

IV. SYSTEMICALLY IMPORTANT SETTLEMENT SYSTEMS

PAYMENT AND SETTLEMENT SYSTEMS OF EESTI PANK

In the first half of 2011, around 96,638 payments a day were settled through the interbank payment and settlement systems managed by Eesti Pank at a total value of 1,240.3 million euros. The total value of Eesti Pank's payment and settlement systems was 71% higher than in the first half of 2010. Despite the increase in the total value of payments, the number of payments settled in the payment and settlement systems of Eesti Pank decreased by 1% (see Figure 1).

In the first half of 2011, 91% of the total value settled in the payment and settlement systems of Eesti Pank originated from payments made through TARGET2-Eesti, which posted 317 payments, or 0.3% of the total volume of payments. The value of payments settled in TARGET2-Eesti has increased significantly in the first six months of 2011. In part this follows the closure of the EP RTGS after Estonia joined the euro area and the channelling of EP RTGS payments to TARGET2-Eesti. However, the second and more important reason is that banks use TARGET2-Eesti actively for large-scale cross-border bank-to-bank payments (see Figures 2-3).

In the first half of 2011, the vast majority of interbank payments were still settled in the Settlement System of Ordinary Payments, the ESTA, with 99.7% of payments going this way. The average size of payments settled in the ESTA has been increasing since the end of 2009 and now exceeds the previous peak it reached in October 2008.

RISKS TO THE PAYMENT AND SETTLEMENT SYSTEMS AND THE OVERSIGHT ASSESSMENT

In overseeing systemically important payment and securities settlement systems, Eesti Pank follows its own framework for the oversight

Figure 1. Payment and settlement systems of Eesti Pank

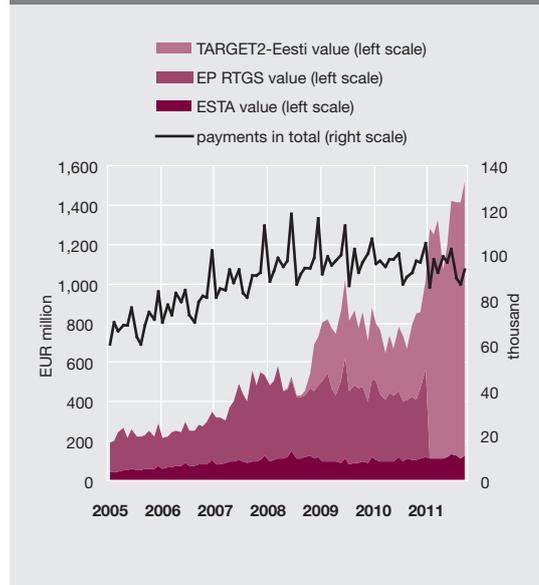
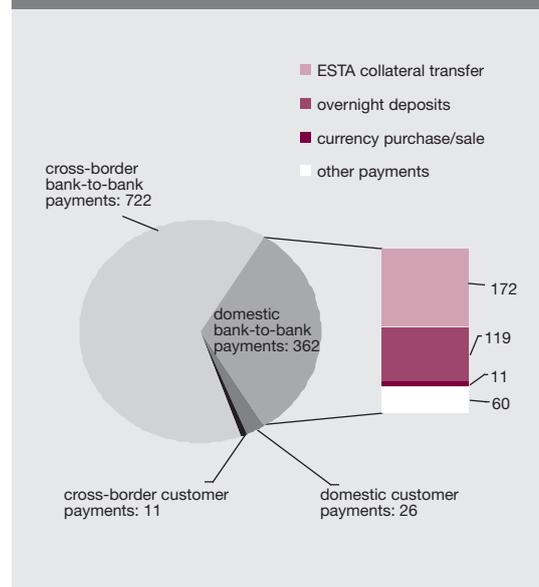


Figure 2. Average daily value of TARGET2-Eesti (EUR million), 1 hy 2011



of settlement systems¹. In Estonia the systems subject to oversight are the ESTA, TARGET2-Eesti and the securities settlement system operated by the Estonian Central Securities Depository.

There were no incidents in the operation of the Estonian payment and settlement systems in the first half of 2011 that could have threatened financial stability or significantly hindered the performance of settlements. The third quarter of 2011 started with an incident in TARGET2, which also affected the performance of the ESTA and the securities settlement system.

In the payment and settlement systems of Eesti Pank the changes that stemmed from the adoption of the euro, notably the closure of the EP RTGS and its replacement with TARGET2-Eesti, and the reduction of the reserve requirement, meant there was a danger of operational risks being aggravated. Some banks have come very close to failing to fulfil the reserve requirement, but luckily these situations have been solved. In addition, there have been occurrences where some banks have not started their ESTA day on time, as their funds have been insufficient for them to make a collateral transfer to the ESTA or the transfer has been delayed. To prevent the problems caused by an insufficiency of funds, banks have now resorted to preventative measures. These operational problems have so far never turned into a long-term liquidity risk.

The banks' reserve requirement diminished following the accession to the euro area and as a result, the funds of the banks in Eesti Pank decreased. This has significantly curbed the liquidity buffer for the settlement of payments in the payment and settlement systems of Eesti Pank, but it has not entailed any liquidity issues.

Figure 3. Average daily number of payments in TARGET2-Eesti, 1 hy 2011

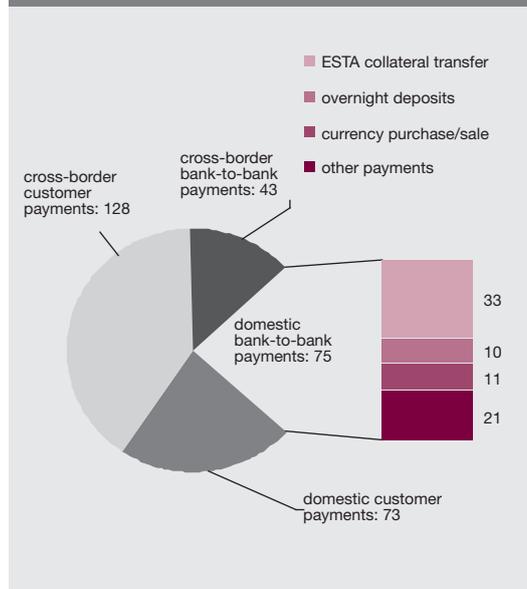
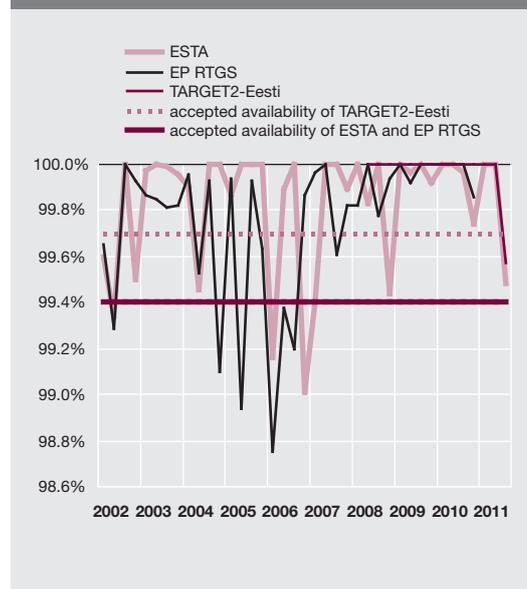


Figure 4. Availability of interbank payment and settlement systems



¹ See Appendix *Oversight of payment and settlement systems*.

In the first and second quarters of 2011, the ESTA and TARGET2-Eesti operated flawlessly, which means that their **availability** was 100% (see Figure 4).

Because of the Easter Monday holiday of TARGET2 on 25 April 2011, it was not possible to settle domestic or cross-border interbank euro payments in Estonia, as the trans-European settlement system TARGET2, its component system TARGET2-Eesti and the Settlement System of Ordinary Payments ESTA were closed.² This, however, did not affect the availability of the ESTA, as it was not a settlement day for the systems.

A greater failure in the payment and settlement systems of Eesti Pank occurred in the third quarter of 2011, when the operation of the single technical platform of TARGET2 was interrupted for 2 hours and 58 minutes at the beginning of the business day on 25 July due to a software error. This meant it was not possible to settle payments in TARGET2 at the beginning of the day and for the first time in the history of TARGET2 a contingency module was employed.

Due to the failure in TARGET2, it was also impossible to perform collateral transfers to the ESTA and start the settlement of domestic interbank payments in the ESTA. The operation of the ESTA was interrupted for 3 hours and 20 minutes.

The Estonian Central Securities Depository (ECSD) introduced a new securities settlement system called Depend at the time of the changeover to the euro. Both changeovers were successful.

Just like the ESTA, the securities settlement system was closed due to the holiday of TARGET2 on Easter Monday on 25 April 2011; therefore, no domestic or cross-border securities transac-

² The holiday of TARGET2 did not affect the performance of intra-bank payments.

tions were performed on that date, either free of payment or delivery-versus-payment.

The failure of TARGET2 that occurred on 25 July 2011 also affected the securities settlement system, because account operators were unable to make payments through TARGET2-Eesti to their liquidity accounts in the securities settlement system. This entailed a 2.5-hour delay in the delivery-versus-payment settlements of securities transactions between account operators.

On 30 June the agreement³ between the ECSD and the Finnish Central Depository managed by Euroclear Finland was terminated due to the significantly lower-than-expected usage of the link.

According to the **oversight assessment**, the ESTA and the securities settlement system operated by the ECSD are important for Estonia. Therefore, the system operators must review the emergency procedures and improve the operation rules of the system. This would help to avoid situations stemming from the holidays of TARGET2 or failures of the single technical platform of TARGET2, where it is not possible to perform domestic interbank payments or securities transactions in Estonia on a local working day or where long-term delays would occur in the performance of payments owing to failures in TARGET2.

³ The agreement between depositories enabled a free of payment transfer of Estonian securities listed on the Tallinn Stock Exchange from an account opened in the Estonian Central Securities Depository to an account in the Finnish Central Depository and a free of payment return transfer from an account in the Finnish Central Depository to an account opened in the Estonian Central Securities Depository.

Oversight of payment and settlement systems

Background information

The efficiency of the financial system depends on the smooth functioning of various payment and settlement systems, since all monetary transactions are conducted through one or several payment and settlement systems. To ensure the smoothness of the financial system, it is necessary to keep various payment and settlement systems in line with the country's legal framework and to avoid disruptions that could have a negative effect on the country's financial system.

The essence of payment and settlement systems

Settlement systems mean infrastructure and the related legal framework that enables the settlement of mutual cash and financial instruments related claims and obligations. Payment and settlement systems include both settlement systems aimed at settling mutual claims and obligations between the participants of the system (hereinafter *settlement systems*), and various instruments used for initiating payments (hereinafter *payment instruments*). The purpose and necessity of different settlement systems have been discussed in detail in Annex 1.

In Estonia, settlement systems include:

Settlement systems of payments:

- settlement systems of intrabank payments, operated by the respective credit and payment institutions;
- settlement system of interbank payments, operated by Eesti Pank, consisting of different settlement systems,

including the TARGET2-Eesti component system and ESTA;

- settlement system of card payments, operated by Nets Estonia AS;
- the interbank direct debit system, operated by AS Itella.

Settlement systems of financial instruments:

- settlement system of securities, operated by the Estonian Central Securities Depository (ECSD).

Payment instruments denote the methods of initiating payments, such as payment orders initiated through the Internet banking and other means.

Role of Eesti Pank

Pursuant to the internationally acknowledged standards, the Treaty on the Functioning of the European Union, the Eesti Pank Act, the Credit Institutions Act, and the Eesti Pank Governor's decrees enacted based on these legal acts, Eesti Pank fulfils three key roles in the field of settlement systems:

1. **operator of settlement systems** – Eesti Pank is the owner and service provider of the interbank payment and settlement systems it manages;
2. **regulator of settlement systems** – Eesti Pank enforces legal acts concerning the settlement systems of interbank payments;
3. **overseer of settlement systems** – Eesti Pank assesses and guides the operation and development of settlement systems.

These functions are mainly fulfilled by the Eesti Pank's Payment and Settlement Systems Department which also **participates in the development of financial sector infrastructures and in the design and implementation of financial sector infrastruc-**

tures policies and regulation (see Annex 2 for details). Eesti Pank facilitates and coordinates the development of settlement systems, above all, through the Estonian Council of Payment System Experts and the TARGET2-Securities Estonian National User Group. Where necessary, Eesti Pank cooperates and exchanges information with the Ministry of Finance and the Financial Supervision Authority on the basis of the cooperation agreement entered into in 2007¹.

The payment and settlements systems managed by Eesti Pank are operated by the Operations and Back-office Division of the Payment and Settlement Systems Department. Oversight is the responsibility of the Policy and Oversight Division of the Payment and Settlement Systems Department. Independence of the oversight of settlement systems is ensured and the conflict of interests within the Payment and Settlement Systems Department is minimised pursuant to the procedure and rules provided in the internal documentation of Eesti Pank. According to these rules and procedures, the Policy and Oversight Division is directly responsible to the Executive Board of Eesti Pank, independently of the role and interests of the Payment and Settlement Systems Department as the operator of payment and settlement systems. The Legal Department provides the legislation on payment and settlement systems, with the required support provided by the Payment and Settlement Systems Department.

In fulfilling the role as the overseer, Eesti Pank is also governed by the oversight framework of settlement systems.

¹ http://www.eestipank.ee/pub/en/ylidine/pank/stabiilus/lepe_1207.html

Oversight framework of settlement systems

Purpose of oversight

According to international standards and best practices, central banks have to guarantee that the settlement systems operated by them fully comply with international standards and to oversee important settlement systems operated by the private sector. The central banks are also responsible for oversight of various payment instruments. The aim of oversight is to ensure effective, smooth and sustainable functioning of settlement systems.

For the central bank, the smooth functioning of its settlement systems is essential for implementing effective monetary policy, ensuring the stability of the economic and financial system and arranging for the smooth operation of currency circulation. The oversight of settlement systems is thus one of the key functions of a central bank, since the smooth and sustainable functioning of the systems is directly related to meeting the main objectives of the central bank. In turn, the achievement of these main objectives ensures price stability through the reliability of the monetary system and public confidence of the currency.

A central bank has several tasks as the overseer of settlement systems. Eesti Pank

- differentiates between the systemically important and important settlement systems on the settlement systems market (see classification in Annex 3);
- establishes the international standards applicable to settlement systems operating in Estonia and assesses compliance with these standards;
- establishes or approves the principles and rules of settlement systems;

- identifies potential risks in and to the settlement systems (see Annex 4 for details);
- participates in the facilitation of the development of settlement systems and in the design and implementation of the policy and legal framework in accordance with the oversight principles, independent of Eesti Pank's role as the operator in consideration of the market needs;
- participates in the oversight of international settlement systems as a member of the European System of Central Banks. For this purpose, a memorandum of understanding has been concluded between the European Union central banks and banking supervisors in 2001, as amended in 2004².

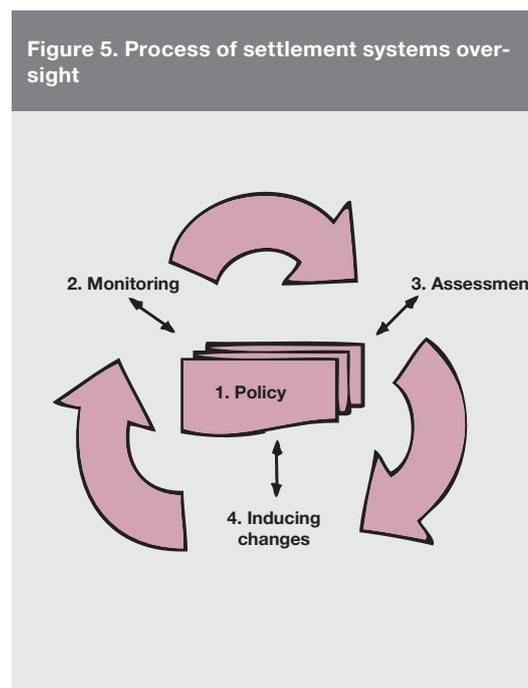
Process of oversight

Oversight of settlement systems means that the central bank monitors the existing systems as well as the systems under development, and assesses their compliance with the international and central bank requirements. Where necessary, the central bank gives recommendations for enhancing the efficiency and security of the systems.

Oversight of settlement systems is an ongoing process where, at first, the relevant principles or policy is formulated (see Figure 5). The central bank monitors and assesses the market and systems on the basis of these principles and employs various instruments or measures to intervene in the functioning of the systems. Then the process begins anew, the difference lying in the refining of the rele-

vant policy if needed at the beginning of the process cycle, based on market needs and the country's general economic development.

Figure 5. Process of settlement systems oversight



Eesti Pank conducts oversight of all important and systemically important payment and securities settlement systems. This means that the systems must comply with the central bank's policy objectives³ and expectations with regard to settlement systems, as well as international requirements. Important settlement systems include the TARGET2-Eesti component system and ESTA, operated by Eesti Pank, and the securities settlement system operated by the ECSD.

Monitoring of settlement systems

In order to fulfil its role, the overseer must have sufficient information on the performance of financial sector infrastructures on the market, and the interdependencies

² <http://www.ecb.int/press/pr/date/2001/html/pr010402.en.html>, <http://www.ecb.int/press/pr/date/2004/html/pr040721.en.html>

³ Operating reliable and well-functioning payment systems.

between the systems. Key sources of information include system rules, the principles for ensuring business continuity, regular reports or ad hoc reports and extraordinary meetings, self-assessments of system operators, meetings of the system operator and participants, evaluations of legal experts and/or auditors, information provided by other central banks or supervisory authorities. A summary of the monitoring of settlement systems is published by the Eesti Pank, mainly in the Financial Stability Review.

Assessment of settlement systems

Information collected through monitoring of settlement systems is used for two purposes. Firstly, the central bank provides a general assessment of the performance of the financial sector infrastructures and for the establishment of the oversight framework, including for determination of the appropriate requirements. Secondly, the central bank assesses the systems that are subject to assessment under the oversight framework.

All important settlement systems must be assessed in a timely and relevant manner. This means that the central bank conducts a comprehensive assessment of these systems once every five years. In the meantime, an assessment is conducted of the changes planned in the system. Where the principles of oversight are changed (e.g. new minimum requirements are established for the system upon amendment of international standards⁴), a new comprehensive assessment is carried out upon enforcement of the new requirements.

⁴ E.g. in 2012, the Bank for International Settlements and the International Organization of Securities Commission will establish new principles for financial market infrastructures. These principles are currently in development. See <http://www.bis.org/publ/cpss94.htm>.

Inducing changes: initiating the development of settlement systems

The result of the monitoring and assessment of settlement systems can either be positive, i.e. the system complies with the requirements, or (partially) negative, i.e. the system does not (partially) comply with the requirements. If the system does not comply with the requirements, the overseer will give the system operator recommendations for improving the system. The overseer's recommendations exert moral suasion, for instance by establishing conditions for the system operator. If the system operator is not fulfilling the requirements established by the overseer, the system will not be used or accepted for certain transactions or in certain cases. Eesti Pank informs the public of the non-compliance in its assessment reports.

As mentioned above, assessments of Eesti Pank are stemming from international standards and best practices (see Annex 5). The Core Principles for Systemically Important Payment Systems of the Bank for International Settlements (BIS) are used as the minimum requirements (standards) for payment settlement systems. The Recommendations for SSSs⁵ of BIS and the International Organization of Securities Commissions (IOSCO) are used in case of securities settlement systems.

In the oversight of TARGET2-Eesti, Eesti Pank applies, in addition to the oversight framework of settlement systems, the Guide on the Implementation of the Eurosystem's TARGET2 Oversight Function. The European System of Central Banks, including the Eurosystem and the non-Eurosystem central banks connected

⁵ Eesti Pank has assessed the system operated by the ECSD based on Eurosystem requirements, which are stricter than the BIS/IOSCO recommendations.

to TARGET2, are responsible for the oversight of TARGET2 as a whole. The European Central Bank plays the lead role in the oversight of the TARGET2 Single Shared Platform. As the TARGET2 component systems are legally and operationally decentralised, the main responsibility for the oversight of the TARGET2-Eesti component system lies with Eesti Pank.

The central bank focuses on the following aspects in the oversight of settlement systems:

- operational structure of the settlement system (technical solution and reliability of the system);
- legal framework for the settlement system (legislation, regulations and system rules);
- acknowledgement of risks (risks to the system and system participants);
- risk management (measuring and management of risk, minimising of excessive risk);
- business continuity;
- efficiency of the settlement system;
- system access;
- governance of the settlement system.

Annex 1. Purpose and essence of different settlement systems

Although there are several settlement systems of different types in Estonia, they all serve the common purpose of enabling the system participants to settle or mediate settlement of mutual claims and obligations.

Settlement systems are required for several reasons. Firstly, settlement systems allow safe and timely settlement of monetary obligations between participants of the system. For private persons, a payment settlement system is important for receiving wages, benefits etc. and paying bills. Businesses use settlement systems for buying and selling goods. The state needs settlement systems for collecting taxes and paying out benefits.

Secondly, the settlement system of interbank payments provides bank customers greater freedom in choosing a commercial bank as their main service providing bank. In initiating payments, customers need not worry about which commercial bank holds the beneficiary's account. The customer can thus pay more attention to factors such as the availability of suitable services, commission fees or quality of services.

Thirdly, the settlement system of card payments allows retailers who are customers of one bank to accept card payments of customers whose cards have been issued by another commercial bank.

Fourthly, settlement systems form the basis for the effective functioning of financial markets. The claims and obligations arising from securities transactions as well as monetary claims and obligations deriving from the purchase and sale of securities are settled through the

respective settlement system.

Annex 2. Facilitating the development of settlement systems⁶ and participating in the designing and implementation of policies and legal framework

The central bank's role in facilitating the development of settlement systems and designing the policies and legal framework depends mainly on the central bank's policy as the operator of settlement systems, as well as the level of development of the country and its financial sector. As the operator of settlement systems, Eesti Pank serves as the owner and operator of interbank settlement systems, TARGET2-Eesti and ESTA. The central bank develops these systems and designs the related policies.

In addition, Eesti Pank as a member of the Eurosystem participates in the designing of the policies and functions related to the centralised infrastructures of the financial sector – the cash settlement system TARGET2, the securities settlement platform TARGET2-Securities and the collateral management infrastructure. The development of the Estonian financial sector and its infrastructures over the last two decades has been inevitable, considering the history of our country and the changing environment⁷, and is natural part of the development of a state. Eesti Pank has facilitated this progress in cooperation with commercial banks and the public sector.

Eesti Pank as the facilitator of the development of financial sector infrastructures:

⁶ The terms *facilitator* and *catalyst* are used internationally.

⁷ Including globalisation, integration, euro area initiatives and establishment of the Single Euro Payments Area (SEPA).

1. has developed smoothly and safely functioning interbank payment settlement systems in accordance with the internationally acknowledged standards and the Estonian market needs, and continues to operate and develop these systems;
2. monitors the development of payment and securities market infrastructures in Estonia, publishing the related reviews in its publications;
3. governs the work of the Estonian Council of Payment System Experts, its sub-units, and the TARGET2-Securities Estonian National User Group;
4. participates in the European Payments Council (EPC) Estonian Committee and, if necessary, other working groups related to the activities of the central bank and headed by the Estonian Banking Association;
5. develops the legal framework for payment services and securities market infrastructures in cooperation with the public sector and market participants;
6. participates in the Eurosystem and other international committees and working groups related to financial infrastructure policy and development, considering the needs of Estonia.

Annex 3. Classification of settlement systems by importance

In Estonia, a settlement system is considered an important settlement system, if it is the only one of its kind in Estonia and/or if it settles positions between members received from other settlement systems.

An important settlement system is considered a systemically important settlement system – a system important for the sustainability of the

Estonian financial system – if the average daily turnover of the important settlement system in the last six months makes up more than 10% of the total average daily turnover of important settlement systems in the last six months.

Annex 4. Settlement system risks

In Estonia, as well as in any other modern society, the entire financial system is based on settlement systems. Therefore, it is essential to ensure the smooth functioning of settlement systems so as to maintain a stable and smooth financial system of a country. This means, first of all, management and minimising of various risks. Identification, measuring, monitoring and management of risks help to prevent transfer of risks to domestic and international financial markets, which can lead to major financial crises.

Due to the domino effect (also called a systemic risk), the default of one system participant or a technical malfunctioning can cause liquidity or credit problems to other participants of the settlement system. Although the likelihood of a systemic risk is small, it can lead to a major financial crisis.

Risks related to settlement systems of payments:

- Systemic risk or the risk that temporary or constant liquidity problems of one participant of the system could lead to similar problems for some other participant of the system. In other words, the systemic risk concerns the potential chain reaction triggered by the liquidity or credit risk that can lead to an economic and financial crisis in the entire country or a group of countries. Thus, the systemic risk can arise in the emergence of other risks.

- Credit risk or the risk that a participant of the system will be unable to fully meet its financial obligations within the system either when due or at any time in the future.
- Liquidity risk or the risk that a participant of the system will have insufficient funds to meet financial obligations within the system when expected, although it may be able to do so at some time in the future. In other words, this is a situation when a system participant experiences a temporary shortage of settlement assets.
- Operational risk or the risk that the smooth functioning of the settlement system will be disrupted by software or hardware failure, human error or malicious activity, which will cause unforeseeable financial obligations to participants of the system. The realisation of the operational risk could, in turn, lead to the realisation of credit or liquidity risks.
- Legal risk or the risk that weak legal framework or unexpected interpretation of legislation will cause unforeseeable financial losses to the operator or participants of the settlement system. Realisation of the legal risk could, in turn, lead to the realisation of credit or liquidity risks.
- Security risk or the risk that fraud or misuse of the system will harm the functioning of the system.
- Risks related to settlement systems of securities:
 - All the above-listed risks of settlement systems;
 - Custody risk or the risk that the custodian does not keep separate books for its own securities and the securities of its customers. In other words, it is the risk that the custodian would carry out

transactions with the securities of its customer without the latter's knowledge.

Annex 5. Main international standards and best practices

Central bank oversight of payment and settlement systems, 2005 (Committee on Payment and Settlement Systems (CPSS), Bank for International Settlements (BIS))

1. Standards on payment settlement systems

1.1. Global standards

1.1.1. Report of the Committee on Interbank Netting Schemes of the central banks of the Group of Ten countries (Lamfalussy Report), 1990 (BIS)

1.1.2. Core Principles for Systemically Important Payment Systems, 2001 (CPSS, BIS)

1.1.3. Policy issues for central banks in retail payments, 2003 (CPSS, BIS)

1.1.4. General guidance for national payment system development, 2006 (CPSS, BIS)

1.1.5. General principles for international remittance services, 2007 (CPSS, BIS)

1.2. EU and EMU standards

1.2.1. Eurosystem oversight policy framework, 2011 (ECB)

1.2.2. Oversight Standards for Euro retail payment systems, 2003 (ECB)

1.2.3. Business continuity oversight expectations for systemically important payment systems, 2006 (ECB)

1.2.4. Guide for the assessment against the business continuity oversight expectations for systemically important payment systems, 2007 (ECB)

1.2.5. Guide on the implementation of the Eurosystem's TARGET2 oversight function, 2008, (ECB)

- 1.2.6. Policy statement on euro payment and settlement systems located outside the euro area, 1998 (ECB)
- 1.2.7. The Eurosystem policy principles on the location and operation of infrastructures settling euro-denominated payment transactions, 2007 (ECB)
- 1.2.8. The Eurosystem policy principles on the location and operation of infrastructures settling euro-denominated payment transactions; specification of „legally and operationally located in the euro area“, 2008 (ECB)

operations, 1998 (European Monetary Institute)

- 3.2.3. The Eurosystem’s policy line with regard to consolidation in central counterparty clearing, 2001 (ECB)
- 3.2.4. Eurosystem statement on central counterparties and interoperability, terms of reference, 2008 (ECB)
- 3.2.5. Central counterparty clearing (CCP) for OTC credit derivatives, Decision taken by Governing Council, 2008 (ECB)

2. Standards on payment instruments

2.1. EU and EMU standards

- 2.1.1. Harmonised oversight approach and oversight standards for payment instruments, 2009 (ECB)
- 2.1.2. Report on electronic Money, 1998 (ECB)
- 2.1.3. Electronic Money systems security objectives, 2003 (ECB)
- 2.1.4. Oversight framework for card payment schemes – Standards, 2008 (ECB)
- 2.1.5. Oversight framework for card payment schemes – Standards, 2008 (ECB)
- 2.1.6. Oversight framework for credit transfer schemes, 2010 (ECB)

3. Standards on securities settlement systems

3.1 Global standards

- 3.1.1. Recommendations for securities settlement systems, 2001 (BIS, IOSCO)
- 3.1.2. Recommendations for Central Counterparties, 2004 (BIS, IOSCO)

3.2. EU and EMU standards

- 3.2.1. Recommendations for securities clearing and settlement systems in the European Union, 2009 (ESCB, CESR)
- 3.2.2. Standards for the use of EU Securities Settlement Systems in ESCB credit