LATVIJAS BANKA

OVERSIGHT OF THE PAYMENT SYSTEM IN LATVIA

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INTRODUCTION

The Bank of Latvia's role and objectives regarding payment systems are laid down in the Law "On the Bank of Latvia". To follow the requirements of the Law, the Bank has formulated its policy for achieving those objectives. The payment system is a vital part of the financial infrastructure, and its efficient functioning contributes to economic performance in the country, ensuring timely completion of payments. The payment system, however, may involve additional risk. For example, the inability of a participant of the system to meet its settlement obligations may cause disturbances affecting other participants, and this may result in a domino-like spread of financial problems in the payment system, even extending beyond the system. The Bank of Latvia's task is to promote the smooth functioning of the payment system and to protect the financial system from the domino effect. The Bank of Latvia performs this task by overseeing payment systems.

Guided by its payment system policy, the Bank of Latvia sets out principles for the oversight of the payment system. Clearly defined oversight principles enable operators, participants and users of payment systems to have a clear understanding of the Bank of Latvia's role in the national payment system, as well they may predict the procedures by which the Bank of Latvia intends to perform the oversight of payment systems. The purpose of this document is to explain to the public the importance of the payment system for the national economy and risks associated with the payment system, as well as possibilities for reducing such risks.

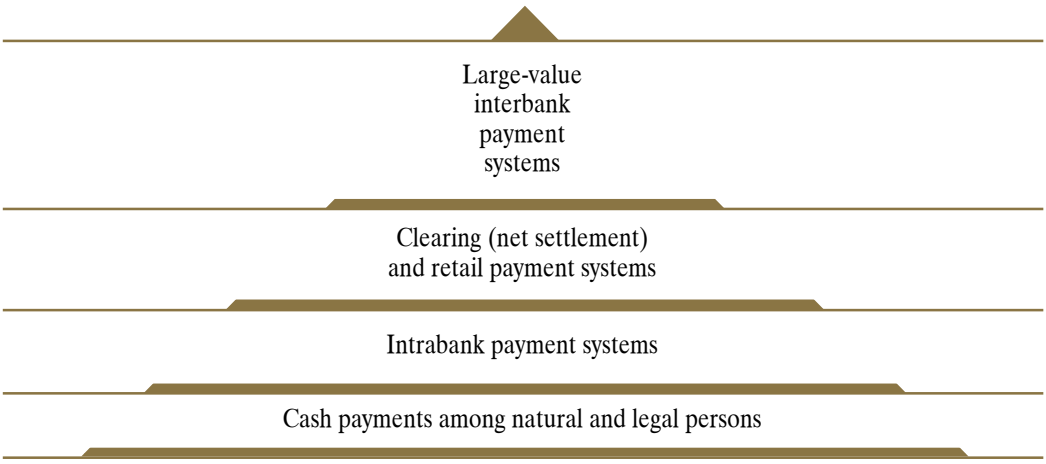
NATIONAL PAYMENT SYSTEM

The national payment system is an arrangement consisting of payment instruments, banking operations, the interbank payment system and other specialised payment systems that ensures money circulation. Nowadays, cash (i.e., banknotes and coins) and claims against credit institutions in the form of deposits are regarded as 'money'. In recent years, there has been worldwide interest in the development of electronic money, i.e., stored value or prepaid products in which a record of the funds or value available to the customer is stored on a device in the customer's possession. Cash is used mainly by individuals in 'face to face' transactions when paying for goods and services, while settlements among bank customers are effected using cashless payment instruments.

The payment system is frequently shown as a multi-level pyramid where levels are defined in terms of their relative value and complexity (see Chart 1):
– cash payments among natural and legal persons;
– intrabank payment systems for handling customers' payments;
– clearing (net settlement) and retail payment systems processing a large number of customers' payments, but having rather small total cash flows;
– large-value interbank payment systems for handling funds of significant value. Cash flows in such systems result from interbank market transactions, the central bank's monetary policy operations and the final settlement of clearing (net settlement) and retail payment systems. Usually, it takes a few days for large-value interbank payment systems to process a value equal to the country's annual GDP.

Chart 1

Payment System



The country's payment system handles various cash flows that accumulate settlements made by participants of different payment systems. These cash flows are interdependent and their values and risks increase upward from one level of the payment system to another. For example, the base of the pyramid, i.e., payments among natural and legal persons, involves the largest number of participants, since nearly all inhabitants make cash payments. When depositing cash with a bank, customers start using payment services provided by banks. Banks execute their customers' payments through specialised payment systems, such as card payment systems for handling transactions by payment cards or clearing (net settlement) systems for handling retail payments. Banks use large-value interbank payment systems to settle their obligations arising from payments effected through clearing (net settlement) and other specialised retail payment systems. Large-value interbank payment systems form the apex of the payment system pyramid. In comparison with the other levels of the payment system, there are less participants (only banks); however, such systems deal with significant cash flows and the density of risks transferred from the other levels of the payment system is high.

Participants of interbank payment systems execute funds transfers in accordance with common rules and standardised procedures, applying a certain data transmission infrastructure. To ensure the efficient and safe functioning of an interbank payment system, its participants agree on the following:
– technical standards, data transmission methods and types of payment messages;
– means of settling claims amongst the participants;
– a set of common procedures and rules on participation in the system, handling of payments and charges applied.

Payments in lats among banks registered in the Republic of Latvia, including foreign bank branches, are handled by the Bank of Latvia's interbank payment systems. The Bank of Latvia operates a real-time gross settlement system for large-value and urgent payments and an electronic clearing (net settlement) system for retail payments. Nearly all funds transfers in lats among banks are handled by the Bank of Latvia's interbank payment systems, while payments in foreign currencies are executed through foreign correspondent banks.

As at the end of 2000, the following payment systems were operated in Latvia:
– the Bank of Latvia's interbank automated payment system (SAMS), which is a real-time gross settlement system used for large-value payments related to interbank market transactions and the Bank of Latvia's monetary policy operations;
– the Bank of Latvia's electronic clearing (net settlement) system (EKS), which is used to process bulk retail payments and ensure the settlement of net positions;
– the postal accounting system (PNS) of the non-profit organisation state joint-stock company *Latvijas Pasts*, which enables *Latvijas Pasts* customers to open PNS settlement accounts and transfer funds to accounts with PNS or credit institutions in Latvia and abroad;
– the card payment systems of the limited liability company *Banku servisa centrs* and the joint-stock company *Baltijas Karšu centrs*.

Table 1 provides information on the above systems, highlighting their importance in Latvia's payment system.

Table 1

Transactions in Payment Systems in 2000 (daily averages)

Payment system	***Volume of transactions*** *(in thousands)*	***Value of transactions*** *(in millions of lats)*
SAMS	0.3	60.4
EKS	49.5	26.5
PNS	91.5	2.0
Card payment systems	40.8	1.2

The levels of the payment system pyramid are closely linked, and interaction among them facilitates the development of the entire payment system. On the one hand, intrabank and interbank payment systems ensure convenient and timely settlements for customers, encouraging customers to use funds transfers more widely. On the other hand, economic growth promotes an increase in the volume of customers' payments and introduction of new payment instruments. The latter may lead to a necessity to improve the existing interbank payment systems or to develop new ones.

PAYMENT SYSTEM RISKS

In recent years, payment systems have been growing rapidly worldwide. As telecommunications and information technologies improve, payment systems become faster and more efficient, providing a positive incentive for growth in the national economy. However, the faster settlements become in a payment system, the sooner financial problems of a participant may lead to unexpected financial exposures of other participants or even the payment system as a whole.

Systemic risk may significantly influence a payment system's operations. Systemic risk is the risk that the failure of a participant in a payment system or financial markets to meet its settlement obligations or operational failures of the system will result in another participant's inability to meet its settlement obligations in the system. Such disruptions in the functioning of the system may cause vast liquidity problems, which may affect the stability of the entire payment system and the financial market. Any of the following financial risks to which participants of payment systems are exposed might become a source of systemic risk for a system:
– credit risk – the risk that a counterparty will not be able to meet its settlement obligations in full either when due or at any time thereafter;
– liquidity risk – the risk that a counterparty will not be able to meet its settlement obligations for full value when due, but some time thereafter;
– operational risk – the risk that hardware or software problems, human error, or malfeasance will result in a breakdown or malfunctioning of the system, giving rise to financial difficulties or losses for its participants;
– legal risk – the risk that misinterpretation of laws and regulations or legal uncertainty will result in unexpected financial difficulties or losses for the payment system or its participants.

Systemic risk arising in large-value interbank payment systems may increase risks throughout the entire payment system because of the following reasons:
– such payment systems process large-value payments, and in case of disturbances or operational failures of the system, losses may be significant;
– large-value interbank payment systems also handle transactions of their participants' customers. Failure to make timely payments may affect not only the system's participants, but also all customers involved in the chain of payments. For example, a failure of an interbank payment system that is used to make salary payments could affect a large number of individuals, unexpectedly leaving them without money resources;
– interbank payment systems are used to settle the cash leg of transactions in the money, foreign exchange and capital markets. Inefficiencies or delays in such settlements may affect the stability of the relevant financial market and, in some cases, increase the demand for the central bank's credit;
– large-value interbank payment systems are used for settlements of the central bank's monetary policy operations. Disruptions in the functioning of such systems may affect the implementation of the central bank's monetary policy.

It is impossible to eliminate risks in payment systems completely. An extremely safe system would be self-defeating because of large costs and inefficiency. Operators and participants in the payment systems have to identify, measure, monitor and as far as possible reduce such risks, as well as to ensure that each participant clearly understands risks associated with participation in the system.

The Bank of Latvia's payment system policy is designed so as to ensure that risk reduction in the entire system is understood and supported by all participants and operators. Risks in a payment system need to be identified, measured and monitored.

THE BANK OF LATVIA'S PAYMENT SYSTEM POLICY[1]

1 THE BANK OF LATVIA'S OBJECTIVES AND ROLE IN THE PAYMENT SYSTEM

1.1 As regards the payment system, the Bank of Latvia's objective is to promote a smooth operation of payment systems in the Republic of Latvia. To ensure an efficient and safe functioning of clearing and payment systems, the Bank of Latvia approves regulations. To achieve the above goal, the Bank of Latvia performs the oversight of the payment system. Oversight results in safe and efficient operation of the payment system and its interaction with monetary policy. The oversight function is closely related with the key tasks of the Bank of Latvia, i.e., implementing of monetary policy to maintain price stability in the country and facilitating the stability of the national currency and the financial system. The Bank of Latvia carries out its task of overseeing the payment system independently from other institutions.

1.2 Oversight is a form of control and is subject to specific regulations and principles. Oversight is exercised over those financial services where intermediaries do not need prior authorisation to engage in payment activities, although, where necessary, the Bank of Latvia may establish specific requirements for potential participants if the functioning of the payment system may be affected significantly. Supervision is exercised over those financial activities where banks and other financial intermediaries need prior authorisation from the supervisory authority (in Latvia, from the Financial and Capital Market Commission) to be able to carry out financial activities.

1.3 The Bank of Latvia oversees systemically important interbank payment systems for settlement in lats that operate in the Republic of Latvia, thus significantly reducing systemic risk in the entire payment system. A payment system is systemically important, where, in case the system were insufficiently protected against risk, disruption within it could trigger further disruptions amongst participants or systemic disruptions in the financial system.

1.4 Pursuant to the Law "On the Bank of Latvia", the Bank of Latvia also exercises other strategic functions related to the payment system, i.e., issues the national currency (banknotes and coins) and ensures the operation of interbank payment and clearing systems.

2 OPERATION OF INTERBANK PAYMENT SYSTEMS

2.1 The Bank of Latvia ensures the operation of interbank payment systems, offering settlement services to banks. The Bank of Latvia's interbank automated payment system (SAMS) functions as the core mechanism of the entire payment system, ensuring the settlement of large-value interbank payments and the Bank of Latvia's monetary policy operations, as well as the final settlement of other payment systems. Banks may also use this system for their customers' payments; however, because of the system's costs, the SAMS is predominantly used for processing large-value or urgent payments. The Bank of Latvia uses settlement accounts with the SAMS also when issuing collateralised credit to banks, i.e., intraday credit that takes a form of an overdraft on the account to ensure a smooth flow of payments in interbank payment systems, and overnight credit or a loan of longer maturity to implement monetary policy. Thus, the SAMS plays an important role in implementing the Bank of Latvia's monetary policy.

2.2 The SAMS is a real-time gross settlement system. Real-time settlement significantly reduces liquidity and credit risk in the system, enabling the participants of the system to make immediate settlement and monitor their liquidity online. SAMS participants may monitor their account balances and payment flows in real time. To promote efficient settlements, the Bank of Latvia extends to banks, at its own cost, intraday credit as an overdraft on a settlement account against collateral. Data exchange within the SAMS is effected, using S.W.I.F.T. *(Society for Worldwide Interbank Financial Telecommunication)* data transmission infrastructure, which guarantees a secure transmission of data. The continuity of the system's functioning is guaranteed by the hardware solution chosen by the Bank of Latvia: the functioning of the system is ensured by two parallel servers, and if the operation of one server is disrupted, the other backs up the system's operations.

[1] Approved by the Bank of Latvia Board of Governors' Resolution No. 89/10 of September 13, 2001.

2.3 The Bank of Latvia also ensures the operation of the interbank retail payment system, i.e., the Bank of Latvia's electronic clearing system (EKS). The EKS is the only clearing (net settlement) system in Latvia that ensures the settlement of bulk customers' credit transfers among banks in Latvia. The EKS is an automated clearing house system, in which the processing of payments is fully automated and only electronic payment instructions are accepted and processed.

2.4 Settlements in the Bank of Latvia's interbank payment systems are handled through banks' settlement accounts with the Bank of Latvia, thus reducing considerably risks inherent in these systems. Claims on the central bank are the safest form of settlement assets, since the central bank guarantees the availability of the funds for settlement thus eliminating liquidity and credit risks associated with the settlement assets of the system's participants.

2.5 To reduce risks in retail payment systems functioning outside the Bank of Latvia, the Bank offers the possibility of making the final settlements of such systems through settlement accounts of the systems' participants with the Bank of Latvia.

3 OVERSIGHT OF SYSTEMICALLY IMPORTANT PAYMENT SYSTEMS

3.1 Independently from ensuring the operation of interbank payment systems, the Bank of Latvia oversees systemically important payment systems. The Bank of Latvia gathers information about the payment systems functioning in Latvia and, after determining their importance, decides on oversight measures. The Bank of Latvia oversees each individual payment system to help its participants and operators to get a clear understanding of potential risks associated with payment systems and means to reduce such risks.

3.2 There has been an increased international emphasis on the oversight of systemically important payment systems. To promote the development of safe and efficient payment systems, the Committee on Payment and Settlement Systems of the Bank for International Settlements[1] has published the *Core Principles for Systemically Important Payment Systems*[2] accepted by the governors of G-10 countries' central banks. This document sets out the core criteria that must be met by any systemically important payment system to be declared as sufficiently safe and efficient on the international scale.

3.3 The Bank of Latvia oversees the operation of systemically important payment systems in Latvia in accordance with the *Core Principles for Systemically Important Payment Systems*, establishing their compliance with these core principles and requiring payment system operators to take all reasonable measures to achieve full compliance with the said principles.

3.4 According to international standards and practices, currently the SAMS is regarded as a systemically important payment system in Latvia. Nevertheless, the Bank of Latvia also oversees the EKS in accordance with the principles for the oversight of systemically important systems. In Latvia, the EKS is the only retail payment clearing system for settlement in the national currency that processes a large number of retail payments, and disruptions in its functioning may affect numerous customers, leaving them without opportunity to make or receive payments in due time. The Bank of Latvia is going to publish an evaluation on the compliance of the SAMS and the EKS with the *Core Principles for Systemically Important Payment Systems*.

3.5 The Bank of Latvia conducts day-to-day oversight of the SAMS and the EKS, monitoring technical and operational functions of the systems, and collects and analyses statistical data on the systems. The Bank of Latvia's Internal Audit Department audits the operation of the systems in accordance with a time schedule approved in advance.

3.6 To achieve compliance with the *Core Principles for Systemically Important Payment Systems*, the Bank of Latvia develops and approves regulations that govern the operation of the Bank of Latvia's interbank payment systems and contain principles for participation in the systems, operational procedures and measures for risk reduction.

3.7 The Bank of Latvia makes amendments to the regulations governing the operation of the Bank of Latvia's payment systems and their operational procedures upon prior agreement with the participants and other

[1] A group of payment system experts from the central banks in G-10 countries, established in 1980 to encourage the development of payment systems.
[2] See Appendix 1.

parties involved in the systems. To foster an efficient solving of issues concerning payment systems, the Bank of Latvia cooperates with the Association of Latvian Commercial Banks, which represents banks registered in the Republic of Latvia. Together with the twelve largest Latvian banks, the Bank of Latvia has established the National Payment Consultative Council that discusses different issues related to the development of payment systems.

3.8 The Bank of Latvia reviews, on a regular basis, risk management in its interbank payment systems and analyses the results of payment systems oversight, as well as publishes reports on the development of the Bank of Latvia's interbank settlement systems.

4 CLEARING (NET SETTLEMENT) AND RETAIL PAYMENT SYSTEMS

4.1 Though retail payments are not considered to be the most important source of systemic risk for a national payment system, operational and other errors in such systems may affect a large number of users and reduce confidence in the national payment system.

4.2 Responsibility for a safe and efficient functioning of clearing and retail payment systems shall be undertaken by operators of payment systems and their participants, and they shall make the operation of the systems compliant, where possible, with the *Core Principles for Systemically Important Payment Systems*. The said principles shall be applied to retail payment systems so that the efficiency of such systems is not impaired. Sometimes, even after risks have been fully eliminated, use of the system may become economically unreasonable and its potential users may choose another, less safe payment system, thus increasing risks in the national payment system as a whole.

4.3 The Bank of Latvia provides consultations to operators of clearing and retail payment systems on risks associated with payment systems. Upon request by such institutions, the Bank of Latvia may provide its opinion on the compliance of a particular payment system with the *Core Principles for Systemically Important Payment Systems* and on other specific issues related to the functioning or development of the system. The Bank of Latvia may participate in discussing and developing projects related to the operation of clearing and retail payment systems.

4.4 The Bank of Latvia compiles, on a regular basis, statistics on payment systems and, if it is necessary for assessing the importance of a particular system, may request operators of payment systems to provide information on the principles of the system's operation, such as system rules, procedures for managing and eliminating risks, or project documentation.

5 PAYMENT INSTRUMENTS USED IN LATVIA

5.1 Efficiency of the payment system is essential not only to banks, but also to customers, who are interested in using payment instruments offered by banks. While natural persons mainly use cash in payments for goods and services in Latvia, funds transfers dominate among the services offered by banks. In recent years, as the range of services based on convenient and modern technologies expands, customers start increasingly using electronic payment instruments, payments by payment cards, and internet and telephone banking services. Customers assume that their payments will be effected in time, and they will be able to meet their financial obligations in due time. When choosing their bank, customers evaluate the range, quality and prices of its services.

5.2 The Bank of Latvia collects and analyses information on payment instruments used in Latvia. When significance of a payment instrument increases considerably and its use may increase the national payment system's exposure to risks, the Bank of Latvia may issue instructions, regulations or recommendations for the use of such payment instrument and, if necessary, participate in drafting amendments to relevant laws.

5.3 The Bank of Latvia may participate in projects on implementing and developing new payment instruments. Upon request by the issuer of a payment instrument or other interested party, the Bank of Latvia provides its opinion on the development of the respective payment instrument and risks associated with it.

6 COOPERATION WITH SUPERVISORY AUTHORITIES AND INTERNATIONAL AUTHORITIES

6.1 Independently of other institutions, the Bank of Latvia oversees the payment system to reduce systemic risk. Nevertheless, the financial stability of each participant of the payment system (in Latvia, predominantly banks) may affect systemic risk in the payment system. Therefore, when overseeing interbank payment systems, the Bank of Latvia cooperates with the Financial and Capital Market Commission, which supervises each individual bank by evaluating its financial stability.

6.2 The Bank of Latvia and the Financial and Capital Market Commission have signed an agreement on cooperation, stipulating that information needed to exercise the tasks of both institutions will be exchanged freely. Upon mutual agreement, they may carry out joint inspections to check the compliance of banks or other financial institutions participating in payment systems with certain requirements or regulations. Where necessary, the Bank of Latvia and the Financial and Capital Market Commission may examine the ability of the relevant institution to meet its obligations to customers or participants of payment systems.

6.3 The Bank of Latvia cooperates with central banks of other countries and international institutions, participating in projects related to the oversight of payment systems and in drafting and discussing documents.

7 INFORMATION TO THE PUBLIC

7.1 To facilitate public understanding of the payment system in Latvia, the Bank of Latvia publishes, on a regular basis, reports on the development of the payment system in Latvia, including a review of developments in the oversight of the payment system and an analysis of payment statistics.

7.2 The Bank of Latvia reports on payment systems in its publication *Monetārais Apskats. Monetary Review* and annual report. The Bank of Latvia provides information on the development of the payment system in Latvia also to several international organisations, such as the European Central Bank, which has included this information in the *Blue Book: Payment Systems in Countries that Have Applied for Membership of the European Union*. Public documents related to payment systems are available on the Bank of Latvia's website (http://www.bank.lv).

Appendix 1

CORE PRINCIPLES FOR SYSTEMICALLY IMPORTANT PAYMENT SYSTEMS

Excerpts from the document *Core Principles for Systemically Important Payment Systems*, published by the Committee on Payment and Settlement Systems of the Bank for International Settlements on January 2001, are given to provide information on the principles based on which the Bank of Latvia conducts the oversight of systemically important payment systems and on the role of the central bank in implementing those principles.

SECTION 3: CORE PRINCIPLES FOR SYSTEMICALLY IMPORTANT PAYMENT SYSTEMS[1]

[..]

I. The system should have a well founded legal basis under all relevant jurisdictions.

3.1.1 The rules and procedures of a system should be enforceable and their consequences predictable. A system which is not legally robust or in which the legal issues are poorly understood could endanger its participants. Poor understanding can give participants a false sense of security, leading them, for example, to underestimate their credit or liquidity exposures.

3.1.2 The legal environment relevant to Core Principle I includes the general legal infrastructure in the relevant jurisdictions (such as the law relating to contracts, payments, securities, banking, debtor/creditor relationships, and insolvency) as well as specific statutes, case law[2], contracts (for example, payment system rules) or other relevant material.

3.1.3 The jurisdiction under whose law the system's rules and procedures are to be interpreted should be specified clearly. In most cases, the most important legal environment will be the domestic one, although, in particular where the system involves cross-border elements such as foreign bank participation or the use of multiple currencies, it will also be necessary to consider whether there are any material legal risks stemming from other relevant jurisdictions.

II. The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.

3.2.1 Participants, the system operator, and other involved parties—in some cases including customers—should understand clearly the financial risks in the system and where they are borne. An important determinant of where the risks are borne will be the rules and procedures of the system. These should define clearly the rights and obligations of all the parties involved and all such parties should be provided with up-to-date explanatory material. In particular, the relationship between the system rules and the other components of the legal environment should be clearly understood and explained. In addition, key rules relating to financial risks should be publicly disclosed.

III. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

3.3.1 The rules and procedures of a systemically important payment system are not only the basis for establishing where credit and liquidity risks are borne within the system, but also for allocating responsibilities for risk management and risk containment. They are, therefore, an important mechanism for addressing the financial risks which can arise in payment systems. A system's rules and procedures should therefore ensure that all parties have both the incentives and the capabilities to manage and contain each of the risks they bear and that limits are placed on the maximum level of credit exposure that can be produced by each participant. Limits on credit exposure are likely to be particularly relevant in systems involving netting mechanisms.

[1] Committee on Payment and Settlement Systems. *Core Principles for Systemically Important Payment Systems.* Basel: Bank for International Settlements, January 2001, pp. 7–12.
[2] Case law is not recognised as a source of law in Latvia.

3.3.2 There are a variety of ways in which risks can be managed and contained using both analytical and operational procedures. Analytical procedures include ongoing monitoring and analysis of the credit and liquidity risks participants pose to the system. Operational procedures include the implementation of risk management decisions through limits on exposures, by prefunding or collateralising obligations, through the design and management of transaction queues or through other mechanisms. For many systems, the use of risk management processes that operate in real time will be a key element in satisfying Core Principle III.

IV. The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

3.4.1 Core Principle IV relates to daily settlement in normal circumstances. Between the time when payments are accepted for settlement by the payment system (including satisfaction of any relevant risk management tests, such as the application of limits on exposures or availability of liquidity) and the time when final settlement actually occurs, participants may still face credit and liquidity risks. These risks are exacerbated if they extend overnight, in part because a likely time for the relevant authorities to close insolvent institutions is between business days. Prompt final settlement helps to reduce these risks. As a minimum standard, final settlement should occur at the end of the day of value.

3.4.2 In most countries it should be a goal for at least one payment system to exceed this minimum standard by providing real-time final settlement during the day. This is particularly desirable in countries with large volumes of high-value payments and sophisticated financial markets. An effective intraday liquidity mechanism is necessary for this development in order to ensure that prompt final settlement is not only available, but is achieved in practice.

3.4.3 Core Principle IV relates to the promptness of settlement on the intended day of value. Nothing in it prevents a system from offering a facility for entering payment details in advance of that day.

V. A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

3.5.1 Most multilateral netting systems defer settlement of participants' obligations. Multilateral netting can create the risk that, if a participant is unable to meet its settlement obligations, other participants will face unexpected credit and liquidity risks at the time of settlement. The amount at risk can be much greater than the net amounts due. The risk is exacerbated the longer settlement is deferred. This combination of multilateral netting and deferred settlement was the focus of Lamfalussy Standard IV[1], which specified that, at a minimum, such netting systems must be able to withstand the failure of the largest single net debtor to the system. Such systems therefore need strong controls to address this settlement risk, and many payment systems that settle on a net basis have introduced arrangements to limit credit and liquidity risk and to ensure access to liquidity in adverse circumstances.

3.5.2 Systems which satisfy only this minimum standard are still exposed to the financial risks of the failure of more than one institution during the same business day. The circumstances in which one large net debtor is unable to meet its settlement obligations to the system may well be those in which other institutions are also under liquidity pressure. Best international practice now is, therefore, for such systems to be able to withstand the inability to settle of more than the one participant with the largest single settlement obligation. Careful consideration should be given to this approach and its implications should be evaluated taking into account the benefits of reduced settlement risk and any other consequences such as for the management of liquidity. In addition, alternative system designs (such as real-time gross settlement systems or hybrid systems) are increasingly being adopted to reduce or eliminate settlement risk.

3.5.3 Core Principle V adopts the wording of Lamfalussy Standard IV almost unchanged, and it remains a universal minimum standard for multilateral netting systems, which should be exceeded wherever possible. It is not relevant for real-time gross settlement systems. If systems of other types, such as hybrid systems, involve multilateral netting or the deferral of settlement, the central bank may need to consider whether the risks are similar. If they are, a similar approach of applying at least the minimum standard, and preferably a higher standard, should be followed.

[1] *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries*. Basel: Bank for International Settlements, November 1990.

VI. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

3.6.1 Most systems involve the transfer of an asset among system participants to settle payment obligations. The most common form of such an asset, which is also the preferable form, is an account balance at the central bank, representing a claim on the central bank. There are, however, examples of other forms of settlement asset, representing a claim on a supervised institution.

3.6.2 The settlement asset must be accepted by all participants in the system. Where an asset other than a claim on a central bank is used, the system's safety depends in part on whether the asset leaves the holder with significant credit risk or liquidity risk. This form of credit risk arises if there is more than a negligible risk that the issuer of the asset could fail. Liquidity risk arises in this context if the asset might not be readily transferable, for example into claims on a central bank or other liquid assets. In either case, the system could face a crisis of confidence, which would create systemic risk. Balances at the central bank are generally the most satisfactory asset used for settlement, because of the lack of credit or liquidity risk for the holder, and they are typically used in systemically important payment systems. If settlement is completed using other assets, such as claims on a commercial bank, those assets must carry little or no financial risk.

3.6.3 In some payment systems minimal use is made of a settlement asset. For example, they may settle by offsetting one claim against another. This can be consistent with Core Principle VI provided that there is no inconsistency with other Core Principles, particularly with Core Principle I, which requires the legal basis for the offset process to be sound.

VII. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

3.7.1 Market participants rely on payment systems for settling their financial market transactions. To ensure the accuracy and integrity of these transactions, the system should incorporate commercially reasonable standards of security appropriate to the transaction values involved. These standards rise over time with advances in technology. To ensure completion of daily processing, the system should maintain a high degree of operational resilience. This is not just a matter of having reliable technology and adequate backup of all hardware, software and network facilities. It is also necessary to have effective business procedures and well trained and competent personnel who can operate the system safely and efficiently and ensure that the correct procedures are followed. This, together with good technology, will, for example, help to ensure that payments are correctly and quickly processed and that risk management procedures, such as limits, are observed.

3.7.2 The degree of security and reliability required to provide adequate safety and efficiency depends on the importance of the system, as well as any other relevant factors. The degree of reliability required may, for example, depend on the availability of alternative arrangements for making payments in contingency situations.

VIII. The system should provide a means of making payments which is practical for its users and efficient for the economy.

3.8.1 Operators, users (that is participants, such as banks and their customers) and overseers of systems all have an interest in the efficiency of a system. They want to avoid wasting resources and, other things being equal, would wish to use fewer resources. There will typically be a trade-off between minimising resource costs and other objectives, such as maximising safety. Within the need to meet these other objectives, the design of the system, including the technological choices made, should seek to economise on relevant resource costs by being practical in the specific circumstances of the system, and by taking account of its effects on the economy as a whole.

3.8.2 The costs of providing payment services will depend on the quality of service and the features demanded by users, and on the need for the system to meet the Core Principles limiting risk in the system. A system which is consistent with the demands of the markets it serves is likely to be more heavily used; if it also satisfies the Core Principles, it spreads more widely the risk-reducing benefits as well as the costs of providing the services.

3.8.3 Designers and operators of payment systems need to consider how to provide a given quality of service, in terms of functionality, safety and efficiency, at minimum resource cost. The relevant costs are not just those passed on to users through system charges, but those of the total resources used by the system and its users in providing the payment services. They will need, for example, to take into account any indirect costs to users, such as the costs of liquidity and collateral.

3.8.4 The availability of liquidity in a system can be an important element in its smooth operation. Recipients like to be paid in funds which are immediately reusable and so value the advantages of systems with intraday settlement. Senders, however, may face costs in raising liquidity to enable them to pay early in a system. Where systems have inadequate intraday liquidity mechanisms, they can face a risk of slow turnover or even gridlock (where participants are each waiting for the others to pay first). In the interests of efficiency, systems should provide participants with adequate incentives to pay promptly. The supply of intraday liquidity is particularly important for systems with real-time settlement. Factors relevant to supply include the depth of interbank money markets and the availability of any relevant collateral. With the benefits of smooth payment flows in mind, the central bank should consider whether and how to provide intraday liquidity to support a system's daily functioning.

3.8.5 The technology and operating procedures used to provide payment services should be consistent with the types of services demanded by users, reflecting the stage of economic development of the markets served. The design of the payment system should therefore be appropriate for the country's geography, its population distribution and its infrastructure (such as telecommunications, transportation and banking structure). A particular design or technological solution which is right for one country may not be right for another.

3.8.6 Systems should be designed and operated so that they can adapt to the development of the market for payment services both domestically and internationally. Their technical, business and governance arrangements should be sufficiently flexible to respond to changing demands, for example in adopting new technologies and procedures.

IX. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

3.9.1 Access criteria that encourage competition amongst participants promote efficient and lowcost payment services. This advantage, however, may need to be weighed against the need to protect systems and their participants from participation in the system by institutions that would expose them to excessive legal, financial or operational risks. Any restrictions on access should be objective and based on appropriate risk criteria. All access criteria should be stated explicitly and disclosed to interested parties.

3.9.2 The rules of the system should provide for clearly specified procedures for orderly withdrawal of a participant from the system, either at the participant's request, or following a decision by the system operator that the participant should withdraw. A central bank's actions in withdrawing access to payment system facilities, or to settlement account services, may also lead to the withdrawal of a participant from a payment system, but it may not be possible for a central bank to specify explicitly in advance all the circumstances in which it might act in this way.

X. The system's governance arrangements should be effective, accountable and transparent.

3.10.1 Payment system governance arrangements encompass the set of relationships between the payment system's management and its governing body (such as a board of directors), its owners and its other stakeholders. These arrangements provide the structure through which the system's overall objectives are set, how they are attained and how performance is monitored. Because systemically important payment systems have the potential to affect the wider financial and economic community, there is a particular need for effective, accountable and transparent governance, whether the system is owned and operated by the central bank or by the private sector.

3.10.2 Effective governance provides proper incentives for management to pursue objectives that are in the interests of the system, its participants and the public more generally. It also ensures that management has the appropriate tools and abilities to achieve the system's objectives. Governance arrangements should provide accountability to owners (for example, to the shareholders of a private sector system) and, because of the system's systemic importance, to the wider financial community, so that those served by the payment

system can influence its overall objectives and performance. An essential aspect of achieving accountability is to ensure that governance arrangements are transparent, so that all affected parties have access to information about decisions affecting the system and how they are taken. The combination of effective, accountable and transparent governance provides a foundation for compliance with the Core Principles as a whole.

SECTION 4: RESPONSIBILITIES OF THE CENTRAL BANK IN APPLYING THE CORE PRINCIPLES[1]

A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.

4.1.1 Designers and operators of private sector payment systems, and participants and other users of all systems, as well as other interested parties, need to have a clear understanding of the central bank's role, responsibilities and objectives in relation to payment systems. They need also to understand how the central bank intends to achieve those objectives, whether by formal powers or other means. This will enable those parties to operate in a predictable environment and to act in a manner that is consistent with those objectives and policies.

4.1.2 The central bank should therefore have clear payment system objectives. It should also define clearly and disclose major policies that will affect the operators and users of systems to ensure that they are well understood and to build support for them.

B. The central bank should ensure that the systems it operates comply with the Core Principles.

4.2.1 The central bank is often the operator of one or more systemically important payment systems. It therefore can and should ensure that they comply with the Core Principles.

C. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.

4.3.1 Where systemically important payment systems are not operated by the central bank, it should oversee their compliance with the Core Principles. The central bank's oversight of systems should have a sound basis. There may be a wide variety of means by which this can be achieved, depending on the country's legal and institutional framework. Some countries have a statute-based system of oversight with specific tasks, responsibilities and powers assigned to the central bank and sometimes also to other agencies. Others have regimes based on custom and practice, which rely on non-statutory approaches. Either approach can work in its own setting—depending on the legal and institutional framework of the country concerned and the acceptance of the approach by the institutions overseen. The potential benefits of a statute-based approach to oversight, however, deserve serious consideration in countries newly establishing or significantly revising the oversight role and related policies.

4.3.2 The central bank should ensure that it has the expertise and resources to carry out its oversight functions effectively. It should not use its oversight role to disadvantage private sector systems relative to those which it owns and operates itself, but to ensure that the combination of public and private sector provision meets the public policy objectives.

D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

4.4.1 A number of different authorities can have an interest in the safe and efficient functioning of payment systems. In addition to central banks, in their capacities as operators or overseers, they can include legislative authorities, ministries of finance, supervisors and competition authorities. In particular, oversight of a country's payment systems, surveillance of its financial markets and supervision of financial institutions are complementary activities, which may be carried out by different agencies. A cooperative approach is likely to assist the fulfilment of all the relevant public policy goals.

4.4.2 Payment system oversight concentrates on the stability of a payment system as a whole, while the supervisors of individual banks and other financial institutions focus on the risks to specific participants. In

[1] Committee on Payment and Settlement Systems. *Core Principles for Systemically Important Payment Systems.* Basel: Bank for International Settlements, January 2001, pp. 13–14.

particular, in assessing payment system risks, overseers may need to take into account the ability of individual participants to fulfil their responsibilities in the system. In monitoring the financial risks for an individual institution, the supervisors may need to take into account risks to which participants can be exposed as a result of participation in the systems and which could affect the viability of the institution. Regular exchanges of views and information between supervisors and overseers, including, where relevant, about key individual participants, can assist these complementary objectives. These exchanges can often benefit from agreements on the sharing of information.

4.4.3 Cooperation is particularly important for systems with cross-border or multicurrency characteristics. The principles for cooperative central bank oversight set out in Part D of the Lamfalussy Report[1] provide a framework for such cooperation.

[1] *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries.* Basel: Bank for International Settlements, November 1990.

Appendix 2

GLOSSARY OF TERMS USED IN PAYMENT AND SETTLEMENT SYSTEMS

Payment systems have different legal, technological and operational aspects. For example, they are important for market infrastructure and for the implementation of monetary policy by a central bank. Experts and institutions, which deal with these aspects, need to reach a common understanding of payment systems and consistency in using the relevant terminology. The Committee on Payment and Settlement Systems of the Bank for International Settlements (BIS) has compiled internationally used standard terms in the *Glossary of Terms Used in Payments and Settlement Systems*, published in January 2001. The most frequently employed terms have been included in Appendix 2. For the full text of the BIS publication, please see the BIS website (www.bis.org).

automated clearing house an electronic clearing system in which payment orders are exchanged among financial institutions, primarily via magnetic media or telecommunications networks, and handled by a data processing centre. See also *clearing/clearance*.

bilateral netting an arrangement between two parties to net their bilateral obligations. The obligations covered by the arrangement may arise from financial contracts, transfers or both. See also *netting*, *multilateral netting*, *net settlement.*

clearing/clearance the process of transmitting, reconciling and, in some cases, confirming payment orders or security transfer instructions prior to settlement, possibly including the netting of instructions and the establishment of final positions for settlement. Sometimes the term is used (imprecisely) to include settlement.

clearing house a central location or central processing mechanism through which financial institutions agree to exchange payment instructions or other financial obligations (eg securities). The institutions settle for items exchanged at a designated time based on the rules and procedures of the clearing house. In some cases, the clearing house may assume significant counterparty, financial or risk management responsibilities for the clearing system. See also *clearing/clearance*, *clearing system.*

clearing system a set of procedures whereby financial institutions present and exchange data and/or documents relating to funds or securities transfers to other financial institutions at a single location (clearing house). The procedures often also include a mechanism for the calculation of participants' bilateral and/or multilateral net positions with a view to facilitating the settlement of their obligations on a net or net net basis. See also *netting.*

collateral an asset that is delivered by the collateral provider to secure an obligation to the collateral taker. Collateral arrangements may take different legal forms; collateral may be obtained using the method of title transfer or pledge.

credit risk/exposure the risk that a counterparty will not settle an obligation for full value, either when due or at any time thereafter. In exchange-for-value systems, the risk is generally defined to include replacement cost risk and principal risk.

credit transfer system a funds transfer system through which payment orders move from (the bank of) the originator of the transfer message or payer to (the bank of) the receiver of the message or beneficiary.

daylight credit credit extended for a period of less than one business day; in a credit transfer system with end-of-day final settlement, daylight credit is tacitly extended by a receiving institution if it accepts and acts on a payment order even though it will not receive final funds until the end of the business day. Also called daylight overdraft, daylight exposure and intraday credit.

debit transfer system a funds transfer system in which debit collection orders made or authorised by the payer move from (the bank of) the payee to (the bank of) the payer and result in a charge (debit) to the account of the payer; for example, cheque-based systems are typical debit transfer systems. Also called debit collection system.

direct participant a participant in an interbank funds transfer system (IFTS) who is responsible to the settlement agent (or to all other direct participants) for the settlement of its own payments, those of its customers and those of the indirect participants on whose behalf it is settling.

final settlement settlement which is irrevocable and unconditional.

funds transfer system a formal arrangement, based on private contract or statute law, with multiple

membership, common rules and standardised arrangements, for the transmission and settlement of money obligations arising between the members. See also *interbank funds transfer system.*

gross settlement system a transfer system in which the settlement of funds or securities transfer instructions occurs individually (on an instruction by instruction basis).

indirect participant/member refers to a funds or securities transfer system in which there is a tiering arrangement. Indirect participants are distinguished from direct participants by their inability to perform some of the system activities (eg input of transfer orders, settlement) performed by direct participants. Indirect participants, therefore, require the services of direct participants to perform those activities on their behalf. In the EC context the term refers more specifically to participants in a transfer system which are responsible only to their direct participants for settling the payments input to the system. See also *direct participant/member.*

interbank funds transfer system a funds transfer system in which most (or all) direct participants are financial institutions, particularly banks and other credit institutions.

intraday liquidity funds which can be accessed during the business day, usually to enable financial institutions to make payments in real time.

large-value payments payments, generally of very large amounts, which are mainly exchanged between banks or between participants in the financial markets and usually require urgent and timely settlement.

legal risk the risk of loss because of the unexpected application of a law or regulation or because a contract cannot be enforced.

liquidity risk the risk that a counterparty (or participant in a settlement system) will not settle an obligation for full value when due. Liquidity risk does not imply that a counterparty or participant is insolvent since it may be able to settle the required debit obligations at some unspecified time thereafter.

multilateral net settlement position the sum of the value of all the transfers a participant in a net settlement system has received during a certain period of time less the value of the transfers made by the participant to all other participants. If the sum is positive, the participant is in a multilateral net credit position; if the sum is negative, the participant is in a multilateral net debit position.

multilateral net settlement system a settlement system in which each settling participant settles (typically by means of a single payment or receipt) the multilateral net settlement position which results from the transfers made and received by it, for its own account and on behalf of its customers or non-settling participants for which it is acting. See also *multilateral netting*, *multilateral net settlement position* and *direct participant.*

multilateral netting an arrangement among three or more parties to net their obligations. The obligations covered by the arrangement may arise from financial contracts, transfers or both. The multilateral netting of payment obligations normally takes place in the context of a multilateral net settlement system. See also *bilateral netting*, *multilateral net settlement position*, *multilateral net settlement system.*

net credit (or debit) position a participant's net credit or net debit position in a netting system is the sum of the value of all the transfers it has received up to a particular point in time less the value of all transfers it has sent. If the difference is positive, the participant is in a net credit position; if the difference is negative, the participant is in a net debit position. The net credit or net debit position at settlement time is called the net settlement position. These net positions may be calculated on a bilateral or multilateral basis.

net settlement the settlement of a number of obligations or transfers between or among counterparties on a net basis. See also *netting.*

netting an agreed offsetting of positions or obligations by trading partners or participants. The netting reduces a large number of individual positions or obligations to a smaller number of obligations or positions. Netting may take several forms which have varying degrees of legal enforceability in the event of default of one of the parties. See also *bilateral netting*, *multilateral netting*.

obligation a duty imposed by contract or law. It is also used to describe a security or other financial instrument, such as a bond or promissory note, which contains the issuer's undertaking to pay the owner.

operational risk the risk that deficiencies in information systems or internal controls could result in unexpected losses.

overnight money a loan with a maturity of one business day. Also called day-to-day money.

oversight of payment systems a central bank task, principally intended to promote the smooth funct-

ioning of payment systems and to protect the financial system from possible "domino effects" which may occur when one or more participants in the payment system incur credit or liquidity problems. Payment systems oversight aims at a given system (eg a funds transfer system) rather than individual participants.

payment the payer's transfer of a monetary claim on a party acceptable to the payee. Typically, claims take the form of banknotes or deposit balances held at a financial institution or at a central bank.

payment instrument any instrument enabling the holder/user to transfer funds.

payment order an order or message requesting the transfer of funds (in the form of a monetary claim on a party) to the order of the payee. The order may relate either to a credit transfer or to a debit transfer. Also called payment instruction.

payment system a payment system consists of a set of instruments, banking procedures and, typically, interbank funds transfer systems that ensure the circulation of money.

principal risk the credit risk that a party will lose the full value involved in a transaction. In the settlement process, this term is typically associated with exchange-for-value transactions when there is a lag between the final settlement of the various legs of a transaction (ie the absence of delivery versus payment). Principal risk that arises from the settlement of foreign exchange transactions is sometimes called cross-currency settlement risk or Herstatt risk. See also *credit risk/exposure.*

real-time gross settlement the continuous (real-time) settlement of funds or securities transfers individually on an order by order basis (without netting).

replacement cost risk the risk that a counterparty to an outstanding transaction for completion at a future date will fail to perform on the settlement date. This failure may leave the solvent party with an unhedged or open market position or deny the solvent party unrealised gains on the position. The resulting exposure is the cost of replacing, at current market prices, the original transaction. Also called market risk, price risk. See also *credit risk/exposure.*

retail funds transfer system a funds transfer system which handles a large volume of payments of relatively low value in such forms as cheques, credit transfers, direct debits, ATM and EFTPOS transactions.

retail payments this term describes all payments which are not included in the definition of large-value payments. Retail payments are mainly consumer payments of relatively low value and urgency.

settlement an act that discharges obligations in respect of funds or securities transfers between two or more parties. See also *gross settlement system*, *net settlement, final settlement.*

settlement agent an institution that manages the settlement process (eg the determination of settlement positions, monitoring the exchange of payments, etc) for transfer systems or other arrangements that require settlement. See also *final settlement*, *settlement*, *multilateral net settlement system.*

settlement asset an asset used for the discharge of settlement obligations as specified by the rules, regulations or customary practice for a payment system.

settlement system a system used to facilitate the settlement of transfers of funds or financial instruments.

supervision of financial institutions the assessment and enforcement of compliance by financial institutions with laws, regulations or other rules intended to ensure that they operate in a safe and sound manner and that they hold capital and reserves sufficient to support the risks that arise in their business.

systemically important payment system a payment system is systemically important where, if the system were insufficiently protected against risk, disruption within it could trigger or transmit further disruptions amongst participants or systemic disruptions in the financial area more widely.

systemic risk the risk that the failure of one participant in a transfer system, or in financial markets generally, to meet its required obligations will cause other participants or financial institutions to be unable to meet their obligations (including settlement obligations in a transfer system) when due. Such a failure may cause significant liquidity or credit problems and, as a result, might threaten the stability of financial markets.

TARGET Trans-European Automated Real-time Gross settlement Express Transfer: the TARGET system is defined as a payment system composed of one RTGS system in each of the countries which participate in stage three of EMU and the European Central Bank (ECB) payment mechanism. RTGS systems of non-participating countries may also be connected, provided that they are able to process the euro alongside their national currency. The domestic RTGS systems and the ECB payment mechanism are interconnected according to common procedures ("interlinking") to allow cross-border transfers throughout the European Union to move from one system to another system.

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