

EUROPEAN CENTRAL BANK

August 1999

Payment systems in countries that have applied for membership of the European Union



EUROPEAN CENTRAL BANK

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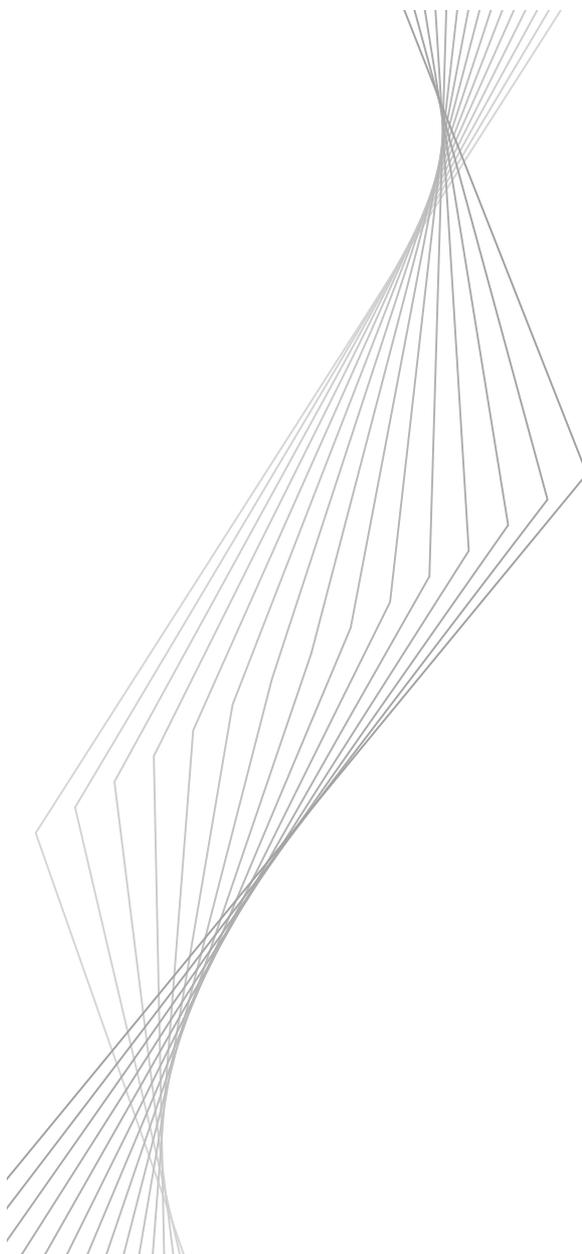
# BLUE BOOK

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Data used in this Blue Book are as of end-1997 unless otherwise indicated.

In order to enhance the comparability between the different country chapters, amounts in the national currencies of the respective countries, which for the most part refer to periods before 1 January 1999, are also indicated in ECU. To ensure consistency throughout this Blue Book, this convention is retained in those cases in which the amounts refer to periods after 1 January 1999, i.e. the date when the euro was introduced.

Conventions used in the tables:

“-” nil

“n.a.” not available or not applicable

“neg.” negligible

“\*” total sum calculated on the basis of an incomplete set of sub-items

Annexes



# Foreword

The importance of payment systems in modern economies has grown considerably over the past decades. Central banks face the task not only of steering the monetary conditions in the economy, but also of ensuring that money circulates smoothly among economic agents. Payment systems are at the heart of central banking. Besides the commitment to contribute to the reduction of the risks associated with the functioning of payment and settlement systems, the European Central Bank (ECB) and the national central banks of the Member States of the European Union (EU) are also dedicated to promoting the efficiency of these systems.

The availability of comprehensive information is essential for these endeavours to be successful, since the variety and structure of payment systems differ from country to country – for historical reasons and due to differences in the legal, regulatory and institutional environment. For EU countries, this kind of information has been made available in the report entitled “Payment systems in the European Union”, also known as the “Blue Book”, a descriptive guide to the payment and settlement systems in the EU Member States, the first edition of which was published by the Committee of Governors in September 1992 and the second edition by the European Monetary Institute (EMI) in April 1996. It is essential that similar information should also be made available for all applicant EU Member States.

In this context, and also in view of the formal launch of the European Union enlargement

process by the European Council in Amsterdam in June 1997 and of the accession process with the 11 applicant countries<sup>1</sup> at end-March 1998, in May 1998 the EMI invited the national central banks of these countries to set up a project to produce a description of their payment and settlement systems in line with those published by the EU countries in 1996. This Blue Book, published by the ECB, makes these descriptions, including the related statistical data, available to the general public.

The information in this Blue Book shows the extensive restructuring work in payment and settlement systems that has been undertaken in recent years in the applicant countries. It also provides useful information in assessing whether further preparatory work would need to be undertaken in these countries to ensure a smooth entry into and operation within the European Union environment.

This publication has been produced in co-operation with the central banks of the applicant countries, and with the collaboration of EU central banks. I should like to thank all the national central banks, in particular those of the applicant countries, for all their efforts in preparing this invaluable publication.

<sup>1</sup> The eleven countries are: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. Malta re-activated its application for EU membership in February 1999, but is not covered in this publication.

Frankfurt, 3 August 1999



Willem F. Duisenberg

President



# Introduction

The intention of this Blue Book is to provide a comprehensive description of the principal payment and securities settlement systems operating in countries that have applied for membership of the European Union (EU). It also provides a possibility to compare these systems with those existing in EU countries, descriptions of which were published in April 1996 by the European Monetary Institute in the second edition of the Blue Book.

In order to allow a straightforward comparison of the various payment systems, the following 11 “country chapters” strictly follow the outline agreed for the 1996 Blue Book.<sup>1</sup>

Each country chapter consists of five sections: the first section provides an overview of the institutional aspects which have an impact on payment systems and briefly describes the major parties involved. The second section deals with the payment media used by non-banks and recent developments in the area of retail payments. The third section focuses on

the interbank exchange and settlement systems, and the fourth section describes securities settlement systems, including the underlying institutional and market aspects.

All country chapters include a list of abbreviations and, as a fifth section, a set of statistical data. The latter are presented as time series in order to facilitate the analysis of recent developments. These tables follow the presentation used in the Statistical Addendum to the Blue Book on payment systems in the European Union.

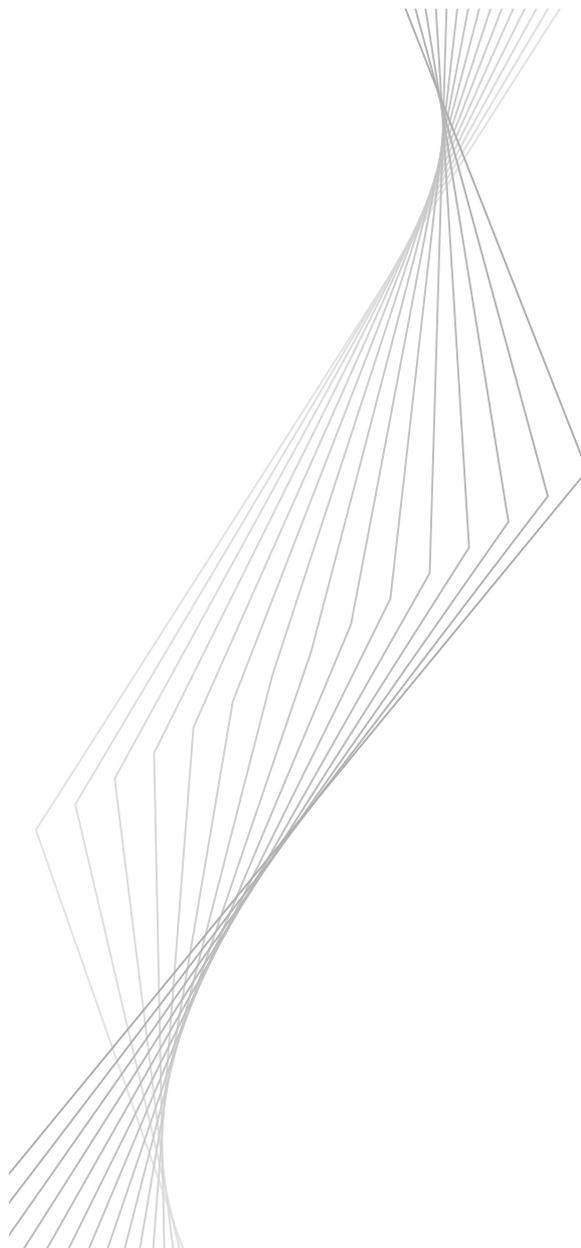
Finally, the annexes contain a methodology for the statistical data, a set of comparative tables, a glossary and a list of members of the Co-ordination Group responsible for the preparation of this publication.

<sup>1</sup> The eleven countries are: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. Malta re-activated its application for EU membership in February 1999, but is not covered in this publication.





EUROPEAN CENTRAL BANK



**Bulgaria**

**August 1999**

Bulgaria

BG

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**List of abbreviations**

<b>ACB</b>	Association of Commercial Banks
<b>BGL</b>	Bulgarian lev
<b>BISERA</b>	Banking Integrated System for Electronic Payments
<b>BNB</b>	Bulgarian National Bank
<b>BORICA</b>	Bank Organisation for Payments Initiated by Cards
<b>BSE</b>	Bulgarian Stock Exchange, Sofia
<b>CDAD</b>	Central Depository AD
<b>CMP</b>	Centre for Mass Privatisation
<b>GSD</b>	Government Securities Depository
<b>SSEC</b>	Securities and Stock Exchanges Commission

## Introduction

The Bulgarian payment system has changed significantly in the 1990s. The Banking Integrated System for Electronic Payments, BISERA (Bulgaria's national settlement system) was introduced in 1992. The national operator, BORICA, was established in 1995 to service card payments. Two securities settlement systems were established, the Government Securities Depository (GSD) in 1992 and the Central Depository AD (CDAD) in 1996.

All the settlement systems in the country are organised as gross systems. The level of computerisation varies: BISERA is fully computerised, while for the other two settlement systems there are some manual

operations in use, which are going to be minimised through the implementation of several new projects. According to the Law on the Bulgarian National Bank (BNB), the central bank is responsible for the organisation, maintenance and development of the payment system. In this respect the legal framework of the payment system is determined by regulations set by the BNB.

Cash payments are still widely used in the country. However, the share of non-cash payments is increasing. Credit transfer is the dominant non-cash payment instrument in terms of value and volume. The growth of card payments is considerable.

## I Institutional aspects

### I.1 General legal aspects

There are no specific laws concerning the payment system in Bulgaria. Specific provisions governing the system can be found in different laws and regulations.

According to the Law on the Bulgarian National Bank (1997), the central bank must assist in the establishment and running of efficient payment mechanisms. It is also stated that for the purpose of facilitating non-cash payments, the Bulgarian National Bank (BNB) may organise and operate payment systems and clearing offices. In accordance with this Law, the bank has issued Regulation No. 3 on Payments (see Section 1.3.1) and Regulation No. 16 on Bank Card Payments (see Section 2.2.4).

The commercial banks' activities are defined and regulated by the Law on Banks (1997). According to this Law, a bank is a joint stock company which accepts money as deposits from the public and uses these funds to make loans and investments for its own account and at its own risk. It is also stated that banks may handle non-cash payments and clear cheques from other persons. The Law on Banks also provides for the establishment of new banks and the penalisation of banks. The same Law governs the operation of foreign credit institutions, but they are not obliged to comply with some of the requirements of Regulation No. 8 on the Capital Adequacy of Banks. For cross-border credit transfers Bulgarian banks apply the Uniform Rules of the International Chamber of Commerce in Paris and the generally accepted practices for matters not covered by Bulgarian legislation.

The Deposits Guarantee Law (1998) provides for the protection of bank customers. The Law protects the deposits of all customers except financial institutions, the government and its institutions, and municipalities (see Section 1.4.2.).

Bankruptcy procedures in general are laid down in the Commercial Law (last amended in 1997). Some specific provisions are, however, included in the Law on Banks (last amended in 1998), in the chapter entitled "Bank insolvency". According to the Law on Banks, the BNB is the only institution which may request a court to initiate bankruptcy proceedings. In the event of a bank becoming insolvent, the BNB withdraws the bank's licence and requests the court to initiate bankruptcy proceedings. If the request of the central bank meets the legal requirements, the court is obliged to take a final decision within 10 days. On the date of insolvency all unsecured credits granted by the bank become payable. No zero-hour clause is applied to payments. The central bank decides in principle whether the insolvent bank must be excluded from the settlement system and, if so, when. (In practice banks are immediately excluded from the system if the banking licence is withdrawn.)

### I.2 Financial intermediaries that provide payment services

#### *Banks*

The commercial banks in Bulgaria are universal banks, i.e. they carry out the whole range of banking activities. The legislation does not differentiate between commercial, savings, mortgage or co-operative banks. Until April 1998 the State Savings Bank had the status of a savings bank but, after changes in the legislation, it is being transformed into a commercial bank. Each bank has the right to offer all types of banking services, including different types of payment services, deposits, credits, foreign exchange and securities trades, etc. Each bank determines the fees and commissions for its customers according to its own policy, without any legal restrictions or limitations. There are also no restrictions regarding the number and location of branches of a bank. At the end of 1997 there were 50 commercial banks,

including foreign credit institutions, with a total of 910 branches. 17 of these commercial banks, with a total of 272 branches, had already lost their banking licences.

#### *The postal system*

Bulgarian Post Office branches do not have the status of a credit institution, but they take part in the payment system in three different ways. First, under agreements with the Post Office branches, the Bulgarian Post Bank and the State Savings Bank provide payment services and deposit accounts through the Post Office branches. Second, the postal system is involved in the payment of pensions. Third, the Bulgarian Post Office branches offer postal money orders for making domestic payments in cash, as well as non-cash payments up to the amount of BGL 500,000 (ECU 263). Non-cash payments are made through current accounts with the commercial banks or through the national settlement system, BISERA. Cash payments are made within the postal system. Every 10 days a netting of cash payments takes place between the Post Office branches, and the funds owed are transferred through current accounts with the commercial banks or through BISERA. In 1997 the number of Post Office branches offering payment services was 3,081.

### **1.3 The role of the central bank**

#### **1.3.1 General responsibilities**

##### *Statutory responsibility*

The Bulgarian National Bank (BNB), established in 1879, is the central bank of Bulgaria. Its main task is to contribute to the maintenance of the stability of the national currency through the implementation of monetary and credit policy and to assist in the establishment and functioning of efficient payment mechanisms. The central bank reports on its activities to the Parliament, and with regard to the definition of the general outlines of its monetary and credit policy, the BNB and the Government inform

each other of their intentions and actions. With the new Law on the Bulgarian National Bank, a specific monetary system, known as a currency board, was implemented on 1 July 1997. In accordance with the rules of this system, the aggregate amount of monetary liabilities of the BNB (including all banknotes and coins in circulation) cannot exceed the equivalent in Bulgarian leva of the gross foreign exchange reserves. The exchange rate of the Bulgarian lev used to be pegged to the Deutsche Mark (BGL 1,000 to DEM 1), and since 1 January 1999 it has been pegged to the euro. On demand, the BNB is obliged to sell and purchase any amount of euro (or Deutsche Mark in cash) against Bulgarian leva within Bulgaria.

In the field of payment systems, it is stated in the Law on the Bulgarian National Bank that for the purpose of facilitating non-cash payments, the BNB may organise and operate payment systems and clearing offices, as well as issue regulations providing for the establishment and operation of such systems and offices. On this basis the BNB is directly involved in the functioning of BISERA, Bulgaria's interbank settlement system. The central bank is the major shareholder in Bankservice (the operator of BISERA) and the sole owner of BORICA, the card payments operator.

In accordance with the Law on the Bulgarian National Bank, the central bank also performs the function of banker to the Government, providing cash management services for the state budget and the government securities market. The Government pays no fees for the services provided.

Furthermore, the BNB has the exclusive right to issue banknotes and coins in the country.

##### *Establishment of common rules*

The BNB has the right to issue payment regulations. Currently these are Regulation No. 3 on Payments, which determines the forms, procedures and terms for effecting

payments in Bulgaria, and Regulation No. 16 on Bank Card Payments. In close co-operation with Bankservice and representatives of the commercial banks, the BNB also defines the so-called Banks' Unified Standards (BUSs). These standards contain the rules for the handling of non-cash payments through BISERA.

#### *Supervision and audit*

One of the major tasks of the BNB is to regulate and supervise banking activities in order to ensure the stability of the banking system and to protect the interests of depositors. The BNB grants banking licences, conducts on-site inspections and collects data from banks. Non-banking financial institutions, such as financial brokerage houses and bureaux de change are also subject to licensing and supervision by the BNB.

### **1.3.2 Provision of processing and settlement facilities**

#### *Provision of settlement accounts*

All banks are obliged to maintain current accounts with the BNB. These accounts are linked to BISERA and to the Government Securities Depository. They are used for the transfer of funds in relation to interbank payments, government securities transactions, the holding of minimum reserves, foreign exchange transactions, etc. The central bank also offers current and deposit accounts to fiscal and other state authorities, and to other public sector bodies. At present all current accounts are non-interest-bearing.

#### *Provision of credit facilities*

Under the Currency Board Arrangement, the possibility for the BNB to refinance banks is strictly limited to exceptional circumstances only. According to BNB's Regulation No. 6 on Providing Banks with Credit against Collateral, the BNB may only extend to a

solvent bank BGL-denominated credits with a maturity of no more than three months in the event of a liquidity risk that may affect the stability of the banking system (which is strictly defined). These credits have to be fully collateralised with government securities, gold, foreign currency or similar highly liquid assets. The interest rates for these credits are higher than the market rates. In normal circumstances, however, banks borrow funds on the interbank money market.

#### *Pricing policies*

The BNB does not charge banks for the opening and maintenance of current accounts, nor for the provision of payment services. For securities settlement services see Section 4.3.9.

### **1.3.3 Monetary policy and payment systems**

Until June 1997 the BNB had pursued its monetary policy through open market operations (repo and reverse repo operations), outright sales and purchases of government securities, lombard loans, the discount window and the minimum reserve requirement. After the implementation of the Currency Board Arrangement on 1 July 1997, the number of monetary policy instruments used by the BNB was reduced. Now only the minimum reserve requirement is applicable. At present, the non-interest-bearing reserve requirement amounts to 11% of the banks' deposit base (interbank deposits and credits are excluded). 60% of banks' vault cash is recognised as required reserves. Banks may use the funds on their current accounts on particular days without limitation, since the minimum reserve requirement has to be fulfilled on the basis of a monthly average. Overdrafts on the current accounts are, however, not allowed. The BNB also has the function of a lender of last resort (see Section 1.3.2.). Other features of the Currency Board Arrangement are described in Section 1.3.1.

### **1.3.4 Main projects and policies being implemented**

The implementation of the RTGS system, BISERA 4, is described in Section 3.2.9. The main projects concerning securities settlement systems are explained in Section 4.3.10.

A special law on the redenomination of the Bulgarian lev was adopted by the Parliament in March 1999. It has been decided that as from 5 July 1999 the new Bulgarian lev will be equal to 1,000 old levs (BGL 1 = DEM 1).

## **1.4 The role of other private and public sector bodies**

### **1.4.1 Association of Commercial Banks (ACB)**

The ACB is an independent representative organisation established in 1992 by the State Savings Bank and the commercial banks operating in Bulgaria. Currently the ACB has 26 regular members and three associate members. The ACB assists its members in their banking activities and protects their rights. For these purposes it may:

- co-ordinate the positions of banks in their activities;
- represent and protect the rights of banks in their relations with government authorities, public organisations, foreign and international organisations, and other legal and physical persons;
- promote fair competition between banks;
- represent banks in the implementation of new or the amendment of existing banking legislation;
- provide training to improve the skills and qualifications of bank employees; and
- contribute to improving banking technologies.

### **1.4.2 Bank Deposit Guarantee Fund**

The Bank Deposit Guarantee Fund is a legal person established under the Law on Bank Deposit Guarantees and covers deposits up to certain specified amounts in the event of a bank becoming insolvent. The Fund determines and collects annual and entry premiums from banks. The entry premium is equal to 1% of the initial capital of the bank (but is no less than BGL 100 million or ECU 50,000). The annual premium is fixed as a percentage of the total deposit base at the end of the year. The collected premiums may be invested in government securities, short-term deposits with commercial banks which are primary dealers, and deposits with the BNB.

The Fund guarantees the payment of funds deposited with a bank, regardless of the number and size of the deposits but subject to a limit of BGL 5 million, as follows:

- 95% for amounts up to BGL 2 million (ECU 1,052); and
- 80% for amounts in excess of BGL 2 million (ECU 1,052), but under BGL 5 million (ECU 2,630).

Branches of foreign banks are excluded from the Deposit Guarantee Scheme if they are covered by a guarantee scheme in their home country and the level of protection is no less than that offered in Bulgaria. The guarantee does not apply to deposits of financial institutions, the Government and its institutions, municipalities and persons connected with the respective bank (e.g. holders of more than 5% of the bank's share capital, members of the bank's management or supervisory board, members of the bank's internal audit bodies, etc.).

## 2 Payment media used by non-banks

### 2.1 Cash payments

The monetary unit of Bulgaria is the lev (BGL). After the redenomination on 5 July 1999 (when 1,000 old levs were replaced by 1 new lev), the traditional substructure was reinstated: 1 new lev is divisible into 100 stotinkas. The BNB has the exclusive right to issue banknotes and coins. The banknotes used to be produced abroad, but in 1998 the BNB started operating its own printing works. The coins are produced at the Bulgarian Mint, which is a company wholly owned by the central bank. The BNB distributes and collects banknotes and coins through its head office and its branches across the country.

At the end of 1997 the banknotes in circulation in Bulgaria had the following denominations: BGL 50,000 (ECU 26.3), BGL 10,000 (ECU 5.3), BGL 5,000 (ECU 2.6), BGL 2,000 (ECU 1.1), BGL 1,000 (ECU 0.53), BGL 500 (ECU 0.26), BGL 200 (ECU 0.11), BGL 100 (ECU 0.05), BGL 50 (ECU 0.03) and BGL 20 (ECU 0.01). There are also banknotes with the denominations BGL 10, BGL 5, BGL 2 and BGL 1 which are no longer acceptable for payments but which can be exchanged at the counters of the central bank, so they continue to be liabilities of the BNB. The same has applied since the beginning of 1998 to banknotes with the denominations BGL 50 and BGL 20. In terms of value, the BGL 50,000 banknotes represent 50% of the banknotes in circulation. In terms of volume, the BGL 200 banknotes have the largest share, i.e. 16.86%. In terms of value, banknotes make up 99.89% of the currency in circulation.

The denominations of the coins in circulation at the end of 1997 were as follows: BGL 50, BGL 20, BGL 10, BGL 5, BGL 2, BGL 1, BGL 0.50, BGL 0.2 and BGL 0.1. There are also some commemorative coins. Currently no banknotes with a nominal value of less than BGL 100 and no coins with a nominal value of less than BGL 1 are in circulation.

On 5 July 1999 a reform changed the nominal value of the lev – the new BGL 1 is equal to old BGL 1,000, and new banknotes and coins are being issued. The new denominations are as follows: banknotes of BGL 50, BGL 20, BGL 10, BGL 5, BGL 2 and BGL 1, and coins of 50 stotinkas (BGL 0.50), 20 (BGL 0.20), 10 (BGL 0.10), 5 (BGL 0.05), 2 (BGL 0.02) and 1 (BGL 0.01). Both types of banknotes – the old and the new – will be in circulation by the end of 1999. The old coins with a nominal value of more than BGL 10 will also be in circulation.

Cash payments are very widely used in Bulgaria. There are no reliable statistical data on the volume and value of cash payments. However, at the end of 1997 the banknotes and coins in circulation represented 57.4% of the M1 monetary aggregate and 7.68% of 1997 GDP. Most salaries are still paid in cash in spite of the fact that the number of employers paying salaries to their employees through accounts connected to debit cards has increased in recent years. Almost all retail transactions are made in cash owing to the traditions in this field and the small number of POS terminals available. For these reasons cards are generally used to withdraw cash at ATMs rather than to make payments.

According to Regulation No. 3 on Payments, issued by the BNB, cash payments may be made up to the amount of BGL 5,000,000 (ECU 2,630). This restriction does not apply to transactions between a natural person and a bank or to private (non-bank) transactions where one of the parties is a natural person.

### 2.2 Non-cash payments

In order to make a non-cash payment, the payer must hold a current account or a demand deposit account with a bank. Whereas in some banks it is possible for the customer to initiate a non-cash payment from a current or demand deposit account, in other banks payments can only be made from

current accounts. Each person may hold accounts in national or foreign currency without limitations. Most banks offer accounts in Bulgarian levs, US dollars, Deutsche Mark and Swiss francs. However, in accordance with currency legislation, payments within the country can only be made in Bulgarian levs. Payments in foreign currency are allowed only for imports of goods and services, studies and medical treatment abroad, etc.

### **2.2.1 Credit transfers**

This is the most widely used form of payment between entities in the corporate and the public sectors. It is also used for the payment of salaries, taxes, duties, subscription fees, etc. For most banks credit transfers constitute over 95% of all payments. In 1997 the average value of a transfer was BGL 2.95 million (ECU 1,552). According to Regulation No. 3, the completion of a credit transfer may take three working days, one for processing at the payer's bank, one for settlement and one for processing at the payee's bank. However, in practice a credit transfer usually takes two working days only.

Only a bank licensed to operate abroad is entitled to make cross-border credit transfers. For these services Bulgarian banks use correspondent accounts with foreign banks and the payments are executed through S.W.I.F.T. Usually the transaction takes up to three working days, but for smaller banks with a limited number of bank correspondents abroad it may take more than three days.

### **2.2.2 Cheques**

Cheques have never been a widely used payment instrument in Bulgaria. They represent a negligible percentage of all payments, the main reason being the risk connected with cheques. They are used only between counterparties which are well-acquainted with one another.

### **2.2.3 Direct debits**

This payment instrument is used by consumers for payments to the providers of electricity, water, telephone and heating services. The payers give permission to such companies to debit their current accounts with the banks. This practice has been increasing in recent years. Direct debits are also used in the field of securities settlement (see Section 4.4.4).

### **2.2.4 Payment cards**

#### *Debit cards*

The use of this instrument is increasing from year to year. Most widely utilised are domestic bank (debit) cards. By the end of 1997 eight banks were issuing bank cards. All of them are members of the national card payment system, BORICA. The number of employers paying salaries to their employees through salary accounts is increasing rapidly. Card holders' accounts are debited on a per transaction basis (both for a cash withdrawal and for a purchase). Some banks offer an overdraft facility to selected customers.

Since 1996 several Bulgarian banks have become members of VISA International, Europay International and MasterCard International Incorporated. In addition to acquiring transactions from merchants, some of the banks have started to issue international debit cards: VISA Business, VISA Electron, and Cirrus/Maestro.

The card payments are governed by Regulation No. 16 on Bank Card Payments, which, however, only regulates payments made with domestic cards. For international cards banks follow the rules set by the respective international card organisations. The national card payments system, BORICA, is operated by a company of the same name. The company is wholly owned by the BNB. BORICA is the operator of an ATM and POS network in Bulgaria. BORICA Ltd. administers ATM and POS transactions and is responsible

for the maintenance of the terminals, performs online authorisation of card payments and is authorised by its members to act as a settlement agent for domestic cards. According to Regulation No. 16, the execution of payments by bank card is to be effected through BISERA. Therefore, BORICA Ltd. has direct access to the system. BORICA executes the interbank payments generated by card transactions with a value date of T + 1. The Bulgarian Post Bank operates its own electronic POS terminal network (with 50 electronic POS terminals).

#### *Credit cards and travel, retail and entertainment cards*

Credit cards are not very widely used in Bulgaria. Several Bulgarian banks issue them under agreements with foreign counterparties. Currently the international credit cards issued by Bulgarian banks are VISA Business and Eurocard/MasterCard (mass, business and gold). Several banks have an agreement with American Express for the distribution of AMEX cards (classic, business and gold). Travel, retail and entertainment cards have just started to be issued in Bulgaria.

#### *Prepaid cards*

Telecommunications companies and chains of petrol stations issue prepaid cards. Their use has increased very rapidly. The existing public coin telephone network has been replaced to a large extent by a wide network of smart card telephones belonging to the Betkom and Bulfon companies. The leading petroleum companies, Petrol and Shell Bulgaria, offer prepaid cards.

#### *ATM and POS networks*

At the end of 1998 there was one ATM network in Bulgaria (operated by BORICA) and two POS networks (operated by BORICA and the Bulgarian Post Bank). For the time

being, the network of ATM and POS terminals is not very extensive, but it is growing. In 1995 the number of ATM terminals was only 32, in 1997 this number was 118 and in the second quarter of 1999 it had reached 180. The number of electronic POS terminals, which was 100 in 1997, increased to more than 510 in the second quarter of 1999. Usually ATMs are located on the premises of banks. POS terminals are installed in bank branches as well as in hotels, restaurants, shops, car rental companies, petrol stations, etc.

#### **2.2.5 Postal instruments**

The postal network is the largest branch network in Bulgaria. The postal services for money transfer are used in small villages in which there are no bank branches, or if either the payer or the payee does not have a bank account. Usually postal instruments are used for the payment of pensions, subscriptions, taxes, or transfers to natural persons who do not hold current accounts with a bank. The total value of payments through postal orders was BGL 103.4 billion (ECU 54.4 million) in 1997, which is negligible compared with the payments made through BISERA, as shown in Table 9.

#### **2.2.6 Other payment instruments**

There is a significant interest in Bulgaria in making payments over the Internet. Since there is only a limited number of credit card holders in Bulgaria, for the time being the volume of Internet transactions with cards is low. Only one bank handles Internet transactions with cards, but it processes the transactions as mail orders. There is still no sophisticated system, complying with internationally set standards, for the processing of Internet transactions.

Furthermore, a number of banks are co-operating with Western Union with regard to the execution of fast money transfers.

### 2.3 Recent developments

Some banks offer home banking (or telebanking). This service enables bank customers to order payments from their offices, which is one of the reasons for its fast growing popularity.

To improve the pension payment process, pensions will, in the near future, be paid not only through the postal system, but also through current accounts with the banks.

Although Bulgaria is not yet participating in European Economic and Monetary Union, the implementation of the euro affects the

Bulgarian financial system. The euro is replacing the Deutsche Mark as an official reserve currency. The current accounts held in ECU with the BNB and the commercial banks have been redenominated in euro. All other BNB assets and liabilities held in ECU or other currencies which have been replaced by the euro are also being redenominated in euro. The central bank will open accounts in euro and recommends that the commercial banks do the same. In accordance with European practice, during the transition period the commercial banks in Bulgaria and their customers may choose to use either the euro or one of its respective national denominations.

## 3 Interbank exchange and settlement systems

### 3.1 General overview

Most of the non-cash payments in Bulgaria are settled through the national settlement system, BISERA, which is a gross settlement system that has been operating since 1992. Although BISERA operates with a T + 1 value date, there is an option for some payments to be settled during the same working day directly by the BNB, on the basis of payment orders presented on paper at the counters of the BNB. This express service is organised for all payments addressed to or initiated by the BNB, direct bank-to-bank payments related to interbank money market operations, payments on the primary and secondary state securities market, as well as some budget payments. (These payments are few in number but significant in terms of value.) It is expected that the current system will be replaced by an RTGS system (BISERA 4) by the end of the year 2000.

BISERA has been designed, programmed and implemented by Bankservice Joint Stock Company on behalf of the BNB. Bankservice

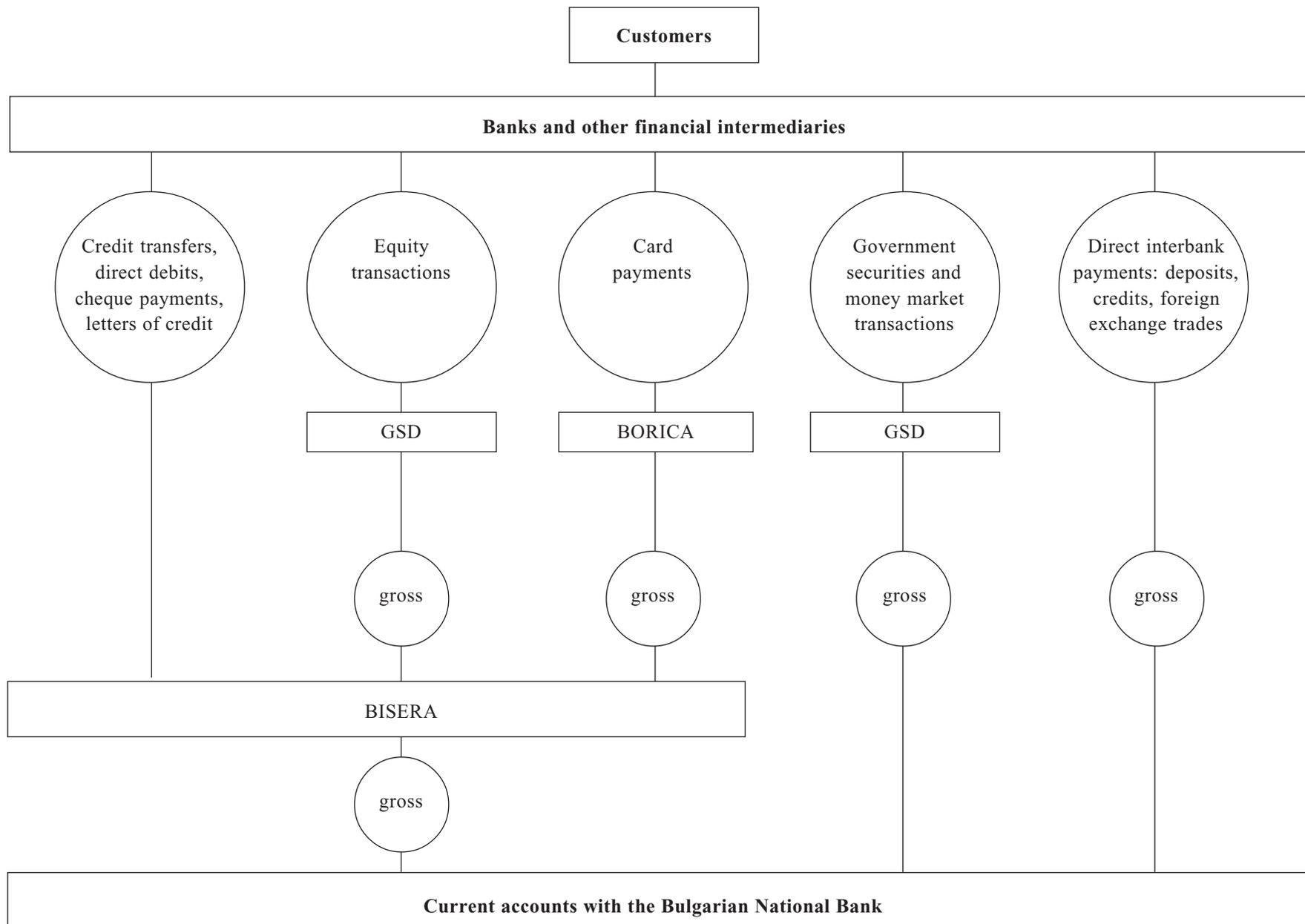
is responsible for the development, maintenance and operation of the system. It also offers other telecommunications and banking automation services to banks. The major shareholder of the company is the BNB (37% of the capital). The rest of the capital is distributed among commercial banks, according to a quota principle, depending on the share of each bank in the volume and value of interbank transactions, on the number of branches belonging to the bank and on the size of each bank's own capital. Bankservice has a pyramid structure with a head office, five branches and 28 local offices, which are the access points to BISERA.

### 3.2 Designated-time gross settlement system: BISERA

The Banking Integrated System for Electronic Transfers (BISERA) is an electronic system with two basic functions – the clearing of electronic messages comprising banks' payment instructions, and the settlement of payments.

**Chart I**

**Current organisation of the Bulgarian interbank payment system**



### 3.2.1 Functioning rules

The Bulgarian National Bank issues Banks' Unified Standards (BUSs) which contain rules on the execution of payment transactions through BISERA. One of the most important standards is BUS 7092, Settlement in the Bulgarian National Bank. It regulates the organisation of the settlement system, including the settlement procedures, the accounting records, the registration of the transfer instructions, the information transfer, the message formats, the control procedures, etc. A new BUS is under preparation, which will replace BUS 7092 and define the main characteristics of the future Bulgarian RTGS system, BISERA 4. Other standards regulate payments using different payment instruments (credit transfers, direct debits, cards, cheques and letters of credit). BUS 12097, Interbank and Intrabank Payments on Equity Transactions with DVP, is applicable in the field of securities trading payments.

### 3.2.2 Participation in the system

According to the current banking regulations, all licensed banks in Bulgaria are obliged to make all their interbank payments through BISERA (or directly through their accounts with the BNB for certain specified types of payments; see Section 3.1). Banks whose licences have been withdrawn are immediately excluded from the system. The bank branches also have direct access to BISERA (provided that the banks do not have an internal payment system). There are two non-bank financial institutions which also have direct access to BISERA, namely the Central Depository AD and BORICA. They act as settlement agents, the Central Depository AD for payments related to securities transactions, and BORICA for interbank payments related to card transactions. They are authorised by their members to initiate interbank payment transactions on behalf of the member banks.

### 3.2.3 Types of transactions handled

BISERA processes all kinds of interbank payments regardless of their value. This includes payments between customers, bank-to-bank payments and payments between the BNB and other banks. The system distinguishes between the following payment instruments: credit transfers, direct debits, cheques,<sup>1</sup> letters of credit, debit cards and office cash collections. (Office cash collections are used for the cancellation of an incorrect transfer. The bank which has made the error generates a request for an office cash collection. In the statistical tables they are shown under "Direct debits".)

### 3.2.4 Operation of the transfer system

According to the generally accepted terminology, BISERA is a designated-time gross settlement system, with settlement on a T + 1 basis. The time schedule for the execution of operations is shown in the table given on the next page.

<sup>1</sup> Cheques are divided into two types – limited and accepted cheques (with previously blocked funds on the customer's account), and payment cheques (without previously blocked funds on the customer's account).

**Table**  
**Schedule of transfer operations**

Day	Local time	Procedure
Date T	8.30 a.m. to 5 p.m.	Accounting day of the members of BISERA and the BNB.
	8 a.m. to 10 p.m.	Commercial banks generate file transfers for bank-to-bank and customer payments and send them to BISERA.
	10 p.m.	After the end of the accounting day the central bank sends the balances of the commercial banks' accounts to BISERA.
	10 p.m.	Cut-off time.
	10 p.m. to 3 a.m.	Processing and settlement by BISERA with T + 1 as the value date.
Date T + 1	6 a.m. to 8.30 a.m.	The commercial banks and the BNB receive the results of the settlement process.
	8.30 a.m.	Start of the accounting day in the commercial banks and the BNB.

After settlement of a payment order, the system generates a payment message for the receiving bank and a confirmation message for the sending bank. It also generates messages for the BNB, with summary information about interbank payments (the gross sum of payments received by each bank from any other bank). The BNB debits the current accounts of the sending banks and credits the current accounts of the receiving banks with the respective gross total. A payment is considered final once it has been debited from the account of the sending bank and credited by the BNB to the account of the receiving bank (i.e. at the time of booking at the BNB at 8.30 a.m. on T + 1). Each transfer is executed individually. Payment instructions sent by banks are irrevocable. In the event that a payment cannot be settled owing to insufficient funds on the account of the sending bank, the BNB and the receiving bank are informed on T + 1, and the message is re-sent every day until the payment is executed. In such a case the defaulting bank owes the receiving bank a penalty. For details of "waiting payments" see Section 3.2.6.

Overdrafts on current accounts and partial payments are not allowed.

### 3.2.5 Transaction processing environment

BISERA is a fully computerised system. Paper-based documents are neither accepted nor processed. Data are received from and transmitted to the bank branches via telecommunications links. Diskettes are used only when telecommunications problems occur, or for backup purposes. The information systems architecture of BISERA can be described as follows:

- a host system, on which the collection and checking of electronic messages with payment orders and the settlement of payments are performed;
- a remote backup system, working as hot backup with remote database backup technology;
- a telecommunications network, called BANKNET, operating 24 hours a day, seven days a week. It serves not only BISERA, but also the ATM devices connected to it, the debit card authorisation centre, BORICA, remote S.W.I.F.T. workstations and local networks of bank branches connected to their head offices. BANKNET supports electronic

mail as well as other value-added services; and

- access points – computer centres in the offices of Bankservice, or in commercial banks, equipped with local PC networks, connected to BANKNET. Files with payment messages from the bank branches are gathered in the access points, and then checked and transmitted to the host system. After the conclusion of settlement, the access points receive the settlement results from the host system and send them to the bank branches. The communications link between the access points and the bank branches is provided through dial-up lines.

### **3.2.6 Settlement procedures**

Incoming payments, including waiting payments from previous days, are queued according to their priority, which is automatically determined by the system, following the first in, first out (FIFO) principle. Payments related to requests for office cash collection have the highest priority, followed by cash withdrawals at ATMs and all other payments. There are two queuing mechanisms in the system: one for incoming payments in general and one for each of the individual settlement accounts.

Payments are processed individually, strictly following the sequence in the incoming queue. Prior to the execution of payments from the incoming queue, the computer system servicing the settlement at the BNB checks whether:

- there are already other payments waiting to be settled in the account of the sending bank concerned; and
- sufficient funds are available in the current account to cover the execution of the first consecutive payment in the queue of payments waiting to be settled in that account.

If, for the account to be debited, there is already a payment queue or funds are insufficient, the payment is not processed but rather placed in the payments queue for that account. When funds are received on the payment account, a check of the availability of waiting payments is made and they are processed in chronological order to the extent that the amounts received provide sufficient cover.

If sufficient funds are not available to settle the first payment in the queue, the queued payment remains unprocessed until such funds are received. To ensure that the processing of payments follows the FIFO principle, waiting payments are marked on the account's registers. Once the incoming queue has been emptied, the payment queues for each separate account are traced again. This cycle is repeated until all payments have been processed, or until the tracing of all queues finishes without the execution of a new payment.

The legislation strictly defines the cases where the BNB has the right to process the payments held in a queue, to reject a payment, to change the priority of payments, etc. For example, when, owing to a bank's lack of liquidity, a payment cannot be executed within a period of 10 working days after having been entered in the settlement system, the payment is rejected by the settlement system and deleted from the waiting queue. In the event of a payment being rejected by the settlement system, this fact is indicated in an appropriate manner. In this event the settlement system informs the BNB with the purpose of allowing the central bank to take specific supervisory actions in conformity with the Law on Banks.

### **3.2.7 Credit and liquidity risk**

An interbank payment transaction is only carried out if the sending bank has sufficient funds on its current account with the Bulgarian National Bank (BNB). Credit risk for the BNB is avoided because overdrafts

on the current accounts of commercial banks are not allowed. There are no specific liquidity requirements to be met by system participants. However, banks are subject to supervision by the central bank, which may withdraw their licences in the event of a serious liquidity crisis.

### 3.2.8 Pricing

The system determines its pricing policy according to the full cost recovery principle. The fees for banks which are shareholders in Bankservice are lower than the fees for non-shareholders. The entry fee is BGL 136,944 (ECU 72) for every branch. There is also a minimum monthly fee of BGL 59,784 (ECU 31) for every branch. For payments between customers of different banks the transfer fee is BGL 299 (ECU 0.16) for shareholders, and BGL 463 (ECU 0.24) for non-shareholders.

### 3.2.9 Main projects and policies being implemented

BISERA 4 will be the future RTGS system of Bulgaria. It will be implemented by means of the BISERA 4 project. The main characteristics of the draft project are as follows:

- BISERA 4 will be administered and operated by the BNB and maintained by Bankservice Plc.
  - All banks will be members of BISERA 4. Non-banks – primary dealers and investment intermediaries – may also be members of BISERA 4, but with the right to initiate payments related to transactions with securities only. Members will hold a current account with the BNB.
  - All members, bank branches and some institutions acting as settlement agents, namely the Government Securities Depository, the Central Depository AD, the BORICA EOOD, etc., will have direct access to BISERA 4 to initiate payments.
  - Within BISERA 4 payments will be settled according to two different procedures. It will incorporate:
    - an RTGS system for the processing of a small number of large-value payments, called “priority payments”, such as interbank payments, payments between the BNB and participants, all payments related to transactions with government securities and payments made through the accounts of state fiscal authorities and budgetary institutions held with the BNB. Some urgent customer payments could also be processed in real time; and
    - a designated-time gross settlement system (DTGSS) for the processing of all other (mass) payments.
  - The settlement accounts of the members will be kept within the RTGS system.
  - All payment instructions will be sent electronically to BISERA 4.
  - BISERA 4 will allocate each payment to one of the two settlement procedures.
- In the RTGS system electronic payment messages will be processed continuously from 9 a.m. to 4 p.m., debiting and crediting the accounts of the payer and payee respectively, and response messages will be created and sent to them. If sufficient funds to execute a payment are not available in a current account, it remains in the queue until enough funds become available. To minimise queues the RTGS system will provide a queue optimisation procedure.
- From 4 p.m. to 5.30 p.m. the RTGS system will only accept payments related to liquidity transfers between banks and between the BNB and banks which are necessary to cover liquidity needs.
  - In the DTGSS mass payments will be accepted from 9 a.m. to 3.30 p.m. for settlement on the same day. All payments

- will be queued according to the chronology of their entry into the system.
- Between 3.30 p.m. and 4 p.m. the DTGSS will summarise the value of payments initiated by each bank to any other bank and will send the information to the RTGS system for settlement.
  - At 4 p.m. the RTGS system will attempt to settle all the amounts at once (in the form of simulated multilateral net balances) and:
    - if the result is positive, it will send a confirmation message to the DTGSS, which will execute each single payment, one by one, and then generate and send response messages to both parties;
    - if settlement is not possible, the payments will be kept in the queues.
  - If the DTGSS balances cannot be settled at 4 p.m. the RTGS system will again try to settle them at 5.30 p.m. If in the meantime the necessary liquidity in the settlement accounts has been ensured by means of liquidity transfers, the RTGS system will execute all payments at once. If not, it sends to the DTGSS:
    - information about non-executed priority payments (if there are any), to be entered with the highest priority in the queues; and
    - information on limits (funds available) for each member, up to which its payments could be executed.
  - Between 5.30 p.m. and 6.30 p.m. the DTGSS will process the payments individually, up to the defined limits. For all executed payments the DTGSS will generate and send response messages to the sending and receiving banks. It will also summarise the value of payments executed by each bank to any other bank and send the information to the RTGS system. Non-executed payments will be postponed for settlement in the next settlement cycle (next day).
  - At 6.30 p.m. the RTGS system will summarise the final settlement results for the day and send them to the members.
  - BISERA 4 will provide a facility for the monitoring and management of the queues of incoming payments with the aim of performing dynamic liquidity control. Each commercial bank will have the possibility of monitoring in “online” mode:
    - the status of its current account with the BNB;
    - outgoing payments during the day;
    - incoming payments during the day;
    - the status of the queue of outgoing payments; and
    - the status of the queue of incoming payments.

The BNB will have the capability to monitor the above information for each bank. The first in, first out (FIFO) principle will still be applied. The possibilities for managing queues will be limited; until 4 p.m. a payment instruction may be cancelled by the sending bank and after 4 p.m. a payment instruction may be cancelled only with the approval of the receiving bank.

## 4 Securities settlement systems

### 4.1 Institutional aspects

#### 4.1.1 General legal aspects

The principal regulation governing securities markets is the Law on Securities, Stock Exchanges and Investment Companies. Its objective is to regulate the issuance of securities for public offer (excluding government securities) and the conduct of transactions in such securities, the incorporation of stock exchanges, investment intermediaries and investment companies, and the state control of these companies. The government securities market operates under Regulation No. 5 of the Ministry of Finance and the Bulgarian National Bank on the Terms and Conditions for Issuance, Acquisition and Redemption of Book-entry Government Securities.

#### 4.1.2 The role of the central bank

##### *General responsibilities*

##### *(i) Statutory responsibilities*

According to the Law on the Bulgarian National Bank (BNB), the central bank may open accounts for investment intermediaries for the purpose of effecting transactions in securities. The central bank has no other specific responsibilities in the field of securities settlement systems.

##### *(ii) Establishment of common rules*

The BNB and the Ministry of Finance issued Regulation No. 5. This Regulation contains the rules that must be followed by the participants in the primary and the secondary government securities markets. Regulation No. 19 of the Ministry of Finance and the BNB contains the basic rules for the operation of the Central Depository AD (CDAD).

##### *(iii) Oversight and audit*

The BNB is responsible for banking supervision, enabling it to control the activities of the banks in the fields of trading and settlement of securities. The BNB administers the Government Securities Depository (GSD) and monitors the activities of the CDAD. However, the BNB has no supervisory power over the Bulgarian Stock Exchange.

##### *Provision of settlement facilities*

##### *(i) Securities accounts*

Each primary dealer holds a custody account with the Government Securities Depository (GSD). The account is divided into sub-accounts to distinguish between the different issues of government securities. For details of primary dealers see Section 4.3.2.

##### *(ii) Securities lending*

Overdraft and securities lending facilities are not available.

##### *Provision of operational facilities*

In its capacity as manager of the GSD, the BNB provides the primary dealers of government securities with a system aimed at keeping and settling these securities. The GSD is a computerised system for the registration, safekeeping, management and servicing of book-entry government securities. It is administered by the Fiscal Services Department of the BNB. The BNB also provides the market with daily information on the value and volume of transactions handled by the GSD. See Section 4.3 for further details.

#### *Monetary policy operations and securities settlement systems*

Since the implementation of the Currency Board Arrangement in July 1997 the BNB has not conducted any monetary policy operations based on outright sales and purchases of securities or repo operations. See Section 1.3.3 for further details.

#### *Main projects and policies being implemented*

See Section 4.3.9.

### **4.1.3 The role of other public sector bodies**

#### *Securities and Stock Exchanges Commission (SSEC)*

The Commission is a state authority that ensures the protection of investors and encourages the development of the securities market. It regulates and controls the issue of securities and their trading (excluding government securities), the Stock Exchange, the over-the-counter (OTC) market, investment intermediaries and investment companies. The SSEC grants licences to the above-mentioned institutions and revokes them (see Section 4.2.3). The Commission also maintains registers of stock exchanges, investment intermediaries and issuers, and investment companies that offer securities for public sale.

#### *Centre for Mass Privatisation (CMP)*

The CMP is a state institution, established in order to oversee the process of privatisation through investment vouchers. The CMP issues the vouchers and controls their transfer and the process of using them to make payments. The CMP organises centralised public auctions of shares in state-owned enterprises.

The first wave of mass privatisation started at the end of 1996. Many people preferred to participate indirectly through specialised

privatisation funds and became their shareholders. Others participated directly in the auctions. The second wave started at the beginning of 1999. The participants may pay not only with investment vouchers, but also with other kinds of vouchers and in cash. Privatisation funds no longer exist, but pension funds are expected to be given the right to collect vouchers from individuals and to participate in the privatisation. However, the Law on Voluntary Additional Pension Insurance has not yet been passed by Parliament.

### **4.1.4 The role of other private sector bodies**

#### *Central Depository AD (CDAD)*

The CDAD was established as a joint stock company in 1996. The CDAD's shareholders are the Ministry of Finance, the BNB, commercial banks, the Bulgarian Stock Exchange, Bankservice and stockbrokers. According to the legislation currently in force, the CDAD shall:

- maintain a reliable system for the book-entry registration of dematerialised shares;
- maintain registers of the securities traded;
- maintain shareholders' registers of the companies traded; and
- immobilise share certificates which are subject to public trading.

#### *Bulgarian Stock Exchange, Sofia (BSE)*

The BSE is the only stock exchange operating in Bulgaria. Its shareholders are the state, commercial banks and other financial intermediaries. For details of the operation of the BSE see Section 4.2.1.

## 4.2 Summary information on securities markets

### 4.2.1 Main features of different securities markets

The Bulgarian securities markets can be divided into two segments, a market for debt instruments and an equity market. A common feature of these markets is that the traded securities are held in book-entry form. Bulgarian legislation allows the existence of equities in paper form, but only book-entry equities may be offered publicly.

Trade in government securities, i.e. bills (with a maturity of up to one year), notes (with a maturity of one to five years) and bonds (with a maturity of over five years), represents a major part of the government securities and money market. The Ministry of Finance and the BNB regulate both the primary and secondary markets for government securities, and the Government Securities Depository (see Section 4.3) settles the transactions. For further details of primary market procedures see Section 4.3. The secondary market is an over-the-counter (OTC) one, with transactions confirmed by telex on the basis of offers exchanged via Reuters.

The equity market operates on the BSE. At present only equities are traded, but trading in corporate bonds and government securities is planned for the future. The BSE has the following market segments:

- the official market, divided into three sub-segments; and
- the free market.

The BSE has established different minimum listing requirements for each market segment of the official market; this is similar to European practice. The only difference is the required minimum size of the listed companies. The shares admitted to the free market have been acquired against vouchers in the mass privatisation process, but do not meet the requirements for the official market.

Stock exchange and OTC transactions are made through investment intermediaries only. Stock exchange trades require the physical presence of the brokers on the exchange (for details of screen-based trade, see Section 4.2.4). Equity market settlement is executed by the CDAD through BISERA.

### 4.2.2 Basic quantitative aspects

For the last three months of 1997 the total value of equities traded on the BSE was BGL 56.8 billion (ECU 30 million). These data are not comparable with previous periods because stock exchange trading was suspended from October 1996 to October 1997. The government securities and money market is the most important securities market in terms of volume and value. It can be seen from Table 8 that the volume of transactions on this market increased significantly from 1993 to 1996. The decrease in 1997 may be explained by the lower issue of government securities under the Currency Board Arrangement and the smaller number of banks remaining in the market after the banking crisis in 1996.

### 4.2.3 Financial intermediaries operating on the different securities markets

Securities may only be traded by investment intermediaries authorised by the SSEC. In practice, these intermediaries are stockbrokers and banks, including the branches and subsidiaries of foreign banks. To be licensed by the SSEC an investment intermediary must meet certain requirements concerning, inter alia, the amount of its capital and the structure of its balance sheet, specified by the Law on Securities, Stock Exchanges and Investment Companies. Given that the global banks' licence covers all kinds of transactions with securities, banks do not need additional authorisation by the SSEC, but only to be registered as investment intermediaries.

Trade on the BSE can only be executed through investment intermediaries which are

members of the Stock Exchange. There are some specific access criteria for membership in the BSE, specified by the Rules on the Activity of the BSE, which have been adopted by its General Assembly (holding shares in the BSE, employment contracts with at least two licensed brokers, etc.).

Members of the Central Depository AD (CDAD) must be investment intermediaries, investment companies, issuers of stocks, stock exchanges or foreign depository and clearing institutions. Each member has full access to the CDAD, enabling it to hold securities accounts and to move shares by itself or on behalf of third parties.

Participants in the government securities and money market are all investment intermediaries, but only those which are authorised to be primary dealers have access to the Government Securities Depository (GSD). For further details of primary dealers see Section 4.3.2.

#### **4.2.4 Recent developments**

Screen-based trading (without the physical presence of the broker) is allowed only on the free market segment of the BSE. Only some BSE members are making use of this opportunity at present, but their number is increasing.

### **4.3 Securities settlement through the Government Securities Depository (GSD)**

#### **4.3.1 Major regulations**

According to the Law on the BNB, the central bank is the official depository of the state. According to the contract between the BNB and the Ministry of Finance, the BNB organises trade with government securities and maintains registers of such securities. Regulation No. 5 of the Ministry of Finance and the BNB establishes the rules and procedures concerning all kinds of transactions with government securities.

#### **4.3.2 Participation in the system**

The Ministry of Finance and the BNB approve the list of primary dealers authorised to participate in the system. Primary dealers may be banks and other investment intermediaries. All other legal and physical persons may only participate in the primary and the secondary markets through primary dealers.

#### **4.3.3 Types of transactions handled**

The GSD handles all kinds of government securities transactions, primary and secondary outright operations, repurchase agreements, etc.

#### **4.3.4 Operation of the transfer system**

The settlement of transactions is handled on a gross basis. This is a batch processing system applying the DVP principle.

On the primary market securities are acquired through auctions organised by the BNB. Primary dealers may participate with irrevocable competitive or non-competitive bids through Reuters Mail. On the date of issue (the second working day after the auction) the BNB debits ex officio the current accounts of the primary dealers with the amount of government securities acquired by them and credits the account of the Ministry of Finance. At the same moment the system automatically enters in the registers the securities acquired by each bidder. Only primary dealers are listed in the registers.

On the secondary market the registration of transactions is effected on the basis of written irrevocable applications sent by telex by both the acquirer and the transferor. The BNB debits ex officio the acquirer's account and credits the transferor's account with the stated amount, and the system automatically enters in the registers the flow of securities at the value date indicated in the application.

At maturity the central bank credits the current accounts of the primary dealers with the funds provided by the Ministry of Finance and cancels the matured issue in the registers.

#### **4.3.5 Settlement procedures**

The settlement of government securities transactions is executed through an accounting system called SOFI. Every transfer instruction is entered in the system and the transaction is only made if securities and funds are available. Otherwise the transaction is not executed.

On the primary market transactions are settled on the day of issue. For bills the day of issue is the second working day after the auction (T + 2). For notes and bonds this is the fourth working day after the auction (T + 4). In the event that maturity falls on the day of a new issue, the system settles the maturity first, and then the new issue. This enables primary dealers to pay for the newly issued securities with the repayment for the previous issue.

On the secondary market the procedures are different. Transactions are settled on the day of the trade or on the forward settlement date, if this is specified in the applications. Settlement is executed three times a day. Forward and repo transactions are settled at 9 a.m. Outright transactions, negotiated between 9 a.m. and 11.30 a.m., are settled at 11.30 a.m. The transfer instructions for both securities and funds are settled on a gross basis with the final transfer of both securities and funds occurring at the end of the processing cycle (11.30 a.m.). This means that the DVP scheme is DVP model I on a batch basis, as defined by the GI0. The same procedures are repeated within the next cycle between 11.30 a.m. and 3 p.m. The three processing cycles enable the participants to trade the same securities more than once per day. For these transactions the FIFO principle is applicable. The instructions are placed in a queue according to the time of receipt of the written applications. If a

transaction cannot be executed because of a lack of securities or funds in the account of a certain primary dealer, it is removed from the queue and the two parties are informed of the reason for the refusal. If the same dealer has sufficient securities or funds for the next transaction in the queue, it is executed.

#### **4.3.6 DVP arrangements**

Every primary dealer has its own current account as well as a government securities account with the BNB. It means that the BNB manages both securities and cash accounts, which makes settlement riskless. After receiving the information about a transaction, the GSD checks the availability of securities, blocks them, checks the availability of necessary funds, and finally makes the transfers.

#### **4.3.7 Credit and liquidity risk control measures**

The DVP principle is the main measure for avoiding risk in the system. Another measure is the penalty applied to defaulting parties. If a participant fails to provide the necessary funds or securities more than once, it may lose its status as a primary dealer.

#### **4.3.8 Pricing policies**

The pricing policy is common to every participant in the system. There is no full recovery of the transaction costs.

Currently, the entry fee for membership is BGL 1,000,000 (ECU 526), paid after each new approval of the primary dealers list. The register-keeping fee for each member is BGL 500,000 (ECU 263) per month. For approved primary auction bids the participant pays a commitment fee of 0.04% of the nominal value. Depending on the amount involved, transfer charges vary between BGL 1,000 (ECU 0.53) and BGL 10,000

(ECU 5.3). On the date of maturity or interest payment, there is a charge of 0.02% of the nominal value of the securities.

#### **4.3.9 Main projects and policies being implemented**

The GSD is going to create direct computer links with system participants in order to establish a fully computerised system for the settlement of primary and secondary market transactions.

### **4.4 Securities settlement through the Central Depository AD (CDAD)**

#### **4.4.1 Major regulations**

The Law on Securities, Stock Exchanges and Investment Companies determines the role of the CDAD. The organisation and operation of the CDAD are determined by Regulation No. 19 of the Ministry of Finance and the BNB. The CDAD is obliged to present information regularly and on request to the Ministry of Finance and the BNB. Both institutions are authorised to carry out on-site inspections of the CDAD. Under the Law on Registered Pledges, all necessary facts connected with pledges must be recorded in the CDAD.

In respect of the functions mentioned in Section 4.1.4, the CDAD organises its operations in four major directions. First, it created a national register of the joint stock companies privatised under the mass privatisation process and the former privatisation funds (now investment companies and holdings). In this regard, accounts were opened automatically (over 3,500,000) for all the shareholders which had acquired shares in the process. Second, it created a securities settlement system for trades between the members of the CDAD. Third, it created a system for organising payments for securities traded on a DVP basis, which is connected to BISERA. Fourth, it created a system which maintains

a common stockbrokers' back office. (The securities account of each member of the CDAD which is an investment intermediary is divided into sub-accounts for each individual customer-stockholder.)

#### **4.4.2 Participation in the system**

The participants in the system are the BSE and investment intermediaries, both of which are members of the CDAD. Only they can operate directly with the register in order to serve their customers. All publicly offered securities can only be traded through the BSE, except transactions between individuals (natural persons), who may transfer the ownership of shares through investment intermediaries.

#### **4.4.3 Types of transactions handled**

In practice, the CDAD handles all types of book-entry equity transactions. Stock lending is available in emergencies. The CDAD also provides its members with the possibility of offering custodial services to their customers.

#### **4.4.4 Operation of the transfer system**

The system settles the instructions for transfer of securities and cash on a gross basis, in a batch processing mode, applying the DVP principle. This is in conformity with the already accepted gross standard for payments in Bulgaria, and is the only way to reduce the risk inherent in the payment process, since a fixed risk management system in Bulgaria does not exist. It is possible to process a delivery free of payment transaction on the OTC market when indicated by the seller, i.e. securities delivery only without the involvement of the payment system.

During the first wave of the mass privatisation process in 1997 the Centre for Mass Privatisation (CMP) provided the CDAD with all data on the transactions. The transfer of ownership was made through registration in

the CDAD's registers. There were no payments, because equities were exchanged for vouchers. In the second wave the process became more complicated because payments could be made in cash or with different kinds of vouchers.

In the event of cash privatisation, the required information is provided by the Agency for Privatisation or by the relevant ministry. If this privatisation is carried out on the stock exchange, the information is provided by the brokers and the BSE.

As regards the settlement of trades between investment intermediaries, the CDAD has implemented the standard settlement period recommended by the Group of Thirty (G30) and the World Bank, that is T + 0 to T + 3. When a transaction is made, securities ownership is transferred and payment is finally completed within a three-day period.

The processing cycle follows the progression outlined below, which is the same for stock exchange and OTC trades.

On the trade date, T + 0, the investment intermediary sends information to the CDAD on the transaction and the securities or cash accounts to be debited or credited. For the stock exchange trades in particular, the information provided by the participants is checked against the information received from the BSE.

On T + 1 any errors and mistakes are identified. The CDAD sends payment information to BISERA. In the event of an error or a mistake, the transaction is kept in a queue for up to three days, after which it should be cancelled if a correction is not made.

On T + 2 after 11 a.m. the relevant securities accounts are checked for securities availability for every transaction. The necessary amount of shares is blocked, and after 6 p.m. the CDAD sends confirmation to the national settlement system, BISERA, which processes the payments overnight.

On T + 3 at 8.15 a.m. the results of the settlement process are received. If the payment is executed (i.e. the sufficient funds are transferred to the seller's account), the securities accounts are unblocked and the securities are transferred to the account of the buyer (and to its customer's sub-account). Simultaneously, the registers of enterprises whose shares are the subject of the trade are automatically updated.

The CDAD has direct access to BISERA to deal as a settlement agent. The CDAD initiates a direct debit transaction on behalf of the seller on the bank account of the investment intermediary buying securities in order to ensure that the payment is made.

#### **4.4.5 Transaction processing environment**

The system is fully computerised. Data are transferred electronically between the CDAD on the one hand and the participants, BISERA and the BSE, on the other. However, according to the existing regulations for payments, the only valid payment documents are paper-based (signed and stamped), which means that all the electronically exchanged information must also be provided on hard copy. According to the new draft regulations, electronic documents will replace the paper-based ones.

#### **4.4.6 Settlement procedures**

The system forms a queue of all transactions to be handled on a given day. The execution priorities for processing transfer orders are as follows:

- stock exchange trades before OTC transactions; and
- trades on behalf of investment intermediaries' customers before trades on behalf of investment intermediaries themselves.

The place of each stock exchange transaction in the queue depends on the time of its conclusion on the BSE. The place of each OTC transaction depends on the time of its reporting to the CDAD. There is also a queue for transactions which cannot be settled due to insufficient securities or funds. Each day the waiting trades from the previous days are processed before the new transactions of the same type and in accordance with the above-mentioned priorities.

#### **4.4.7 DVP arrangements**

Every member of the CDAD must hold an account with a commercial bank which can be directly debited by the CDAD, under an agreement between the CDAD and its member. The buyer cannot stop this payment. On T + 2 the bank blocks the funds after receiving confirmation from the CDAD and the CDAD blocks the securities. If both funds and securities are available, they are transferred on the night after T + 2. If funds (or securities) are not available, they may remain blocked until T + 9.

#### **4.4.8 Credit and liquidity risk control measures**

The stability of securities trading is guaranteed by a guarantee fund administered by the BSE. All members of the BSE must pay an affiliation fee of BGL 200,000 (ECU 105)

and are required to keep on deposit a sum equal to 5% of their average daily turnover for the preceding accounting period. In the event of a stock exchange trade not being settled after T + 9, the BSE uses its guarantee fund to cover the obligations of the defaulting party. In this event the defaulting participant must offer compensation for the expenses incurred by the fund.

If a participant is unable to provide funds or securities, it is charged a penalty of 0.5% of the transaction amount per day after T + 3.

#### **4.4.9 Pricing policies**

The CDAD applies full cost pricing to the services offered. Currently the affiliation fee is BGL 1,000,000 (ECU 526) for banks and BGL 500,000 (ECU 263) for non-banks. The membership fee is BGL 500,000 (ECU 263) per year. The transfer charge is BGL 350 (ECU 0.18). The register fees depend on the type of the joint stock company and the number of its shareholders.

#### **4.4.10 Main projects and policies being implemented**

The CDAD is intending to offer the joint stock companies different kinds of services, such as organising shareholders' meetings, distribution of dividends, etc.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population (thousands) <sup>1)</sup>	8,472	8,444	8,406	8,362	8,312
Gross domestic product (BGL billions)	298.9	525.6	880.3	1,748.7	17,103.4
Exchange rate vis-à-vis ECU <sup>1)</sup>	32.3899	64.5315	80.0110	223.2474	1,901.22

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; BGL billions)

	1993	1994	1995	1996	1997
Banknotes and coins	25.2	38.5	61.6	126.5	1,314.1
Transferable deposits	23.2	36.6	46.9	111.2	979.9
<i>of which held by:</i>					
<i>households</i>	<i>n.a.</i>	<i>n.a.</i>	4.4	6.6	44.1
<i>corporate sector</i>	<i>n.a.</i>	<i>n.a.</i>	41.8	103.6	932.1
<i>other (non-residents)</i>	<i>n.a.</i>	<i>n.a.</i>	0.6	1.0	3.7
Narrow money supply (M1)	48.3	75.1	107.9	236.6	2,290.3
Outstanding value on electronic money schemes	-	-	-	-	-
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	-	-	-

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; BGL billions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	9.0	39.6	55.1	123.1	507.1
<i>of which can be used for settlement</i>	-	-	-	-	76.1
Free reserves held at the central bank	-	-	-	-	-
Transferable deposits at other institutions	<i>n.a.</i>	<i>n.a.</i>	3.0	8.5	16.9

**Table 4****Banknotes and coins***(total value, end of year; BGL millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	37,989	68,869	125,995	201,238	1,875,722
<i>of which:</i>					
<i>BGL 50,000</i>	-	-	-	-	951,500
<i>BGL 10,000</i>	-	-	-	10,000	400,000
<i>BGL 5,000</i>	-	-	-	30,000	204,995
<i>BGL 2,000</i>	-	3,460	39,868	39,775	110,503
<i>BGL 1,000</i>	-	5,280	10,280	22,550	78,283
<i>BGL 500</i>	6,500	22,999	38,447	60,262	73,763
<i>BGL 200</i>	11,878	16,306	19,539	23,044	38,083
<i>BGL 100</i>	9,959	12,189	10,894	10,217	12,320
<i>BGL 50</i>	4,257	4,424	39,123	2,915	3,881
<i>BGL 20</i>	2,405	2,185	1,744	1,697	1,853
<i>BGL 10</i>	2,047	1,289	755	404	241
<i>BGL 5</i>	741	558	387	221	162
<i>BGL 2</i>	107	92	83	73	66
<i>BGL 1</i>	94	87	84	79	72
Total coins issued	358	399	723	1,227	4,534
<i>of which:</i>					
<i>BGL 50</i>	15	11	11	11	2,540
<i>BGL 20</i>	6	5	5	5	492
<i>BGL 10</i>	8	21	171	473	750
<i>BGL 5</i>	50	124	199	273	333
<i>BGL 2</i>	10	41	101	160	160
<i>BGL 1</i>	17	28	67	137	137
<i>BGL 0.5</i>	45	56	56	55	42
<i>BGL 0.2</i>	42	48	48	48	47
<i>BGL 0.1</i>	33	33	33	33	33
<i>BGL 0.05</i>	13	12	12	12	-
<i>BGL 0.02</i>	11	11	11	11	-
<i>BGL 0.01</i>	9	9	9	9	-
<i>Commemorative coins</i>	99	257	440	501	614
Banknotes and coins held by credit institutions	17,196	31,027	65,542	76,504	566,764
Banknotes and coins in circulation outside credit institutions	21,151	38,498	61,615	126,462	1,314,106

**Table 5**  
**Institutional framework**

(end of 1997)

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (BGL billions)
Central bank	1	6	n.a. <sup>1)</sup>	8.0
Credit institutions	48	786	n.a.	903.6
Savings banks	1	124 <sup>2)</sup>	n.a.	67.8
Post Office	1	3,081	-	-
<b>TOTAL</b>	<b>51</b>	<b>3,997</b>	<b>n.a.</b>	<b>979</b>
Foreign banks' entities:	8	9	n.a.	40
Branches	6	6	n.a.	18.47
<i>of which EU-based</i>	<i>6</i>	<i>6</i>	<i>n.a.</i>	<i>18.47</i>
Subsidiaries	2	3	n.a.	21.37
<i>of which EU-based</i>	<i>2</i>	<i>3</i>	<i>n.a.</i>	<i>21.37</i>

1) Not applicable for methodological reasons.

2) Only branches linked to BISERA.

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals <sup>1)</sup>**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	-	-	1	1	1
Number of machines	-	-	32	70	118
Volume of transactions (thousands)	-	-	11.0	293.6	1,305.3
Value of transactions (BGL millions)	-	-	20.9	1,197.5	41,773.0
<b>EFTPOS terminals</b>					
Number of networks	-	-	1	1	1
Number of machines <sup>2)</sup>	-	-	100	308	512
Volume of transactions (thousands)	-	-	0.6	3.3	16.1
Value of transactions (BGL millions)	-	-	0.2	3.0	520.6
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (BGL millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (BGL millions)	-	-	-	-	-

1) Data for transactions through BORICA only.

2) Online terminals only.

**Table 7****Number of payment cards in circulation** <sup>1) 2)</sup>*(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	-	-	0.8	20.5	65.8
Cards with a debit/credit function	-	-	0.8	20.5	65.8
<i>of which:</i>					
<i>cards with a debit function</i>	-	-	0.8	20.5	65.6
<i>cards with a credit function</i>	-	-	-	-	0.2
Cards with a cheque guarantee function	-	-	-	-	-
Retailer cards	-	-	-	-	-
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is, therefore, not meaningful to add the figures.

2) Data for cards issued through BORICA only.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions** <sup>1)</sup>*(thousands)*

	1993 <sup>2)</sup>	1994	1995	1996	1997
BISERA	4,058.66	8,610.44	10,282.41	10,324.36	10,175.82
Paperless credit transfers	3,536.96	7,608.71	9,112.38	9,135.55	8,783.20
Direct debits	521.70	1,001.73	1,168.29	1,174.95	1,093.43
Card payments <sup>3)</sup>	-	-	n.a.	11.62	298.37
Cheques	-	-	0.75	1.15	0.35
Letters of credit	-	-	0.99	1.09	0.47

1) Excluding intrabank and intrabranche transactions.

2) For eight months only.

3) Including transactions connected with cards issued abroad.

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions** <sup>1)</sup>*(BGL billions)*

	1993 <sup>2)</sup>	1994	1995	1996	1997
BISERA	589.10	1,428.38	2,219.38	3,210.65	26,508.88
Paperless credit transfers	576.50	1,395.00	2,170.40	3,140.80	25,928.90
Direct debits	12.60	33.38	47.35	66.42	512.78
Card payments <sup>3)</sup>	-	-	0.02	1.20	53.20
Cheques	-	-	0.19	0.27	0.54
Letters of credit	-	-	1.42	1.96	13.46

1) Excluding intrabank and intrabranche transactions.

2) For eight months only.

3) Including transactions related to cards issued abroad.

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
GSD	28	28	28
Banks	20	20	20
Savings banks	1	1	1
Stockbrokers	6	6	6
Insurance companies	1	1	1
CDAD	47	47	-
Banks	20	20	-
Stockbrokers	27	27	-

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions**

	1993	1994	1995	1996	1997
GSD	811	5,403	13,122	23,321	8,350
Government securities	811	5,403	13,122	23,321	8,350
<i>of which:</i>					
<i>bills</i>	758	3,924	3,271	9,206	4,379
<i>notes</i>	53	435	3,102	5,612	1,254
<i>bonds</i>	-	1,044	6,749	8,503	2,717
CDAD	-	-	-	-	48,818
Shares	-	-	-	-	48,818

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(BGL billions)*

	1993	1994	1995	1996	1997
GSD	71.23	833.10	2,045.13	4,845.07	11,988.38
Government securities	71.23	833.10	2,045.13	4,845.07	11,988.38
<i>of which:</i>					
<i>bills</i>	65.41	443.61	181.25	737.30	3,826.79
<i>notes</i>	5.82	45.30	404.49	971.68	1,198.45
<i>bonds</i>	-	344.18	1,459.39	3,136.07	6,963.14
CDAD	-	-	-	-	30.71
Shares	-	-	-	-	30.71

**Table 13****Nominal values registered by securities settlement systems***(end of year; BGL billions)*

	1993	1994	1995	1996	1997
GSD	130.22	208.05	319.50	625.95	2,705.05
Government securities	130.22	208.05	319.50	625.95	2,705.05
<i>of which:</i>					
<i>bills</i>	33.44	45.52	89.03	255.45	626.25
<i>notes</i>	5.08	25.93	62.37	84.20	518.20
<i>bonds</i>	91.70	136.60	168.10	286.30	1,560.60
CDAD	-	-	-	-	236.09
Shares	-	-	-	-	236.09

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions <sup>1)</sup>***(thousands)*

	1993 <sup>2)</sup>	1994	1995	1996	1997
Cheques issued	n.a.	n.a.	0.8	1.2	0.4
Payments by debit and credit cards	-	-	11.6	296.9	1,321.4
Paper-based credit transfers	n.a.	n.a.	n.a.	n.a.	n.a.
Paperless credit transfers	3,537.0	7,608.7	9,112.4	9,135.5	8,783.2
Direct debits	521.7	1,001.7	1,168.3	1,175.0	1,093.4
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	1.0	1.1	0.5
<b>TOTAL</b>	<b>4,058.7*</b>	<b>8,610.4*</b>	<b>10,294.0*</b>	<b>10,609.6*</b>	<b>11,198.9*</b>

1) *Excluding intrabank and intrabranche transactions.*2) *For eight months only.*

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions <sup>1)</sup>***(BGL billions)*

	1993 <sup>2)</sup>	1994	1995	1996	1997
Cheques issued	n.a.	n.a.	0.2	0.3	0.5
Payments by debit and credit cards	-	-	0.02	1.2	42.3
Paper-based credit transfers	n.a.	n.a.	n.a.	n.a.	n.a.
Paperless credit transfers	576.5	1,395.0	2,170.4	3,140.8	25,928.9
Direct debits	12.6	33.4	47.4	66.4	512.8
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	1.4	2.0 <sup>3)</sup>	13.5 <sup>3)</sup>
<b>TOTAL</b>	<b>589.1*</b>	<b>1,428.4*</b>	<b>2,219.4*</b>	<b>3,210.7*</b>	<b>26,498.0*</b>

1) *Excluding intrabank and intrabranh transactions.*2) *For eight months only.*3) *Including postal instruments.***Table 16****Participation in S.W.I.F.T. by domestic institutions**

	1993	1994	1995	1996	1997
S.W.I.F.T. users	14	19	28	29	28
<i>of which:</i>					
<i>members</i>	14	18	26	26	23
<i>sub-members</i>	-	1	2	3	5
<i>participants</i>	-	-	-	-	-
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

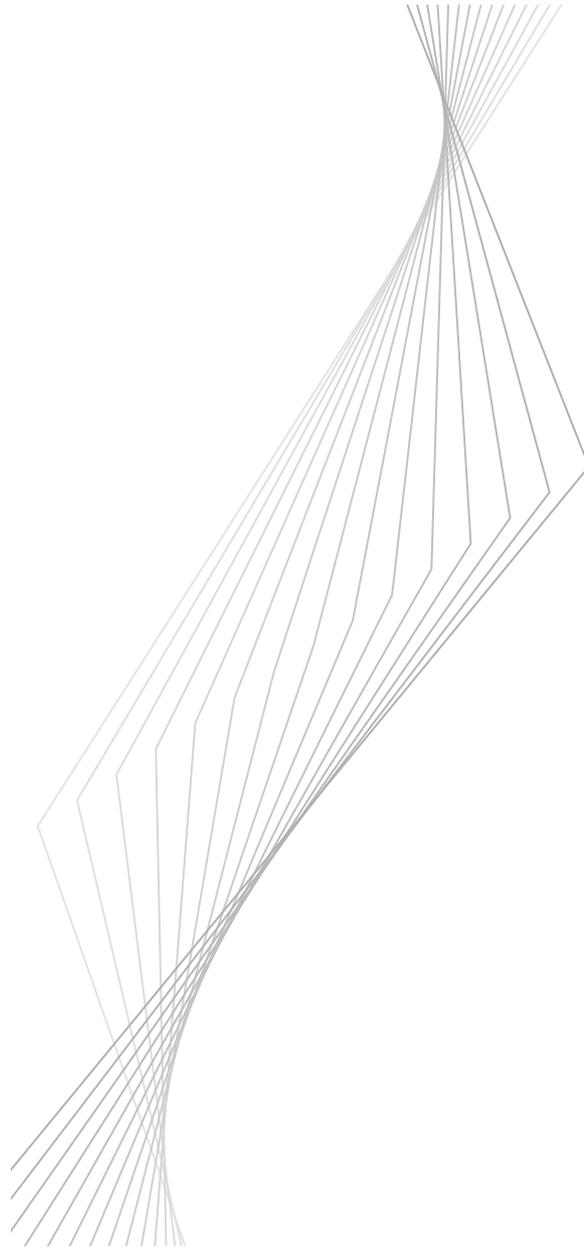
**Table 17****S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	193,245	324,527	466,394	468,317	469,733
<i>of which:</i>					
<i>category I</i>	118,973	186,523	225,998	234,024	233,126
<i>category II</i>	30,342	59,741	110,066	95,907	90,692
<i>sent to/received from   domestic users</i>			97,266	108,388	110,719
Total messages received	283,850	456,010	617,950	631,194	646,241
<i>of which:</i>					
<i>category I</i>	121,158	194,661	235,519	256,392	289,748
<i>category II</i>	11,305	20,142	32,642	25,906	19,525
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556





EUROPEAN CENTRAL BANK



**Cyprus**

**August 1999**

Cyprus

CY

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**List of abbreviations**

<b>ACCB</b>	Association of Cyprus Commercial Banks
<b>CAP</b>	Chapter of the Laws of the Republic of Cyprus
<b>CBC</b>	Central Bank of Cyprus
<b>CCH</b>	Cyprus Clearing House
<b>CCI</b>	Co-operative credit institution
<b>CSE</b>	Cyprus Stock Exchange
<b>IBU</b>	International Banking Unit
<b>JCC</b>	JCC Payment Systems Ltd.
<b>MRA</b>	Minimum Reserve Account

## Introduction

The Government and the Central Bank of Cyprus (CBC) are taking steps to liberalise the financial system by means of the gradual abolition of exchange controls on capital flows and the removal of the statutory ceiling on interest rates. A draft bill liberalising interest rates was submitted to the House of Representatives at the end of January 1999, and it is expected that it will come into effect by the end of the year. The full liberalisation process is expected to be completed by the time of Cyprus' accession to the European Union (EU). A new monetary policy framework was introduced at the beginning of 1996, whereby open market operations using repurchase agreements and reverse repurchase agreements became the main tool for liquidity management. At that time,

auctioning of government stock was implemented in the primary market. In July 1997 the enactment of the Banking Law strengthened the statutory powers of the CBC regarding the supervision and regulation of the banking system. Moreover, the Banking Law of 1997 incorporates in all material respects the provisions of the EU Directives on prudential supervision.

With regard to means of payment, cash and cheques are the two main instruments used in the settlement of transactions. Other instruments are not as widely used, although the use of credit cards and, to a lesser extent, debit cards has increased substantially in recent years.

## I Institutional aspects

### I.1 General legal aspects

Payment systems in Cyprus are not, in the main, the subject of specific legislation or regulatory provisions. Only cheques are the subject of legislation, namely the Bills of Exchange Law (CAP 262) and subsequent amendments. The other payment instruments are the subject of regulations in conjunction with established practice, which were developed by the participants in the relevant payment systems. The legal framework relating to securities is described in Section 4.1.

Mention should be made of the fact that no instances have occurred whereby the provisions of the Companies Law (CAP 113) regarding insolvency and the Bankruptcy Law (CAP 5), and amendments thereto, have been applied with regard to banks, thus affecting payment systems. This is due to the close supervision of the CBC, the prudent operations of the banks themselves and the relatively protected environment in which they operate, although their expansion abroad indicates that they can successfully operate and compete in liberalised markets. It should be noted that the above-mentioned laws do not contain a zero-hour clause.

In the context of Cyprus' efforts to prepare for accession to the EU, the harmonisation of legislation will include matters relating to payment systems. The CBC has requested banks to incorporate provisions relating to Directive 97/5/EC on cross-border credit transfers into their code of good banking practice. Furthermore, the CBC proposes to adopt the Directive formally, by way of mandatory instructions to be issued to banks under the provisions of the Banking Law, by mid-2000. The Banking Law is in the process of being amended in such a way as to make such action possible. It is envisaged that, at a later stage, legislation or regulations relating to the provisions of Directive 98/26/EC on settlement finality in payment and securities settlement systems will also be adopted. With

regard to consumer protection, the relevant department of the Ministry of Commerce, Industry and Tourism is in the final stages of preparation of a draft Law on Consumer Credit, which will take into account all the relevant Directives of the EU.

### I.2 Financial intermediaries that provide payment services

There are three types of credit institutions operating in the banking sector: commercial banks, specialised credit institutions and co-operative credit institutions (CCIs). At the apex of the banking system is the CBC, the competent authority for monetary policy and for the regulation and supervision of banking.

#### *Commercial banks*

There are nine commercial banks<sup>1</sup> operating in Cyprus, of which four are public companies quoted on the Cyprus Stock Exchange (CSE), two are branches of foreign banks (one of which is based in the EU) and two are subsidiaries of foreign banks (both of which are based in the EU). The three largest domestic banks have operations in EU countries and representative offices in other countries outside the EU. Cypriot banks are multi-product firms providing a wide range of corporate and retail banking services. The larger banks have subsidiaries that engage in activities such as insurance, factoring, financing, leasing, brokering and mutual funds.

Special reference must be made to the Co-operative Central Bank Ltd. This institution is a commercial bank that is regulated and supervised by the CBC. However, it is primarily engaged in accepting deposits from its member CCIs and granting them loans for

<sup>1</sup> These are: Bank of Cyprus Ltd., National Bank of Greece (Cyprus) Ltd., Cyprus Popular Bank Ltd., Hellenic Bank Ltd., Co-operative Central Bank Ltd., Arab Bank Plc, Alpha Bank Ltd., Commercial Bank of Greece Ltd. and Universal Savings Bank Ltd.

their requirements. It acts as banker to the CCIs, thus performing a role similar to that of the CBC vis-à-vis the commercial banks. It also acts as clearing agent for the CCIs for the clearing of cheques through the Cyprus Clearing House (CCH).

#### *Specialised credit institutions*

There are three institutions that fall within the scope of this category: the Cyprus Development Bank, which specialises in providing long-term financing for development purposes and consultancy services in Cyprus and the Middle East region, the Housing Finance Corporation and the Mortgage Bank of Cyprus. The latter two are deposit-taking institutions that specialise in housing loans.

#### *Co-operative credit institutions*

The CCIs are registered and operate according to the provisions of the Co-operative Law and the Co-operative Societies' By-laws. They are supervised by the Registrar of Co-operative Development, who is accountable to the Minister of Commerce, Industry and Tourism. These institutions were set up to facilitate, inter alia, the basic banking needs (deposit-taking and credit facilities) of their members in the rural areas of Cyprus. CCIs do not fall within the scope of the supervisory activities of the CBC, unlike the Co-operative Central Bank Ltd., as mentioned in the sub-section entitled "Commercial banks" above, and as such are not subject to the minimum reserve requirements with which commercial banks and deposit-taking institutions must comply.

### **1.3 The role of the central bank**

#### **1.3.1 General responsibilities**

##### *Statutory responsibilities*

The existing legislation does not contain any express provisions regarding payment and settlement systems. Section 4 of the Central Bank of Cyprus Law (the Law), by which the CBC was established, provides that "the main purpose of the Bank, by which the Bank shall be guided in all its actions, is to foster monetary stability and such credit and balance of payments conditions as are conducive to the orderly development of the economy of the Republic". For the fulfilment of the above purpose, the CBC is explicitly empowered by the Law to regulate the supply of money and credit, manage and administer the international reserves of the Republic, supervise the financial system and act as the banker and financial agent to the Government. The CBC also has the exclusive right to issue legal tender in the Republic. In the discharge of its responsibilities for the implementation of monetary policy and the development of the economy, reliable and efficient clearing and settlement procedures are a prerequisite. The CBC is directly involved in the determination of the rules and regulations of the Cyprus Clearing House (CCH) and the Credit Transfer System. The CBC also has an operational interest in the systems as a participant and as the banker to the Government and the commercial banks. Furthermore, the nature and extent of risks incurred by participants in payment and settlement systems are of interest to the CBC in its capacity as a banking supervisor.

##### *The establishment of common rules*

The rules governing each of the clearing systems are laid down by their members and are therefore referred to under the relevant sections. The CBC is most influential with regard to the following two systems: (i) the CCH, which operates under the auspices of the CBC and is governed by the Cyprus

Clearing House Committee, which is chaired by the CBC; and (ii) the Credit Transfer System, which operates under terms determined by the CBC.

#### *Supervision and audit*

As already noted, there are no express statutory provisions for the oversight of payment systems in Cyprus, either by the CBC or by any other public body. However, the CBC in its capacity as the competent authority for banking supervision aims to ensure the soundness of commercial banks. Following the enactment of the Banking Law of 1997, all the material provisions of the relevant EU Directives on prudential supervision were incorporated into domestic legislation. The CBC is audited by the Auditor General of the Republic. Thus the transactions relating to the Credit Transfer System and the CCH are subject to the normal auditing procedures of the CBC's auditors, in addition to those of the Internal Audit Department.

#### *The role of the central bank vis-à-vis the Government and other public bodies*

As already mentioned in Section 1.3.1, the CBC is empowered to act as the banker and financial agent to the Government (Section 46 of the Law). In this respect the Government maintains accounts with the CBC, through which it accepts deposits and effects payments for the account of the Government. The CBC also acts as the banker to government agencies, municipalities and other public bodies.

Under Section 47 of the Law the CBC: (i) administers public funds (in accordance with arrangements made with the Minister of Finance); (ii) manages the public debt (including the issue and service of bonds and other securities of the Government and its agencies); (iii) pays, remits, collects or takes custody of funds in the Republic or abroad; and (iv) purchases, sells, transfers or takes

custody of cheques, bills of exchange, securities, gold and foreign exchange.

The Law also provides for government financing by the CBC via a credit facility and the purchase of government securities within specified limits. As part of the process of harmonisation with the *acquis communautaire*, the Government, starting in 1994, embarked upon a process of gradual reduction of these limits to enable them to be abolished in due course.

### **1.3.2 Provision of processing and settlement facilities**

#### *Provision of settlement accounts*

Commercial banks and deposit-taking institutions are required to maintain balances of no less than 7% of their fortnightly average deposit liabilities on accounts with the CBC designated as Minimum Reserve Accounts (MRAs). The MRA balances up to the required amount are interest-bearing. Shortfalls from the required balance are penalised, with penalties becoming more severe depending on the magnitude of the deviation. As the penalties take the form of non-interest-bearing deposits in multiples of the shortfall, the banks ensure that they have adequate funds in the MRAs. Although these accounts were set up for the above purpose, they are used for the settlement of the Credit Transfer System and CCH transactions (see Sections 3.2 and 3.3), and for monetary policy transactions (see Section 1.3.3). Furthermore, these accounts are used by the commercial banks to carry out foreign currency transactions with the CBC.

Various government departments and agencies maintain current accounts with the CBC which are used to effect credit transfers and the settlement of cheques presented through the CCH.

*Provision of credit facilities*

The CBC provides the commercial banks with an overnight facility (lombard type) which is fully collateralised with government securities. The size of this facility is set at 1% of each bank's deposits at the end of the previous year. This facility, when utilised, is credited to the banks' MRAs. Reference to the credit facilities available to the Government has been made under Section 1.3.1.

*Pricing policies*

Insofar as fees are concerned, no such fees are levied upon the banks and the Government in connection with the payment systems operated by the CBC.

**1.3.3 Monetary policy and payment systems**

As at 31 December 1995 the liquidity ratio applied to banks, which averaged 27% for the whole year, was abolished. On 1 January 1996 the minimum reserve requirement was reduced from 12% to 7% of banks' average deposit liabilities, and since January 1996 any additional increase in deposits has been subject to the new reserve requirement of 7%. However, in order to avoid flooding the credit market with excess funds, a proportion equal to 20% of the banks' average weekly deposits during 1995 was "frozen" on the same day and invested in Treasury bills. The frozen stock, which is held at the CBC for the banks, is gradually being released over a period of seven years, commencing on 1 January 1997, is automatically renewable and bears a yield of 6% per annum. At the same time repurchase/reverse repurchase transactions were introduced as the main instrument of monetary policy. Operations injecting or absorbing liquidity are carried out through the auctions of repurchase/reverse repurchase agreements between the CBC and banks. These operations take place whenever the CBC deems it appropriate and

their duration is up to 15 days. The cash payment in respect of these transactions is settled on the banks' MRAs.

Furthermore, two facilities were introduced to provide and absorb overnight liquidity, which are credited to and debited from the MRAs respectively through the Credit Transfer System. Liquidity is provided overnight through a lombard credit facility, the interest rate on which is deemed to provide the upper ceiling for overnight money market interest rates. Banks can also utilise an overnight deposit facility to place their short-term surplus funds at the end of the day. The interest rate on this facility is intended to provide, in normal circumstances, the floor for overnight money market rates. Currently the interest rates applicable to the lombard credit facility and the overnight deposit facility are 7% per annum and 4% per annum respectively.

**1.3.4 Main projects and policies being implemented**

The future development of payment services at the CBC will be shaped primarily by the decline in the processing of paper-based items, the ongoing extension of electronic access to data and the wider use of telecommunications in the banking system.

The CBC is committed to the establishment of an RTGS system. An in-house committee was formed and a report was prepared on this topic. It is envisaged that implementation work will start in the second half of 1999 when a new online accounting system will have been put in place and the Year 2000 question will have been resolved. It is also anticipated that an RTGS system will be in place by January 2003. In addition, it is planned to offer facilities to banks and other account holders for electronic access to comprehensive information about account movements and account balances.

## **1.4 The role of other private and public sector bodies**

The role of the key organisations in the payment cards system and the securities settlement system are addressed in Sections 3.4 and 4.1 respectively. Reference should be made here to the Association of Cyprus Commercial Banks (ACCB) and International Banking Units (IBUs).

### **1.4.1 Association of Cyprus Commercial Banks (ACCB)**

The ACCB was formed in 1969. Its membership consists of all but two of the local commercial banks mentioned in the footnote to the sub-section entitled “Commercial banks” in Section 1.2.<sup>2</sup> The primary objectives of the ACCB are: (i) to promote the interests of the banking industry in Cyprus; and (ii) to represent the views of its members and, where necessary, to negotiate on their behalf with government bodies, as well as to co-operate with those bodies and, in particular, with the CBC. The activities of the ACCB include liaising between its members and the Government and other professional bodies. It may also engage in lobbying activities regarding issues

which affect the banking industry. Furthermore, the ACCB provides a forum for the discussion of current issues and may also establish technical committees or working groups in order to carry out in-depth analysis of special issues. Membership is open to any institution authorised by the CBC to operate as a bank in Cyprus (as distinct from an IBU which operates from within Cyprus) undertaking commercial banking business. A unanimous decision of all the members of the ACCB in a meeting is required for accession.

### **1.4.2 International Banking Units (IBUs)**

With the emergence of Cyprus as a major international business centre, IBUs started to operate from Cyprus. The IBUs may transact banking business with non-residents of Cyprus and in currencies other than the Cyprus pound. Therefore, under the current regime, they cannot participate in domestic payment and settlement systems. IBUs may engage in banking activities with the CBC or other onshore banks. In certain cases, subject to the approval of the CBC, they may grant loans and guarantees in foreign currencies to residents. IBUs are subject to the supervision of the CBC.

## **2 Payment media used by non-banks**

### **2.1 Cash payments**

The CBC has the sole right to issue banknotes and coins under the Central Bank of Cyprus Law. Currently there are banknotes of four denominations – CYP 1, 5, 10 and 20 – and coins of six denominations – 1, 2, 5, 10, 20 and 50 cents – in issue. The most commonly used banknote denomination is the CYP 10 banknote. The CBC is responsible for withdrawing from circulation and replacing demonetised, mutilated, defaced and otherwise defective banknotes and coins.

Surplus banknotes and coins are removed from circulation by commercial banks, which return them to the CBC or hold them to the order of the CBC at nominated cash centres.

Cash is the dominant means of settling retail transactions, although cashless means of payment are increasingly gaining a market share. The share of cash in M1 has gradually declined from 42.9% as at 31 December 1994 to 39.2% as at 31 December 1997.

<sup>2</sup> The Co-operative Central Bank Ltd. and Universal Savings Bank Ltd. are not members of the ACCB.

## 2.2 Non-cash payments

### 2.2.1 Credit transfers

Credit transfers and standing orders can be effected between accounts held at the same bank (interbranch). In addition, more technologically advanced banks offer the facility to effect credit transfers between accounts of the same holder via ATMs, personal computers, by direct links or over the Internet and touch-dial telephones.

Currently there is no system, whether paper-based or electronic, by which retail credit transfers may be executed between accounts held at different banks. Interbank standing orders may be executed via an instrument called an agent's claim voucher (see Section 3.3.3). These limitations have resulted in the extensive use of cheques as means of settlement. However, a project is under way to introduce an electronic system for retail credit transfers (see Section 2.4).

### 2.2.2 Cheques

Cheques constitute the non-cash instrument most frequently used in the settlement of both retail and wholesale transactions. Cheques differ from other payment instruments in the sense that their use is regulated by legislation (the Bills of Exchange Law).

Dishonoured cheques that are still unpaid seven days after presentation remain a problem which has some adverse effects on the smooth functioning of the economy generally but does not seriously threaten the payment system, bearing in mind that a substantial proportion are honoured in subsequent presentations. In 1997 the total value of cheques returned unpaid owing to insufficient funds was 2.8% of the total cheques presented through the CCH. The Criminal Code provides for penalties of a fine of up to CYP 1,500 (ECU 2,575) and/or two years' imprisonment. In an effort to tackle the problem the CBC has prepared a

draft law amending the Banking Law 66 (I) of 1997, which will enable the Governor of the CBC to issue instructions regarding the setting-up of a register of frequent offenders. The administration and maintenance of this register will be assigned to a special committee. Frequent offenders will be subject to administrative sanctions to be imposed by the special committee and enforced by the banking institutions.

The clearing of cheques takes place at the CCH (see Section 3.3). Cheques processed through the CCH are denominated in Cyprus pounds only. Payments in foreign currency can be settled by banker's draft, subject to exchange control regulations. Another form of payment instrument is the postal draft, which is used by the Government in order to pay various state benefits. This payment instrument is drawn by the Director of the Social Insurance Department instructing the Director of the Postal Services Department to pay the beneficiary. Initially these payment orders could only be encashed at post offices, whereas now the bulk of them are presented at banks for encashment. Postal drafts are delivered daily by the commercial banks to the CBC where they are credited in good faith and the drafts are dispatched to the Social Insurance Department. In 1997 the number of postal drafts issued was 1,141,000 (1,093,000 in 1996) amounting to CYP 214,286,000 (ECU 367,684,000; CYP 196,606,000, or ECU 332,105,000 in 1996).

### 2.2.3 Direct debits

The use of direct debits is restricted to the payment of utilities bills and insurance premiums. These payment instructions are not subject to clearing arrangements and therefore each service utility or insurance company must maintain an account at each bank through which it intends to offer this facility.

### 2.2.4 Payment cards

There has been tremendous growth in the use of payment cards in the 1990s as these instruments have gained wide acceptability among merchants and users alike. With the increased use of debit cards and EFTPOS, further growth is expected.

#### *Debit cards*

Separate debit card products were first introduced in 1984, on a smaller scale, and were promoted on a large scale in 1993. These enable cardholders to make payments which are usually debited from their current accounts one day after the transaction has taken place. Some debit cards can be used exclusively at EFTPOS terminals, whereas others can be used both at EFTPOS terminals and in conjunction with paper vouchers.

#### *Credit cards, travel and entertainment cards*

Credit cards are usually associated with a credit facility with a preset limit and a credit period within which, if the balance is settled in full, the cardholder is not charged interest. They were first introduced in Cyprus in 1983. Some banks charge a flat annual fee on some of their credit cards, depending on the benefits offered, such as free travel insurance and purchased goods insurance.

Travel and entertainment cards issued by local banks do not differ from the above description and are included in the statistical information as part of "credit cards". This is also applicable to co-branded and affinity cards, which are associated with a brand name or a common cause, respectively.

Diners Club and American Express are each represented locally by a commercial bank, and cards issued by them operate as charge cards, whereby the amount outstanding must be settled in full at the end of each month.

#### *Retailer cards*

Retailer cards can be categorised into affiliated cards and loyalty cards. The first type is a credit card which is issued by a retailer in association with a commercial bank for exclusive use at this retailer. Owing to the small number of cards in circulation and the clearance of the transactions at the bank level, they are excluded from the statistical information on credit cards. The second type of retailer card, the loyalty card, is usually issued by a retailer in order to attract repeat business by offering discounts or gifts through points schemes and, as such, is not a payment card.

#### *Prepaid cards*

There is only one type of single-purpose stored-value card in Cyprus, the phonecard. No multi-purpose cards are expected to be introduced in the foreseeable future.

#### *Automated teller machines (ATMs)*

At the end of 1997 there were three networks of ATMs, two owned by the two largest banks and one owned by a consortium of smaller banks. Although a consortium of banks owns the third network, these machines cannot be used for interbank transactions, such as transfers of funds. Each payment card operates only in conjunction with accounts held with the issuing bank of the card being used. ATMs were initially designed to dispense cash, but they now offer a variety of services, including cash deposits, balance enquiries, the ordering of cheque-books and statements and the preparation of mini-statements in addition to cash withdrawals.

## 2.3 Postal instruments

Reference has already been made in Section 2.2.2 to postal drafts, a payment instrument used for the payment of state benefits.

Although the bulk of postal drafts issued are encashed at commercial banks, a small number are presented at Post Office branches. The Postal Services Department deposits these in its account with the CBC. These are subsequently dispatched to the Social Insurance Department.

The Postal Services Department issues, through selected branches, foreign and international money orders. In 1997 the Postal Services Department issued 9,000 (1996: 11,000) domestic money orders that amounted to CYP 331,000 (ECU 567,000; 1996: CYP 340,000, ECU 574,000) and 1,000 (1996: 1,000) international money orders that amounted to CYP 38,000 (ECU 64,000; 1996: CYP 33,000, ECU 55,000).

## 2.4 Recent developments

A project has been assigned by the commercial banks to JCC Payment Systems Ltd. (see Section 3.4.1 for information about this organisation) to introduce a retail credit transfer system. Having determined the

business requirements, the operational procedures were drafted in February 1999. It is proposed that the system should handle payment instructions up to CYP 10,000 (ECU 17,200) for transfers to one or more beneficiaries, which may be at different recipient banks. It is envisaged that the transactions will be settled daily on a net multilateral basis on the banks' accounts with the CBC. The system is currently at the development stage and is expected to be operational by the end of 1999.

An initiative is under way to link up the individual ATM networks to create a national network so that cards issued by any local bank may be used in any ATM on the island. Furthermore, some banks are looking to develop home banking to a greater extent by offering more services over the Internet.

In early 1999 the Cyprus Telecommunications Authority introduced the first single-purpose prepaid cards with microchip technology. It plans gradually to replace the old technology by the last quarter of 1999.

## 3 Interbank exchange and settlement systems

### 3.1 General overview

This Section provides a detailed description of the interbank settlement systems relating to credit transfers, cheques and payment cards (see Sections 2.2.1, 2.2.2 and 2.2.4 respectively).

The limited number of institutions involved, the value and volume of transactions and geographical proximity have enabled the above systems to operate independently, without the operation by the CBC of an all-encompassing RTGS system. Furthermore, exchange control restrictions have eliminated the need for the settlement of transactions in currencies other than the Cyprus pound, as most resident entities of Cyprus are not entitled to hold accounts in foreign currencies. Balance of payments transactions

are settled through an extensive network of foreign correspondents of the CBC and commercial banks.

### 3.2 Credit Transfer System

#### 3.2.1 Functioning rules

The Credit Transfer System is a paper-based bilateral gross settlement system. The payment instructions submitted are booked to the participants' accounts on an individual basis.

The operating rules are set by the CBC as the owner of the system and having regard to its objectives (see Section 1.3.1) and policies. For example, the prohibition on back-value

transactions for banks was introduced as part of the monetary policy reform of 1996.

### **3.2.2 Participants in the system**

Participation in the system is open to all holders of accounts denominated in Cyprus pounds which are held with the CBC. Therefore participation is restricted to institutions entitled to hold accounts with the CBC. As a result, all the commercial banks are direct participants in the system. Furthermore, government departments and government agencies that maintain accounts with the CBC may also execute payments through this system. Currently there are less than 30 participants in the system.

### **3.2.3 Types of transactions handled**

There is no restriction on the type or value of transactions handled, provided that they are denominated in Cyprus pounds and that both parties involved maintain accounts with the CBC. Although individuals and corporate customers of banks are not explicitly prohibited from using the Credit Transfer System, its use is restricted by established practice. Some transfers are between accounts of government agencies and semi-governmental organisations with the CBC and accounts which they maintain with one or more commercial banks, as conventional bank customers. Transactions may be interbank, intra-governmental and across the different types of institutions. The system also handles the funds transfers in respect of monetary policy transactions (repos and reverse repos) as well as overnight facilities and deposits by banks.

### **3.2.4 Operation of the transfer system**

The system is in operation during normal working hours, i.e. from 7.30 a.m. to 2.30 p.m. (6.30 a.m. to 1.30 p.m. C.E.T.). Payment instructions are sent throughout the day to the CBC by the participants, via S.W.I.F.T.,

by mail or by hand, in the prescribed format. These payment instructions are batched and processed in the afternoon, after the closing time for the acceptance of instructions. The normal processing time is from 4.30 p.m. to 6 p.m. (3.30 p.m. to 5 p.m. C.E.T.). On the following working day, advice slips are dispatched to the paying and receiving institutions.

Back-value transactions on banks' MRAs, overnight deposit accounts and lombard-type facility accounts are not permitted other than in exceptional circumstances, because of their use as part of the monetary policy mechanism, whereas such a restriction does not apply to the accounts of other participants. In practice, instructions can be withdrawn by the paying bank prior to processing, from the time of transmission to the CBC until the close of business on the execution date of the payment instruction. Instructions are deemed to be final and irrevocable once they have been processed by the CBC. Corrections can then only be initiated by relevant instructions from the receiving institution. The arrangement is based on a gentlemen's agreement and no instances have occurred of legal measures being required to resolve a dispute.

### **3.2.5 Transaction processing environment**

Users may submit payment instructions via S.W.I.F.T., by mail or by hand. Transactions are entered manually and processing is carried out on the CBC's computerised systems.

### **3.2.6 Settlement procedure**

The credit transfer payments are settled in central bank money. The processing of instructions is carried out on a deferred gross settlement basis, with transactions being posted directly to the MRAs of banks and the current accounts of government departments/agencies accordingly.

### 3.2.7 Credit and liquidity risk

As the payment instructions are batch processed at the end of the day, no check on the adequacy of funds is carried out. However, the balances maintained in the banks' MRAs substantially cover all their transactions, and credit and liquidity risks are virtually eliminated.

### 3.2.8 Pricing

No fees are charged by the CBC in connection with the Credit Transfer System.

### 3.2.9 Main projects and policies being implemented

The CBC is in the process of changing over to an online accounting system, with implementation expected in mid-1999. It is envisaged that credit transfers will be processed in real time. An interface is being developed to achieve straight-through processing of S.W.I.F.T. instructions, with funds adequacy checks on the account to be debited. Messaging will also be improved and expedited.

## 3.3 Cyprus Clearing House (CCH)

### 3.3.1 Functioning rules

The CCH was established in June 1964 in order to facilitate the exchange and clearance of cheques, postal drafts and similar specified articles drawn by one bank on another. The CCH operates from the CBC's premises and a representative of the CBC is appointed as Chief Inspector, with responsibility for the general conduct of business in the CCH. The CCH operates according to regulations which are agreed by the representatives of the banks on the CCH Committee. The CCH Committee consists of one representative of each member and is chaired by the CBC representative.

### 3.3.2 Participation in the system

The CCH has 10 member banks and functions under the auspices of the CBC. One of the specialised credit institutions is represented at clearing exchanges by a CCH member. Participation in the system is open to any institution authorised by the CBC to operate as a bank in Cyprus and the application of which has been accepted by the majority of the existing members of the CCH.

### 3.3.3 Types of transactions handled

The types of articles cleared through the CCH are cheques, claims arising from direct deliveries or special presentations of cheques, agent's claim vouchers and claims for unpaid cheques. Special presentations are large-value cheques,<sup>3</sup> which are presented on the day of deposit to the drawer's bank in order to ensure immediately that sufficient funds exist. However, the settlement is carried out through the CCH in the normal manner. An agent's claim voucher is an instrument issued by the paying bank (e.g. for the purpose of a customer's standing order), which is dispatched to the receiving bank with the particulars of the payment. The receiving bank presents the agent's claim voucher to the CCH in order to receive the funds.

### 3.3.4 Operation of the system

Cheques in Cyprus have a uniform format, which was agreed by the members of the CCH in order to enable the use of OCR technology in the processing and capturing of information. Every day at 9.15 a.m. (8.15 a.m. C.E.T.) at the commencement of the CCH session the banks' representatives present cheques drawn on the other banks for collection. The cheques are enclosed in envelopes addressed to each paying bank concerned, with the total number of cheques

<sup>3</sup> The CBC has set the limit for cheques at CYP 50,000 (ECU 85,800) for special presentations which it makes to commercial banks.

and value written on the envelope. These amounts are used to calculate each bank's net position vis-à-vis the cheques delivered and received by other banks. The clearing article exchanges between members are accompanied by the exchange of electronic media (computer diskettes) containing specific information about the exchanged articles (which comprises data captured<sup>4</sup> from the OCR code line in the cheques exchanged).

### **3.3.5 Transaction processing environment**

Data regarding the cheques presented for payment are exchanged electronically on diskette. These data are processed by the participants using proprietary software. The CBC has developed such software in-house to run the processing of incoming cheques on a stand-alone unit.

### **3.3.6 Settlement procedure**

Although the net positions of the banks are agreed prior to the departure of their representatives from the CCH, the relevant accounting entries are batched and processed at the end of the working day. Therefore settlement takes place in central bank money through the banks' MRAs on a deferred net settlement basis.

### **3.3.7 Credit and liquidity risk**

See Section 3.2.7.

### **3.3.8 Pricing**

No fees are charged by the CCH or the CBC in connection with the cheque clearing system.

### **3.3.9 Main projects and policies being implemented**

The implications of the online accounting system mentioned in Section 3.2.9 are also applicable to this system. An interface has been developed by means of which the results of the CCH meeting will be reflected in the banks' MRAs as soon as their net positions are agreed.

In addition, steps are being taken towards the introduction of cheque truncation. A draft amendment to the Bills of Exchange Law, which was recently prepared by the CBC, has been agreed by the commercial banks and is in the process of final legal vetting. The proposed amendment removes the requirement set out in the Bills of Exchange Law that every cheque must be physically presented at the branch where the account is held, and also inserts provisions to safeguard the interests of banks' customers.

## **3.4 Payment cards system**

### **3.4.1 Functioning rules**

JCC Payment Systems Ltd. (JCC) was formed in 1990 by six local banks for the purpose of technical co-operation and the development of interbank systems. Although the scope of JCC's objectives as mentioned above is wide-ranging,<sup>5</sup> this Section will only cover the payment cards system, which so far is its core business.

The owners of JCC have signed a Letter of Agreement on their relationship with JCC as participants in the system. Company policy is determined by the Board of Directors, which represents the shareholding groups (two large banks and a consortium of four smaller banks).

<sup>4</sup> The information captured is the transaction code, cheque number, bank code, account number and amount.

<sup>5</sup> JCC undertook the technical evaluation of the hardware and specifications of the software used for cheque clearing for the commercial banks. It is currently developing an interbank credit transfer system (see Section 2.4).

### **3.4.2 Participation in the system**

There are eight participants in the system – the six shareholders in JCC and two other local banks that have also signed a Letter of Agreement with the company. The participation of a new applicant is subject to the majority approval of the Board of Directors and the execution of a Letter of Agreement with the company. However, the transfer of ownership to a new member is subject to a special resolution at an extraordinary general meeting of the shareholders.

### **3.4.3 Types of transactions handled**

JCC handles the clearing and settlement of debit and credit card transactions, including cash withdrawals from ATMs, of both locally issued cards and those issued abroad. The company operates the National Authorisation Centre and the National POS Network. It also services merchants with regard to the relevant equipment, which is owned by JCC.

### **3.4.4 Operation of the transfer system**

Claims are presented to JCC in batches, either physically or by electronic means. All vouchers are read, verified and processed. The transactions are classified into two groups: local cards and foreign cards. The transactions for foreign cards are sent abroad for clearing and settlement to each international payment scheme electronically. JCC produces an interchange file on a daily basis for the local banks, containing transactions to be debited from cardholder accounts, transactions to be credited to merchant accounts, interchange fees and charges and reconciliation items. The clearing cycle of local transactions varies from one working day for EFTPOS transactions to five working days for paper vouchers.

### **3.4.5 Transaction processing environment**

The JCC computer systems are linked with all the banks in Cyprus via dedicated leased lines with backup facilities in place. JCC is also linked to VISA and Europay (MasterCard) via leased lines. Merchants with EFTPOS terminals send their transactions via the public switched telephone network to JCC for processing. The exchange of data files with the banks is at present carried out via tape and/or diskettes, but these methods are soon to be replaced by file transfer via leased lines.

### **3.4.6 Settlement procedure**

For the settlement with international payment schemes, JCC maintains accounts with foreign banks. For the settlement with local banks, JCC maintains current accounts with each local bank. These current accounts are used as settlement accounts. A bank will debit the cardholders' accounts and credit the JCC current account with the cardholder transactions, and it will debit the JCC current account and credit the merchants' accounts with the merchant transactions. The merchant and cardholder transactions are taken from the interchange files mentioned above. Therefore transactions are settled on a deferred net settlement basis.

### **3.4.7 Credit and liquidity risk**

The settlement of obligations on a net basis on the following day together with the credit period offered to cardholders entail credit risks for the participants. The settlement of transactions through current accounts that allow overdrafts results in liquidity exposures to the banks. However, as these are retail transactions, the risks are not deemed to be significant, also taking into account the fact that the average monthly value of transactions for cards issued by local banks for 1997 was CYP 14,671,000 (ECU 25,173,000).

### 3.4.8 Pricing

JCC is funded primarily by the merchant service charge. This varies, the maximum rate being 5% of the transaction value, while the average is in the region of 2-3%. The negotiation of charges is performed independently with merchants and depends on the turnover, average transaction amount and category of the merchant.

### 3.4.9 Main projects and policies being implemented

As mentioned in Section 2.4, one of the objectives of JCC is the development of a

national ATM network; agreement among major potential participants is imminent, whereas the technical infrastructure has already been completed. This will also open the way for the installation of ATMs at third-party sites, which will be managed by JCC. International developments involving smart cards and electronic money (e-money) are being followed closely, but no developments in this area are expected in the near future. Furthermore, JCC is in the process of developing a retail credit transfer system, which is also mentioned in Section 2.4.

## 4 Securities settlement systems

### 4.1 Institutional aspects

#### 4.1.1 General legal aspects

Currently there is no automated securities settlement system. The securities market consists of government securities and corporate stocks and bonds. The legal framework governing government Treasury bills and development stocks consists of the Treasury Bills Laws of 1989 and 1996 and the Loan (Development) Laws of 1968 and 1973.

A recent development has been the enactment of legislation allowing the dematerialisation of listed securities and the establishment of a Central Depository-Registry System for securities (Law 27 (I) of 1996). This Law stipulates that the role of the Cyprus Stock Exchange (CSE) shall be enlarged to encompass the establishment and management of the said system (see Section 4.1.3).

### 4.1.2 The role of the central bank

#### General responsibilities

#### (i) Statutory responsibilities

The CBC acts as the Government's agent in the management of the domestic public debt. It is responsible for the issue, either by subscription or by auction, redemption and repayment of Treasury bills and development stocks, and for the maintenance of the holders' registers, in accordance with the laws mentioned in Section 4.1.1 above and related regulations. Since April 1997 the securities issued by auction have been listed and traded on the CSE. A representative of the CBC is present on the CSE floor in order to intervene in the market regarding quoted government securities when deemed necessary.

#### (ii) Oversight and audit

The operations of the CBC with regard to government securities are subject to the oversight of the Internal Audit Department and the Office of the Auditor General of the

Republic, in the normal course of execution of their respective duties.

#### *Provision of settlement facilities*

##### *(i) Securities accounts*

The CBC maintains the register of holders of government securities. The cash payment in respect of certain transactions is executed through accounts with the CBC where the parties involved are entitled to hold such accounts (banks, public funds administered by the CBC and government agencies). At the same time the register is updated to reflect the said transactions.

#### *Securities lending*

No such arrangement exists.

#### *Provision of operational facilities*

See Sections 4.1.1 and 4.1.2 above.

#### *Monetary policy operations and securities settlement systems*

##### *(i) Type of securities*

Only government securities issued by auction can be used for monetary policy operations (repos and lombard-type facilities).

#### *Legal arrangements*

The legal basis of the monetary policy operations is the Central Bank of Cyprus Law.

#### *Technical and operational infrastructures*

The volume of transactions deriving from monetary policy operations has not been sufficient to require an elaborate automated

system; therefore operations are manual and paper-based. The titles of the securities used as collateral for such operations are usually held at the CBC on an ongoing basis or they are delivered to the CBC on the day of the transaction. Appropriate entries are made against these securities in the register to prohibit their disposal. These matters will have to be reconsidered in view of the establishment of the Central Depository-Registry System. However, at this stage, the technical and operational aspects have not been agreed by the parties involved (CBC and CSE), as these relate to Phase II of a project which foresees the dematerialisation of securities and computerisation of the operations at the CSE.

#### **4.1.3 The role of other public sector bodies**

##### *The Cyprus Stock Exchange (CSE)*

##### *(i) Statutory responsibilities*

The CSE was established under the Cyprus Securities and Stock Exchange Law of 1993 as a public body incorporated by statute.

The objectives of the CSE are to provide "for the development of the securities market in Cyprus and for the establishment and operation of the Cyprus Stock Exchange". It commenced its operations on 29 March 1996 and is governed by the CSE Council under the supervision of the state through the Minister of Finance and the Capital Market Committee. Regulations governing its operation were prepared by the CSE Council and approved by the House of Representatives in July 1995.

##### *(ii) Provision of operational and settlement facilities*

Currently, according to the CSE Regulations, members must settle every transaction within three working days of the transaction taking place. This includes the submission of original certificates and relevant forms, and cash settlement. Within one day of the completion

of the transaction the CSE issues a certificate of transfer, which confirms that a transaction has been executed at the Stock Exchange. Following that, the issuing company has an obligation to issue a new certificate for the buyer and deliver it to the CSE within five working days. The CSE member has an obligation to collect the certificate and deliver it to the buyer. As a result of the above procedure, the certificate is delivered to the buyer within nine working days of the day on which the transaction has taken place.

As mentioned in Section 4.1.1, the objectives of the CSE were expanded to include the establishment and management of a Central Depository-Registry System. In 1997 a substantial amount of work was undertaken concerning the dematerialisation of securities and computerisation of the operations of the CSE (trading, clearing and settlement). In March 1997 a contract was signed with an application software developer for the provision of a software system for the full computerisation of CSE operations. This project is currently at the testing stage of Phase I (computerisation of trading operations), which is anticipated to be completed by the third quarter of 1999. The project will then proceed to Phase II, which is the computerisation of clearing and settlement operations. Following a tender procedure, the CSE proceeded with the selection of a bank (holding bank) for the settlement of payments in respect of the securities settlement system, in conjunction with the CSE software systems.

Under the new system the operational procedure described above will change substantially. The members of the CSE will maintain settlement accounts with the holding bank, which is a public company carrying out banking business. Adequate funds will be required to be deposited in the settlement accounts by the end of the second working day and settlement will take place on the third working day following the trade day. Cash settlement will be effected on a net basis but at a pre-determined time at which the updating of the securities register will

take place, thus effectively achieving delivery versus payment (DVP). Provision has been made for large-value transactions, which will also be settled after three working days but through separate settlement accounts on a trade-by-trade basis. The operational framework of the system will be governed by regulations which are currently being drafted by the CSE.

#### **4.1.4 The role of other private sector bodies**

##### *CSE Members Association*

The Association took its present form with the creation of the CSE in 1996, having evolved from a previous organisation which existed when securities were traded over the counter. It consists of 19 members, which are all current CSE members. Any new member of the CSE is eligible to join the Association, this being the only condition for membership. The objectives of the CSE Members Association are to protect the interests of its members, to promote interest in the capital market and to represent the views of its members regarding the operation and enhancement of the CSE to the CSE itself, the CBC, the Ministry of Finance and other relevant government departments.

## **4.2 Summary information on the Cyprus Stock Exchange (CSE)**

### **4.2.1 Main features of different securities markets**

Government securities can be issued in the primary market in two ways: (i) by subscription, a method which is available only to private individuals through banks, Post Office branches, stockbrokers or directly from the CBC – these securities can be redeemed prior to maturity at the CBC and are not quoted on the CSE; and (ii) by auction, a method which is available to any legal person (including banks, insurance companies, pension and provident funds in both the public and private sectors and semi-

governmental institutions). The securities issued by auction are quoted on the CSE and can only be disposed of through the CSE.

Once quoted on the CSE, all financial instruments (shares, warrants, bonds and government bonds) are subject to the same trading rules and all the CSE members are active in all market segments.

#### **4.2.2 Basic quantitative aspects**

At the end of 1997 there were 102 listed securities on the CSE issued by 49 listed issuers. The types of securities listed were the following: shares (fully paid-up and partly paid-up), warrants, corporate bonds and government bonds. The total market capitalisation on 31 December 1997 was CYP 1,422 million (ECU 2,440 million), of which 85% was private paper and 15% was government bonds. The average daily value traded during 1997 amounted to CYP 0.7 million (ECU 1.2 million) and the average number of transactions was 174.

#### **4.2.3 Financial intermediaries operating in the various securities markets**

The membership of the CSE consisted of 18 corporate members and one individual member (with a broker's licence).

#### **4.3 Cross-border securities activity**

The level of cross-border securities activity is low owing to exchange control restrictions. Outward portfolio investment is confined to certain categories of institutions (such as banks, insurance companies and investment companies) which are entitled to hold a predetermined percentage of their portfolio in approved foreign assets. Trading activity for non-banking institutions is usually carried out through their bankers, and banking institutions act through their correspondents or through participation in international clearing systems (Euroclear and Cedel).

Non-residents may hold up to 49% of the issued share capital (reduced to 15% for banking institutions) of companies listed on the CSE. Companies and stockbrokers can carry out the relevant transactions without reference to the CBC through normal payment channels.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	630	638	645	652	655
Gross domestic product (CYP millions)	3,275.0	3,649.0	3,976.0	4,143.0	4,370.3
Exchange rate vis-à-vis ECU <sup>1)</sup>	0.5820	0.5846	0.5917	0.5920	0.5828

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; CYP millions)

	1993	1994	1995	1996	1997
Banknotes and coins	229.4	246.5	257.0	265.6	276.2
Transferable deposits	319.0	328.2	356.7	387.6	427.9
Narrow money supply (M1)	548.4	574.7	613.7	653.2	704.1
Transferable deposits in foreign currencies	n.a.	n.a.	n.a.	n.a.	n.a.
Outstanding value on electronic money schemes	-	-	-	-	-
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	-	-	-

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; CYP millions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank <sup>1)</sup>	350.5	397.2	453.3	277.5	314.0
Free reserves held at the central bank <sup>2)</sup>	20.5	25.7	20.1	49.0	1.9
Transferable deposits at other institutions	n.a.	n.a.	n.a.	n.a.	n.a.

1) As from 1996 a new monetary policy framework was introduced and the reserve requirement was reduced from 12% to 7% of average deposit liabilities.

2) Excludes balances in foreign currency.

**Table 4****Banknotes and coins***(total value, end of year; CYP millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	236.8	251.3	261.8	272.4	282.8
<i>of which:</i>					
CYP 20	60.9	84.4	95.0	104.9	100.9
CYP 10	146.6	139.5	140.1	139.7	153.3
CYP 5	16.4	14.3	14.1	14.6	14.7
CYP 1	11.0	11.8	12.6	13.2	13.9
CYP 0.5	1.9	1.3	-	-	-
Total coins issued	15.3	18.6	20.6	21.6	23.1
<i>of which:</i>					
CYP 0.5	3.0	5.9	7.2	7.8	8.4
CYP 0.2	5.7	5.8	6.1	6.3	6.7
CYP 0.1	3.0	3.1	3.3	3.4	3.6
CYP 0.05	2.2	2.3	2.4	2.5	2.7
CYP 0.02	0.8	0.9	1.0	1.0	1.1
CYP 0.01	0.5	0.5	0.6	0.6	0.6
CYP 0.005	0.1	0.1	-	-	-
Banknotes and coins held by banks	22.7	23.4	25.4	28.4	29.7
Banknotes and coins in circulation outside credit institutions	229.4	246.5	257.0	265.6	276.2

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (CYP millions)
Central bank	1	1	0.1	31.6
Commercial banks	9	533	n.a.	313.3
Other financial institutions	3	7	n.a.	3.2
Co-operative credit institutions	360	452	n.a.	n.a.
<b>TOTAL</b>	<b>373</b>	<b>993</b>	<b>n.a.</b>	<b>n.a.</b>
Branches of foreign banks	2	21	n.a.	n.a.
<i>of which EU-based</i>	<i>1</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
Subsidiaries of foreign banks	2	53	n.a.	n.a.
<i>of which EU-based</i>	<i>2</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	3	3	3	3	3
Number of machines	74	113	121	146	159
Volume of transactions (thousands) – local banks' cards <sup>1)</sup>	n.a.	n.a.	n.a.	5	7
Volume of transactions (thousands) – foreign banks' cards <sup>2)</sup>	n.a.	n.a.	n.a.	359	473
Value of transactions (CYP millions) – local banks' cards <sup>1)</sup>	n.a.	n.a.	n.a.	0.4	0.4
Value of transactions (CYP millions) – foreign banks' cards <sup>2)</sup>	n.a.	n.a.	n.a.	24.1	32.9
<b>EFTPOS terminals</b>					
Number of networks	1	1	1	1	1
Number of machines	n.a.	1,160	1,800	2,500	3,800
Volume of transactions (thousands) – local banks' cards	n.a.	394	614	1,057	1,894
Volume of transactions (thousands) – foreign banks' cards <sup>2)</sup>	n.a.	506	645	743	906
Value of transactions (CYP millions) – local banks' cards	n.a.	18.0	28.8	47.6	79.6
Value of transactions (CYP millions) – foreign banks' cards <sup>2)</sup>	n.a.	29.9	38.8	44.3	54.4
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (CYP millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (CYP millions)	-	-	-	-	-

1) Excludes use at own bank (whereby the great majority of transactions are not included in the figures provided).

2) Use by visitors to Cyprus.

**Table 7****Number of payment cards in circulation <sup>1)</sup>***(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	n.a.	n.a.	n.a.	n.a.	n.a.
Cards with a debit/credit function	220	268	271	332	406
<i>of which:</i>					
<i>cards with a debit function</i>	23	27	35	52	103
<i>cards with a credit function</i>	197	241	236	280	303
Cards with a cheque guarantee function	-	-	-	-	-
Retailer cards	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is, therefore, not meaningful to add the figures.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
Cyprus Clearing House	13,022	14,346	14,781	16,876	16,962
Cheque collections <sup>1)</sup>	13,022	14,346	14,781	15,785	15,821
Postal drafts	n.a.	n.a.	n.a.	1,091	1,141
Credit Transfer System	13	15	19	22	27
JCC Multipack	n.a.	2,497	2,867	3,397	4,963

1) Excludes interbranch items.

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(CYP millions)*

	1993	1994	1995	1996	1997
Cyprus Clearing House	6,089	6,691	7,270	8,342	8,315
Cheque collections <sup>1)</sup>	6,089	6,691	7,270	8,145	8,101
Postal drafts	n.a.	n.a.	n.a.	197	214
Credit Transfer System	2,229	2,661	3,260	17,069	16,435
JCC Multipack	n.a.	143	163	190	260

1) Excludes interbranch items.

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
CSE	19	n.a.	-
Brokerage firms	18	n.a.	-
Individual brokers	1	n.a.	-

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
CSE <sup>1)</sup>	n.a.	n.a.	n.a.	33.2 <sup>2)</sup>	42.7

1) *Includes quoted government bonds from 30 April 1997.*2) *Volume of transactions as from 29 March 1996, i.e. the date of commencement of the operations of the CSE.***Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(CYP millions)*

	1993	1994	1995	1996	1997
CSE <sup>1)</sup>	14.6	41.6	135.5	231.5	170.7

1) *Includes quoted government bonds from 30 April 1997 and the value of transactions on the over-the-counter market that preceded the CSE.*

**Table 13****Nominal values registered by securities settlement systems***(end of year; CYP millions)*

	1993	1994	1995	1996	1997
Shares	n.a.	n.a.	n.a.	n.a.	482.1
Corporate bonds	n.a.	n.a.	65.2	72.9	81.3
Government securities	1,905.8	2,104.9	2,404.5	2,789.2	3,134.8
<i>of which:</i>					
<i>Development stock</i>	316.5	377.5	414.0	449.0	638.3
<i>Bearer stock</i>	3.8	3.8	6.2	5.0	5.0
<i>Treasury bills</i>	1,559.2	1,695.9	1,954.0	2,305.1	2,458.5
<i>Savings bonds</i>	17.3	18.3	21.0	21.0	22.5
<i>Savings certificates</i>	9.0	9.4	9.3	9.1	10.5

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
Cheques issued	13.0	14.3	14.8	15.8	15.8
Postal drafts	n.a.	n.a.	n.a.	1.1	1.1
Payments by debit and credit cards	n.a.	1.5	1.9	2.5	4.0
Paper-based credit transfers	0.01	0.02	0.02	0.02	0.03
Paperless credit transfers	-	-	-	-	-
Direct debits	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	-	-	-	-	-
<b>TOTAL</b>	13.0	15.8	16.7	19.4	20.9

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(CYP billions)*

	1993	1994	1995	1996	1997
Cheques issued	6.1	6.7	7.3	8.1	8.1
Postal drafts	n.a.	n.a.	n.a.	0.2	0.2
Payments by debit and credit cards	0.07	0.10	0.13	0.17	0.24
Paper-based credit transfers	2.2	2.7	3.3	17.1	16.4
Paperless credit transfers	-	-	-	-	-
Direct debits	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	-	-	-	-	-
<b>TOTAL</b>	<b>8.4</b>	<b>9.5</b>	<b>10.7</b>	<b>25.6</b>	<b>24.9</b>

**Table 16****Participation in S.W.I.F.T. by domestic institutions**

	1993	1994	1995	1996	1997
S.W.I.F.T. users	10	12	18	18	23
<i>of which:</i>					
<i>members</i>	5	5	6	6	7
<i>sub-members</i>	5	7	12	12	15
<i>participants</i>	0	0	0	0	1
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

**Table 17****S.W.I.F.T. message flows to/from domestic users**

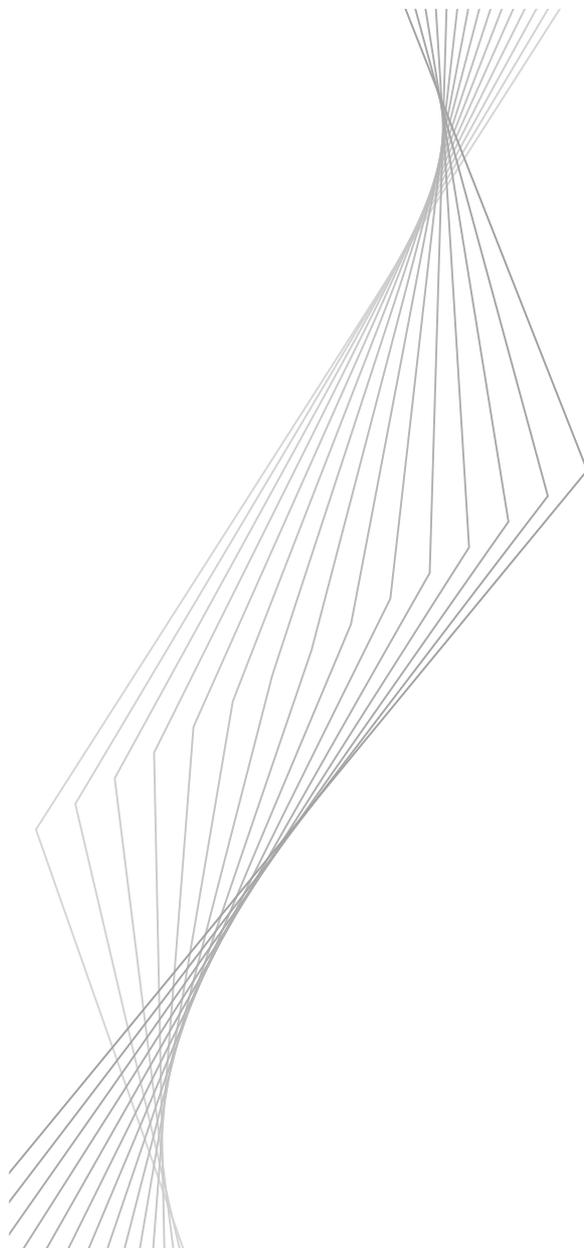
	1993	1994	1995	1996	1997
Total messages sent	571,507	687,460	864,708	1,032,157	1,190,421
<i>of which:</i>					
<i>category I</i>	182,702	249,835	345,657	443,766	535,721
<i>category II</i>	164,625	181,727	213,451	243,055	274,381
<i>sent to/received from domestic users</i>			66,999	85,905	96,970
Total messages received	452,968	533,638	669,215	814,722	962,264
<i>of which:</i>					
<i>category I</i>	146,361	193,253	253,211	318,955	378,818
<i>category II</i>	39,088	45,108	61,612	78,225	93,647
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556

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EUROPEAN CENTRAL BANK



**Czech Republic**

**August 1999**

Czech Republic

CZ

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## List of abbreviations

<b>CZK</b>	Czech koruna
<b>RM</b>	Registration Centre – <i>Registrační místo</i>
<b>SBCS</b>	State Bank of Czechoslovakia – <i>Státní banka československá</i>
<b>SCP</b>	Securities Centre – <i>Středisko cenných papírů</i>
<b>SPAD</b>	System to support trading in shares and bonds – <i>Systém na podporu obchodování akcií a dluhopisů</i>
<b>TKD</b>	Register of short-term securities – <i>Trh krátkodobých dluhopisů</i>
<b>UNIVYC</b>	Universal Securities Clearing Centre – <i>Univerzální vypořádací centrum</i>

## Introduction

Until 1989 there were only six banks in Czechoslovakia, including the State Bank of Czechoslovakia (SBCS) which at that time also performed the functions of a central bank. The SBCS and its branch network provided the payment system for legal entities, while the Czech State Savings Bank and the Slovak State Savings Bank operated the payment system for private individuals. In the mid-1970s the SBCS had introduced a nationwide payment system, which had brought important new features, including the unified numbering of accounts, the option of presenting data on magnetic tapes and the abolition of the physical circulation of cheques and other payment documents. Instead of text descriptions, standardised codes were introduced to define the type and nature of payments.

After the change in the political situation in 1989, the commercial activities of the SBCS

were separated from its central banking functions and were transferred to two newly created commercial banks and one already existing commercial bank. At this time there was a rapid expansion of the banking industry in general, including the establishment of many new commercial banks; in fact, the number of banks grew tenfold. Therefore, in 1992 the central bank introduced a new interbank payment system and set up a Clearing and Settlement Centre to handle all domestic currency payments between banks.

After the division of Czechoslovakia at the beginning of 1993, the new central bank of the Czech Republic, the Czech National Bank (*Česká národní banka*), was formed from the Czech part of the federal SBCS, while the National Bank of Slovakia (*Národná banka Slovenska*) was founded from the Slovak part.

## I Institutional aspects

### I.1 General legal aspects

The important task of managing and co-ordinating the payment system in the Czech Republic is performed by the Czech National Bank. Under Article 98 of the Constitution of 1993, the Czech National Bank's primary aim is to safeguard the stability of the currency. The obligation to regulate the payment system derives from the 1993 Czech National Bank Act (formerly the 1992 State Bank of Czechoslovakia Act).

The payment system in the Czech Republic is provided by banks and the Czech postal system. Banks (see Section 1.2.1) operate on the basis of the 1992 Banking Act (to which there have been several amendments, the most recent in 1998), which lays down both the conditions to be met for setting up banks as well as banks' rights and obligations when performing banking activities. The Banking Act also stipulates that only banks may receive deposits from the public (with the exception of savings and credit co-operatives, see Section 1.2.2). Consequently, maintaining accounts and providing cashless payment services are exclusively banking activities. The postal system operates on the basis of the 1946 Postal Act. (In the near future a new Postal Act is expected to be passed.) The postal payment system provides a primarily cash-based money transfer service, mostly for private individuals.

There is no special law regulating the payment system in the Czech Republic. Payments between private individuals and legal entities are considered to be a civil law relationship and are subject to the Civil Code (1964) and the Commercial Code (1992). These Codes also contain the basic principles on which banking contracts are based. To implement the interbank payment system the central bank issued a decree in 1992, which is binding on all banks operating in the Czech Republic. In the same year the SBCS issued the General Terms and Conditions (amended in 1994 and 1997), which serve, on the basis of a

“gentlemen's agreement” with banks, as a model for banks when creating their own terms and conditions for maintaining accounts and providing payment services. The principles of a uniform interbank payment system, as well as the rules for the handling of misdirected payments, are stipulated in the last amendment of the 1992 Banking Act.

In 1991 the law stipulating rules on bankruptcy took effect (amended in 1998). The current wording does not contain rules pertaining to the zero-hour problem. This issue will be addressed in the process of the harmonisation of the legislation of the Czech Republic with that of the European Union (EU).

The Czech National Bank is preparing a new Banking Act, which should become effective in three years' time. It is intended to be fully compliant with EU Directives, including those concerning cross-border payments and finality and the Recommendation concerning transactions made using electronic payment instruments.

### I.2 Financial intermediaries that provide payment services

#### I.2.1 Banks

At the end of 1997 there were 51 banks and branches of foreign banks operating in the Czech Republic. Banks are authorised to perform their activities on the basis of a licence issued by the Czech National Bank in agreement with the Ministry of Finance. Most banks hold a universal licence, which permits them to carry out all principal banking activities. All banks provide domestic payment services for their customers, but some (e.g. specialised or local banks) are not authorised to transfer payments abroad or to issue certain payment instruments (namely cheques and payment cards). Some banks specialise in certain activities. For example, savings and loan associations specialise in accepting

deposits and providing mortgage loans to their depositors; in 1997 six such banks were in operation in the Czech Republic. The Czech state encourages saving at these banks by providing private account holders with a contribution related to the amount saved per year. Licences to provide mortgage loans have so far been granted to the five universal banks and also to two specialised mortgage banks. Other banks focus on particular types of customers; for example, the Czech Savings Bank (*Česká spořitelna*) provides services mostly for small investors who are private individuals. Overall, payment system services were provided by 2,513 bank operating units (i.e. head offices and branches) in 1997. Of the total number of accounts and transactions processed in 1997, the five largest banks in the Czech Republic accounted for 90%.

Banks are subject to supervision performed by the Czech National Bank to ensure the security of deposits and the sound functioning of the banking system. For the same reason, the Czech National Bank lays down the framework of rules for the cashless payment system. The principal rule is that banks are obliged to perform all interbank transfers, including transfers for their customers, by means of the central bank's Clearing and Settlement Centre, which was set up for this purpose in 1992. This system is used by all banks in the Czech Republic, each bank having a code which uniquely identifies it and which is an obligatory part of any payment transaction. Additional numerical codes (so-called payment symbols) are used to provide more detailed information about the payments. Therefore, there is no need for a physical circulation of documents between the payer's bank and the payee's bank.

Payments between customers of the same bank are executed by the bank itself using its own branches and internal information systems. These systems have been introduced by banks in recent years with the aim of achieving full automation, and of speeding up and improving the services offered to their customers.

International payments are mainly carried out by means of correspondent banks and the S.W.I.F.T. network. The Clearing and Settlement Centre does not handle foreign currency payments.

### **1.2.2 Savings banks and credit co-operatives**

In 1995 a special law was passed laying down the regulatory framework for savings banks and credit co-operatives and in 1996 the first co-operatives started operating. The co-operatives are specialised non-bank institutions, which receive deposits, grant credits and provide payment services (including payment cards). As they are not licensed under the Banking Act, they are entitled to provide services only for their members and they do not participate directly in the interbank payment system. The activities of the co-operatives are supervised by Úřad (i.e. the special administrative office which was set up under the above-mentioned 1995 law).

## **1.3 The role of the central bank**

### **1.3.1 General responsibilities**

The central bank of the Czech Republic is an independent body, founded on the basis of the Constitution. The basic rules and activities of the Czech National Bank are described in the National Bank Act. This Act forbids the Bank to grant direct credit to the Government.

Section 2 of the National Bank Act provides that, in order to safeguard the stability of the Czech currency, the Czech National Bank shall "issue banknotes and coins, control the circulation of money, the payment system and settlement between banks and ensure the smooth and efficient operation of these functions". For this purpose, the Bank has the authority to submit draft legislation to the Government concerning these areas and to issue binding regulations by decree.

In accordance with the Constitution and the National Bank Act, the Czech National Bank is the sole issuer of banknotes and coins. It organises the printing of banknotes and the minting of coins and it regularly changes the design of banknotes to improve protection against counterfeiting. Banknotes are printed by the State Securities Printing Office, while the minting of coins is carried out by a private joint stock company. The Bank manages the supply of banknotes and coins: it exchanges damaged banknotes and coins for undamaged ones and withdraws worn out banknotes and coins from circulation, destroys them and replaces them with new ones. Cash handling is carried out by the Bank at its seven regional branches, located in accordance with the regional structure of the Czech Republic, and at selected branches of a licensed commercial bank.

### **1.3.2 Provision of payment and settlement facilities**

As part of its function of controlling and co-ordinating the payment system, the Czech National Bank has introduced standardised payment instruments; it also issues and updates the General Terms and Conditions (see Section 1.1) as a model for the commercial conditions of the banks. The Bank regulates the domestic payment system by decree and operates the Clearing and Settlement Centre at the heart of the system. It evaluates and uses the information obtained from the interbank payment system to monitor banks' activities and to exert influence on the banking system by means of monetary policy instruments (such as minimum reserves or short-term loans).

The Czech National Bank is the the "banker to the banks" and the "banker to the Government". To support the interbank payment system, the Bank is required to maintain an account for each bank. These accounts are used by the banks to carry out all interbank payments in the Czech Republic. The Bank also maintains accounts and provides payment system services for the

state budget institutions. Furthermore, it can maintain accounts for other legal entities such as international institutions. The Czech National Bank, like other banks, provides these services on a contractual basis in accordance with its terms and conditions by means of its seven regional branches, which share a common computer network.

### **1.3.3 Monetary policy and payment systems**

Under the National Bank Act, the primary task of the Czech National Bank is to safeguard the stability of the Czech koruna. To carry out this task the Bank:

- defines and implements monetary policy;
- issues banknotes and coins;
- controls the money supply;
- regulates the payment system and interbank clearing and settlement and ensures their smooth and efficient operation;
- supervises the banks and ensures the development of a secure and effective banking system in the Czech Republic; and
- performs other activities specified in both the National Bank Act and other legal documents.

Since 1 January 1998 the monetary policy framework has been inflation targeting. Under this scheme, the National Bank sets short and medium-term inflation targets. In December 1997 two targets were set – one short-term target for the end of 1998 (6%  $\pm$ 0.5 percentage point) and one medium-term target for the end of 2000 (4.5%  $\pm$ 1 percentage point). In November 1998 another short-term target was defined, namely for the end of 1999 (4.5%  $\pm$ 0.5 percentage point). Targets are expressed in terms of so-called net inflation. Net inflation represents the movement of

unregulated prices (i.e. the consumer price index (CPI), adjusted for regulated prices), further adjusted for the effect of indirect taxes or subsidy elimination.

The framework of inflation targeting is characterised by a forward-looking approach. Monetary policy is focused on a conditional inflation forecast, which takes into account the future development of a broad set of factors influencing inflation, such as domestic demand, net exports, current account, labour market, wages, monetary aggregates, interest rates, exchange rates, import prices, inflation expectations, etc. Monetary policy decisions are derived from envisaged deviations of inflation forecasts from the respective inflation targets.

The Czech National Bank implements the monetary policy decisions solely by means of market instruments, as administrative instruments are incompatible with the inflation targeting regime. The following monetary policy instruments are used:

#### *Policy instruments*

The main policy instrument is a two-week repo tender, which is announced daily; the rate used for this facility is the two-week repo rate, which is the most important policy rate of the Czech National Bank. The supplementary policy instrument is a three-month repo tender, which is usually announced weekly; the rate used for this facility is the three-month repo rate, which is the market rate prevailing at the time of the announcement.

#### *Automatic facilities*

The deposit facility is a non-collateralised overnight deposit with the Czech National Bank; the rate used for this facility is the discount rate. The marginal lending facility is a collateralised overnight deposit with the Bank; the rate used for this facility is the lombard rate.

#### *Fine-tuning instruments*

In order to conduct monetary policy, to intervene in the markets or to smooth intraday volatility, the Czech National Bank may, at its discretion, initiate:

- individual money market operations;
- foreign exchange operations; and
- securities operations.

#### *Structural operations*

The Czech National Bank may issue its own short-term securities ("CNB bills") from time to time, which may be used as eligible collateral in its own operations or in commercial bank operations. Non-residents cannot purchase these bills.

#### *Reserve requirements*

The Czech National Bank uses reserve requirements in order to control the liquidity of the banking sector and to secure the stability of the money market, especially with regard to short-term interest rates.

The implementation of monetary policy is supported by the effective operation of the payment system controlled by the Czech National Bank.

### **1.3.4 Main projects and policies being implemented**

The Clearing and Settlement Centre (see also Section 3.2) came into operation in March 1992 with so-called "cold" backup – namely the possibility of reprocessing all of the day's data on a smaller computer at the Czech National Bank. However, with the growing number of transactions processed each day, the establishment of a better and more reliable backup became a matter of urgency. Final acceptance tests were successfully

completed in October 1996. Live operation of the new backup system started at the beginning of 1997.

In connection with this project, a new method of communication and data security was prepared. (The standard of communication in Czechoslovakia was very poor at the time the Clearing and Settlement Centre was set up, so that banks were allowed to deliver data on magnetic tape.)

In 1997 a project for a new information system for the Clearing and Settlement Centre was launched. The information system will provide the participants with information about all important parameters of the processing, including current balances, individual transactions, queued payments and other operational aspects. The design of the system is based on extranet technology using strong encryption features and authentication tokens. Live operation of the information system started at the beginning of 1999. The Czech National Bank is also modernising the TKD System (see Sections 4.1.4 and 4.3), the latest version of which has been in operation since May 1995.

There are also new developments concerning the Prague Stock Exchange. In addition to the introduction of continuous trading, the Stock Exchange Register has developed a new system for registering securities and settling trades. The Czech National Bank is co-operating with the Prague Stock Exchange on these projects.

#### **1.4 The role of other private and public sector bodies**

##### **1.4.1 The Czech Post Office**

The postal payment system is operated by the Czech Post Office, which is a state institution. The Czech Post Office provides cash-based money transfer services for a major part of the population, including the acceptance of cash to be paid into accounts at banks and the paying-out of cash remitted

from bank accounts (see Table 14). Through its 3,500 operating units, the Czech Post Office processed 210 million transactions amounting to CZK 500 billion (ECU 13.92 billion) in 1997. The Czech Post Office does not take deposits or maintain accounts and does not perform the functions of a bank. Therefore, it is not a direct member of the interbank payment system. For the transfers of funds to and from banks it uses the services of commercial banks.

##### **1.4.2 Payment card companies**

The banks in the Czech Republic co-operate within the framework of the Association for Bank Cards, which was founded in 1991 with the aim of increasing the use of payment cards in general. At the end of 1997 the Association had 21 members. It co-ordinates all commercial activities related to payment cards, especially the expansion of cashless shopping, the location and networking of ATMs and connections to Europay, VISA and other card companies. It also addresses security and standardisation issues.

Services for banks related to payment cards, which include maintaining ATMs and carrying out the functions of an authorisation centre, are provided by a specialised joint stock company. The majority of the shares in the company are owned by the banks.

In 1995 the Association for Smart Cards was set up, with both banks and non-bank institutions as members. The Association's task is to develop a unified technology for smart cards and to promote their use in the Czech Republic.

## 2 Payment media used by non-banks

### 2.1 Cash payments

The most common means of payment, used in particular by individuals, is banknotes and coins. At the end of 1997 banknotes and coins in circulation amounted to CZK 119.3 billion (ECU 3.32 billion). Banknotes and coins are accepted and distributed by banks and Post Office branches, and distributed via ATMs throughout the Czech Republic. Under the laws concerning legal tender, non-banks are obliged to accept banknotes without restriction, while the maximum number of coins that have to be accepted is limited by a decree of the Czech National Bank.

Since the Czech Republic was formed in 1993, banknotes and coins have been issued with advanced security features corresponding to European standards. Banknotes are issued in eight denominations (CZK 20, 50, 100, 200, 500, 1,000, 2,000 and 5,000) and coins in nine denominations (CZK 0.10, 0.20, 0.50, 1, 2, 5, 10, 20 and 50).

### 2.2 Non-cash payments

#### 2.2.1 Deposits

Banks provide current accounts that can be used to make cashless payments. It is not common for deposit accounts to be used to make payments. In 1997 banks maintained 5.9 million current accounts (on which 463.9 million transactions were settled for a total amount of CZK 25,053 billion (ECU 697.64 billion) – see Tables 10 and 11) and 2.64 million deposit accounts.

#### 2.2.2 Payment methods

As regards the total number of cashless payments in 1997, credit transfers accounted for 82.40%, direct debits for 3.80%, cheques for 2.99% and payment cards for 10.81%. In terms of the total value of cashless payments in that period, credit transfers accounted for

95.25%, direct debits for 1.54%, cheques for 2.93% and payment cards for 0.28%.

#### *Credit transfers*

Credit transfers are the dominant form of cashless payment in the Czech Republic. On receipt of a payment order from a customer, a bank will debit the customer's account and transfer the funds. This method is used by legal entities and investors, in particular to settle their contractual liabilities. However, credit transfers can be used for all kinds of payments. Banks also carry out recurring payments for their customers (e.g. for the payment of rent and water or gas bills) based on customers' standing orders. As noted in the introduction, standardised codes have been introduced to define the type and nature of the payment.

Customers can present their payment orders in electronic or in paper form. When the electronic form is used, the payment orders are sent to the bank on diskette or by remote data transfer. Some banks have also introduced home banking services. The electronic form is often used for credit transfers of regularly recurring amounts or for frequent payments (e.g. wages, pensions and social security payments). In recent years the share of customers' orders sent to banks in electronic form has grown markedly.

The Czech National Bank has standardised the design of paper forms; customers can present a universal payment order for a credit transfer at any bank with which they hold an account. The bank branch will then transform the paper-based data into electronic data records; in the interbank payment system the data can only be presented in electronic form.

If the transfer is between accounts held at the same bank, the payee's account is usually credited on the same day as the payer's account is debited. In the case of interbank credit transfers the payee's account is usually

credited on the next or, at the latest, on the second working day after the payer's account has been debited. The time between the presentation of a payment order and the debiting of the payer's account is subject to the contract between the customer and the bank. Execution times vary from bank to bank; they are influenced by the bank's branch network and its technical infrastructure.

#### *Direct debits*

In the Czech Republic direct debits are commonly used for certain types of payments, such as energy and telecommunications charges, for liabilities arising from the processing of cheques and payment cards (see below) or for payments arising from some commercial contracts. In contrast to credit transfers, direct debits are presented by the payees to their banks for collection. Again, the payment order can be given to the bank in electronic or in paper form, but in either case the bank will send the direct debit request to the payer's bank electronically through the interbank payment system. After being authorised by the payer, the payer's bank settles the payment by means of a credit transfer. Without prior authorisation, the bank does not carry out the payment and returns the direct debit request to the bank of the payee. The payer's authorisation can be a general one, without any restrictions, or the payer can specify the exact account number(s) of the payee(s) and/or the maximum amount to be collected. The bank of the payer does not examine the agreement, if one exists, concerning the authorisation between the payer and the payee. As with credit transfers, standardised numeric codes are used to identify the nature of the payment. These include special codes used within the interbank payment system, for example, by the payee's bank to indicate that the direct debit payment is related to a cheque or payment card transaction or by the payer's bank to confirm the authorisation of a debit operation.

#### *Cheques*

In the Czech Republic the use of cheques has traditionally been insignificant. Until 1989 cheques were predominantly used for withdrawing cash from banks and only cheques issued by the Czech State Savings Bank were used for making purchases; however, since 1990 newly established banks have started to issue cheques. Payment by cheque is regulated by the 1950 Bills and Cheques Act, which is based on the Geneva Convention, and by interbank agreements.

Banks issue and accept domestic guaranteed cheques, private cheques (personal, non-guaranteed cheques), bank cheques and eurocheques. Domestic guaranteed cheques are personal cheques presented with a guarantee card and can be used to make face-to-face payments or to make cash withdrawals. Payments with these cheques are guaranteed (as are eurocheques) up to the amount of CZK 6,500 per cheque; a customer may present up to 10 cheques at a time. Domestic guaranteed cheques were introduced by banks in 1995, in co-operation with the Czech National Bank, in order to promote the use of cheques. The cheques and the guarantee cards have a uniform appearance and incorporate modern security features against counterfeiting. Banks issuing and accepting this instrument are members of the Association of the Guaranteed Cheque System; at the end of 1997 the Association had 20 member banks.

Private (personal, non-guaranteed) cheques are used for payments of larger amounts or to withdraw cash from bank accounts. Bank cheques are cheques drawn by a bank on itself. The cheques are purchased by the payers and given to the payees, who present them to their banks for collection. Banks are taking steps to broaden the use of bank cheques instead of cash settlement for large amounts. Eurocheques are issued by three large Czech banks and accepted by 26 banks. In the Czech Republic eurocheques are mainly used by foreigners. The settlement of eurocheques is governed by the rules of Europay.

While guaranteed cheques and bank cheques are truncated (i.e. they are not physically returned to the payer's bank, but remain in the bank where they were presented), some banks require private (personal, non-guaranteed) cheques to be physically returned for approval. Cheques are archived by the banks either as originals or on microfilm. Guaranteed cheques are personalised using optical character recognition (OCR) printing, but they are not yet optically processed.

There is no separate cheque clearing in the Czech Republic. Cheques are processed either within a bank's internal network (if the payee and payer are customers of the same bank) or through the interbank Clearing and Settlement Centre. The settlement of guaranteed cheques differs from the settlement of non-guaranteed cheques. Because the payment is guaranteed by the payer's bank, the account of a merchant which has accepted a guaranteed cheque is credited directly once it has presented the cheque to its bank. This bank will then collect the amount of the cheque from the payer's bank by direct debit through the interbank clearing. Non-guaranteed cheques may also be settled on the basis of a direct debit instruction from the payee's bank or they may be sent physically for collection, with the funds then sent from the payer's to the payee's bank by credit transfer; however, either way, the payee's account is only credited after the funds have been received from the payer's bank.

Banks also sell travellers' cheques issued by some of the large international companies (e.g. Citicorp and Thomas Cook). The use of travellers' cheques is regulated by the Commercial Code.

#### *Payment cards*

Payment cards have been used in the Czech Republic since 1990. Mostly banks issue debit cards (Eurocard/MasterCard and VISA). American Express also issues its credit cards in the country. Some non-banks issue single-purpose prepaid cards.

#### *(i) Credit cards*

Until 1997 credit cards were not issued in the Czech Republic. Nowadays two commercial banks issue credit cards. There are only about 1,700 credit cards in circulation.

#### *(ii) Debit cards*

Some banks issue their own debit cards, such cards mainly used for making cash withdrawals from ATMs. Most banks, however, issue cards under licence from Eurocard/MasterCard or VISA. These cards have been used increasingly during the past five years. There are currently some 1,500,000 cards in circulation, which can be used at more than 13,000 retail outlets. Non-banks usually accept cards using paper-based procedures, but some POS terminals have been installed that are connected to the network with online authorisation. Cards can also be used for cash withdrawals at ATMs. Customer fees and terms and conditions for merchants differ across banks.

Eurocheque cards (as well as eurocheques) are issued by three banks at the moment.

(Only 831 eurocheque cards were in circulation at the end of 1997.)

#### *(iii) Non-bank cards*

Non-banks (such as petrol companies and the telephone company) issue various types of single-purpose prepaid cards that can be used to purchase their goods and services.

#### *(iv) Automated teller machines (ATMs)*

Offline ATMs were used from January 1990 until mid-1998 by one bank, which was the first bank to issue payment cards to its customers. Online ATMs are currently used by some banks in the Czech Republic. These online ATMs are connected through two different networks, which accept Europay and VISA products. In 1997 there were 1,322 ATMs and 2,985 EFTPOS terminals

accepting domestic and foreign payment cards.

(v) *Settlement of transactions*

Eurocard/MasterCard transactions are cleared in the single card-clearing system, which uses “third-party” instructions (see Section 3.1.3) to inform the Czech National Bank’s Clearing and Settlement Centre of the net amounts to be settled. VISA card transactions are cleared through one relevant commercial bank.

### 2.3 Recent developments

Further developments in cashless payments in the Czech Republic are expected. For example, many banks are introducing home banking, telephone banking, Internet banking and other new payment services. Czech banks are also adopting the latest international

standards such as new S.W.I.F.T. subsets or data interchange based on EDIFACT. (The Czech National Bank has also embarked on a large project that will enable it to gather statistics from commercial banks based on electronic data interchange (EDI) standards.) As far as card schemes are concerned, preparations are under way to introduce chips for bank cards (mainly for an electronic purse scheme) and in September 1995 two banks launched pilot electronic purse projects, namely CLIP (the Europay system) and MONET (the system taken over from VISA). In view of past developments (the share of card transactions in the total number of bank operations increased by 3.3% in 1997 compared with 1995) and given the advantages of a multi-purpose chip card, a further increase in the number of bank payment cards and in the number of retailers willing to accept the cards can be expected in the years to come.

## 3 Interbank exchange and settlement systems

### 3.1 General overview

As a result of the political changes at the beginning of the 1990s there was a very rapid development not only of the market economy, but also of the banking market in former Czechoslovakia. This made it necessary to introduce a modern, secure, reliable and effective interbank payment system. The leading role in the project to achieve this was taken over by the central bank. With the co-operation of commercial banks, the central bank prepared an international tender, through which a vendor of both hardware and software was chosen and the detailed specification of the future system was defined. In a very short time (only 11 months after the contract had been signed) the necessary technology was installed and the software completed. On 8 March 1992, after 14 months of development, implementation and testing, the live operation of the Clearing

and Settlement Centre at the central bank started.

The system, now owned by the Czech National Bank, is the only interbank payment system in the Czech Republic. Use of the system and direct participation in it is obligatory for all licensed commercial banks. The system processes all transactions, regardless of whether they are for high or low values and of whether they are initiated directly by a customer’s credit transfer order or indirectly as a result of cheque, debit card or stock exchange transactions.

#### 3.1.1 Basic principles of the interbank payment system

The Czech National Bank’s interbank payment system is based on the following principles:

- real-time gross settlement (RTGS);

- obligatory direct participation by all commercial banks;
- direct bilateral connections between the head offices of commercial banks and the Clearing and Settlement Centre;
- settlement on accounts held at the central bank (which also serve as the accounts on which reserve requirements are held);
- the irrevocability of all transactions accepted by the system;
- no overdrafts are permitted and no intraday credit is provided;
- uncovered transactions are not settled, but held in a queue (with two priority levels);
- the processing of different types of transactions (credit transfers, credit transfer cancellations, information requests); and
- the granting of overnight credit by the Czech National Bank.

Real-time gross settlement on the basis of full cover for each payment was chosen in order to minimise the systemic risk. Irrevocability means that once the payment transaction has been accepted by the Clearing and Settlement Centre it cannot be cancelled or recalled.

### **3.1.2 Legal aspects**

The obligation to use only one uniform interbank payment system on an RTGS basis was stipulated by the Czech National Bank in the last amendment to the Banking Act (1998). Under this Act all banks in the Czech Republic are obliged to perform all interbank transfers exclusively by means of the Czech National Bank's Clearing and Settlement Centre.

The rights and obligations of commercial banks and of the central bank concerning the

operation of the Clearing and Settlement Centre are set out in the 1992 Interbank Payment System and Accounting of Banks Decree issued by the Czech National Bank. The accounts used to settle interbank transactions are held at the Czech National Bank on the basis of the account agreements signed with the commercial banks in accordance with the Commercial Code. These agreements stipulate uniform legal and technical conditions for keeping accounts and for the exchange and processing of interbank payment systems data for all banks. In line with the last amendment to the Banking Act, an amendment to the Interbank Payment System and Accounting of Banks Decree is also expected. Work on the modification of the agreements on accounts used to settle interbank transactions is currently in progress to accommodate new features of the Clearing and Settlement Centre (see Section 1.3.4).

### **3.1.3 Participation in the system**

Pursuant to the Banking Act and the Czech National Bank Decree, only licensed banks can be direct participants in the interbank payment system and all licensed banks must be direct participants. The Clearing and Settlement Centre, located at the head office of the Czech National Bank, communicates only with the head offices of the commercial banks. Each bank has only one interbank payment account with the Czech National Bank. This means that banks must process data from their own branches internally and extract those transfers from these data directed to other banks. Only such transactions can be handed over to the Clearing and Settlement Centre. Internal transfers between the branches of a bank are processed in the internal system of this bank without any involvement of the Czech National Bank.

Under bilateral agreements with the Bank, certain financial institutions are allowed to participate in the system with a special status, as so-called third parties. These third parties are non-bank financial institutions such as

card payment clearing houses and the UNIVYC (formerly the Stock Exchange Register), which play an important role in the market. Third parties have no interbank payment system account with the Czech National Bank, but may (with the permission of the direct participants concerned) submit payment orders to the Clearing and Settlement Centre to transfer funds between direct participants (e.g. to settle the net positions arising from card payment clearing or payments relating to stock exchange transactions).

#### **3.1.4 Types of transactions handled**

The following types of transactions are handled in the interbank payment system:

- accounting transactions (i.e. funds transfer instructions);
- non-accounting transactions (e.g. direct debit requests – see Section 2.2.2); and
- information and control transactions.

In turn, accounting transactions can be credit transfers submitted either by direct participants (see Section 2.2.2) or by third parties (see Section 3.1.3). Moreover, banks can attach one of two priority levels to transfer instructions: transfers can either be priority transactions or standard transactions.

#### **3.1.5 Description of the Clearing and Settlement Centre's activities**

The Clearing and Settlement Centre handles all domestic currency interbank payments in the Czech Republic. For this purpose, every bank has a special account with the Czech National Bank through which all interbank transfers, irrespective of whether they are initiated by the bank itself or sent by the bank on behalf of its customers, are processed and settled. Funds placed on these accounts count towards the minimum reserves to be held at the Czech National Bank.

During the accounting day banks send data to the Clearing and Settlement Centre in electronic form in accordance with fixed conditions determined by the Czech National Bank. Data can be delivered either by telecommunications network or physically on tapes or diskettes.

After acceptance, the Clearing and Settlement Centre validates all data, irrespective of whether they comply with the formal standards. If data are of the required quality, the settlement process begins. During that process the account of the payer's bank is checked to see whether it contains sufficient funds to cover the transactions submitted. If the result of the check is positive, the transfers are immediately settled by debiting the payer's bank account and crediting the payee's bank account.

If funds are insufficient to cover a transaction, it is "suspended" by placing it in the so-called "holding queue". The respective bank is immediately informed about this by the Clearing and Settlement Centre so that it can obtain sufficient cover, for example, by waiting for incoming funds transfers that will increase its balance or by borrowing from another bank or from the Czech National Bank. (Note that overdrafts on the account are not allowed and that the Czech National Bank does not provide intraday credit, but the bank may be able to borrow overnight funds from the Czech National Bank.) If, for any reason, the bank is not able to obtain the required funds by the end of the accounting day, the transfer instructions in the "holding queue" are rejected by the system and returned to the sending bank.

Processed transactions are transmitted to banks in electronic form (physically or by telecommunications network, as requested by the bank). The whole process is monitored by the Clearing and Settlement Centre, which has real-time information about the balances on all interbank payment accounts.

The operating hours of the accounting day begin at 4 p.m. on the previous working day

(D - 1) and the cut-off time is at 3 p.m. on the following working day (D). The time between 2.30 p.m. and 3 p.m. on day D is used for the "fine-tuning" of balances on the banks' accounts. For this purpose, the banks can obtain funds on the interbank money market.

### 3.1.6 Pricing

The pricing policy is determined by the Czech National Bank to ensure cost recovery for the Clearing and Settlement Centre. At the same time, the pricing structure is designed to encourage banks to spread optimally the delivery of the data to the Clearing and Settlement Centre across the day. The time schedule of the accounting day and the related charges have been amended several times during the relatively short existence of the system. The aim has not only been to extend the operating hours, but also to support the Czech National Bank's efforts to increase the punctuality of the end-of-day procedure.

With regard to transaction volumes, the Czech National Bank encourages the delivery of payment instructions as early as possible in order not to overload the system at the end of the accounting day. (The throughput of the system varies from 150,000 to 190,000 transactions per hour, depending on the type of transaction.) The current charge for sending banks is therefore set at the very low level of CZK 0.40 (ECU 0.01) per item at the beginning of the accounting day,

whereas at the end of the day, when only high-value bank-to-bank transactions are expected, the charge is considerably higher (CZK 200 (ECU 5.569) per item), as shown in the table given below.

### 3.2 Main projects

When the system started there were only 200,000 transactions per day and it was not very difficult in the event of a system crash to reprocess the whole accounting day – in spite of the fact that only a smaller machine of the same type had been installed for this purpose. However, as the volume of transactions increased, it became clear that this arrangement was not robust enough to provide the necessary backup facilities. Therefore, at the end of 1995 the Czech National Bank started a new project to provide a real-time backup facility based on the technology of "disk mirroring". Final acceptance tests for the whole project were successfully completed in October 1996.

Because of the growing need to transmit data securely, the Czech National Bank initiated another large project at the end of 1995, involving changes in transaction formats, in types of transmission (a change in the network standard) and in data security. The project is expected to be finished by the end of 1999.

**Table**

#### Charges for payer banks

(D = settlement day)

Time	Price (CZK)	Price (ECU)
4 p.m. to 9.30 p.m. on D - 1	0.40	0.010
7 a.m. to 8 a.m. on D	0.80	0.022
8 a.m. to 11.30 a.m. on D	1.50	0.042
11.30 a.m. to 12.30 p.m. on D	5.00	0.139
12.30 p.m. to 1.30 p.m. on D	20.00	0.557
1.30 p.m. to 2.30 p.m. on D	200.00	5.569

### **3.3 Provision of clearing and settlement services by the Czech National Bank**

#### **3.3.1 The use of accounts held at the Czech National Bank for payment transactions**

For the operation of the interbank payment system, the Czech National Bank maintains a non-interest-bearing account in Czech korunas for every bank in the Czech Republic. Balances on these accounts also make up the reserve requirements, which are mandatory in the Czech Republic. Minimum reserves are set at explicit percentages of deposits averaged over 14-day cycles (5.0% in February 1999). Banks are allowed to use minimum reserves for interbank payments, but, over the cycle, have to meet the minimum requirement. No overdrafts are allowed on the accounts and no intraday credit is provided, so that a bank has to obtain any funds it needs to cover its interbank payments from the market or by means of an overnight credit line from the Czech National Bank.

Banks use the accounts to settle their interbank payments in domestic currency. The Czech National Bank executes orders for transfers of funds from these accounts on the basis of instructions from the account-holding bank. Payments from the accounts can also be originated by other banks, or even by approved third-party organisations which have no account with the Czech National Bank, but only if the account-holding bank has given prior written permission.

#### **3.3.2 The role of the Czech National Bank in the RTGS system**

The Clearing and Settlement Centre for the interbank payment system is based on RTGS principles. All payments between banks in the Czech Republic are processed through this system. Apart from standard credit transfers, there are also funds transfers resulting from the use of cheques and from transactions in the securities market, as well as the

settlement of the overall amounts resulting from bank payment card transactions.

The Czech National Bank is responsible for the operation and regulation of the interbank RTGS system. The principles of the system are laid down in a Czech National Bank Decree. In addition, the Bank sets the conditions for the maintenance of the interbank payment system accounts, the pricing policy and technical data standards.

### **3.4 International transfers**

#### **3.4.1 General overview**

In the past there were many restrictions on cross-border payments. These restrictions derived from the hard currency system of former Czechoslovakia. This was the result of the domestic political system, of restrictions imposed by western countries and of the fact that the Czech koruna was not convertible after the Second World War. The subsequent dismantling of the hard currency regime was followed by the introduction of a new Foreign Exchange Act in October 1995, which, among other things, introduced the external convertibility of the Czech koruna. Under the Act there are still some special restrictions on the capital account of the balance of payments, affecting, in particular, transfers by residents connected with foreign securities, financial derivatives and loans and also transfers by non-residents (other than direct investments). These transactions can only be carried out with a hard currency licence or with hard currency authorisation issued by the Czech National Bank and the Ministry of Finance. The import and export of banknotes and coins are not restricted.

Cross-border payment transactions are carried out by banks licensed to execute foreign payments. (At the end of 1997, 45 of 50 banks and branches of foreign banks held such a licence.) Cross-border payments are also processed by the main international payment card companies, while the Czech Post Office intermediates cross-border transfers in foreign

currencies on the basis of international postal regulations. The Czech National Bank, which is in charge of holding hard currency reserves, is also active in international payments.

### **3.4.2 Operations performed by banks**

Czech banks have entered into many bilateral correspondent banking relationships in order to provide international services. Among the banks offering such services, 36 are participants in S.W.I.F.T. Foreign banks that are active in international transfers also use their own networks and the correspondent relationships of their head offices. (At the end of 1997 there were 10 branches and 10 subsidiaries of foreign banks in the Czech Republic, while four Czech banks had branches abroad.)

Apart from “clear transfers” to and from other countries, banks also process “documentary transfers” such as letters of credit and appeals, using rules and other procedures laid down by the International Chamber of Commerce. The final clearing and settlement of documentary transfers take place in the same way as for clear transfers.

As noted above, banks process international payments using accounts which they maintain with foreign correspondent banks or using their own networks in the case of foreign banks’ branches. In most cases the transfers are sent via the S.W.I.F.T. network. If a bank in the Czech Republic receives an incoming payment instruction denominated in Czech korunas which is to be credited to an account held at another bank, then the further transfer is carried out through the Czech National Bank’s domestic currency Clearing and Settlement Centre. (Foreign currency transfers are not processed by the Centre.)

One large Czech bank is a member of the international Banking Association for Central and Eastern Europe (the former Clearing Bank Association), which provides payment system services in euro (in ECUs up to 31 December 1998) for countries in central and eastern Europe. This activity will be

expanded in the course of 1999 with the joining of some western banks.

### **3.4.3 Role of the Czech National Bank in the international clearing and settlement arrangements between the Czech and Slovak Republics**

The new system for domestic interbank transfers was implemented in 1992 and was used by all banks licensed in former Czechoslovakia, which has now become the Czech and Slovak Republics. For about five weeks after the division of Czechoslovakia at the beginning of 1993 there was a monetary union between the two new Republics using the former Czechoslovak currency and there continued to be a single clearing and settlement system. However, in February 1993 these arrangements were abandoned and two new domestic currencies were introduced (the Czech and Slovak korunas). Simultaneously a new clearing centre was founded in Slovakia, while the former federal Clearing and Settlement Centre remained within the new Czech central bank, the Czech National Bank.

Just before the currency was split, the Payment Treaty was signed by the Czech and Slovak Republics. That Treaty covered both cross-border payments arising from contracts entered into during the time of the federation (so-called “old block” payments) and new transfers, which were initiated after the split of the federal state (so-called “new block” payments).

The international payment system between the Czech and Slovak Republics was based on the simple principle of transferring payments from one domestic clearing and settlement system to the other, using a third currency as the settlement currency (the ECU was chosen). It was quite easy to introduce such a system, as the two countries had very similar domestic payment systems to which all existing banks were connected. Under the arrangement, “old block” payments were converted at an exchange rate of CZK 1 to SKK 1, while “new block” payments were

denominated in the so-called “clearing ECU” (which could fluctuate by up to 5% around the market ECU, the actual exchange rates between the clearing ECU and domestic currencies being set by the central banks of the two Republics).

The exchange of payment instructions between the two countries took place once a day, with only credit transfers being allowed. Cross-border transactions issued by a bank in one country were first delivered (together with domestic payments) to the domestic clearing centre. The payments, denominated in domestic currency, were checked and, if sufficient cover was available, the corresponding domestic currency amount was debited from the sending bank’s account and credited to the account of a “virtual” clearing bank called CLEA, which was an integral part of the general ledger of the Czech National Bank. The cross-border payments were then converted into ECUs (still in the first country) and the transactions added to a file, which was transmitted at a specified time to the second country’s virtual clearing bank, also called CLEA. In the receiving country’s clearing and settlement

system the conversion from ECUs into domestic currency took place and the transaction was transmitted from the account of the CLEA bank to the payee’s bank.

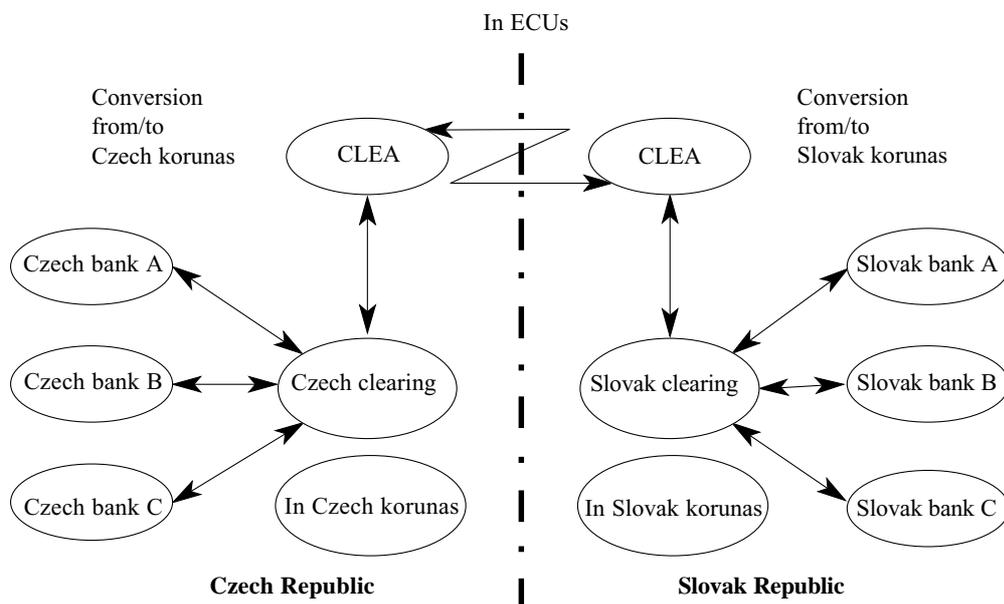
The system was supported by the Ministries of Finance of both states, which settled the net amounts transferred between the two clearing centres. For this purpose, each side offered the other a credit line of up to ECU 130 million, which was guaranteed by the state. If the actual balance at the end of the month was higher than the credit limit, the difference between the limit and the actual balance was settled between the two countries by a transfer in convertible currency.

The system functioned smoothly for more than two and a half years, processing over 10,000 transactions daily. However, in October 1995 the arrangement between the two clearing centres was cancelled in anticipation of the Czech Republic’s membership of the Organisation for Economic Co-operation and Development (OECD). (One of the OECD rules stipulates that members are allowed to have only one

CZ

**Chart I**

**The payment system between the Czech and Slovak Republics**



exchange rate between their domestic currency and other currencies, a rule which the clearing arrangement between the two countries would have contravened.) Since then, payments between the Czech and Slovak Republics have been handled in the same way as all other international payments.

#### **3.4.4 Foreign cheques and payment cards**

Eurocheques, bank cheques and payment cards are instruments commonly used for making international payments.

Eurocheques are used in the Czech Republic by foreign visitors for shopping and for settling bills for accommodation and other services. They can be used to make purchases in retail and service outlets, especially in the larger cities, or encashed at 26 banks (at their 1,300 branches) and at 600 other places (such as bureaux de change). In 1997 foreign visitors to the Czech Republic used about 110,000 eurocheques. (In addition to eurocheques, eurocheque cards are used by foreign visitors to the country.) For Czech

customers, eurocheques are issued by three large banks and in 1997 more than 1,500 such eurocheques were used abroad. The clearing and settlement of eurocheques are performed by the national Eurocheque Clearing Centre operated by one relevant commercial bank.

Foreign currency bank cheques, which are guaranteed by banks, are widely used by Czech customers of banks to make payments abroad. Often they are used in cases where the payer does not have precise details of the beneficiary's bank account (and thus cannot make a direct credit transfer) or instead of a letter of credit.

Foreign visitors very often use payment cards to make payments and to withdraw cash from domestic ATMs, VISA and Eurocard/MasterCard being the cards which are most widely accepted. Czech customers use these types of cards for payments abroad. Transmission and clearing of such card transactions are performed by the card companies concerned.

## **4 Securities settlement system**

### **4.1 Institutional aspects**

#### **4.1.1 General legal aspects**

The functioning of the securities markets in the Czech Republic is governed by a range of laws defining the structure and the operating rules of the securities markets, as well as the role of the public and private sector bodies involved. The relevant laws and their main objectives are presented below.

The Commercial Code applies generally to the functioning of all types of companies.

The 1992 Securities Act governs major issues related to securities issuance, rights and obligations of securities market participants and tasks of the governmental bodies. The Act also regulates the functioning of the

clearing and settlement institutions. Under this Act, the clearing and settlement institutions are subject to licencing by the Securities Commission and have to meet prescribed administrative, technical and personnel requirements. The 1998 amendment also covers derivatives activities.

The 1992 Bonds Act contains rules on bond definition, types of bonds, issuance conditions, rights and obligations of the issuers and possibilities of yield determination and bond redemption.

The 1992 Stock Exchange Act governs the establishment and the activities of the Prague Stock Exchange (PSE). The Act stipulates the rights and obligations of the bodies of the PSE and the rights and duties of their members, and also regulates stock exchange

trades (including the conditions for permission to conduct these trades). This Act also stipulates the conditions for accepting securities, the settlement of trades, the resolution of disputes and the state supervision provided by the Securities Commission through the Stock Exchange Commissioner.

The 1992 Investment Funds and Investment Companies Act regulates the activities of financial institutions which are supervised by the Securities Commission. The main activities of investment funds include the purchase of securities, real estate and other assets and the taking of deposits. They collect funds from investors by issuing shares. Investment companies collect funds by selling investment certificates and setting up open-ended funds. Both investment companies and investment funds played an important role in the first and second waves of voucher privatisation (i.e. the privatisation of state-owned organisations from 1992 to 1995).

The 1998 Securities Commission Act governs the organisation and the objectives of the Securities Commission, which is the regulatory authority for the securities markets. Furthermore, the Act defines the rights and obligations of participants in these markets, the administrative proceedings for the licensing of securities issuance and co-operation between the Securities Commission, the Czech National Bank and the Ministry of Finance.

Further amendments to both the Securities Act and the Bond Act are being prepared in connection with the accession of the Czech Republic to the EU.

#### **4.1.2 The registration of securities in the Czech Republic**

According to Czech law, sub-registers are not allowed. Therefore, all securities in the Czech Republic are registered in two registration centres:

- the TKD System (see Sections 4.1.4 and 4.3) is used for the registration of all book-entry securities with a maturity of up to one year; and
- the Securities Centre (see Section 4.1.5) is used for the registration of book-entry equities and securities with a maturity of more than one year.

#### **4.1.3 The settlement of securities in the Czech Republic**

All securities in the Czech Republic are settled through three independent securities settlement systems, one for the settlement of short-term securities with a maturity of up to one year and two for the settlement of all other securities:

- the TKD System (see Sections 4.1.4 and 4.3) settles short-term fixed income securities with a maturity of up to one year;
- UNIVYC (see Sections 4.1.6 and 4.4) settles securities listed on the Prague Stock Exchange (PSE), selected according to the rules of this institution; and
- the RM System (see Sections 4.1.6 and 4.5) settles all Czech publicly tradable book-entry securities.

#### **4.1.4 The role of the central bank**

##### *Operating the TKD System*

The Czech National Bank is responsible, by law, for operation of the TKD System, which is used for the issuance, registration and settlement of all short-term Treasury bills and the Czech National Bank bills (money market instruments). Private sector participants which issue short-term debt instruments may also use the TKD System (notably large banks and companies).

The TKD System was developed by the Czech National Bank as an in-house system and has been in use since May 1995. This system operates on the delivery-versus-payment principle.

*Settlement of interbank payment transactions arising from securities markets trading*

The Czech National Bank's Clearing and Settlement Centre for cash transfers (see Section 3) settles all interbank payments arising from securities trades processed in private sector bodies (see Section 4.1.6).

#### **4.1.5 The role of other public sector bodies**

*The Securities Commission*

The Securities Commission was established on 1 April 1998, in accordance with the Securities Commission Act. It is responsible for the regulation and supervision of the securities markets in the Czech Republic. It performs licensing in the fields of securities issuance and the provision of settlement services, assigns ISIN codes and authorises printing offices for the printing of securities. The Securities Commission is entitled to impose sanctions and fines on non-compliant institutions. It also regulates and supervises the activities of the Prague Stock Exchange and the RM System.

*The Securities Centre (SCP)*

The SCP is a central securities depository (CSD) founded by the Ministry of Finance, on the basis of the Securities Act. All shares and debt instruments issued with a maturity of more than one year are registered in book-entry form at the SCP. The SCP is responsible only for the registration of securities on individual securities accounts. It is not itself allowed to take part in securities trading or to provide a market-place for securities trading.

Both UNIVYC and the RM System are connected to the SCP, so that they can instruct the SCP to change the ownership of securities on the basis of realised trades.

#### **4.1.6 The role of other private sector bodies**

*The Prague Stock Exchange and UNIVYC*

The Prague Stock Exchange was established as a joint stock company in 1992. Its activities are regulated by the Stock Exchange Act and it is guided and supervised by the Securities Commission. The Prague Stock Exchange trades securities in the secondary market. The members of the Prague Stock Exchange are predominantly banks, investment companies and securities brokers. According to the rules of the Prague Stock Exchange, all members have to contribute to the Stock Exchange Guarantee Fund. The contributions are calculated according to special formulas and depend on the volume and risk of trades. All assets of the fund are held in cash.

According to the Stock Exchange Act, the Prague Stock Exchange is not allowed to provide clearing and settlement services. Therefore, it has established a subsidiary called UNIVYC (a clearing and settlement organisation), which is responsible for the clearing and settlement of all trades concluded on the Prague Stock Exchange. UNIVYC is directly connected to the Czech National Bank's Clearing and Settlement Centre, where the cash settlement of all payments relating to processed trade transactions is executed.

*The RM System*

The RM System was established as a joint stock company, pursuant to the provisions of the Securities Act, during the voucher privatisation period (see Section 4.1.1). The RM System is operated by the company that carried out the voucher privatisation. The activities and operations of the RM System are subject to supervision by the Securities Commission.

The RM System is a trading system, which intermediates the supply of and demand for all equities and securities with a maturity of more than one year, including securities which are not allowed to be traded on the Prague Stock Exchange (e.g. less liquid securities). It is also an over-the-counter (OTC) market.

The cash settlement is executed through one commercial bank commissioned by the RM System.

## **4.2 Summary information on securities markets**

### **4.2.1 Main features of different securities markets**

The securities markets are composed of the OTC money and capital markets for short and long-term debt instruments and the equity market for shares and unit trust issues. In the money market only Treasury bills issued by the Ministry of Finance and the Czech National Bank are traded, while in the capital market municipal and corporate bonds are also included.

### **4.2.2 Basic quantitative aspects**

In 1997 the value of transactions settled by UNIVYC amounted to CZK 901.3 billion (ECU 25.1 billion), that by the RM System to CZK 158.7 billion (ECU 4.4 billion) and that by the TKD System to CZK 7,735.0 billion (ECU 215.4 billion). The nominal value of the securities registered on the accounts in the TKD System was, in early 1999, approximately CZK 231 billion (ECU 6.4 billion) and the average daily turnover is about 100 transactions with a value of several tens of billions of Czech korunas.

### **4.2.3 Financial intermediaries operating in the securities markets**

Securities dealers, securities companies and investment firms operate as financial

intermediaries in the securities markets in the Czech Republic. They have to obtain a licence from the Securities Commission.

## **4.3 The TKD System**

### **4.3.1 Key regulations**

The TKD System (see also Section 4.1.4) is the system developed and operated by the Czech National Bank. It is used for the issuance, registration and settlement of all short-term Treasury bills and Czech National Bank bills. The Czech National Bank has issued specific rules on the functioning and participation in the TKD System. These rules regulate, with the aim of ensuring the smooth and efficient operation of the TKD System, the record-keeping method for securities and other activities of the system.

### **4.3.2 Participation in the system**

There are more than 30 agents (direct participants) in the TKD System, mostly banks and licensed securities brokers, which handle trades for around 240 clients (banks and large companies, including non-residents).

### **4.3.3 Types of transactions handled**

All securities with a maturity of up to one year are handled by the TKD System.

### **4.3.4 Transaction processing environment**

Communications between the direct participants and the TKD System are based on a real-time online network.

### **4.3.5 Settlement procedures**

The settlement of securities is carried out gross on a continuous basis. The TKD System enables settlement on the trade date (T).

Finality is reached at the moment of transfer of the securities to the asset accounts.

#### **4.3.6 DVP arrangements**

The system runs in real time with all direct participants connected online. When the instructions received are matched, the TKD System blocks the securities and sends a third-party payment instruction to the Czech National Bank's Clearing and Settlement Centre. If the funds transfer is not confirmed (e.g. if it is held in a "holding queue"), the securities remain blocked on the account of the seller. Only after the funds transfer has taken place is the TKD System notified electronically and the securities are then effectively transferred. If the transaction is not settled in the Clearing and Settlement Centre by the end of the accounting day, the transaction is rejected and the TKD System suspends the trade and blocked securities are released. The TKD System also enables free-of-payment transfers (i.e. a transfer of securities during which the TKD System does not ensure and monitor payments related to the change of a participant).

#### **4.3.7 Credit and liquidity risk control measures**

See Section 4.3.9.

#### **4.3.8 Pricing policies**

The pricing policy is determined to ensure cost recovery for the TKD System. The type and value of fees are stipulated by the Board of the Czech National Bank. The main fees are fees for admission, monthly participation, opening and maintaining a securities account and for securities transactions.

#### **4.3.9 Major projects and policies being implemented**

The Czech National Bank is modernising the TKD System, which has been in operation, in its latest version, since May 1995. In the light of acquired experience, it is intended to implement a new technology with a higher level of security in the course of 1999. The modernised TKD System will also provide an intraday collateralised credit facility for the interbank payment system (the Czech National Bank's Clearing and Settlement Centre).

### **4.4 Universal Securities Clearing Centre (UNIVYC)**

#### **4.4.1 Key regulations**

UNIVYC (see also Section 4.1.6) is a clearing and settlement organisation and is responsible for the clearing and settlement of all trades concluded on the Prague Stock Exchange. UNIVYC's activity is regulated by its internal rules and regulations, which are mandatory for the members of the Prague Stock Exchange (see Section 4.1.6).

#### **4.4.2 Participation in the system**

UNIVYC, as a subsidiary of the Prague Stock Exchange, does not have its own members, but the members of the Prague Stock Exchange use the services of UNIVYC as direct participants in the settlement process. Other entities have to use the services of a direct participant.

#### **4.4.3 Types of transactions handled**

UNIVYC handles the equities of companies listed in the Prague Stock Exchange and OTC trades, as well as the issuance of unit trusts and bonds.

#### **4.4.4 Transaction processing environment**

Communications between the direct participants and UNIVYC are based on a real-time online network.

#### **4.4.5 Settlement procedures**

Securities settlement is carried out on a gross basis for all kinds of trades and is provided in batches in two cycles (twice per day).

Cash settlement for stock exchange trades concluded on the central market is carried out net in one batch per day. Cash settlement for all other kinds of trades is carried out gross and also in one batch per day. Finality is reached in the afternoon on the settlement day.

Prague Stock Exchange trades are settled on T + 5 (i.e. five days after conclusion) and central market trades on T + 3. For these exchange trades it is guaranteed that settlement will occur. (The guarantee background is represented by the Stock Exchange Guarantee Fund – see Section 4.1.6.) When it is not possible to provide settlement by using assets of the member, the alternative means (i.e. those of the Stock Exchange Guarantee Fund) are used.

The settlement of direct trades is carried out on a day determined by the counterparties, which have to choose a settlement day between T + 1 and T + 15. In addition, OTC trades are settled on the day determined by the counterparties. This day has to be between T + 1 and T + 30. The counterparties determine the settlement day on the day of conclusion of a trade (on the day of introducing instructions into the system). Settlement is not guaranteed (if the counterparty is unable to pay or to deliver securities, the trade is cancelled).

Trades that cannot be settled on the determined settlement day because of a deficiency of cash or securities can be settled after an additional term. When it is impossible to settle the trade, even after the additional term, it is cancelled, but the counterparties

can input the trade instructions regarding the same trade again.

If an interbank transfer is needed, the UNIVYC sends a third-party order to the Czech National Bank's Clearing and Settlement Centre. (The Czech National Bank will only transfer funds if it has a standing authorisation from the purchaser's bank to debit that bank's account on instructions received from UNIVYC.)

#### **4.4.6 DVP arrangements**

Settlement by UNIVYC is not based on DVP arrangements.

#### **4.4.7 Credit and liquidity risk control measures**

Credit risk is limited by a guarantee in the form of the Stock Exchange Guarantee Fund. The fund is used in the event of a member's failure to find an alternative method of fulfilling its obligations. If a member is unable to deliver securities of a specific issue, UNIVYC organises a substitute purchase (the so-called "buy-in" procedure). In this context, UNIVYC buys the missing securities on the market from members of the Prague Stock Exchange. The purchase can be made in three cycles: if the securities are not bought in the first cycle, the second cycle is held, etc. The price of a purchase is staggered – the higher the cycle, the higher the potential price – so that UNIVYC is usually able to obtain the missing securities. If the third cycle is unsuccessful, cash compensation is given.

#### **4.4.8 Pricing policies**

The pricing policy is intended to ensure cost recovery for UNIVYC. The type and value of fees are stipulated by the Board of Directors of UNIVYC. The main fees are those for membership, common and extraordinary services, suspending trades and securities lending.

#### **4.4.9 Major projects and policies being implemented**

During 1997 and 1998 the following projects were implemented:

- settlement of OTC trades;
- securities lending facilities;
- introduction of a new cycle, leading to two cycles daily; and
- settlement of trades with units of open unit trust funds.

UNIVYC has also prepared a system for the clearing and settlement of derivatives transactions that will begin to operate after the start of trading on derivatives markets, as organised by the Prague Stock Exchange and expected to begin during 1999.

### **4.5 The RM System**

#### **4.5.1 Major regulations**

The RM System (see also Section 4.1.6) is a joint stock company, which was established during the voucher privatisation period. The RM System has its own internal rules and regulations which are known as the "Trading rules".

#### **4.5.2 Participation in the system**

Contrary to the Prague Stock Exchange, participation in the RM System is not based on membership and any member of the general public can have direct access to the system.

#### **4.5.3 Types of transactions handled**

All Czech publicly tradable book-entry shares as well as bonds traded continuously in auction, in non-anonymous trades between two parties (off-market trades) and in primary markets can be traded in the RM System.

#### **4.5.4 Transaction processing environment**

Communications between the direct participants and the RM System are based on a real-time online network.

#### **4.5.5 Settlement procedures**

The settlement of securities is carried out on a continuous basis. Before the trade, the securities accounts and securities on individual client securities accounts in the SCP are validated and, for sell orders, the securities are blocked. After the trade, the change in the ownership of securities is registered in the SCP on these accounts and finality is reached.

Cash settlement is executed through one commercial bank commissioned by the RM System. The buyer has to deposit sufficient funds to cover a purchase in advance at this commercial bank. Before the trade, the funds on the buyer's cash account are blocked. After the trade, the amount needed to cover the securities sold is credited to the account stated by the seller.

#### **4.5.6 DVP arrangements**

Settlement in the RM System is based on DVP arrangements.

#### **4.5.7 Credit and liquidity risk control measures**

Credit and liquidity risk is eliminated by pre-trade validation, i.e. in the case of sell orders by the blocking of relevant securities on securities accounts in SCP and in the case of buy orders by the blocking of adequate funds on a cash account in a specific bank.

#### **4.5.8 Pricing policies**

The pricing policy is determined so as to ensure cost recovery for the RM System. The type and value of fees are stipulated by the decision of the Director of the RM System. The main fees are those for using online stations, for trading in auctions and for providing information.

#### **4.5.9 Major projects and policies being implemented**

As a part of the preparations for integration into the European capital markets, the central computers of the RM System and the Wiener Börse AG have been connected since June 1998. The RM System is technically and legally ready to provide services for derivatives trading at the Wiener Börse AG. The new method of order entry – online Internet application – is being prepared (for April 1999).

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	10,331	10,336	10,330	10,316	10,304
Gross domestic product (CZK billions)	1,002.3	1,148.6	1,348.7	1,532.6	1,649.5
Exchange rate vis-à-vis ECU <sup>1)</sup>	34.1382	34.2403	34.7159	34.4636	35.9108

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; CZK billions)

	1993	1994	1995	1996	1997
Notes and coins	61.4	83.9	103.5	118.9	119.3
Transferable deposits	300.1	337.8	349.0	356.4	325.8
Narrow money supply (M1)	359.9	421.8	453.3	475.3	445.1
Transferable deposits in foreign currencies	57.4	60.8	87.5	85.7	138.5
Outstanding value on electronic money schemes	-	-	n.a.	n.a.	n.a.
<i>of which:</i>					
<i>on card-based products</i>	-	-	n.a.	n.a.	n.a.
<i>on network-based products</i>	-	-	n.a.	n.a.	n.a.

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; CZK billions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	6.8	23.2	90.6	25.7	109.4
Free reserves held at the central bank	59.0	51.3	75.2	113.1	89.8
Transferable deposits at other institutions	211.2	236.8	225.1	289.5	403.4

**Table 4****Banknotes and coins***(total value, end of year; CZK millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	67,063	93,971	117,799	134,854	135,304
<i>of which:</i>					
CZK 5,000	1,554	18,155	29,006	37,841	39,372
CZK 2,000 <sup>1)</sup>	-	-	-	5,715	10,839
CZK 1,000	50,181	57,936	67,915	68,757	61,886
CZK 500	8,255	9,145	10,840	11,918	12,803
CZK 200	3,625	4,021	4,508	4,711	4,728
CZK 100	2,913	3,180	3,541	3,711	3,787
CZK 50	535	1,015	1,220	1,340	1,401
CZK 20	-	519	769	861	488
Total coins issued	3,073	2,355	2,642	3,000	3,842
<i>of which:</i>					
CZK 50	592	201	148	127	127
CZK 20	694	481	374	395	996
CZK 10	364	549	757	917	998
CZK 5	271	354	435	490	534
CZK 2	131	187	233	278	314
CZK 1	86	126	165	187	201
CZK 0.5	32	56	64	77	88
CZK 0.2	18	41	47	60	70
CZK 0.1	11	29	29	35	41
Commemorative coins	874	331	390	434	473
Banknotes and coins held by credit institutions	8,700	12,400	16,960	18,934	19,846
Banknotes and coins in circulation outside credit institutions	61,436	83,926	103,481	118,920	119,300

1) CZK 2,000 banknotes were not issued in the years 1993-95.

2) The value of commemorative coins in the years 1993-94 was recalculated to reflect the split of the former federal Czechoslovak currency (Czechoslovak crown, CSK).

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (CZK billions)
Central bank	1	18	23	48.8
Credit institutions	50	2,495	5,883	336.6
Post Office	1	3,500	-	-
<b>TOTAL</b>	<b>52</b>	<b>6,013</b>	<b>5,906</b>	<b>385.4</b>
Branches of foreign banks	24	69	60	26.0
<i>of which EU banks</i>	22	64	53	25.0

**Table 6****Cash dispensers, ATMs and EFTPOS terminals***(end of year)*

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	4	4	4	4	4
Number of machines	474	787	1,063	1,169	1,322
Volume of transactions (millions)	6.32	12.91	25.14	38.63	49.40
Value of transactions (CZK billions)	5.81	13.26	27.45	48.86	67.34
<b>EFTPOS terminals</b>					
Number of networks	1	1	2	2	2
Number of points of sale	20	161	668	1,100	2,985
Volume of transactions (millions)	-	0.09	0.32	0.92	1.39
Value of transactions (CZK billions)	-	0.41	1.74	2.42	3.90
<b>Electronic money-loading machines</b>					
Number of machines	-	-	n.a.	n.a.	n.a.
Volume of transactions (thousands)	-	-	n.a.	n.a.	n.a.
Value of transactions (CZK millions)	-	-	n.a.	n.a.	n.a.
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	n.a.	n.a.	n.a.
Volume of transactions (thousands)	-	-	n.a.	n.a.	n.a.
Value of transactions (CZK millions)	-	-	n.a.	n.a.	n.a.

**Table 7****Number of payment cards in circulation <sup>1)</sup>***(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	193.7	328.1	467.9	569.9	408.9
Cards with a debit/credit function	377.2	651.2	919.9	1,288	1,480
<i>of which:</i>					
<i>cards with a debit function</i>	377.2	651.2	919.9	1,288	1,479
<i>cards with a credit function</i>	-	-	-	-	1.7
Cards with a cheque guarantee function	2.3	2.6	5.9	13.2	20.5
Retailer cards	141.0	197.8	207.5	241.0	265.1
Electronic money cards	-	-	n.a.	n.a.	n.a.

1) A card with multiple functions may appear in several categories. It is, therefore, not meaningful to add the figures.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions <sup>1)</sup>***(thousands)*

	1993	1994	1995	1996	1997
Clearing and Settlement Centre					
Total year	72,000	95,000	124,420	156,300	171,700

1) The system does not provide a breakdown of the volume of transactions by the type of payment instruction.

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions <sup>1)</sup>***(CZK billions)*

	1993	1994	1995	1996	1997
Clearing and Settlement Centre					
Total year	8,488	11,795	18,346	32,996	48,897

1) The system does not provide a breakdown of the volume of transactions by the type of payment instruction.

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
<b>RM system</b>			
Banks	12	12	12
Stockbrokers	120	120	-
Others (Treasury bodies)	93	-	-
<b>UNIVYC</b>			
Banks	21	21	21
Stockbrokers	58	58	58
<b>TKD</b>			
Banks	37	31	37
Securities houses	55	1	55
Insurance companies	32	-	32
Foreign central banks	1	-	1
Others (Treasury bodies)	113	-	113

**Table 11****Transfer instructions handled by securities settlement systems: volume of transactions <sup>1)</sup>***(millions)*

	1993	1994	1995	1996	1997
RM System	4.5	8.3	57.6	203.9	373.6
UNIVYC	-	-	-	-	1.1
TKD	-	-	0.009	0.016	0.019

1) The system does not provide a breakdown of the volume of transactions by the type of security.

**Table 12****Transfer instructions handled by securities settlement systems: value of transactions <sup>1)</sup>***(CZK billions)*

	1993	1994	1995	1996	1997
RM System	2.9	4.4	27.3	100.7	158.7
UNIVYC	9.0	62.0	195.4	534.1	901.3
TKD	-	-	3,491.7	6,059.2	7,735.0

1) The system does not provide a breakdown of the volume of transactions by the type of security.

**Table 13****Nominal values registered by securities settlement systems***(end of year; CZK billions)*

	1993	1994	1995	1996	1997
SCP	-	975	1,093	1,161	1,097
TKD	-	-	202	209	231

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
Cheques issued	4.8	7.6	13.9	14.4	13.9
Payments by debit and credit cards	6.4	15.9	25.2	37.8	50.1
Paper-based credit transfers	-	-	-	-	-
Paperless credit transfers	142.3	163.8	257.8	308.4	382.2
Direct debits	10.4	14.4	36.1	17.3	17.6
Electronic money	-	-	n.a.	n.a.	n.a.
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	n.a.	n.a.	n.a.
<i>payments by network-based products</i>	-	-	n.a.	n.a.	n.a.
Others	-	-	-	-	-
<b>TOTAL</b>	<b>164.0</b>	<b>201.6</b>	<b>333*</b>	<b>377.9*</b>	<b>463.9*</b>

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(CZK billions)*

	1993	1994	1995	1996	1997
Cheques issued	402.1	530.9	979.4	688.6	735.0
Payments by debit and credit cards	6.2	16.2	29.9	49.9	69.5
Paper-based credit transfers	-	-	-	-	-
Paperless credit transfers	11,432.4	12,554.4	13,360.2	18,028.7	23,863.3
Direct debits	302.3	399.9	663.7	501.5	385.7
Electronic money	-	-	n.a.	n.a.	n.a.
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	n.a.	n.a.	n.a.
<i>payments by network-based products</i>	-	-	n.a.	n.a.	n.a.
Others	-	-	-	-	-
<b>TOTAL</b>	<b>12,143.0</b>	<b>13,501.4</b>	<b>15,033.2*</b>	<b>19,268.7*</b>	<b>25,053.4*</b>

**Table 16**  
**Participation in S.W.I.F.T. by domestic institutions**

	1993	1994	1995	1996	1997
S.W.I.F.T. users	25	31	31	34	36
<i>of which:</i>					
<i>members</i>	15	19	19	18	19
<i>sub-members</i>	10	12	12	13	13
<i>participants</i>	-	-	-	3	4
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

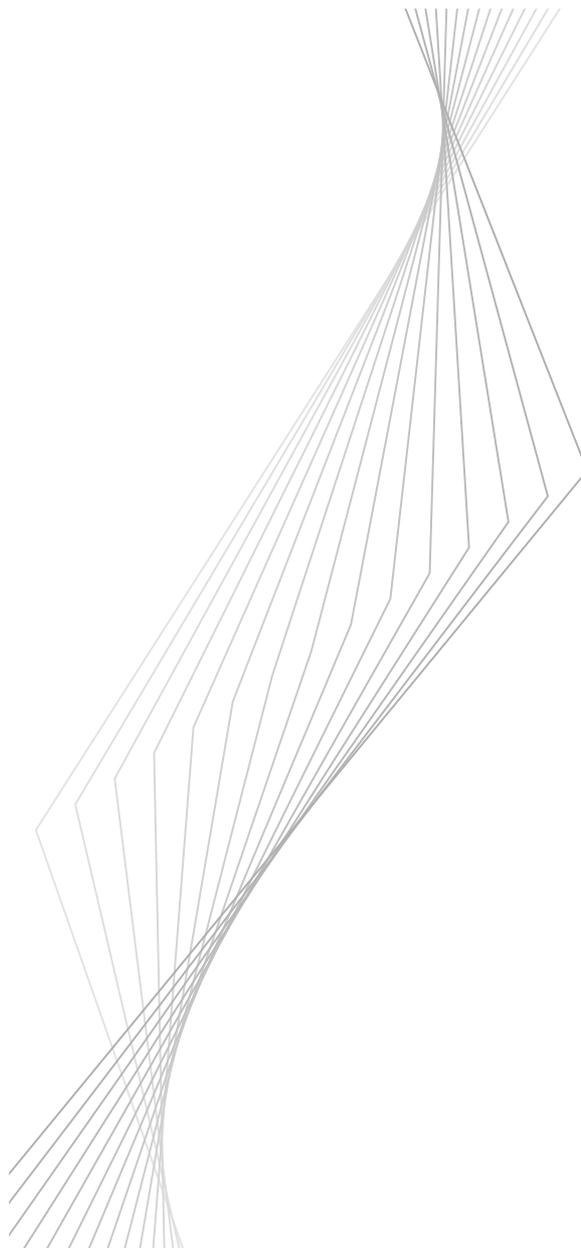
**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	449,371	1,678,147	2,340,672	3,116,290	3,464,523
<i>of which:</i>					
<i>category I</i>	261,893	972,244	1,249,679	1,595,658	1,664,430
<i>category II</i>	105,871	385,773	578,330	759,085	808,240
<i>sent to/received from</i> <i>domestic users</i>			332,815	407,149	413,168
Total messages received	420,051	1,559,489	2,144,686	2,900,459	3,272,438
<i>of which:</i>					
<i>category I</i>	207,583	796,899	1,044,395	1,437,325	1,526,589
<i>category II</i>	17,198	66,605	101,746	213,880	383,004
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556





EUROPEAN CENTRAL BANK



**Estonia**

**August 1999**

Estonia

EE

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### List of abbreviations

<b>AO</b>	Account operator
<b>CCB</b>	Card Centre for Banks
<b>ECSD</b>	Estonian Central Securities Depository
<b>EVP</b>	Estonian Privatisation Voucher
<b>EVPKR</b>	Estonian Central Register for Privatisation Vouchers
<b>LCD</b>	Latvian Central Depository
<b>TSE</b>	Tallinn Stock Exchange

## Introduction

The current interbank payment system was established in spring 1992, just before the launch of the monetary reform in Estonia. The main objective of the current interbank payment system is to have a reliable infrastructure for payments made in Estonian kroon. The years between 1992 and 1995 can be considered a period of consolidation and stabilisation in the banking sector. During this period no significant changes took place in the current interbank payment system. To make their payment processing more efficient, the banks and Eesti Pank (the central bank)

started the payment system standardisation process in 1996. Common standards for account numbers, reference numbers, payment order templates, electronic payment order formats and electronic account statement formats were designed and implemented during 1996 and 1997. In 1998 Eesti Pank started to design a new interbank payment system, which was intended to comply with the European Union requirements and to satisfy the banking sector's growing demand for efficiency.

## I Institutional aspects

### I.1 General legal aspects

Estonia implemented the currency board principle at the time of the introduction of the national currency, the Estonian kroon, in June 1992, and that principle constitutes the basis for the whole Estonian monetary system.

Payment and settlement activities are regulated by the Law of the Central Bank of the Republic of Estonia (18 May 1993, amended 5 April 1994), the Law on Credit Institutions (15 December 1994) and relevant decrees of the President of Eesti Pank (i.e. the central bank of Estonia).

Pursuant to Article 3 of the Law of the Central Bank of the Republic of Estonia, Eesti Pank is independent of all governmental agencies and reports only to Riigikogu (the Parliament of the Republic of Estonia). It is not subordinate to the Government of the Republic of Estonia, nor to any other institution holding executive state powers. Eesti Pank is not held legally responsible for the state's financial obligations, and the state, in turn, is not held legally responsible for the financial obligations of Eesti Pank. The Law of the Central Bank of the Republic of Estonia states that Eesti Pank manages currency circulation in Estonia.

The Law on Credit Institutions states that a credit institution is allowed to operate as a public limited company only. In addition, the minimum level of own funds set in the Law is EEK 75 million (ECU 5 million). The credit institutions must settle their payments according to regulations established by Eesti Pank.

A single banking licence allows an authorised credit institution to carry out all activities listed in the Annex to the Second Banking Co-ordination Directive. Only credit institutions are allowed to accept deposits and other repayable funds from the public. The competent authority to grant licences to

credit institutions and to supervise their activities is Eesti Pank and, in particular, its Banking Supervision Department.

The Estonian Bankruptcy Act of March 1997 and the Law on Credit Institutions contain a zero-hour rule applicable in the event of bankruptcy. The enactment time of the court order is the date on which it is issued, which means that the court order takes effect at 0.00 a.m. on the date of the court order. A new version of the Law on Credit Institutions will be enforced as from 1 July 1999, which will make the zero-hour clause inapplicable to credit institutions.

There is no special legislation governing different payment instruments (cheques, payment cards, direct debits, etc.). The payment practices are determined by agreements between banks, service providers and customers.

### I.2 Financial intermediaries that provide payment services

In Estonia three different types of institution provide payment services: credit institutions, loan and savings co-operatives and Eesti Post (the Estonian Post Office).

#### *Credit institutions*

In December 1998 there were six credit institutions in Estonia, including five domestic credit institutions and one branch of a foreign bank. All credit institutions hold a settlement account with Eesti Pank, and interbank payments are settled via the interbank payment system operated by Eesti Pank.

#### *Loan and savings co-operatives*

By the end of 1998 there were two loan and savings co-operatives. Co-operatives can only offer payment services to their members.

Unlike credit institutions, co-operatives do not have an account with Eesti Pank. The payments are settled via the credit institutions with which the co-operative has an account.

#### *Eesti Post (the Estonian Post Office)*

The state-owned Eesti Post also provides payment services. The Eesti Post payment system is a closed system operated and utilised by Eesti Post itself and it does not have any connection with the interbank payment system.

### **1.3 The role of the central bank**

#### **1.3.1 General responsibilities**

##### *Statutory responsibility*

The objectives and tasks of Eesti Pank are defined by the Constitution of the Republic of Estonia and the Law of the Central Bank of the Republic of Estonia. The main objective of Eesti Pank is to ensure the stability of the Estonian kroon and its ability to fulfil all functions as a means of payment. In addition, Eesti Pank has to contribute to the stability of the banking sector as well as the whole financial system, to maintain the integrity and efficiency of the payment systems, and to promote the development of financial markets. In other areas, Eesti Pank broadens the scope of these targets to support economic growth and general welfare.

One of the primary goals of Eesti Pank is to meet the currency needs of the public. Pursuant to the Law of the Central Bank of the Republic of Estonia, Eesti Pank is the sole legal issuer of banknotes and coins in the Republic of Estonia. The Estonian kroon is legal tender.

##### *Establishment of common rules*

Pursuant to Article 45 of the Law on Credit Institutions, Eesti Pank has the right to

establish a legal framework for the settlement of payments. Several decrees issued by Eesti Pank establish the times for settlement of payments, rules for sending and receiving payment orders, and common account statements. Eesti Pank is participating in an Estonian Banking Association working group seeking to create and implement common standards in the banking industry. Common standards for account numbers, reference numbers, payment order templates, electronic payment order formats and electronic account statement formats were designed and implemented during 1996 and 1997.

##### *Supervision and audit*

Eesti Pank, in particular its Banking Supervision Department, is responsible for the supervision of credit institutions. For supervisory purposes, Eesti Pank collects on a regular basis prudential reports from credit institutions and makes on-site inspections. Based on the findings of the inspection, Eesti Pank has the right to issue recommendations and rulings. The range of sanctions includes, inter alia, the imposition of stricter prudential requirements, the limitation or suspension of the entitlement to grant loans, the limitation of dividend payments, withdrawal of licence, etc.

#### **1.3.2 Provision of processing and settlement facilities**

The current interbank clearing and settlement system was introduced in 1992 and it is operated and owned by Eesti Pank. All interbank payments, both large-value as well as retail payments, are cleared and settled through this single system. In the clearing and settlement process, large-value payments have a higher priority than retail payments.

*Provision of settlement accounts*

As at December 1998 a total of 32 settlement accounts had been opened with Eesti Pank. Opening a settlement account is mandatory for credit institutions. In addition, Eesti Pank keeps settlement accounts for the Estonian Central Securities Depository (ECSD), the Tallinn Stock Exchange, Eesti Pank, the Ministry of Finance, some central banks of the former Soviet Union and supranational organisations (e.g. the World Bank). All the above institutions have opened one settlement account with Eesti Pank, with the exception of the ECSD, which has opened two settlement accounts.

*Provision of credit facilities*

As Estonia has implemented the currency board principle, Eesti Pank is not providing ordinary central bank refinancing facilities. A detailed description of the tools available for credit institutions to manage their liquidity is given in Section 3.2.8.

*Pricing policy*

Pursuant to a decree of Eesti Pank, interbank payments processed through Eesti Pank settlement system are subject to a fee. The maintenance of the first settlement account per institution with Eesti Pank is free, but for additional settlement accounts a fixed monthly fee is charged (see Section 3.2.7).

**1.3.3 Monetary policy and payment systems**

The monetary policy in Estonia is based on a currency board arrangement. The cornerstones of the arrangement comprise a fixed exchange rate vis-à-vis the Deutsche Mark (DEM 1 = EEK 8), the restriction that central bank liabilities must not exceed reserves held in high-rated foreign assets or gold, and unlimited current and capital account convertibility. Since 1 January 1999

the exchange rate of the Estonian kroon has been fixed, not only vis-à-vis the Deutsche Mark, but also vis-à-vis the other legacy currencies of the countries participating in Stage Three of Economic and Monetary Union (EMU) in accordance with the exchange rate of the Deutsche Mark vis-à-vis these currencies (ECU 1 = EEK 15.6466).

Eesti Pank does not participate actively in the interbank money market and it does not initiate daily open market operations. Ordinary central bank refinancing facilities are non-existent. Consequently, the most important channels for stabilising the liquidity in the economy are the standing facility provided by Eesti Pank in the foreign exchange market and the reserve requirement, which has to be met on a monthly average basis.

Eesti Pank provides commercial banks with the possibility of buying or selling foreign exchange to adjust their kroon liquidity. All transactions are initiated by commercial banks. For licensed credit institutions, Eesti Pank is obliged to exchange US dollars, Japanese yen, Swedish kronor, pounds sterling, euro and the EMU legacy currencies for Estonian kroons and vice versa without limits. There is no spread between the buying and selling rates of the Estonian kroon against the euro and the EMU legacy currencies. Sales of foreign currency are based on the day T + 2 spot rate. The predominant currency sold to Eesti Pank used to be the Deutsche Mark.

Eesti Pank's reserve requirement, including the temporary additional liquidity requirement, is the most important instrument for providing immediate domestic liquidity and settlement buffers. Banks are required to fulfil the requirement on a monthly average basis. The reserve requirement currently amounts to 13% (10% being the non-remunerated reserve requirement and 3% the temporary additional liquidity requirement, which is remunerated) of banks' deposits, debt securities issued, net liabilities to foreign credit institutions and

financial guarantees to financial institutions. Banks are allowed to use their reserves for daily settlement purposes, but the balance at the end of the day should not be less than 40% of the required level. If the balance falls below 40% of the reserve requirement, or the bank does not fulfil the monthly average requirement, it will be subject to a penalty interest rate. Eesti Pank pays interest on average balances exceeding the required level.

Since May 1993 Eesti Pank has also been issuing discountable certificates of deposit (CDs) with a one-month maturity that are auctioned to Estonian commercial banks once a month in fixed and comparatively limited amounts (EEK 30 million (ECU 1.9 million) per tranche). These CDs offer the banks the opportunity to carry out guaranteed secondary market transactions and are an additional liquidity buffer for use in the settlement system. CDs can be resold with same-day value to the issuer or to a third party.

### **1.3.4 Main projects and policies being implemented**

Eesti Pank is currently working on the implementation of an interbank payment

system compliant with the EU requirements. It will be based on two subsystems: a real-time gross settlement system and a designated-time net settlement system (see Section 3.2.9).

### **1.4 The role of other private and public sector bodies**

The Estonian Banking Association was established in 1992 by commercial banks. The objectives of the Estonian Banking Association are to represent the interests of its members, participate in the drafting of legislation concerning banking activity and support the development of interbank payment and settlement systems.

The National Payment Council, established in the second half of 1997, has the role of a round table forum for participants in the payment and settlement systems and other interested parties. Eesti Pank, the Ministry of Finance, the Chamber of Commerce and the Estonian Banking Association have representatives in the National Payment Council. The National Payment Council has two sub-committees: a payment and settlement sub-committee and a legal framework sub-committee.

## **2 Payment media used by non-banks**

### **2.1 Cash payments**

Eesti Pank, as the central bank, has the exclusive right to issue banknotes and coins. In Estonia, there are eight banknote denominations (EEK 1, 2, 5, 10, 25, 50, 100, and 500) and six coin denominations (5, 10, 20 and 50 sent and EEK 1 and 5). The minting of 5 sent coins ceased at the end of 1996.

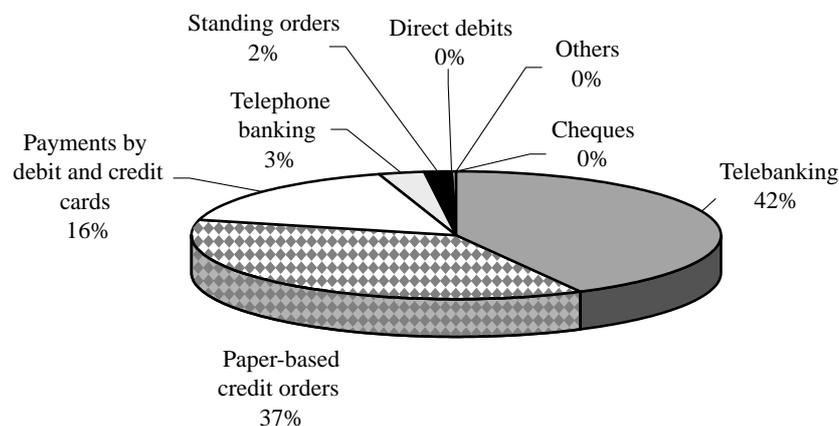
The use of cash still predominates. However, the increase in cash in circulation has slowed down and the structure of cash circulation has stabilised. No estimate is available of the value or number of cash payments, but the

share of cash in MI in Estonia has been declining for a number of years (see Table 2).

### **2.2 Non-cash payments**

Between 1993 and 1997 the use of payments made with non-cash payment instruments increased compared with cash payments. The non-cash means of payment include credit transfers, direct debits, payment cheques and payment cards.

As regards the development of non-cash payment instruments, it may be noted that

**Chart 1****The relative shares of non-cash payment instruments (volume in 1997)**

between 1992 and 1994 non-cash payment instruments were mainly used by companies. In 1994 a rapid evolution of payment cards started and, since then, the installation of ATMs has been increasing. By the end of 1997 the expansion of Internet and telephone banking had also started.

### 2.2.1 Credit transfers

Credit transfers are the predominant non-cash payment instrument in Estonia. In 1997 credit transfers accounted for approximately 73% of the total number of non-cash payments and 94% of turnover. The total turnover of credit transfers was EEK 819 billion (ECU 52.3 billion) in 1997. In the past it was mainly companies which favoured credit transfers as a payment instrument, but today this also applies to private individuals.

During recent years there has been a remarkable breakthrough in telebanking (also known as remote banking or electronic banking) products. In 1997 40% of credit transfers were originated using different telebanking products. Telebanking includes

special telebanking software, ATMs, telephone banking and Internet banking facilities. The reason for the popularity of telebanking is its convenience and the fact that private individuals can easily execute payment orders at a relatively low cost.

It is expected that the overall increase in non-cash payments in the long run will imply a decrease in the share of credit transfers. The reason for the expected decrease in the share of credit transfers is the growing popularity of other payment instruments, such as direct debits and payment cards.

### 2.2.2 Cheques

Cheques have never played an important role in Estonia and their number has remained stable over the years. The very limited use of cheques is a result, on the one hand, of the tradition of active cash use, and, on the other, of the fast evolution of other non-cash payment instruments. The total turnover of cheques was EEK 205 million (ECU 13.1 million) in 1997.

### 2.2.3 Direct debits

On the Estonian non-cash payment instruments market direct debits are still a novelty and their share is comparable with that of cheques. The use of direct debits was restricted by the fact that the payer and the beneficiary had to have their accounts with the same credit institution. In 1998 the credit institutions reached an agreement on direct debit standardisation. The direct debit standardisation agreement can be considered to be the first step towards the broad use of direct debits in Estonia. For private individuals, direct debits are convenient for the payment of public utilities bills (rent, telephone and electricity) and some other regularly payable bills. The total turnover of direct debits was EEK 23 million (ECU 1.5 million) in 1997.

### 2.2.4 Payment cards

Only credit institutions are authorised to issue payment cards. Before 1993 commercial banks issued VISA payment cards through the Finnish card centre company named Luottokunta and cards carried Finnish banks' logos. Issuing VISA payment cards via Finnish banks was a temporary solution to satisfy customers' demands.

The payment cards era in Estonia started in 1993, when, on the initiative of Estonian commercial banks, the Card Centre for Banks (CCB) was established. The main purpose of the CCB is to establish a domestic card payment system. The CCB provides the banks with the card transaction environment for data interchange, routing and clearing. The CCB operates as an automated clearing house, authorising the card transactions, collecting the card transaction data, and calculating the gross position of each bank. The calculated gross positions and other card transaction data are sent back to the banks.

In recent years payment cards have become highly widespread payment instruments. There were 618,000 payment cards issued by

credit institutions at the end of 1997. The total turnover of payments made by payment cards was EEK 4.2 billion (ECU 271 million) in 1997.

#### *Debit cards*

When payment cards were first introduced in Estonia, credit institutions issued cash cards only. Debit cards were introduced in 1994. Two different strategies were used in the issuance of debit cards. One group of banks began to issue its own debit cards, but changed its strategy in 1997 and started to issue only Cirrus/Maestro debit cards. Another group of banks started to issue VISA Electron as a debit card from the outset. Nowadays most of the debit cards carry either the VISA Electron or the Cirrus/Maestro trademark.

#### *Credit cards and travel and entertainment cards*

As regards major international credit cards, VISA and MasterCard are the types represented in Estonia. Credit cards are not widely used because of the high annual fee. Special characteristics of Estonian credit cards are that the holder is granted up to 50 days' payment delay and no extended line of credit is granted. The issue of domestic credit cards has been very limited and the proportion of these cards relative to the total number of credit cards issued is not significant. No travel and entertainment cards are issued.

#### *Retailer cards*

In Estonia there is no institution collecting information about retailer cards issued. Petrol companies and larger supermarket chains issue prepaid retailer cards for purchases to enhance customer loyalty.

In 1998 one of the largest supermarkets in Estonia started to issue retailer cards with a credit line. The holder of the card is granted

a line of credit and the card enables bonus points to be earned.

#### *Prepaid cards*

At present no credit institution or other operator provides multi-purpose prepaid cards in Estonia. However, the interest in such a payment instrument is growing. Estonian credit institutions are keeping track of VISA and MasterCard projects in this field and considering the possibility of issuing VISA or MasterCard products in the future.

#### *ATM and EFTPOS networks*

In 1994 the first five ATMs were installed and 20 points of sale (POS) were established. Since then even more equipment has been installed; hence the number of ATMs at the end of 1997 was 432, and 2,183 POS were available.

As the number of ATMs doubled in 1997, their services have been extended. Approximately three-quarters of them permit cross-usage of local cards issued by different credit institutions as well as the use of the international payment cards VISA and Eurocard/MasterCard issued in any country of the world. In addition to the regular cash-dispensing ATMs, ATMs accepting cash deposits were introduced. By the end of 1997 there were 12 such ATMs. The ATMs are owned and managed by the credit institutions.

Retailers are equipped with EFTPOS terminals, and in 1997 the number of POS accepting payment cards increased by about 80% from the previous year.

#### **2.2.5 Postal instruments**

The state-owned company Eesti Post (the Estonian Post Office) provides retail payment services and is not considered to be a part of

the interbank payment system. The payment services offered are not subject to interbank payment system regulation and Eesti Post is not subject to any supervision by another authority. The turnover of payments via Post Office branches is unknown and the Eesti Post payment service is mainly used for paying monthly social benefits and pensions to those private individuals who do not have a bank account.

#### **2.2.6 Other payment instruments**

Letters of credit issued by credit institutions play a relatively small role in the payment instruments market. They are only used in international trade and between unacquainted trading partners.

### **2.3 Recent developments**

The Estonian payment system started to develop seven years ago from a cash-oriented society. Following a phase of active use of paper-based payment instruments, Estonia is now moving towards a more automated electronic payment system.

The current interbank payment and settlement system can handle limited types of payment instruments. One objective of Eesti Pank is to have the most practical, cost-effective, reliable and secure payment system in Estonia, which will satisfy customers' demands. Therefore Eesti Pank is building a new designated-time net settlement (DNS) system for the settlement of retail payments (see Section 3.2.9). This new system will accept, in addition to credit orders, many other payment instruments.

### 3 Interbank exchange and settlement systems

#### 3.1 General overview

The Law on the Central Bank of the Republic of Estonia sets out the role and responsibilities of Eesti Pank, which include responsibility for providing domestic interbank payment facilities and managing the current interbank payment system. The current Estonian interbank clearing and settlement system has been in operation since 1992. The system has a central clearing and settlement body, namely the Clearing Division of Eesti Pank. The Estonian interbank payment system is based on end-of-day gross settlement. It is a funds transfer system in which payment orders are sent and received batch by batch and the final settlement takes place at the end of the day on an aggregate gross basis. The bilateral clearing of payment orders between credit institutions without the involvement of the central body is not prohibited. In spite of this, credit institutions very seldom use bilateral clearing in the local currency, the Estonian kroon.

#### 3.2 Current interbank payment and settlement system

##### 3.2.1 Functioning rules

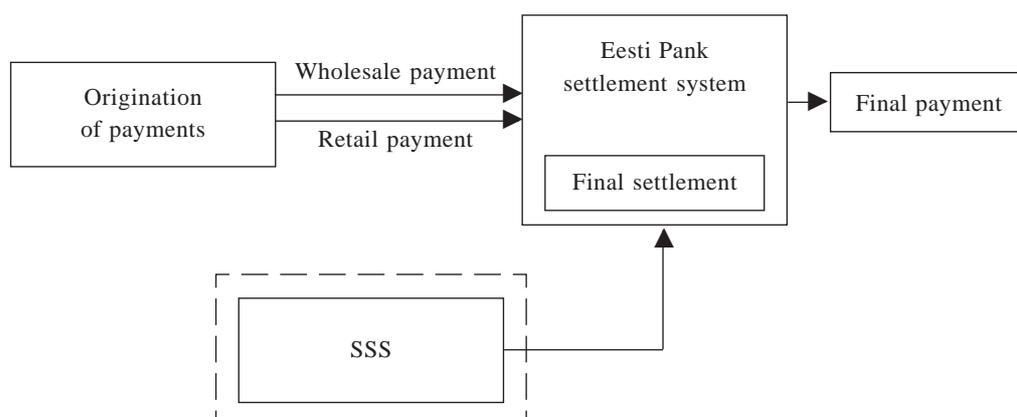
The participation in and operation of the current interbank payment and settlement system are subject to the rules set by Eesti Pank. Eesti Pank operates and manages the current interbank payment and settlement system and is responsible for maintaining and developing the system's hardware, software and organisation.

Each credit institution participating in the clearing process deposits the required reserves with the central bank. The minimum reserve requirements are specified in Section 1.3.3.

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**Chart 2**

#### The current structure of the Estonian interbank payment system



### 3.2.2 Participation in the system

There are 32 settlement accounts with Eesti Pank as described in Section 1.3.2, but only the credit institutions, the Estonian Central Securities Depository (ECSD) and Eesti Pank are fully qualified participants in the current interbank payment and settlement system. The Estonian Ministry of Finance, some central banks of the former Soviet Union and supranational organisations (for instance the World Bank) are restricted members of the current interbank payment and settlement system. Restricted members do not participate in the interbank money market.

### 3.2.3 Types of transactions handled

The system handles three types of transaction: credit transfers, debit orders and cheques. The majority of transactions processed through the clearing and settlement system are credit transfers, which represent more than 99% of both the volume and value of overall transactions. Only Eesti Pank and the ECSD can issue debit orders. The credit and debit orders are cleared electronically. Cheque items are delivered in paper form, but the clearing is completed electronically.

### 3.2.4 Operation of the transfer system

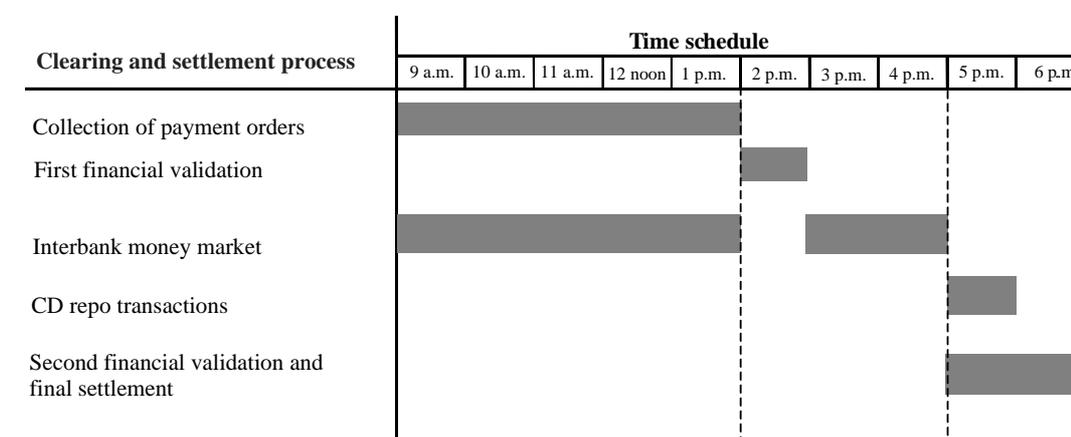
The current payment system includes a double flow of information from the sending bank and Eesti Pank to the receiving bank. The receiving bank matches the payment orders sent by Eesti Pank and the sending bank. If the payment orders match, the receiving bank accepts the payment; otherwise the payment is rejected. The reason for the double flow is to ensure the security and integrity of information.

In the clearing and settlement system, payments are classified according to their priority. The highest priority is given to the payments originated by Eesti Pank, the second highest priority to payments originated by the ECSD and the lowest priority to payments originated by credit institutions. Within one level of priority, the payments are settled using the first in, first out (FIFO) rule. If the participant has insufficient funds to cover the payments, rejection of the payment orders takes place according to the last in, first out (LIFO) rule. The rejection of payment orders has occurred a maximum of four times per year, and the last rejection took place in October 1998.

The time schedule of the operating day is indicated in Chart 3 below.

**Chart 3**

### The time schedule for clearing and settlement



All domestic interbank payments are cleared and settled within 24 hours. The payee must have funds at its disposal within two banking days after the payment transaction has been submitted by the payer.

### **3.2.5 Transaction processing environment**

The system is based on batch processing. The batches are sent electronically via local networks using frame relay or public telephone networks. The central clearing and settlement system is based on a client-server architecture.

### **3.2.6 Settlement procedures**

The clearing and settlement process has two separate stages. During the first stage payment orders are received, after which the first financial validation is carried out. At the end of the first stage, at 3 p.m., every participant receives the following information about its financial status:

- preliminary account statement;
- interim balance on the account;
- accepted payments, broken down into individual amounts;
- total amount of accepted payments;
- payments not accepted because of insufficient funds, broken down into individual amounts;
- total amount of insufficient funds.

The second stage includes the correction of the financial position of the participant and final settlement. To acquire additional funds, the participant can borrow money from other banks and/or sell CDs of Eesti Pank in the interbank short-term money market.

The execution of CD repo transactions takes place between 5 p.m. and 6 p.m. Money

market transactions are executed within the two hours between 3 p.m. and 5 p.m. The CD repo and money market transactions must pass the financial validation.

Additional money market payment orders which are financially valid are added to the payment orders from the first stage and the final settlement can take place.

The final settlement is between 5 p.m. and 7 p.m. If there are no CDs issued by Eesti Pank, the final settlement starts at 5 p.m. Otherwise the final settlement starts at 6 p.m. After completion of the final settlement, the following information is sent to the participants:

- account statement for the day;
- finally accepted payments broken down into individual amounts;
- list of payments not settled due to insufficient funds.

### **3.2.7 Pricing**

All transactions in Estonian kroons are subject to a transaction fee of EEK 0.10 (ECU 0.006). EEK 10,000 (ECU 640) is charged for an additional settlement account with Eesti Pank. The fees paid by the credit institutions do not cover the actual cost.

### **3.2.8 Credit and liquidity risk**

Interbank payments in kroons are settled using the funds of the credit institutions held with the central bank as a minimum reserve requirement. Commercial banks have to hold an amount equal to 13% of their reserve base on the settlement account with Eesti Pank (see Section 1.3.3). As a result, liquidity problems arising in the settlement of daily transactions are very rare. If the credit institutions cannot meet their obligations due to a lack of funds on their respective settlement accounts, they can sell foreign

currency to Eesti Pank, make CD transactions and borrow funds in the interbank money market (see Section 1.3.3). In accordance with the Law of the Central Bank of the Republic of Estonia, buying Estonian government securities is prohibited, which means that dealing with repurchase agreements collateralised by those bonds is not possible.

The currency board system limits any credit granted to commercial banks to the amount of net foreign assets held in excess of domestic liabilities. Emergency liquidity for commercial banks can be provided by Eesti Pank only under special agreement and in exceptional circumstances.

### **3.2.9 Main projects and policies being implemented**

The year 1997 played an essential role in shaping the future of the Estonian payment and settlement system. Eesti Pank decided to design a new interbank payment system complying with EU requirements, which was

based on two subsystems: a real-time gross settlement (RTGS) system for the processing of large-value and urgent interbank payments and a designated-time net settlement (DNS) system for the processing of retail payments. The objective of the new payment and settlement system was and still is to accelerate settlement and build confidence so as to enhance financial intermediation in the Estonian banking sector and reduce the significance of cash in large-value transactions.

To design and implement the new payment and settlement system, Terms of Reference were prepared and a competitive tendering procedure was conducted together with the European Union Phare programme. The actual design of the payment and settlement system started in January 1998 and was completed in December 1998. In accordance with the Terms of Reference, the designated-time net settlement system will be operational in March 2000 and will replace the current interbank payment and settlement system. The real-time gross settlement system will be operational in September 2000.

## **4 Securities settlement systems**

The securities market in Estonia is still being developed. The first public issue of shares was carried out in 1991. Actively traded securities are quoted on the Tallinn Stock Exchange (TSE), which became operational in 1996.

In Estonia there is one securities settlement system (SSS), which is operated by the Estonian Central Securities Depository (ECSD). A central register for securities is also maintained by the ECSD. The TSE, as a securities trading system, and Eesti Pank, as a cash settlement agent, also have important roles with regard to the SSS.

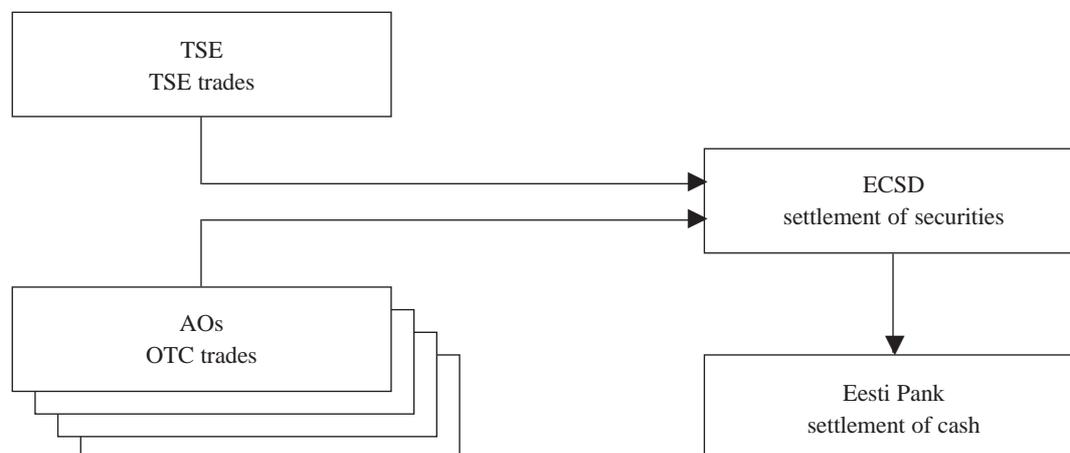
### **4.1 Institutional aspects**

#### **4.1.1 General legal aspects**

##### *Legal framework concerning securities markets*

The Law on the Securities Market (1993) and the Law on Investment Funds (1997) govern the Estonian securities market and contain legislative provisions stipulated by the Government and the Minister of Finance.

The Law on the Securities Market regulates the activities of professional participants, issuers and investors in securities markets which operate with publicly circulated securities in the primary and secondary markets. Professional participants are allowed to operate in the securities market provided

**Chart 4****Securities settlement system of Estonia**

that they possess the relevant licence issued by the Securities Inspectorate.

In compliance with the Law on the Securities Market, the issuer is obliged to register a public issue at the Securities Inspectorate prior to making the issue. All publicly traded issues are in dematerialised form and are registered in the ECSD. The only exception is Estonian Privatisation Vouchers (EVPs), which can be registered in their special register or in the ECSD.

There is currently no legislation governing the securities settlement system, and the clearing and settlement of trades are based on the ECSD rules developed by the ECSD shareholders.

#### *Other regulatory provisions concerning securities*

The activity of the Tallinn Stock Exchange (TSE) is regulated by the Rules and Regulations of the TSE, which have been approved by the Council of the TSE. The main sections of this document set out the principles for the listing of securities, the trading rules and the rules for the clearing and settlement of TSE transactions.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

Eesti Pank has no statutory responsibilities with regard to securities settlement systems (SSSs) and is not legally empowered to issue any binding regulations concerning SSSs. Nevertheless, Eesti Pank is a shareholder in the ECSD and is represented on its Board. In addition, Eesti Pank plays the role of settlement bank for the netted cash position of the ECSD participants. It is also one of the owners of the TSE and, as such, participates in the establishment of common rules for securities trading.

##### *Provision of settlement facilities*

Eesti Pank does not provide securities accounts for market participants.

##### *Provision of operational facilities*

Eesti Pank does not provide operational facilities for securities settlement except through its role as shareholder in the ECSD and the TSE.

*Monetary policy operations and securities settlement systems*

Securities are not used for monetary policy operations (see Section 1.3.3).

**4.1.3 The role of other public sector bodies***Ministry of Finance*

The Ministry of Finance is in charge of supervising the securities market and regulating its operations. In accordance with the Law on the Government of the Republic of Estonia, which has been effective since January 1996, supervision of the securities market is performed by the Securities Inspectorate within the legislative jurisdiction of the Ministry of Finance.

The duties of the Securities Inspectorate comprise supervising the activities of the professional participants in the securities market, registering public issues of securities, licensing securities market professionals, etc.

**4.1.4 The role of other private sector bodies***Estonian Central Securities Depository*

On the initiative of some commercial banks, along with Eesti Pank and the Ministry of Finance, the Estonian Central Securities Depository (ECSD) was founded as a private company in March 1994. The main tasks of the ECSD are to offer secure conditions for holding the registered securities in dematerialised form and to execute transactions involving securities. The ECSD is also responsible for all procedures connected with the securities register.

*Tallinn Stock Exchange*

Eesti Pank, the Ministry of Finance and 21 other financial organisations founded the Tallinn Stock Exchange (TSE) as a private company in April 1995, and it became

operational in June 1996. The TSE is an electronic market in which a combination of the electronic dealer market and the order book market is used.

**4.2 Summary information on securities markets****4.2.1 Main features of the different securities markets**

The core elements of the Estonian securities market are the TSE and the ECSD. The TSE is a computer-based trading system with no trading floor. The ECSD maintains the central securities register and is the clearing house for securities transactions.

The main securities traded in Estonia are equities and bonds of private companies. As regards state securities, the State Compensation Fund obligations and EVPs are traded on the TSE. In Estonia there is a limited amount of central government and local government bonds. The securities can be traded via the TSE trading system or the over-the-counter (OTC) trading system.

**4.2.2 Basic quantitative aspects**

The total turnover of the Estonian securities market in 1997 was EEK 30.6 billion (ECU 2 billion). The turnover of the OTC market in 1997 was EEK 12.6 billion (ECU 810 million). The total turnover of the Estonian securities market in the first half of 1998 was EEK 17.7 billion (ECU 1.1 billion). The turnover of the OTC market in the first half of 1998 was EEK 8.2 billion (ECU 520 million). Capitalisation of the Estonian securities market as at 30 June 1998 amounted to EEK 20.1 billion (ECU 1.3 billion).

As at 30 June 1998 there were 64,346 valid securities accounts registered at the ECSD. As at 31 December 1997 the ECSD had in its central register 201 companies, 113 shares, 282 debt instruments, 11 subscription notes and 19 fund units and shares.

#### 4.2.3 Financial intermediaries operating in the different securities markets

The following participants operate on the Estonian securities market:

- the ECSD (which maintains a central register);
- Eesti Pank;
- account operators of the ECSD;
- the TSE; and
- member firms of the TSE.

##### *An account operator*

An account operator (AO) is an entity which forwards to the ECSD investors' instructions to make register entries and acts as an intermediary in offering the services of the ECSD to investors. To act as an AO the

entity must be licensed as a credit institution and as a securities intermediary, and hold ECSD shares. An AO is required to select a person from among its employees to be responsible for forwarding instructions for making register entries, for passing the required information to the ECSD and for making enquiries about the data kept in the register.

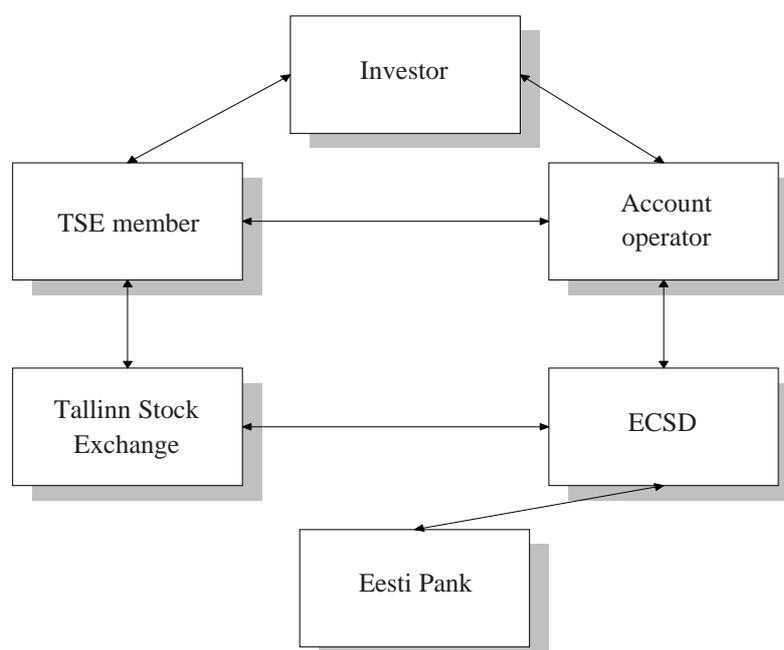
##### *TSE member firms*

Investors communicate with the TSE via member firms, which have the right to use the trading system in three major areas:

- to enter bid and offer quotations in the system;
- to report transactions in securities traded on the TSE; and
- to obtain information about listed companies and transactions.

**Chart 5**

#### Organisational chart of the securities settlement system



A member of the TSE must be an entity registered in Estonia, have been granted a securities intermediary licence by the Ministry of Finance and hold TSE shares. An applicant's share capital must be at least EEK 400,000 (ECU 25,600). In the case of a credit institution, a corresponding requirement of Eesti Pank must be fulfilled. A member firm which is not a credit institution must present a bank guarantee to the TSE.

#### **4.2.4 Recent developments**

An agreement between the Estonian Central Register of Privatisation Vouchers (EVPKR) and the ECSD was signed in 1997. The agreement gives Estonian Privatisation Vouchers (EVPs) the status of dematerialised securities which can also be registered at the ECSD. The agreement was concluded in order to allow the trading of EVPs on the stock exchange.

In 1997 the first steps were taken towards a common Baltic securities market. In order to simplify the trading procedure for investors interested in making investments in the securities of the other Baltic states, on 31 January 1997 an agreement was signed between the ECSD and the Latvian Central Depository (LCD). The agreement enables Estonian holders to keep Latvian domestic securities which are admitted by the LCD to its register on their securities accounts at the ECSD, and vice versa. On 1 July 1997 the two depositories started cross-border free of payment transfers.

### **4.3 Structure, operation and administration of securities settlement systems**

#### **4.3.1 Major regulations**

Securities market operations are mainly regulated by the Law on the Securities Market (passed in 1993 and currently in the process

of being amended), the Rules and Regulations of the TSE and the Rules of the ECSD. All the participants in the securities market must abide by the legislative acts of the Republic of Estonia.

The Ministry of Finance, the State Compensation Fund, Eesti Pank and seven commercial banks established the ECSD on 30 March 1994. On 14 October 1994 the central securities register was established by Government Decree No. 374. On 10 November 1994 the agreement between the Ministry of Finance and the ECSD was signed. (The ECSD assumed the obligation to maintain the central register.)

All the credit institutions that act as account operators of the ECSD have an agreement with the ECSD in order to gain access to the electronic system of the ECSD.

Each credit institution has signed the tripartite agreement with Eesti Pank and the ECSD. The tripartite agreement enables the ECSD on a given value date to credit or debit the settlement accounts of the credit institution with the central bank.

#### **4.3.2 Participation in the system**

At present, the ECSD has five members (account operators) that have access to the ECSD system:

- the Compensation Fund;
- Optiva Pank;
- Eesti Krediidipank;
- Hansapank; and
- Eesti Ühispank (Union Bank of Estonia).

Eesti Pank also has access to the system.

### 4.3.3 Types of transactions handled

#### *Primary market transactions*

In the case of a new issue of securities each subscriber to the issue must pay into the account of the ECSD held with Eesti Pank the total amount of cash required. Following the subscription period, in accordance with the decision of the issuer, the respective amount of securities is transferred into the account of investors in the ECSD and the surplus cash is returned to the investors.

#### *Secondary market transactions*

In the Estonian securities market both delivery versus payment (DVP) and free of payment (FOP) transactions are processed. The stock exchange transactions are settled according to the DVP principle. OTC transactions can be settled using either the DVP or FOP principle. The pledging of securities is executed as an FOP transaction. Transactions involving a transfer of securities from one bank to another owing to a customer changing banks are also handled as FOP transactions.

### 4.3.4 Operation of the transfer system

#### *Free of payment transfers*

Only OTC trades can be settled according to the FOP principle. In the case of FOP transfers, the ECSD transfers securities from the seller's securities account to the buyer's securities account and is not responsible for the money transfer between them. The securities ownership will change hands once the seller's and buyer's securities transfer orders have been matched by the ECSD. The parties selling and purchasing the securities can predetermine the securities transfer date between day  $T + 1$  ( $T$  is the date of matching) and  $T + 30$ .

#### *Delivery versus payment transfers*

All stock exchange trades are settled on  $T + 3$ , according to the DVP principle. Depending on the investor's order, OTC trades according to the DVP principle can be settled from  $T + 1$  to  $T + 30$ . The securities in the ECSD are transferred on a gross basis and money in Eesti Pank is transferred on a bilateral net basis.

### 4.3.5 Transaction processing environment

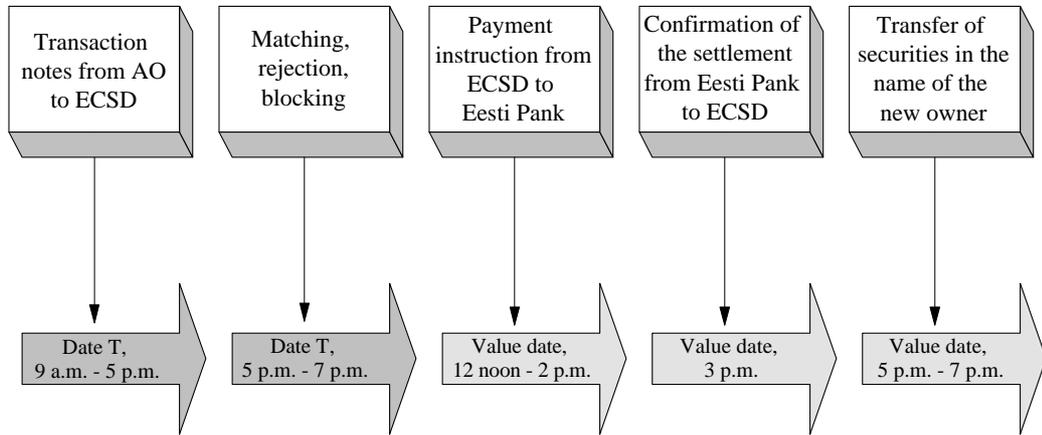
The ECSD only keeps dematerialised (book-entry) securities. Hence the ECSD imposes stringent obligations in respect of the security and safety of the electronic system. Account operators communicate with the ECSD via a frame relay network. SSL protocol is used while changing the data between account operators and the ECSD.

### 4.3.6 Settlement procedures

#### *Free of payment settlement procedure*

The seller and buyer should send the securities transfer order to the ECSD through their account operator, once they have agreed on FOP transfer of securities. The instruction can be entered in the ECSD system between 9 a.m. and 5 p.m. at least one day before the value date. Where the data in the settlement instructions match and the respective amount of securities is available on the securities account of the seller, the ECSD will accept the securities transfer order. Acceptance means that this amount of securities will be blocked on the seller's securities account on day  $T$  until the settlement has taken place. Settlement is made daily between 5 p.m. and 7 p.m. The actual securities transfer in the ECSD takes place on the predefined value date, but no sooner than  $T + 1$ .

**Chart 6**  
**OTC trades settlement timetable**



*Delivery versus payment settlement procedure*

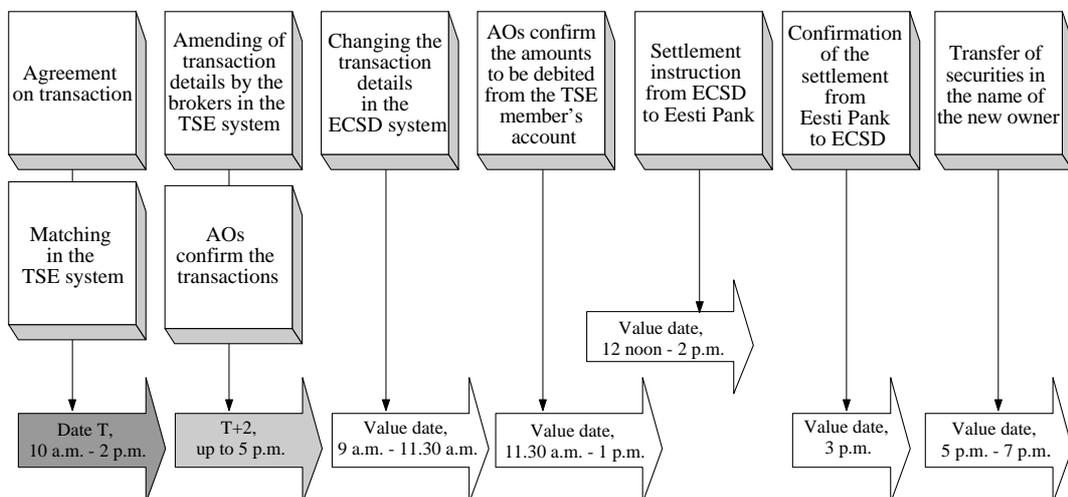
All TSE trades and predefined OTC trades are settled according to the DVP principle. Securities settlement according to the DVP principle involves settling securities in the ECSD on a gross basis and funds in Eesti Pank on a bilateral net basis.

All securities transactions are originated by the buyer as well as by the seller. The ECSD receives settlement instructions concerning OTC trades from account operators (AOs)

on the trading day. The ECSD accepts the settlement instructions where the data in the settlement instructions match and the respective amount of securities is available on the securities account of the seller. Acceptance means that the respective amount of securities will be blocked on the seller's securities account until settlement has taken place.

The ECSD receives the settlement instructions for TSE trades from the TSE trading system in the afternoon on T + 2.

**Chart 7**  
**TSE trades settlement timetable**



The matching of TSE transactions has already taken place in the TSE system, and the ECSD system checks whether the respective amount of securities is available on the seller's securities account. Where this amount of securities is available on the securities account of the seller, the ECSD blocks them. In the event that the respective amount of securities is not available on the securities account of the seller, the parties to the trade have the possibility of changing the securities account to be debited. Any such change should be carried out through the TSE system before 11.30 a.m. on T + 3.

The ECSD calculates the bilateral net cash position of each AO on the basis of accepted TSE and OTC securities settlement instructions on the settlement day at 1 p.m. According to the calculated cash positions, the ECSD generates payment orders and sends them to Eesti Pank. The payments originated by the ECSD have lower priority than payments originated by Eesti Pank, but higher priority than payments originated by credit institutions. The settlement in Eesti Pank occurs as described in Section 3.2.6.

After Eesti Pank has submitted to the ECSD the confirmation of the cash settlement, securities are transferred with finality to the new owners (from 5 p.m. to 7 p.m.).

#### **4.3.7 Pricing policies**

The ECSD is a non-profit-making institution. The operating costs are covered by the registration fees, transaction fees and account maintenance fees.

#### **4.3.8 Credit and liquidity risk control measures**

Implementing DVP transfers has reduced credit risk. The securities are only transferred when the counterparty has sufficient funds to pay for the transaction. In order to guarantee the availability of securities for the matched

transaction, the securities are blocked until settlement has taken place.

The problem of taking liquidity risks is usually connected with the stock exchange transactions. TSE member firms have the possibility of making back-to-back trades, which means also taking the risk of short selling.

The right to take short positions has been granted to recognised dealers only. A recognised dealer is allowed to take short positions within the limits specified by the TSE and only in securities for which it is a market-maker. A recognised dealer can cover short positions by securities borrowing. The TSE has drawn up a model Master Lending Agreement to be used by its members. Securities can only be borrowed to cover short positions. In a securities-lending transaction the funds from selling the borrowed securities shall be kept by the TSE as collateral. The TSE shall transfer the collateral to an account in Eesti Pank in which it shall be deposited on behalf of the lender until such time as the loan is returned. In the event that the borrower does not return the securities to the lender, the lender shall have the right to claim the collateral.

The ECSD does not use loss-sharing arrangements, nor does it use collateral or haircuts.

#### **4.3.9 Main projects and policies being implemented**

After the reform of the interbank payment system, it will be possible to start using the RTGS functions for the ECSD cash settlement. The link for cross-border free of payment securities transfers between the ECSD and the Lithuanian CSD has also been the subject of preliminary negotiations.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population (thousands) <sup>1)</sup>	1,517	1,499	1,484	1,469	1,458
Gross domestic product (EEK millions)	21,600.0	29,600.0	40,700.0	52,400.0	65,400.0
Exchange rate vis-à-vis ECU <sup>1)</sup>	15.4841	15.4531	14.9963	15.2802	15.7427

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; EEK millions)

	1993	1994	1995	1996	1997
Banknotes and coins <sup>1)</sup>	2,378.6	3,069.6	3,801.3	4,265.8	4,585.2
Transferable deposits <sup>2)</sup>	3,738.9	4,782.8	6,354.6	8,089.5	10,750.9
Narrow money supply (M1)	6,119.8	7,857.1	10,162.0	12,358.0	15,339.7
Transferable deposits in foreign currencies	326.7	883.6	1,461.3	2,255.5	3,755.6
Outstanding value on electronic money schemes	-	-	-	-	-
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	-	-	-

1) Without coins in gold and silver.

2) Local currency only.

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; EEK millions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank <sup>1)</sup>	683.5	531.0	555.2	803.4	2,774.7
Free reserves held at the central bank	360.6	171.6	164.6	398.5	260.6
Transferable deposits at other institutions	601.6	1,080.5	1,406.7	1,421.3	1,652.2

1) See Section 1.3.3 for information on reserve requirements.

**Table 4****Banknotes and coins***(total value, end of year; EEK millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	2,707.2	3,476.5	4,289.6	4,933.5	5,382.8
<i>of which:</i>					
<i>EEK 500</i>	886.4	1,472.3	2,437.6	3,245.0	3,837.9
<i>EEK 100</i>	1,347.3	1,552.4	1,463.5	1,348.0	1,207.3
<i>EEK 50</i> <sup>1)</sup>	-	113.1	119.9	94.6	88.7
<i>EEK 25</i>	283.5	191.4	143.4	125.8	127.5
<i>EEK 10</i>	125.7	94.5	73.7	66.8	65.1
<i>EEK 5</i>	43.1	33.0	31.2	30.2	31.5
<i>EEK 2</i>	12.1	11.4	10.6	12.0	12.6
<i>EEK 1</i>	9.1	8.5	9.6	11.1	12.0
Total coins issued (coins in circulation)	20.7	33.5	45.2	50.6	52.5
<i>of which:</i>					
<i>EEK 5</i>	4.2	7.9	8.5	8.7	9.1
<i>EEK 1</i>	3.6	9.9	17.9	20.4	18.9
<i>EEK 0.5</i>	4.8	5.2	6.4	7.1	7.8
<i>EEK 0.2</i>	3.7	5.1	6.3	7.2	8.5
<i>EEK 0.1</i>	3.0	3.4	4.1	5.0	6.0
<i>EEK 0.05</i>	1.4	1.9	2.0	2.2	2.2
<i>Commemorative coins</i>					
<i>EEK 100</i>	2.3	2.4	2.4	2.5	3.2
<i>EEK 10</i>	-	-	-	0.1	0.1
Banknotes and coins held by credit institutions	349.3	440.4	533.5	718.3	850.1
Banknotes and coins in circulation outside credit institutions	2,378.6	3,069.6	3,801.3	4,265.8	4,585.2

1) Banknotes with a denomination of EEK 50 were first issued in 1994.

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts	Value of accounts (EEK millions)
Central bank	1	-	33	3,442
Credit institutions	12	402	n.a.	14,500
Loan and savings co-operatives	2	-	n.a.	9
Post Office	1	n.a.	-	-
<b>TOTAL</b>	<b>16</b>	<b>402</b>	<b>n.a.</b>	<b>17,951</b>
Branches of foreign banks	1	-	n.a.	191.2
<i>of which EU banks</i>	<i>1</i>	<i>-</i>	<i>n.a.</i>	<i>191.2</i>

**Table 6****Cash dispensers, ATMs and EFTPOS terminals***(end of year)*

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	-	1	2	2	2
Number of machines	-	5	140	230	432
Volume of transactions (millions) <sup>1)</sup>	-	n.a.	n.a.	11.5	21.3
Value of transactions (EEK billions) <sup>1)</sup>	-	n.a.	n.a.	3.5	9.1
<b>EFTPOS terminals</b>					
Number of networks	-	n.a.	n.a.	n.a.	n.a.
Number of points of sale	-	20	250	1,200	2,183
Volume of transactions (millions) <sup>1)</sup>	-	n.a.	n.a.	0.3	1.5
Value of transactions (EEK billions) <sup>1)</sup>	-	n.a.	n.a.	0.1	0.4
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (millions)	-	-	-	-	-
Value of transactions (EEK billions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (millions)	-	-	-	-	-
Value of transactions (EEK billions)	-	-	-	-	-

1) *Estimated data.***Table 7****Number of payment cards in circulation <sup>1)</sup>***(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	-	5	120	434	618
Cards with a debit/credit function	-	5	120	434	618
<i>of which:</i>					
<i>cards with a debit function</i>	-	5	117	424	603
<i>cards with a credit function</i>	-	-	2	10	16
Cards with a cheque guarantee function	-	-	-	-	-
Retailer cards	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money cards	-	-	-	-	-

1) *A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.*

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
Settlement system of Eesti Pank	2,329.4	3,926.8	6,236.7	8,762.6	10,900.7
Credit transfers	2,297.7	3,903.3	6,215.6	8,748.8	10,891.1
Cheques	31.7	23.5	21.1	13.8	9.6

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(EEK millions)*

	1993	1994	1995	1996	1997
Settlement system of Eesti Pank	49,456	105,960	149,440	212,363	323,882
Credit transfers	49,271	105,814	149,326	212,294	323,831
Cheques	185	146	114	68	51

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
Total	24	11	10
Banks	10	10	10
Stockbrokers	14	-	-
Insurance companies	-	-	-
Foreign central banks	-	1	-
Cedel/Euroclear	-	-	-
Others	1	1	-

**Table I I****Transfer instructions handled by securities settlement systems:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
ECSD securities settlement system <sup>1)</sup>	-	-	4.1	259.6	4,404.6
Government securities	-	-	0.3	13.3	3,797.7
Bonds and notes	-	-	neg.	0.9	2.8
Shares	-	-	3.8	245.4	604

1) Active trading on the Estonian securities market started in 1995.

**Table I 2****Transfer instructions handled by securities settlement systems:  
value of transactions***(EEK billions)*

	1993	1994	1995	1996	1997
ECSD securities settlement system	-	-	0.3	4.0	30.6
Government securities	-	-	0.0	0.1	2.5
Bonds and notes	-	-	0.1	0.3	5.1
Shares	-	-	0.1	3.5	23.1

**Table I 3****Nominal values registered by securities settlement systems***(end of year; EEK billions)*

	1993	1994	1995	1996	1997
Total	-	-	2.2	4.1	7.0
Government securities	-	-	0.4	0.6	1.7
Bonds	-	-	0.1	0.6	1.3
Shares	-	-	1.7	3.0	4.1

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(thousands)*

	1993	1994	1995	1996 <sup>1)</sup>	1997 <sup>1)</sup>
Cheques issued	n.a.	n.a.	n.a.	14.6	35.8
Payments by debit and credit cards	n.a.	n.a.	n.a.	2,932.0	8,584.7
Paper-based credit transfers	n.a.	n.a.	n.a.	-	-
Paperless credit transfers	n.a.	n.a.	n.a.	15,170.2	23,727.4
Direct debits	n.a.	n.a.	n.a.	18.0	30.0
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	52.0	88.0
<b>TOTAL</b>	n.a.	n.a.	n.a.	18,186.8	32,465.9

1) *Estimated data.***Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(EEK millions)*

	1993	1994	1995	1996 <sup>1)</sup>	1997 <sup>1)</sup>
Cheques issued	n.a.	n.a.	n.a.	91.1	204.5
Payments by debit and credit cards	n.a.	n.a.	n.a.	1,350.1	4,237.2
Paper-based credit transfers	n.a.	n.a.	n.a.	-	-
Paperless credit transfers	n.a.	n.a.	n.a.	452,183.3	819,220.7
Direct debits	n.a.	n.a.	n.a.	10.0	23.0
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	39,336.0	45,035.0
<b>TOTAL</b>	n.a.	n.a.	n.a.	492,970.5	868,720.4

1) *Estimated data.*

**Table 16**  
**Participation in S.W.I.F.T. by domestic institutions**

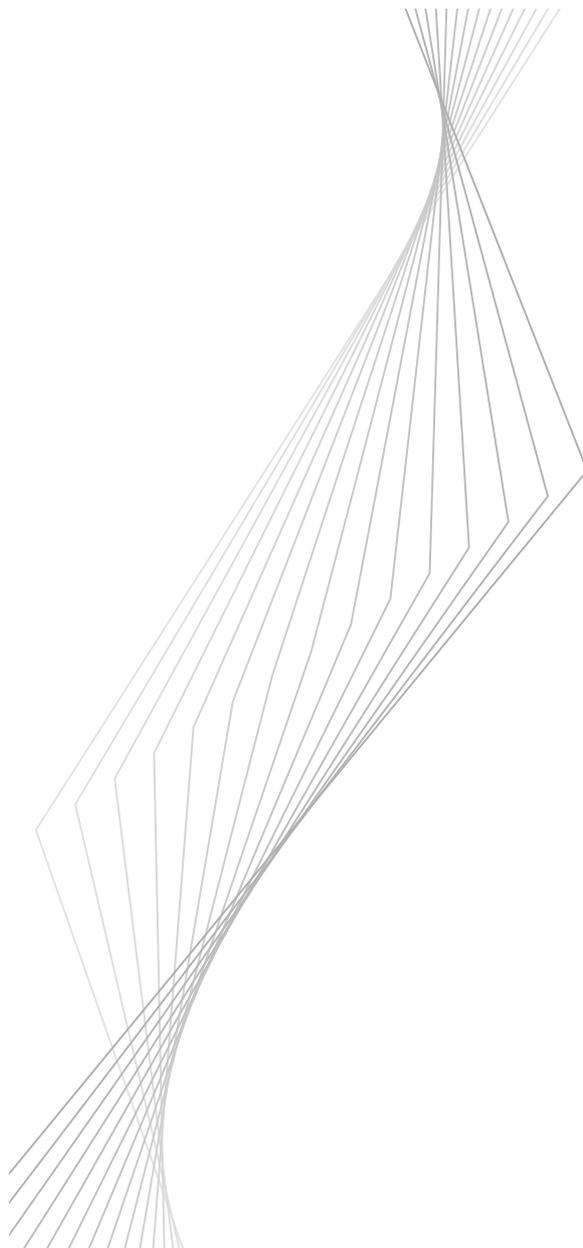
	1993	1994	1995	1996	1997
S.W.I.F.T. users	6	9	12	11	11
<i>of which:</i>					
<i>members</i>	6	9	11	10	10
<i>sub-members</i>	-	-	1	1	1
<i>participants</i>	-	-	-	-	-
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	7,649	168,883	324,881	466,803	640,650
<i>of which:</i>					
<i>category I</i>	5,517	108,642	183,400	268,081	362,859
<i>category II</i>	940	31,162	72,875	109,003	150,578
<i>sent to/received from domestic users</i>			18,047	27,209	27,718
Total messages received	5,770	153,882	292,613	433,491	594,812
<i>of which:</i>					
<i>category I</i>	3,164	78,344	139,441	203,607	277,956
<i>category II</i>	96	2,903	8,422	18,425	29,231
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556



EUROPEAN CENTRAL BANK



**Hungary**

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**List of abbreviations**

<b>ÁKK</b>	Government Debt Management Agency – <i>Államadósság Kezelő Központ</i>
<b>BCE</b>	Budapest Commodity Exchange
<b>BFC</b>	Basic Financial Cover
<b>BSE</b>	Budapest Stock Exchange
<b>BUBOR</b>	Budapest Interbank Offered Rate
<b>BUX</b>	Index of the Budapest Stock Exchange
<b>CME</b>	Chicago Mercantile Exchange
<b>CSD</b>	Central Securities Depository
<b>EER</b>	Securities accounting system of KELER
<b>GBC</b>	Giro Bankcard Ltd.
<b>GIRO Rt.</b>	GIRO Clearing House Ltd. – <i>GIRO Elszámolásforgalmi Rt.</i>
<b>HBA</b>	Hungarian Banking Association
<b>HBCMS</b>	Hungarian Banking and Capital Market Supervisory Authority
<b>HFTB</b>	Hungarian Foreign Trade Bank Ltd.
<b>HSI</b>	Hungarian Standards Institution
<b>HUF</b>	Hungarian forint, the national currency
<b>ICSD</b>	International Central Securities Depository
<b>IGS</b>	Interbank Giro System
<b>KELER</b>	Central Clearing House and Depository Ltd. – <i>Központi Elszámolóház és Értéktár Rt.</i>
<b>MATÁV</b>	Hungarian Telecommunications Company Ltd.
<b>NBH</b>	National Bank of Hungary
<b>OBA</b>	Deposit Guarantee Fund – <i>Országos Betétbiztosítási Alap</i>
<b>PVR</b>	Cash accounting service of KELER
<b>SPAN</b>	Risk management system of KELER for exchange-traded derivatives
<b>VIBER</b>	Hungarian RTGS payment system – <i>Valós Idejű Bruttó Elszámolási Rendszer</i>

## Introduction

The current Hungarian payment systems were established in the second half of the 1980s when the single-tier monobank system (the traditional socialist model in which the central bank had a monopoly on commercial banking) was reformed. The National Bank of Hungary (NBH) played a very important and proactive role in the development of the payment systems. The reasons for this are twofold. On the one hand, the NBH is directly entrusted with the design of the payment systems in its Statute, while on the other, the newly created banks were preoccupied with resolving their own internal system problems at that time. Nevertheless, the NBH created a framework in which the banking community would have a say in the development of payment systems. At the beginning the NBH concentrated on commercial rather than retail payment systems. As a result the retail payment systems (e.g. card systems) developed on a competitive rather than a co-operative basis. The current systems are characterised by a high degree of automation, and an elimination or efficient limitation of credit risk.

Practically all interbank transactions are processed electronically. The predominant payment instruments are giro credit transfers and debit cards. Cheque usage is extremely limited, as cheque services were introduced in Hungary at the same time as debit cards. The number of cards, ATMs and POS terminals has risen spectacularly in the past few years. Electronic banking services have also become very popular.

The organisation of the payment systems will change significantly with the introduction of real-time gross settlement (RTGS) systems by the NBH for high-value payments (VIBER), and the Central Clearing House and Depository Ltd. (KELER) for securities settlement in 1999. The two systems will work closely together to reach pure model I delivery versus payment (DVP) (i.e. both securities and funds are settled on a trade-by-trade, gross basis with the final transfers occurring at the same time) in the settlement of over-the-counter (OTC) securities trades.

## I Institutional aspects

### I.1 General legal aspects

With the exception of the traditional cheque rules based on the Geneva Convention of 1931, which were incorporated into and enacted by national law in 1962, the basic payment systems legislation was adopted after 1987. It was in that year that the Hungarian banking system underwent fundamental restructuring, including the separation of the roles and activities of the commercial banking sector and the central bank.

In addition to issuing legal tender and maintaining price stability, the National Bank of Hungary (NBH) bears constitutional responsibility for regulating the circulation of money, according to the first indent of paragraph 32/D of the Constitution of the Republic of Hungary (Act XX of 1949). Among other duties, such as managing the exchange rate of the currency, foreign exchange control, keeping accounts for the government and settlement accounts for credit institutions, Act LX of 1991 on the NBH also authorises the central bank to design and oversee the domestic payment systems.

Within its scope of competence the NBH is entitled to issue decrees establishing obligations in respect of payment and clearing matters, binding not only on credit institutions and financial undertakings but also on other entities, and even on natural persons.

The Government Decree 39/1984 on the Circulation of Payments and Bank Credit sets out the rules governing the holding of accounts for all registered and some non-registered legal entities as well as for private entrepreneurs. It defines when a payment instruction is deemed to have been fulfilled. Other important matters such as the various payment instruments and maximum time frame for executing payment instructions are regulated by Decree 6/1997 of the Governor of the National Bank of Hungary

on Circulation of Payments. This Decree also contains a description of the nationwide uniform account-numbering structure and the standardised (paper) document forms. The special rules relating to payment services offered by the State Treasury can be found in Decree 42/1996 (XII. 28) of the Minister of Finance.

Banking activities and financial services in general are governed by Act CXII of 1996 on Credit Institutions and Financial Undertakings, in which clearing services are reserved solely for clearing houses. Clearing houses are required to have the minimum amount of initial capital (HUF 500 million, ECU 2.4 million) stipulated in the law and are licensed by the central bank. The NBH may require clearing houses to build up risk reserves to cover operational risks. The ownership of clearing houses is restricted to the central bank, credit institutions, other clearing houses and securities clearing houses. The Government Decree 61/1997 contains the conditions that must be met by parties applying for a licence.

In Act CXII of 1996 on Credit Institutions and Financial Undertakings the provision of payment services and the issuance of cashless payment instruments are treated as two separate activities. The latter activity is licensed by the central bank, the former by the Hungarian Banking and Capital Market Supervisory Authority (HBCMS). All credit institutions, with the notable exception of savings co-operatives, which have a licence to conduct payment services business, are required to become direct participants in the Interbank Giro System (IGS).

In order to become a member of the European Union (EU), Hungary is obliged to harmonise its legislation in order to meet the requirements of the Single Market. Hungary has already adopted a considerable amount of EU legislation covering financial services. Further changes are on their way, e.g. specific regulations on electronic payment

instruments and, in particular, the relationship between issuer and holder.

The bankruptcy law does not contain a “zero-hour rule”, i.e. a bankruptcy decision by the court has no retroactive effect, but any set-off is strictly limited after a credit institution or a financial undertaking has gone bankrupt; hence netting agreements between payment systems participants are not recognised by law.

Credit institutions are subject to the general anti-trust law (Act CLV of 1997) and consumer protection legislation (Act LVII of 1996). Act CXII of 1996 on Credit Institutions and Financial Undertakings also contains certain specific consumer protection rules. Banks are obliged to join the Deposit Guarantee Fund (OBA).

Depositors are protected by deposit guarantee schemes for up to HUF 1 million (ECU 4,727). The amount of deposits guaranteed per customer is, in line with income levels, substantially lower than the comparable figure in EU countries (ECU 20,000).

## **1.2 Financial intermediaries that provide payment services**

### *Credit institutions*

Financial institutions in Hungary are divided into credit institutions and financial undertakings. Only credit institutions are allowed to provide payment services and/or issue non-cash payment instruments. There are three categories of credit institutions: banks, specialised credit institutions and (savings and credit) co-operatives. Only banks may have a full licence. Co-operatives (savings or credit co-operatives) and specialised credit institutions may only offer a limited range of financial services.

New legislation, including Act CXXXII of 1997 on Hungarian Branches and Commercial Representative Offices of Companies

Registered Abroad and the amendments to Act CXII of 1996 on Credit Institutions and Financial Undertakings, complying with the requirements of the Organisation for Economic Co-operation and Development (OECD), have opened the way for foreign credit institutions to establish branches in Hungary since 1998. The branches receive equal treatment in respect of their participation in the payment and settlement systems. No application for a branch licence had been submitted by the end of 1998.

### *Other institutions*

A number of other institutions may keep accounts for limited purposes and/or carry out payment services. For example, securities investment firms may keep cash balances for investors, but may not carry out payment instructions for third parties, except for those related to investment transactions.

### *Post Office*

The Hungarian Post Office provides cash payment services. A large proportion of households use the postal network for transferring public utility bills and other regular payments (e.g. insurance premiums) or conducting occasional cash transfers to other private persons. A significant proportion of social security benefits and pension payments are also delivered through the postal network. There are currently 3,233 Post Office branches in Hungary compared with 3,022 bank branches. Banks and the Post Office settle their bilateral obligations on their accounts with the NBH.

### *Hungarian State Treasury*

The State Treasury offers quasi-banking services for public sector institutions by keeping non-interest-bearing budgetary accounts. Account holders can make payments related to activities financed by the government, provided that payments are

made from positive balances. The State Treasury manages 3,021 accounts for 1,753 public institutions.

### 1.3 The role of the central bank

#### 1.3.1 General responsibilities

The NBH performs five basic functions: conducting monetary policy; managing the foreign exchange reserves; exercising foreign exchange control; issuing banknotes and coins; and overseeing payment systems as well as providing settlement services.

The NBH plays a pivotal role in payment systems as it is responsible for the regulation of the systems, promoting co-operation among the major players in the payment business, and influencing the design, operation and management of the interbank payment systems.

#### *Statutory responsibilities*

Act LX of 1991 on the National Bank of Hungary contains the statutory responsibilities of the central bank.

#### *Cash payments*

The NBH has the exclusive right to issue and destroy banknotes and coins in Hungary. It is responsible for the production and distribution of banknotes and coins, for withdrawing them from circulation and, when necessary, replacing old, mutilated or damaged ones. The NBH distributes cash through its head office in Budapest and its four regional branches (as of end-1998). Banknotes and coins are produced by companies that are subsidiaries of the NBH.

#### *Administration of accounts*

The NBH holds accounts for credit institutions, KELER, the State Privatisation

and Holdings Ltd., the State Treasury and the Hungarian Post Office. In addition to holding settlement accounts, it also provides correspondent banking services for some credit institutions (for the indirect participants of the IGS). The NBH is entitled to permit account opening by credit institutions with other credit institutions (correspondent banks), but these practices have not become widespread. Most banks also hold foreign exchange accounts with the central bank.

#### *Regulatory tasks*

The NBH has the right to issue decrees within its scope of authority. One of the most important of these is Decree No. 6/1997, which defines the rules for financial institutions when executing payment instructions. It regulates payment instruments and standardises some electronic messages, paper documents and the structure of bank account numbers.

#### *Establishment of common rules*

The NBH has initiated the formation of, and has participated in, various ad hoc interbank committees dedicated to the development of certain areas of payment systems, such as the setting-up of the IGS and the introduction of new payment instruments. These committees also played a crucial role in establishing common rules and standards.

#### *Supervision and auditing*

Although the Hungarian Banking and Capital Market Supervisory Authority (HBCMS) is the authority which is primarily responsible for the supervision of individual credit institutions, the NBH is obviously also concerned with the stability of the financial system. The NBH is responsible for licensing the issuance of non-cash payment instruments and providing clearing as well as cash processing services. The NBH and the

HBCMS have a co-operation agreement under which the two institutions can share information and co-ordinate compulsory reporting and on-site inspections. Through its Banking Control Department, the NBH regularly monitors compliance with its regulations both by banks and by clearing houses. The NBH carries out regular audits on the functioning of the payment systems by collecting information as a shareholder (in the case of KELER) or by imposing compulsory reporting on the credit institutions for statistical purposes (see also Section 1.4.1).

### **1.3.2 Provision of processing and settlement facilities**

#### *Provision of settlement facilities*

All banks have a single account held with the head office of the NBH. The accounts of credit institutions serve as compulsory reserves as well as current accounts; their most important function is to facilitate the settlement of high-value domestic interbank transactions and transactions with the NBH. Credit institutions are required to meet the reserve requirement on an average basis in a period and their entire account balance can be used for settlement purposes during the day. The NBH is settlement agent for some of the net settlement systems (e.g. the IGS and the GBC card clearing system) and settles the Hungarian forint (HUF) leg of OTC securities transactions. (The securities side is managed by KELER.) Transactions are entered and settled on a gross basis during the day, and are deemed to be final and irrevocable. The NBH schedules its own payments in order to facilitate the liquidity management of credit institutions.

#### *Provision of credit facilities*

The NBH provides intraday interest-free credit to banks against collateral in the form of government securities. There is no cap on the intraday credit line. The credit limit is set

after the closing of accounts on the previous day and cannot be changed during the day. The intraday credit can turn into an overnight loan at normal repo rates within the so-called repo limit set for the bank. For any amount exceeding the repo limit the bank is charged a penal rate of interest (i.e. double the normal repo rate).

#### *Pricing policy*

The pricing policy is aimed at achieving full cost recovery. Banks pay transaction fees based on the value of the transaction with a cap on the minimum and maximum amounts (the percentage rate is currently 0.3%, the minimum being HUF 10 (ECU 0.05) and the maximum HUF 1,000 (ECU4.73)).

### **1.3.3 Monetary policy and payment systems**

The ultimate objective of the NBH's monetary policy is to achieve price stability. The key means of addressing inflation and, as a result, an intermediary target for the NBH is the stability implied by a pre-announced crawling peg exchange rate regime and a decrease in the monthly crawl. The government and the NBH have set up a  $\pm 2.25\%$  intervention band around the central parity and modify the monthly rate of devaluation, taking into account the requirements of external equilibrium. Monetary policy aims to achieve its goals by influencing short-term interest rates. This means influencing short-term interest rates in line with the pre-announced rate of devaluation and ensuring positive real interest rates.

The monetary policy instruments currently employed are minimum reserves and open market operations (repos, foreign exchange swaps and the deposit facility). Reserve requirements apply to all credit institutions including banks, savings co-operatives, building societies, investment banks and mortgage companies. The maintenance period

has recently been changed from a two-week to a one-month period. The current reserve ratio is 12% of all liabilities except for capital funds, reserves for bad debts, subordinated loan capital, liabilities from the NBH and liabilities from both resident banks and non-residents. The NBH pays interest on the reserve balances. The interest is calculated on the basis of interbank deposit rates and is paid monthly.

The NBH overnight repo and deposit facilities are available on call at pre-announced interest rates. The interest rates of these two facilities constitute a corridor for the overnight interest rate. The NBH has a net borrowing position against the banking sector. The main instrument used for absorbing liquidity is a four-week deposit facility available through fixed rate tenders. In the near future the NBH is planning to implement a quick tender facility for very short-term liquidity management.

The NBH is concerned about both the smooth functioning of the payment system and the adverse effect of a possible banking failure on monetary policy. As a preparatory step towards the introduction of the IGS, three important changes were made. First, since September 1994 credit institutions' compulsory reserve accounts and current accounts have been combined. This means that during the day the required reserves can be used for payment purposes, and the end-of-day balances serve as required reserves. Second, banks have been allowed to meet their compulsory reserve requirements on an average-of-period basis, which supports their liquidity management. Third, banks (credit institutions, but not others such as the State Treasury) which hold accounts with the central bank have been allowed to raise intraday liquidity by pledging collateral.

Banks can enter into repos and foreign exchange swaps with the NBH. A bank's total assets determine the size of the standard repo facility (repo limit). A so-called emergency repo facility, provided on an overnight basis without a pre-set limit, is also

available. Through this instrument the NBH is empowered to take steps to maintain the stability of the payment systems when a bank's liquidity difficulties seem likely to jeopardise the liquidity of other banks. Pledged government securities serve as collateral for end-of-day overdrafts. End-of-day overdrafts which exceed the repo limit are discouraged by means of a penal interest rate which is twice the repo rate.

#### **1.3.4 Main projects and policies being implemented**

The future development of payment services at the NBH will be primarily shaped by the implementation of the RTGS system. VIBER is the abbreviated Hungarian name for this system. The RTGS (VIBER) development project was launched by the NBH in January 1997 in close co-operation with interested credit institutions.

The VIBER system will profoundly change the NBH's current accounting practices. It will assume some important tasks of the current NBH accounting system, such as the management of the members' settlement accounts. It will also provide the opportunity for the provision of pure model I DVP for securities-related settlement.

The VIBER system will be owned and operated by the NBH and is scheduled to become operational by September 1999.

#### **1.4 The role of other private and public sector bodies**

*Hungarian Banking and Capital Market Supervisory Authority (HBCMS)*

The legal status of the HBCMS is defined in Act CXIV of 1996 on the HBCMS. It is a government agency, accountable to the Ministry of Finance.

The supervision of financial and investment services is delegated to the HBCMS by Act

CXII of 1996 on Credit Institutions and Financial Undertakings, and by Act CXI of 1996 on the Public Offering of Securities, Investment Services and on the Stock Exchange.

Within the scope of its responsibilities, the HBCMS grants licences and regularly monitors the activities of the individual institutions, the exchanges and the clearing houses. Among other duties, the HBCMS grants to credit institutions licences for the provision of payment services.

#### *Office of Economic Competition*

Act LVII of 1996 on the Prohibition of Unfair and Restrictive Market Practices, harmonised with EU legislation, sets out the tasks of the Office of Economic Competition. The Office is a publicly owned legal entity. It is entitled to impose penalties. The Act contains provisions prohibiting the abuse of dominant positions, anti-competitive price co-operation, unfair

market practices, etc. In some cases the prohibition on the abuse of dominant positions has led to changes and penalties in retail payment services.

#### *Hungarian Banking Association*

The Hungarian Banking Association (HBA) represents the interests of its 41 member banks. Membership is voluntary. The HBA participates in the drafting of laws and regulations concerning the financial sector and facilitates the formulation of a common position of the members on different issues. The HBA has been actively supporting the development of common market infrastructures (such as the IGS, the Deposit Insurance Fund, the Credit Guarantee Company and the compulsory debt information system). The HBA joined the Banking Federation of the European Union as a correspondent member in 1991 and was granted associated status in 1998.

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## **2 Payment media used by non-banks**

### **2.1 Cash payments**

Banknotes and coins continue to play an important role in payment transactions in Hungary. The share of cash in circulation in the M1 monetary aggregate was 36.9% in 1997, compared with 41% in 1993, while its share in M3 was 15% in 1997 compared with 18% in 1993. The same trend can be seen when comparing cash in circulation with GDP (6.7% in 1997 and 10.4% in 1993).

The NBH began issuing a new series of banknotes in 1997. The old type of Hungarian forint (HUF) banknotes will be replaced by the six denominations (HUF 10,000, 5,000, 2,000, 1,000, 500 and 200) of the new series by the end of 1999.

Until 31 December 1967 the Ministry of Finance issued coins for circulation as well as commemorative coins. In order to enforce

uniform principles of issue, since 1 January 1968 the NBH has been responsible for issuing these, pursuant to Decree No. 36/1967. Metal coins are minted at the Magyar Pénzverő Rt. (Hungarian Minting Co. Ltd.). In 1993 the NBH issued a new series of coins with a uniform design. When the replacement of coins began, the number of coins in circulation exceeded 3.4 billion. Of the old series, only the 50 fillér coin (100 fillér equals 1 forint) has remained in circulation. As a result of the coin replacement programme and the withdrawal of the 10 and 20 fillér coins, the number of coins in circulation had declined to 1.4 billion by 31 December 1997.

When specifying denominations of the new series of banknotes, the NBH followed the recommendations of the EU and the International Monetary Fund (IMF) and the traditions of Hungarian banknote issues. Taking into account the practical cash

management criteria of users, the primary consideration was to ensure that payments would be conducted with as few banknotes as possible in order to reduce the cost of cash payments.

At the end of 1997 the value of banknotes and coins in circulation totalled HUF 620 billion (ECU 2.8 billion), of which banknotes accounted for HUF 600.5 billion (ECU 2.7 billion) and coins for HUF 19.6 billion (ECU 0.1 billion). The value of banknotes and coins in the vaults of credit institutions amounted to HUF 61.1 billion (ECU 0.29 billion) and the value of those in circulation was HUF 560.2 billion (ECU 2.65 billion).

## 2.2 Non-cash payments

Customers of banks have access to a wide range of payment instruments. The predominant means of payment are giro credit transfers and card payments. A very high proportion of transfer instructions are initiated via remote access payment instruments (e.g. by bank card, telephone, personal computer, telecommunications lines, etc.). Banks are also actively encouraging large organisations generating or receiving high volumes of recurring payments to use paperless electronic transfers.

Decree 6/1997 of the Governor of the National Bank of Hungary on the circulation of money has established the most important rules and standards for the different types of payments. The same standards apply to the fulfilment of commercial and retail payments. Orders received before the cut-off time (determined by the receiving institution itself) must be processed and finally credited to the beneficiary account on the next day if two direct participants of the IGS are involved. The payment is always settled on a gross basis, i.e. there is certainty of final and irrevocable settlement of value delivered to customers. In the case of the involvement of indirect participants, the time allowed for payment processing is extended by one day for each indirect participant involved.

### 2.2.1 Credit transfers

The most commonly used payment medium in Hungary is the giro credit transfer. The order is given to the bank in either paper or electronic form (diskette, magnetic tape or file transfer via the telecommunications network).

There are two types of credit transfers: the ordinary transfer instruction and the multiple transfer order (direct credit). The latter can only be initiated in electronic batches, by its being sent either to the payer's bank or directly to GIRO Rt. (the IGS operator). For interbank transactions, both types of payment orders are processed by the IGS.

A credit transfer transaction involving two credit institutions normally takes two days to be completed. Payment instructions received by the cut-off time published by each bank are forwarded to the IGS on the same day. Receiving banks credit the beneficiaries' accounts on the next day (usually before the opening of the bank). Credit transfers between two accounts with the same bank are fulfilled on the day of receipt of the instruction, while transactions involving correspondent banks can take one extra day for every correspondent.

The emergence of office and home banking is a significant new development. More and more account holders are presenting their payment orders electronically via telecommunications lines, making labour-intensive manual data capture within the financial system unnecessary. In the first half of 1998 45% of transfers were initiated electronically. The total number of transactions reached 27.5 million in the six-month period, with the value of transactions amounting to HUF 52,938 billion (ECU 238.9 billion).

### 2.2.2 Cheques

Cheques have never been very popular in Hungary. Guaranteed cheques issued by the

large commercial banks since the end of the 1980s have not become widespread. The issue of eurocheques started in 1990, but in the second half of 1998 the last eurocheque issuer bank formally ended this activity because of its customers' lack of interest. Debit cards took over the role of cheques very quickly. There is no cheque clearing system owing to the low volumes involved, and cheques are exchanged bilaterally between banks. Most cheques are encashed at post offices.

During the first half of 1998 approximately 52,000 domestic guaranteed cheques were encashed in Hungary, of which only 221 were eurocheques.

### 2.2.3 Direct debits

Direct debits allow recipients of large numbers of regular payments, such as public utilities suppliers and insurance companies, to collect money automatically from bank accounts, in cases where the account holder has pre-authorized the bank to debit the account.

The use of direct debits is a substantially cheaper means of collecting receivables than using postal transfer orders, and therefore many companies are encouraging their customers to switch from postal payments to direct debits.

Until 1997 direct debits were not recognised as a payment instrument. Before 1997 banks debited their private customer accounts under bilateral data exchange agreements concluded with the beneficiaries, and settled the transactions by credit transfer. By tradition this service was not available for business customers. Direct debit rules were agreed upon and standardised only in 1996 and 1997.

### 2.2.4 Payment cards

The issuance of payment cards by banks in Hungary began in 1989. Currently 23 commercial banks offer this service and, as a result of their vigorous promotional efforts, by the middle of 1998 the number of bank-issued cards in circulation had reached 2.5 million, almost all of which were debit cards. Several other banks are also interested in the card acquisition business.

The clearing and settlement of domestic card transactions depend on the type of card concerned. Domestic VISA and Europay transactions are cleared by the respective card organisations, separately from international transactions, and are settled by HFTB. The Giro Bankcard Company (GBC) clears transactions for its members and settlement takes place in the books of the NBH.

The card business has developed very competitively. In practice, it is the Europay and VISA trade names which have made mutual card acceptance possible, so the great majority of cards carry either one or the other of these logos.

#### *Debit cards*

The majority of debit cards (83%) can be used internationally. The remaining 17% are cards for exclusive domestic use. Approximately 80% of the cards can be used only in an electronic environment. Some 91% of the cards are eligible both to pay for goods and services and to withdraw money. The remaining 9% are cash only cards, which can be used at ATMs and POS terminals installed at bank branches as well as at 3,200 Post Office branches.

All cards contain magnetic strips and require the use of personal identification numbers (PINs) at ATMs. PIN usage is not required at most retail outlets, where customers sign paper slips.

The volume of transactions is growing continuously. During the first half of 1998 some 32 million transactions were made: 88% of them were cash withdrawals. The value of these transactions was HUF 473 billion (ECU 2.1 billion), of which 91% were cash withdrawals.

#### *Credit and charge cards*

Bank-issued credit and charge cards have just appeared in Hungary. Only a few hundred had been issued by the middle of 1998 and the corresponding turnover was also very modest, i.e. HUF 140 million (ECU 0.66 million), which represented less than 1% of the total bank card turnover.

Apart from banks, American Express is the largest issuer of charge cards. By mid-1998 it had issued some 5,000 cards to Hungarian card holders. By the end of 1998 some credit institutions had begun issuing American Express cards under franchise agreements.

#### *Retailer cards*

Retailer cards, issued by six petrol companies, can be used only at the petrol stations run by the respective issuer. At the 818 petrol stations, 1,000 POS machines and 401 manual imprinters are in operation.

By 30 June 1998 some 178,000 petrol cards had been issued and during the first half of the year 3.2 million transactions were recorded with a value of HUF 26 billion (ECU 123 million).

#### *Prepaid cards*

Prepaid cards, launched in Hungary a couple of years ago by the Hungarian Telecommunications Company (MATÁV), enable national telephone calls to be made from payphones in the issuer's telephone network. All these cards are single-purpose, non-reloadable chip cards.

Currently there are no concrete plans for the introduction of electronic money (e-money). However, there are some interesting projects (e.g. loyalty cards and student cards) under way using smart card technology.

#### *ATM and POS networks*

There are four ATM networks in Hungary. Two of them are managed by card-issuing credit institutions, one is managed by the Giro Bankcard Company (GBC), which is owned by six commercial banks, and the fourth is an independent service provider.

By the middle of 1998 1,866 ATMs had been installed. All of the ATMs are linked online, through switches, to the account-keeping banks. The banks offer extra services only at their own ATMs (e.g. cash deposits, balance checking and payment order acceptance). Besides ATMs, cash can be withdrawn at 2,482 POS terminals installed at bank branches (a cashier-handled POS is a temporary alternative to an ATM in places where the transaction volume does not justify the installation of an ATM) and at another 3,793 terminals installed in Post Office branches. All cash transactions require the use of a PIN number.

15,866 POS terminals and 15,701 manual imprinters were installed at retail outlets. Four credit institutions manage their own POS networks, while others utilise the services of two other service providers.

#### **2.2.5 Postal instruments**

The Post Office offers three types of services related to cash payments. The cash transfer order enables non-account holders to make credit transfers (inpayment). Generally the beneficiary provides the debtor with a paying-in slip, which has the necessary payment data pre-printed on it. The Post Office delivers the payment data to the beneficiary's bank or directly to the beneficiary via a data medium,

or on paper in image form. In 1997 about 134 million transactions were processed with a value of HUF 1,494 billion (ECU 6.7 billion).

The domestic postal order is used for payments where the debtor's cash is handed over at the counter and delivered to the address of the beneficiary. The slips for this purpose can be obtained at Post Office counters. The forms can also be used for payments into bank accounts. In 1997 6.9 million transactions were processed with a total value of HUF 82 billion (ECU 0.37 billion).

The cash delivery order is used for paying cash from current accounts kept by banks. The debtor may initiate the payments either on paper or via a magnetic data medium. The banks, after debiting the account with the total value of the orders, forward them to the Post Office branch nearest to them. With the bank's consent the debtor may hand in the orders directly at the Post Office using a bank cheque, which serves as collateral. In 1997 56.8 million transactions were processed with a value of HUF 983 billion (ECU 4.43 billion).

The share of postal instruments in total non-cash payments was 3.5% in 1997.

### **2.2.6 Other payment instruments**

There are two types of collection orders used exclusively within the business sector: the pre-authorised collection order and the bills of exchange collection order. Pre-authorised collection orders may be used if the debtor authorised his bank, by a unilateral written statement, to debit his account to the benefit of a specified creditor. In respect of certain public sector receivables, such as taxes, an appropriate paragraph of an act may replace the authorisation by the debtor, helping public sector agencies to collect their outstanding claims. This type of order can be used for collections based on executable documents such as final court orders. In such cases, the debtor is not notified before the

debiting of the account. This payment instrument is in many respects similar to a direct debit.

In respect of bills of exchange collection orders, when the debtor is a drawee of a bill of exchange or the issuer of a promissory note, the place of payment is the debtor's bank. The documents should be submitted to the creditor's bank, which forwards them to the debtor's bank for collection of payment. The debtor has the right to reject the payment before it is due.

Hungarian consumers can use travellers' cheques when travelling abroad. During the first half of 1998 Hungarian banks and travel agencies sold American Express, VISA, Citicorp and Thomas Cook cheques to a value of HUF 2.8 billion (ECU 0.01 billion). During the same period the value of encashed travellers' cheques in Hungary also amounted to HUF 2.8 billion.

### **2.3 Recent developments**

Standards for account numbering and some important paper slips, such as transfer orders, were introduced in 1995.

The NBH and the Banking and Financial Working Group of the Hungarian Standards Institution (HSI) are working together on publishing standards for the use of direct debits in order to enhance the effectiveness of automated processing. Representatives from commercial banks and the Hungarian Banking Association are involved in this procedure.

The NBH and the HSI are working together on the introduction of international and European standards in the area of payments.

### 3 Interbank exchange and settlement systems

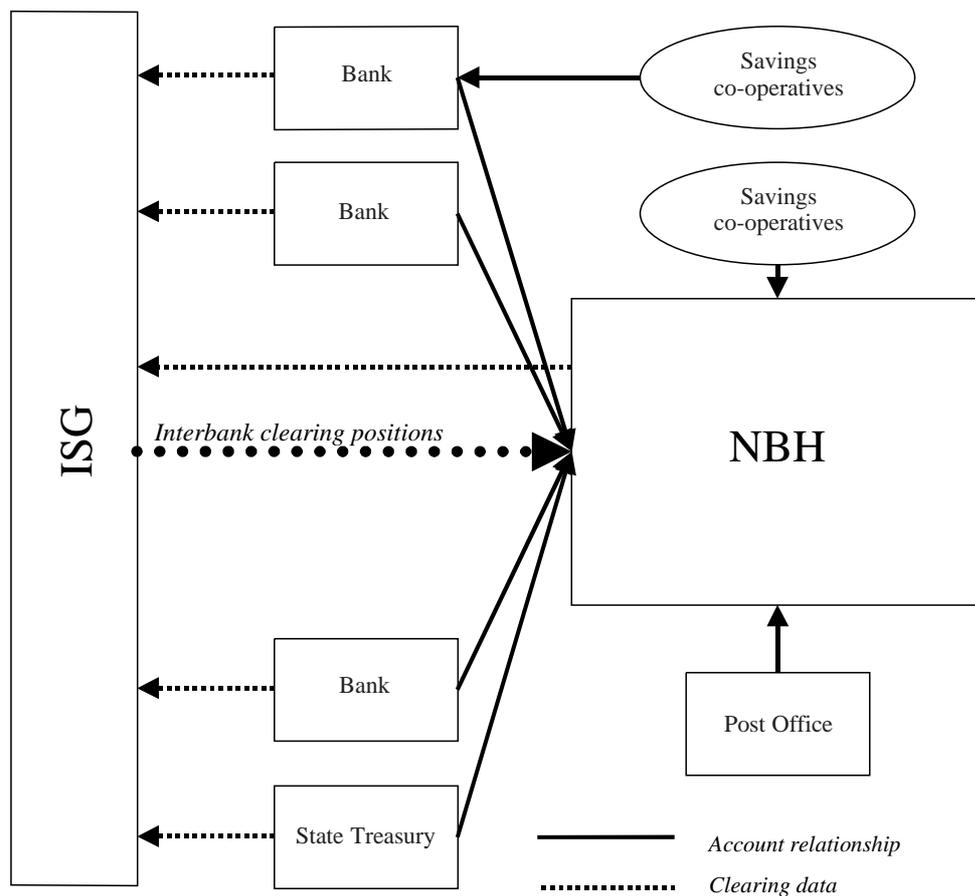
#### 3.1 General overview

Interbank non-cash payments are processed either in the IGS or the NBH's banking system. Both systems process payments regardless of value, but only the IGS processes customer transactions. Since the IGS is an overnight system, customer

payments cannot be processed in one day. Card payments are processed in three different clearing systems as described in Section 3.5 below.

The following chart illustrates the structure of the Hungarian payment and settlement systems:

**Chart I**  
Clearing and settlement relationships



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### **3.2 Real-time gross settlement system (VIBER)**

The Hungarian RTGS (VIBER) system is currently being developed. It is scheduled to be operational by September 1999. VIBER will be a gross settlement system in which the processing and settlement of payment orders will take place continuously with real-time notification of the participants concerned. Transactions will be settled individually in the central bank accounts, that is, without netting. Settlement will be final and irrevocable. In addition to interbank payments, VIBER will also process urgent or high-value orders of banks' customers. This system will ensure automated and same-day settlement and will provide a DVP settlement mechanism for securities trades. The system is intended to meet the requirements set out in the May 1995 EMI report on the TARGET system, and will therefore support Hungary's accession to the EU in the future.

#### **3.2.1 Functioning rules**

All operating rules of the system will be set out in bilateral contracts and rule books. The rules will include: membership criteria, operating hours, a timetable of the business day, revocability and finality provisions, standard messages, responsibilities and obligations of participants, collateral arrangements, prices, etc. The contracts will have to be finalised by the time the system becomes operational.

#### **3.2.2 Participation in the system**

The system will be open to domestic credit institutions and branches of foreign banks. Other participants in the system will include the NBH, the State Treasury and KELER. It is expected that almost all current direct IGS participants will become members of the RTGS system. For a credit institution (including branches of credit institutions based abroad) there is only one – technical – criterion for participation, namely having an established S.W.I.F.T. connection.

#### **3.2.3 Types of transactions handled**

The system will handle bank-to-bank and customer payments, regardless of value. It will be possible to settle OTC securities trades on a pure real-time DVP basis. Net positions stemming from net settlement systems will also be settled in VIBER. Finally, the system will allow the NBH to debit funds related to transactions with other participants, such as loan collection, deposit paybacks, repo transactions, the HUF leg of foreign exchange transactions and cash withdrawals from the NBH.

#### **3.2.4 Operation of the transfer system**

The system will operate on a real-time gross basis. Participants other than the NBH and KELER can only initiate credit transactions by submitting a S.W.I.F.T. payment message. Settlement of payment orders takes place after checking the availability of funds. If there are sufficient funds available, the sender is debited and the account of the beneficiary bank is credited.

If there are not enough funds on the account of the participant, the payment will be queued. The bank concerned will receive notification of the queuing. Participants can assign different priorities to payments. The payment at the top of the queue within each priority level will, once funds become available, be released and settled according to the first in, first out (FIFO) principle. VIBER will also have an algorithm that will enable circular processing to be used in the event of a gridlock situation. The procedure will not violate the FIFO principle. In the event of insufficient funds being available, cash withdrawal requests at the NBH's counters will be rejected. However, the participant can re-initiate the cash withdrawal request once funds have been made available. The NBH will notify the participant's head office in real time with a message about the rejected cash withdrawal.

Comprehensive enquiry facilities will be provided, so that members can obtain information on their balances, queued payments, settled payments and incoming payments which have not been settled. NBH users can obtain information about any member.

Every transaction will be settled in real time and there will be no back value dating (not even in the case of error correction).

### **3.2.5 Transaction processing environment**

The system can be accessed using the S.W.I.F.T. FIN-copy service. A closed user group will be established and only members will have access to the system. Participants will have enhanced monitoring capabilities if using the monitoring system. The use of the monitoring system will be optional; all enquiries and orders can be effected through the S.W.I.F.T. network. In the first half year of operation the participants will not need to integrate their S.W.I.F.T. CBT (computer-based terminal) into their banking systems, since no customer payments will be processed in this period.

### **3.2.6 Settlement procedures**

Each member will have one settlement account in the system. The NBH will facilitate the smooth functioning of the system by extending intraday credit in the form of an overdraft limit. Spillover at the end of the day will be subject to a penalty (see Section 1.3.2 above). The NBH will schedule its own payments in a way that benefits other participants. The operating time of the system, at least in the first year, is likely to be the same or perhaps one hour longer than that of the current banking system of the NBH. The NBH is, however, planning to extend its operating hours substantially in the future.

### **3.2.7 Credit and liquidity risks**

The system will eliminate credit risk. Liquidity risk (e.g. the threat of a serious gridlock situation) will still exist, but pricing which favours early settlement and the acceptance of a common code of conduct should help to reduce the level of risk.

### **3.2.8 Pricing**

No final decisions on pricing have been made. Prices will, however, be determined with full cost recovery in mind and basic transaction fees will be increased as the cut-off time approaches.

## **3.3 Current banking system of the National Bank of Hungary (NBH)**

As a central bank, it is the NBH's task to keep settlement accounts for credit institutions and certain other institutions as laid down in the statute of the NBH. For this reason the NBH operates an automated accounting system providing item-by-item real-time gross settlement. This system provides settlement for netting systems, and settles transactions related to monetary policy operations. The NBH does not process customer payment transactions; participants (banks and others) can only use their accounts to make payments to each other.

### **3.3.1 Functioning rules**

The operating rules of the NBH's accounting system, together with the general terms and conditions of the NBH, are laid down in bilateral contracts. Aiming at consensus, the NBH negotiates changes proposed to the contracts with the banking community. To ensure transparency the NBH applies uniform conditions to every contract.

### 3.3.2 Participation in the system

The NBH keeps accounts for credit institutions (excluding the majority of savings co-operatives), KELER, the State Privatisation and Holding Ltd., the State Treasury and the Hungarian Post Office. All customers of the NBH (including non-banks, e.g. the Post Office or the State Privatisation and Holding Ltd.) can have access to the system.

### 3.3.3 Types of transactions handled

The following entries are booked on the credit institutions' accounts:

- IGS clearing balances (IBI matrix), the output of the giro process;
- net positions stemming from GBC clearings;
- transfer orders, when the beneficiary's account is held by the NBH (e.g. overnight interbank deposits);
- transactions between the NBH and participants (e.g. open market operations, reimbursements, account maintenance costs and refinancing loans);
- settlement of clearing positions with the Post Office;
- the cash leg of OTC securities transactions on a DVP basis;
- cash deposits and cash withdrawals; and
- the HUF leg of foreign exchange transactions.

### 3.3.4 Operation of the transfer system

The accounting system of the NBH, which facilitates the provision of settlement services, is operated on a standard banking system. The system processes transactions on an item-by-item basis, which means that

the account balances are updated after each transaction. The NBH only processes transactions if the sending participant has sufficient funds available on its account. The system is basically paper-based, although the NBH also accepts forward-dated payment instructions transmitted in electronic form through the S.W.I.F.T. message transfer system. Nevertheless, same-day transfers can only be initiated using paper forms, which have to be delivered to the NBH. The NBH informs the account holders of their closing balances, but the detailed printed account statements are only posted on the next working day. The banks can enquire about their position during the day by telephone.

### 3.3.5 Transaction processing environment

A substantial number of payment orders are received on paper slips and are captured through manual input. Orders can also be input through the S.W.I.F.T. network on the day before settlement (forward value dated orders) or through Microsoft Exchange (savings co-operatives). Encrypted faxes are the carriers of messages exchanged with the net settlement systems (the IGS and the GBC system) and the KELER system.

### 3.3.6 Settlement procedures

The operating hours of the NBH and the IGS differ. While payments are processed in the IGS overnight, the NBH's banking system is operational in the morning and the early afternoon. The business day starts at 2 p.m. and ends at 2 p.m. on the next day. Daily operations start with the setting of an intraday credit limit, which is extended by the NBH to the account-holding credit institutions against government securities pledged at KELER. The intraday credit limit cannot be changed during the day.

The account balance of the account holder changes for the first time when the IGS clearing position received from the IGS operator is processed. Then the system

processes payment instructions item by item on a gross basis as they are entered in the system. The payments relating to OTC securities transactions are settled three times a day. Data on pending securities settlement transactions are entered manually, and after successful settlement KELLER is notified by fax. Booking ends at 1 p.m. The NBH notifies banks of their final position by encrypted fax message by 2 p.m.

### **3.3.7 Credit and liquidity risk**

The system is free of credit risk due to the gross settlement method employed. Liquidity risk, however, still exists and has the potential to become very serious, as participating banks have no online real-time information on their positions. They can only obtain this information by telephone. The threat of gridlock has not been serious in the past few years, as the banking sector has been in a very favourable liquidity position due to the high level of reserves.

### **3.3.8 Pricing**

Per transaction banks pay commissions based on the value of the transaction with a cap on the minimum and the maximum amounts (i.e. percentage fees, currently 0.3‰ of the amount transferred, as a minimum HUF 10 (ECU 0.05) and as a maximum HUF 1,000 (ECU 4.73)). As an exception, for the settlement of IGS clearing positions, the NBH may require the credit institutions to pay a 0.3‰ fee on the total value of debits in the IGS, up to a maximum of HUF 50,000 (ECU 225.67) per day.

## **3.4 Interbank Giro System (IGS)**

The only system available for the processing of third-party credit transfers is the IGS, a deferred settlement, batch-processing, gross payment system. The bulk of interbank payments are processed by this system. GIRO Elszámolásforgalmi Rt. (GIRO Rt.), the

national clearing house, operates the IGS. The major commercial banks and the NBH own the company. The NBH holds 14.6% of the company's shares.

### **3.4.1 Functioning rules**

The IGS operates according to its general terms of contract, its manuals and other internal documents. The IGS operator and participants are to conclude uniform bilateral contracts for the clearing house services. The general terms of contract are published in the official financial gazette of the Ministry of Finance. Credit institutions are expected to contribute to the improvement of the IGS by participating in the Interbank Experts' Committee, which operates under the aegis of GIRO Rt. However, all modifications and additions to rules require the approval of the NBH.

### **3.4.2 Participation in the system**

Banks licensed to offer payment services must join the IGS, subject to the approval of the NBH. As a precondition for approval, the NBH requires an audit report from one well-known auditing company certifying that the applicant meets all the membership criteria. A technical qualification certificate from GIRO Rt. is also required. Credit institutions that cannot meet the above-mentioned criteria can join the system through the NBH as correspondents for a six-month period.

There are no restrictions on participation in the system providing that certain technical requirements are met.

### **3.4.3 Types of transactions**

There are three types of transaction processed by the IGS: bank-to-bank payments, customer payments and non-clearing (i.e. initiation of collection) transactions. All transactions have the same priority. There is also no limit on the value of payments handled by the IGS.

The system processes transactions exclusively in the national currency, the Hungarian forint (HUF). All payments are credit transfers, i.e. the actual funds transfer is always initiated by the creditor bank. The IGS supports all types of payment instruments (except for cards and postal instruments), such as ordinary transfer orders, collection order instructions, cheques and bills of exchange as well as collection orders for letters of credit on behalf of customers. Records of direct debit orders are kept by the system and corresponding transfers are matched. However, other collection orders are simple messages using the IGS as a communication channel. Multiple (electronic batch) direct debit and credit transfer instructions have been used since October 1997. Banks may also use the IGS to initiate bank-to-bank payments.

#### **3.4.4 Operation of the transfer system**

The IGS is a designated-time (deferred) settlement, batch-processing, gross payment system. It runs one or, in exceptional cases, two processing cycles a day. Banks can submit their instructions using the GIRO Rt.'s proprietary X.25 network from 4 p.m. until midnight. Processing takes place overnight, with settlement at the NBH on the next morning. The total of each batch, before processing, is checked against available funds (i.e. the previous-day closing balance of the settlement account held with the NBH plus the intraday credit limit granted for pledged securities) and processed only if sufficient cover is available. Incoming payments are continuously added to the disposable balance.

The clearing position matrix is prepared once the processing has been finalised, and is posted to the NBH for settlement between 6 a.m. and 7 a.m.

If sufficient funds are not available, payments are held pending in a queue file. If one or more participants cannot meet their obligations and the queue file is not emptied during overnight processing, a second cycle can be run from 9.30 a.m. on the next day. By

that time banks must have cover in central bank money for all the remaining debit items. If these funds are available and set apart on a separate account, a new clearing cycle can start. The second clearing position matrix is produced by 11.30 a.m. and booked immediately by the NBH. If the bank cannot raise enough funds, the queued items are cancelled and the bank must re-enter the transactions the next day.

#### **3.4.5 Transaction processing environment**

The IGS started its operations on 18 November 1994. At that time data transmission was conducted by a physical exchange of magnetic media, but within a couple of months participants had switched to file transfers.

The means of communication include the GIRO Rt.'s proprietary X.25 network, magnetic data media or satellite. Direct participants are equipped with computer-based terminals, so-called PC GIDs (Personal Computer Giro Interface Devices). These devices are owned by the clearing operator and deployed at the head offices of the participating institutions. The participants use their own software (called AGIRO/B) to convert transaction data sent from and received by their accounting systems.

An operative and a hot backup system are available at GIRO Rt. Up until now there have been no system breakdowns. In the event of a catastrophic breakdown of the IGS, a backup computer facility is available to process items with a one-hour time lag. The operative and the backup systems have identical capacity.

#### **3.4.6 Settlement procedures**

In accordance with the clearing position matrix, transactions are sent by GIRO Rt. to the NBH and settled by 7 a.m. Output messages on settled items and queue information as provided by the IGS are also available at this time.

Booking at the NBH on the banks' accounts ends at 1 p.m. Banks receive their final position from the NBH by encrypted fax message by 2 p.m. (For more information, see Section 3.4.4.)

#### **3.4.7 Credit and liquidity risk**

Credit risk is eliminated in the IGS by the gross settlement principle and by the fact that payment messages are only forwarded to receiving participants if there is certainty of settlement at the NBH.

Liquidity risk is inherent in the system, since the participants have to manage their positions a priori. Before the processing of previously queued items in the morning the sending banks must have cover for their gross obligation without the possibility of taking into account pending incoming payments.

#### **3.4.8 Pricing**

IGS participants pay transaction fees which are based on the value of the transactions processed. The fee is paid by the ordering bank, except in the case of multiple direct debits, where the initiator (beneficiary's bank) pays the fee. A fee is charged for all transactions regardless of the method of payment. Credit institutions pay a 0.23% fee to GIRO Rt. provided that this is no less than HUF 5 (ECU 0.022) and no more than HUF 1,000 (ECU 4.51) per transaction. Non-clearing transactions (e.g. the initiation of collections) are charged at HUF 4 (ECU 0.018) per transaction. The processing of return payments is free of charge.

The pricing policy is revised quarterly. Fees tend to cover the operational costs as well as the investments of GIRO Rt.

#### **3.4.9 Main projects and policies being implemented**

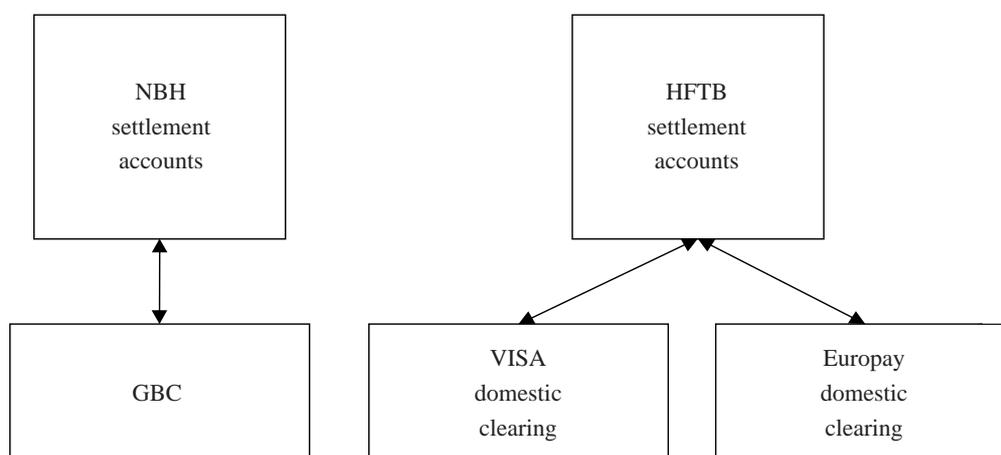
The most important project under way is the preparation for the year 2000. This includes the internal testing of the hardware and software in GIRO Rt. and integrated external testing with participants.

Two other tasks being undertaken in connection with direct debit and direct credit payment instruments are the simplification of message standards and the promotion of the widespread use of these instruments.

#### **3.5 Card clearing systems**

The clearing of bankcard transactions is administered through three different systems, the GBC, VISA and Europay national net settlement systems.

The Giro Bankcard Company (GBC) provides clearing services for its 16 members, of which six are shareholders. Some of the most important issuers and acquirers are not members of this company. Therefore, many Hungarian banks have outsourced the processing of their card transactions to the VISA and Europay card companies, both of which provide domestic clearing services. While the NBH is the settlement agent for GBC clearing, the Hungarian Foreign Trade Bank (Magyar Külkereskedelmi Bank Rt., HFTB) acts as settlement agent for VISA and Europay clearing arrangements. The GBC sends the NBH an interbank position matrix that is processed by the central bank on the same day. VISA and Europay notify participants in their respective systems about their net positions, and net debtors discharge their obligation with a giro credit transfer for the clearing account held with HFTB. Accordingly, the HFTB initiates giro credits for net receivers on the same day. The clearing of card transactions in all of the above-mentioned systems is based on the principle of net settlement.

**Chart 2****Card clearing and settlement**

There are some protective measures in place in order to reduce liquidity and credit risks. Members in each system have to deposit government securities as collateral, the value of which is based on their net settlement obligations in the previous period. The settlement agents (the NBH and the HFTB) are liable to extend overnight loans up to the

value of the collateral required if a member cannot meet its obligation. Surviving members should cover the losses exceeding the market value of the collateral.

In all three cases, it is the NBH that manages the collateral.

## 4 Securities settlement systems

Chart 3 on the next page illustrates the structure of the Hungarian securities settlement systems.

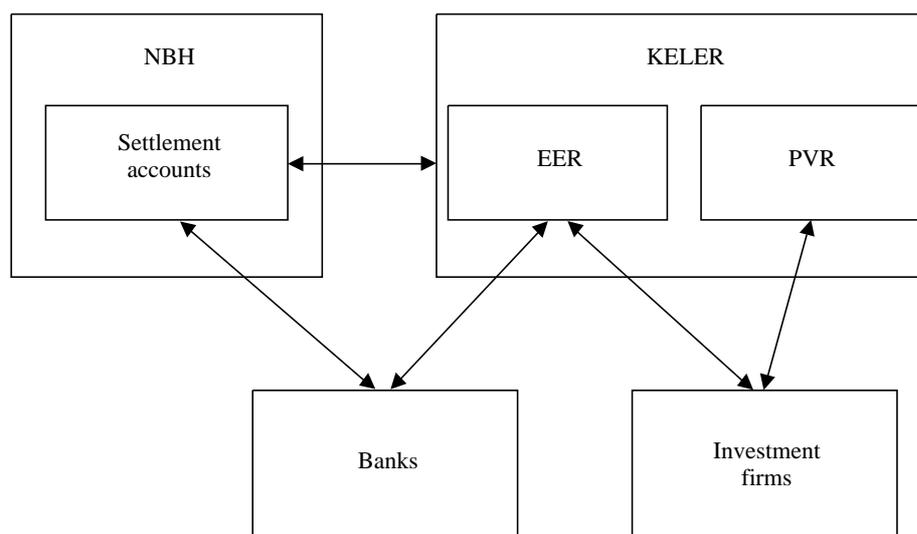
### 4.1 The institutional aspects

#### 4.1.1 General legal aspects

The institutional framework for the securities market is set out in Act CXI of 1996 on the Public Offering of Securities, Investment Services and on the Stock Exchange. According to the Act, clearing houses are private sector companies. Only licensed clearing houses may pursue clearing house

services such as the settlement of stock exchange transactions, commodity exchange transactions, OTC transactions, etc. The Hungarian Banking and Capital Market Supervisory Authority (HBCMS) can order a clearing house to provide a further four services. These are keeping central records of securities, issuing securities codes, keeping central securities accounts and issuing depository receipts on securities issued in Hungary with the purpose of trading abroad. A clearing house which performs these activities should also be considered a central depository. Ownership of clearing houses is restricted to the NBH, stock and commodity exchanges, investment companies, members

**Chart 3**  
**Securities and cash settlement systems**



of the commodity exchanges, credit institutions and other clearing houses. Clearing houses must publish their rules and a schedule of their prices in official gazettes. The Act requires fair access to clearing house services.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

The NBH has no special responsibilities for the securities settlement system. Responsibility for the supervision of the clearing houses is borne primarily by the HBCMS. The HBCMS approves the general terms of contracts and the rules of the clearing houses. The HBCMS can intervene in the day-to-day business of the clearing house by restricting the access of customers to any account in certain circumstances. Both the HBCMS and the NBH can impose

reporting obligations on the clearing houses. Given the NBH's interest in the efficiency and risk management of the capital and money markets, it plays a proactive role in the development of the securities settlement system through its shareholding in KELER.

##### *Provision of settlement facilities*

The NBH provides cash settlement for OTC trading exclusively for credit institutions in its accounting system. KELER performs cash settlement for trades involving other parties.

##### *Provision of operational facilities*

KELER provides operational facilities.

#### *Monetary policy operations and securities settlement systems*

The only eligible securities for monetary policy operations are government securities. The settlement of repo agreements takes place on the trading day (T + 0). Repurchase agreements, which are a combination of a spot sale and a forward purchase, do not require a specific legal framework. End-of-day loans can be obtained against collateral consisting of securities blocked on the securities account of the borrower.

KELER processes OTC transactions in multi-batch mode in three sessions at 8 a.m., 10 a.m. and 11.30 a.m. respectively. The cash settlement requests are sent to the NBH using encrypted fax, and the processing of the securities transfers is completed after receipt of the faxed response from the NBH.

#### **4.1.3 The role of other public sector bodies**

##### *Hungarian Banking and Capital Market Supervisory Authority (HBCMS)*

The supervision of economic organisations performing investment service activities is delegated to the Hungarian Banking and Capital Market Supervisory Authority by Act CXI of 1996 on the Public Offering of Securities, Investment Services and on the Stock Exchange.

Within the scope of its responsibilities the HBCMS grants licences, regularly monitors the activities of the investment service providers, issuers, exchanges and clearing houses, inter alia, and monitors the disclosure of information by the above-mentioned organisations.

#### **4.1.4 The role of other private sector bodies**

##### *The Budapest Stock Exchange (BSE)*

The BSE was re-established in 1989 as a private sector institution by enterprises

providing investment services at that time. The purchase and sale of listed securities on behalf of the general public is only permitted if performed through the Stock Exchange. Currently, government securities, shares and derivatives are traded on the BSE.

##### *Investor Protection Fund*

Act CXI of 1996 on the Public Offering of Securities, Investment Services and on the Stock Exchange requires investment service enterprises to establish the Investor Protection Fund.

The main tasks of the Fund are to pay indemnification to investors in the event of their claims being frozen and to represent the investors (based on their assignment) in composition negotiations or in the course of liquidation proceedings. The maximum amount of indemnification is HUF 1 million (ECU 4,727) per investor. Members should pay an initial fee (0.5% of registered capital, maximum HUF 2 million) and an annual membership fee (maximum HUF 2 million, ECU 9,454). The Board of the Fund can triple the payable annual fee in the case of deficit. Membership is obligatory for all licensed institutions.

## **4.2 Summary information on securities markets**

### **4.2.1 Main features of various securities markets**

Hungarian capital markets have expanded considerably over the past 10 years. The uninterrupted step-by-step easing of foreign exchange controls has greatly contributed to the growth of the turnover. Currently foreign investors are permitted to invest in Hungarian securities, except those that have been issued with a maturity of less than one year. Domestic investors may operate on international markets buying either government bonds issued by an OECD country, or corporate stocks and bonds with

a maturity of more than one year. In both cases, the issuer should have its seat in an OECD country.

The Budapest Stock Exchange (BSE) was re-established in 1989. Since then the turnover in the capital markets has grown rapidly. Treasury bills and government bonds still dominate the market, but the growth in the stock market over the past three to four years has also been significant.

There are three sections of the BSE. The first section is for government securities, the second for equities and other securities (e.g. fund notes), and the third is reserved for futures transactions. Hungary has two exchanges operating simultaneously, namely the BSE and the BCE, the latter having commodity and financial futures sections. It is relatively unusual in a country of Hungary's size for two exchanges to have financial futures sections in parallel. Another interesting feature is that, while government securities are listed on the BSE, primary issues of these securities are executed on the OTC market, through the primary dealer network. There are 16 primary dealers – as at 1 January 1999 one of them was a bank and the others were investment service companies – which have exclusive rights to bid at government securities auctions and an obligation to quote bid and ask prices on the secondary market.

Listed securities can be traded on the BSE. Standardised derivatives contracts can also be concluded for the shares of three major issuer companies (MATÁV, MOL and TVK). Non-listed paper can be traded over the counter. In both cases KELER administers the settlement of securities transactions. KELER provides both securities and cash settlement for the BSE spot market, the OTC market and the BSE and BCE futures markets respectively. KELER is also the central depository for securities and conducts settlement for dematerialised securities. (Dematerialised securities are not yet traded on the BSE.) KELER and Cedel Bank established a link by bilaterally opening securities accounts and concluding

agreements on clearing foreign cash and securities settlements.

The Index of the Budapest Stock Exchange (BUX) gives a fair overview of the performance of the Hungarian stock market. The BUX is published on Reuters continuously throughout the trading period.

A wide range of instruments is in use. These include government securities (such as three, six and twelve-month Treasury bills and two, three, five and seven-year government bonds), other paper-based securities (such as equities issued by private enterprises and government securities) and standardised futures transactions both on the BSE and the BCE.

#### **4.2.2 Basic quantitative aspects (basic statistics)**

The value of outstanding government bonds and Treasury bills at the end of 1997 was HUF 1,754.17 billion (ECU 7.91 billion) and HUF 901.12 billion (ECU 4.1 billion) respectively. The data on outstanding government bonds are expressed in terms of nominal value. Treasury bill data include the value of discount Treasury bills at issue price and other bills (interest-bearing Treasury bills and savings bills) in terms of nominal value.

The total capitalisation of the BSE at the end of 1997 was HUF 5,115.23 billion (ECU 24.18 billion), including the capitalisation of shares amounting to HUF 3,058.36 billion (ECU 14.46 billion). Spot turnover (taking account of both sales and purchases, thereby duplicating transaction value) in 1997 was HUF 6,736.31 billion (ECU 31.84 billion), of which shares accounted for HUF 2,872.71 billion (ECU 14.46 billion), and the turnover for the period 1990-97 was HUF 8,581.75 billion (ECU 40.57 billion).

**Table****Market value of outstanding government bonds and Treasury bills for 1991-97**

Years	1991	1992	1993	1994	1995	1996	1997
Government bonds	56.18	309.39	778.23	1,034.52	1,221.02	1,761.00	1,754.17
Treasury bills	60.00	157.30	220.72	315.14	416.99	684.59	901.12

**4.2.3 Financial intermediaries operating in the various securities markets**

Several kinds of institutions such as banks, stockbrokerage firms, securities dealers and primary-dealer brokers, are allowed to operate on the Hungarian securities markets. There are three types of investment firms operating on the market. Stockbrokers (14 firms) must have a minimum subscribed capital of HUF 20 million (approximately ECU 95,000), securities dealers (50 firms) HUF 100 million (around ECU 473,000), and investment companies (22 firms) HUF 1 billion (around ECU 4.73 million). Banks (24 companies) are allowed to operate on the government securities market and may become members of the BSE. They may also operate on the private (OTC) equities and bond markets. Since 1 January 1999 banks have been allowed to operate on the publicly issued equities and bonds markets.

**4.2.4 Recent developments**

The BSE implemented a new electronic trading system (MMTS) in 1998. The new trading system covers all existing markets and existing and new products. It is an integrated system based on a single technical platform capable of supporting further development of the BSE and the Hungarian securities market without limiting growth by its capacity in the years to come. The new system allows for closer integration with the off-market segments around the trading system of the BSE, thereby promoting higher transparency of the securities markets.

The new technology has enabled the BSE to computerise trading fully, i.e. to conduct electronic trading both on the spot market

and on the market for derivatives, and this will reshape its operation. The new system supports the shift to remote trading, whereby member firms will conduct their trades from their own offices. Remote trading will create the opportunity to extend trading hours substantially, which may attract new business and more trades to Budapest from competitive market-places such as London, Frankfurt and Vienna.

**4.3 Structure, operation and administration of BSE securities settlement****4.3.1 Major regulations**

The legal basis for the establishment of KELER can be found in Act CXLIV of 1997 on Business Associations (Companies Act), while its operation is governed by Act CXI of 1996 on the Public Offering of Securities, Investment Services and on the Stock Exchange. Government decrees also regulate KELER, including the rules for handling dematerialised securities.

The Rules and Regulations of KELER govern operational procedures, which are approved and supervised by the HBCMS.

Special contractual arrangements between KELER and the BSE govern the procedures and responsibilities with regard to the flow of information between the two institutions.

KELER's liability towards its participants is based on the general rules of Act IV of 1959 on the Civil Code.

#### 4.3.2 Participation in the system

Subject to the signing of the respective membership agreements, BSE clearing member securities investment firms (for the T + 5 and the T + 2 net cycle) and credit institutions (only for the T + 2 cycle) may open settlement securities custody and exchange cash accounts.

The depository securities custody accounts are available for all KELER system eligible members, including specialised credit institutions, non-resident securities custodians (foreign CSDs and ICSDs) and domestic securities issuers (for own physical certificates only).

#### 4.3.3 Types of transactions handled

All trades concluded on the Stock Exchange are settled via KELER (both the cash and the securities leg) on the basis of multilateral netting rules with the value:

- T + 5 in the case of all listed securities (equities, corporate debt instruments, compensation coupons, closed-end investment fund units) excluding government papers; and
- T + 2 in the case of government securities.

Negotiated block trades (an option for bilateral trading with publicly issued shares on the BSE) are settled bilaterally on T + 2 or T + 5 respectively in KELER on a gross basis.

#### 4.3.4 Operation of the transfer system

The securities settlement system (EER) and the cash management system (PVR) are connected via interface and fully operated by KELER.

#### 4.3.5 Transaction processing environment

The server component work is performed on an ALPHA Server 4001, using Oracle Enterprise-based software developed by domestic providers. The front end is PC-based.

Participants have electronic access to the settlement system via KIS (KELER Internetwork System) or S.W.I.F.T.

#### 4.3.6 Settlement procedures

The rolling (i.e. fixed time span) settlement of T + 2 and T + 5 trades is based on multilateral netting. Matched trades are reported to KELER by the Budapest Stock Exchange at the end of each trading day via electronic messaging. KELER executes multilateral netting and reports positions to participants on the morning of each T + 1.

##### *T + 2 government securities cycle*

Net securities sellers must provide sufficient securities balances on their securities settlement custody account by T + 1, and securities are then pre-blocked for final settlement. Net securities buyers must have sufficient funds on their exchange cash account with KELER by the morning of T + 2. Settlement is carried out in a one batch processing cycle on T + 2 at 9.15 a.m. If there is insufficient securities coverage on T + 1, the KELER-operated government securities lending and borrowing facility applies as an automated settlement support mechanism. In the event that the lending is unsuccessful, KELER initiates buy-in procedures (in this case KELER buys the securities to be delivered on the market using the collective settlement fund), or ultimately takes out the respective transaction from the multinet system, and simultaneously calculates new clearing positions. In the event of financial non-performance, in the first instance the individual collateral is used, and subsequently the collective guarantee fund.

*T + 5 cycle (all other listed securities)*

Net securities sellers must provide sufficient securities balances on their securities settlement custody account by T + 4. Securities are pre-blocked for final settlement. Net securities buyers must provide sufficient funds on their exchange cash account with KELER by T + 5. Settlement is executed in a separate batch run on T + 5 at 9.15 a.m. If there is insufficient securities coverage on T + 4, KELER initiates buy-in as default. If the buy-in is unsuccessful, partial settlement takes place. In the event of financial non-performance, the individual collateral and the collective guarantee fund are used.

Negotiated block trades are settled on a gross basis on T + X. No guarantee mechanism is applied. In the event of insufficient securities coverage, the transaction fails.

#### **4.3.7 DVP arrangements**

True DVP is implemented among direct clearing members of the Budapest Stock Exchange in the T + 2 and T + 5 multinet batch cycles (model 3) and in the gross settlement of negotiated block trades (model 1). This can be attained as all clearing members have both their cash and securities accounts with KELER. (This procedure is different from that applied in the case of OTC settlement as described in Section 4.4.)

At present, no true DVP exists in Hungary between clearing members and custodian banks.

#### **4.3.8 Credit and liquidity risk control measures**

KELER does not net by novation (guarantee) spot exchange trades. However, it does operate an extensive guarantee system: (i) individual collateral plus (ii) a collective guarantee fund in cash or government

securities, and default procedures for both securities and financial non-performance. The contribution of each clearing member to the collective guarantee fund (in cash only) is based on the participant's turnover for the previous 10 weeks, while in the case of individual collateral (cash and government securities), the basis for calculation is the participant's daily open position.

There are also intraday/overnight credit facilities offered by KELER to clearing members if the participant in question provides sufficient government securities as collateral or the net present value of its incoming funds arising from exchange settlement is larger than the required overdraft.

#### **4.3.9 Pricing**

KELER charges a flat transaction fee that is currently set at a level of HUF 25 (ECU 0.11) per transaction. KELER is a non-profit-making organisation, but relies on fees and commission income to fund the continuous development of its systems. Since its establishment, in accordance with its growing turnover and the substantial improvements to its efficiency, KELER has continued to decrease its fees regularly and substantially.

#### **4.3.10 Main projects and policies being implemented**

KELER aims to introduce a new real-time gross settlement environment in 1999, including features such as multi-currency accounting, fully integrated securities and cash clearing, real-time risk management, automated settlement support mechanisms, real-time communication and cross-border DVP.

#### **4.4 Structure, operation and administration of OTC securities settlement**

##### **4.4.1 Major regulations**

See Section 4.3.1.

At present only government securities are deemed to be eligible securities.

##### **4.4.2 Participation in the system**

All securities investment firms and credit institutions which hold securities accounts with KELER and cash accounts with either the NBH or KELER are participants in the system.

##### **4.4.3 Types of transactions handled**

There are two types of transactions, namely OTC market transactions for banks and clearing members in government securities, and primary issues where the Government Debt Management Agency (ÁKK) and the primary dealers are the counterparties.

##### **4.4.4 Operation of the system**

See Section 4.3.4.

##### **4.4.5 Transaction processing environment**

See Section 4.3.5.

##### **4.4.6 Settlement procedures**

Settlement instructions are submitted directly by the participants to KELER via the KELER Internetwork System (KIS).

KELER executes the matching of trades and checks securities and cash balances during two separate batch runs. After the first batch processing KELER informs the counterparties

of any unmatched trades in order to offer an opportunity to amend instructions before the second cycle starts.

For matched instructions KELER checks securities and cash balances, settles the trade on the same day (T + 0) and sends confirmation to all interested participants. As the clearing member credit institutions have their cash accounts at the NBH, a “hotline” had to be developed between KELER and the NBH in order to facilitate effective communication when executing same-day DVP settlement (for trades involving at least one customer of the NBH) on the banks’ reserve accounts. The “hotline” is not a direct technical interface but rather a communication tool by which information may be transferred to the NBH. This information must be translated and input manually into the NBH’s booking system.

Primary market transactions are also settled on a DVP basis (exclusively within the books of KELER) on the issue date, prior to the two OTC batch runs.

##### **4.4.7 DVP arrangements**

All transactions are settled on a delivery versus payment (DVP) basis. At present no true DVP exists between clearing members and custodian banks since custodian banks are not allowed to open cash accounts with KELER and the Interbank Giro System (IGS) works on a T + 1 basis. This means that they must release payment on the day before settlement.

##### **4.4.8 Credit and liquidity risk control measures**

KELER does not provide any support mechanism for the settlement of OTC transactions. If one of the counterparties lacks securities or cash, the trade fails. KELER settles high-value trades first.

#### **4.4.9 Pricing**

The flat fee for OTC settlement is HUF 1,000 (ECU 4.73) per transaction.

#### **4.4.10 Main projects and policies being implemented**

See Section 4.3.10.

### **4.5 Structure, operation and administration of the clearing and settlement of exchange-traded derivatives**

#### **4.5.1 Major regulations**

See Section 4.3.1.

In respect of the settlement of derivatives trades concluded on the Budapest Commodity Exchange (BCE) Act XXXIX of 1994 on the Commodity Exchange and Act XLVIII of 1994 on Public Warehouses are also relevant.

#### **4.5.2 Participation in the system**

KELER provides clearing membership for those members of the BSE and BCE which comply with the clearing rules and are nominated by the exchanges as members entitled to use the direct settlement services of KELER. Clearing members can clear their own trades as well as those of indirect participants. KELER acts as a counterparty in all transactions as well as in most settlement procedures. By becoming a seller to a buyer and vice versa, KELER acts as a guarantor in all transactions executed on the exchanges. However, there is no contractual relationship between KELER and the customers of a clearing member or KELER and those exchange members or their customers which only participate indirectly. Consequently, as principals, the clearing members are responsible exclusively for orderly performance towards their customers.

#### **4.5.3 Types of transactions handled**

Since July 1994 KELER has been providing clearing and settlement services in products traded in three sections of the BCE. These are milling and euro wheat, corn, black seed and barley futures together with corn, milling and euro wheat options in the grain section, live hogs in the livestock section and HUF-based DEM, USD, CHF, GBP, JPY and ITL currency futures together with 30-day and 90-day BUBOR interest rate futures in the currency section. Though the majority of products traded on the BCE are settled in cash, physical delivery for futures trades has recently been introduced. American-type options on futures in the grain section required significant enhancements of systems and settlement procedures applied by KELER.

Since April 1995 KELER has been clearing BUX index, USD, DEM and three-month Treasury bill futures contracts of the BSE. At the end of 1996 the product range was extended to include one-month and three-month BUBOR, and one-year Treasury bill futures contracts.

This year the BSE launched the HUF-based GBP and CHF currency futures, as well as futures on the three most liquid equities. Though all products traded on the exchange are currently settled in cash, work has already been started to convert these equity futures into physically deliverable ones, hopefully in 1999.

#### **4.5.4 Operation of the system and the transaction processing environment**

The system operates independently from both the trading systems of the exchanges and the members' back-office systems. Nevertheless, as a wide range of back-office functions is integrated into the system, KELER is able to meet most of its members' back-office needs. The system receives daily matched trade files from the BSE and BCE in batches by the end of the trading day. The system maintains position accounts down to the level of each

individual customer account. Accordingly, detailed statements on the position accounts are provided for members.

#### **4.5.5 Clearing and settlement procedures**

The margin requirements are calculated for each customer of the members. During the batch processing conducted in the evening, based on the price movements of the daily matched trades, positions are updated and marked to market, i.e. both variation and initial margins are calculated, and the settlement procedure is carried out. Due to the comprehensive approach taken by KELER, the clearing system and other KELER systems such as PVR and EER are linked, so that daily open profits and losses are immediately debited and credited to the accounts of members, all of which hold cash and securities accounts with KELER.

#### **4.5.6 Credit and liquidity risk control measures**

In order to ensure orderly variation margin settlements on time and by all means, KELER not only operates a robust guarantee system, but also provides its members with a full range of banking services, ranging from account keeping to overnight repo facilities. Initial margin funds can be used by KELER in favour of final variation margin settlements on the T date, but the initial margin fund is to be replenished by paying in cash or depositing government debt securities before trading starts on T + 1. If a member fails to do so, KELER advises the exchanges to suspend its trading rights, and the BSE or the BCE respectively makes the ultimate decision. KELER then closes and liquidates the positions of this member and transfers the performing position accounts to a sound clearing member. After three days of non-performance, an institutional receivership procedure is initiated.

In order to eliminate an accumulation of extreme credit and liquidity risks, KELER has

also introduced its intraday settlement facility. In the event of extreme price movements, when pre-set limits are breached, trading is suspended until the exchanges have transferred trades and KELER blocks intraday margin amounts on the accounts concerned. As a rule, this procedure may take no longer than 20 minutes.

#### **4.5.7 Risk management system**

KELER uses SPAN, developed by the Chicago Mercantile Exchange (CME) to determine the daily initial margin commitments to be provided by a member. KELER's SPAN handles positions on each account as if they constituted a separate portfolio within the member's structure of accounts. Individual account level requirements for customers are produced and aggregated onto an omnibus customer account. These figures, together with any requirements for positions on the proprietary account, are shown on the daily statements of account. The system supports the application of several different approaches, i.e. BCE members' positions are currently downloaded gross, while the positions of BSE members are downloaded net into the SPAN system. Subject to a member's risk factor or on reaching certain limits, KELER requires additional margins to be deposited.

#### **4.5.8 Pricing**

As a precondition, clearing members must initially lodge a "Basic Financial Cover (BFC)", which is determined by KELER according to the exchanges and markets in which the clearing member trades. The BFC may be lodged either in the form of cash or in government securities and must be maintained continuously. Various per contract clearing fees are payable by members. Members pay additional fees for physical deliveries and option exercises. KELER does not charge its members for the back-office facilities supplied to them.

#### **4.5.9 Main projects and policies being implemented**

In order to meet the challenges it faces, KELER launched the very ambitious KELER 2000 Project. It is aimed at developing a new, integrated information system with multi-currency, real-time gross settlement, real-time collateral management, integrated risk management, automated lending and

borrowing, as well as overdraft and cross-border DVP facilities. As a result of the concerted efforts made, it is hoped that in the near future, KELER will have a more reliable, robust derivatives clearing and settlement system, capable of tracking positions in real time and providing intraday settlement and with linkages to external systems such as VIBER.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population (thousands) <sup>1)</sup>	10,277	10,246	10,212	10,174	10,155
Gross domestic product (HUF billions)	3,548.3	4,364.8	5,614	6,893.9	8,372.2
Exchange rate vis-à-vis the ECU <sup>1)</sup>	107.6535	125.0899	164.6378	193.6749	211.5546

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; HUF billions)

	1993	1994	1995	1996	1997
Banknotes and coins	371.2	410.6	443.9	497.7	560.2
Transferable deposits <sup>1)</sup>	530.7	563.2	592.4	739.5	957.4
Narrow money supply (M1)	901.9	973.9	1,036.3	1,237.2	1,517.6
Transferable deposits in foreign currencies	n.a.	405.8	626.5	689.4	758.0
Outstanding value on electronic money schemes	-	-	-	-	-
of which:					
on card-based products	-	-	-	-	-
on network-based products	-	-	-	-	-

1) Foreign currency accounts are excluded from aggregate M1.

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; HUF billions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	169.3	174.7	261.5	318.5	378.9
Free reserves held at the central bank	-	-	-	-	-
Transferable deposits at other institutions	2	4	5	13	33

**Table 4****Banknotes and coins***(total value, end of year; HUF billions)*

	1993	1994	1995	1996	1997
Total banknotes issued	393.3	429.1	470.6	541.1	600.5
<i>of which:</i>					
HUF 10,000	-	-	-	-	212.3
HUF 5,000	283.8	330.4	379.3	452.8	311.4
HUF 1,000	84.8	75.0	68.9	68.7	62.8
HUF 500	12.5	11.8	11.2	12.1	11.2
HUF 100	10.3	10.3	10.2	7.0	2.8
HUF 50	1.6	1.6	1.0	0.5	-
HUF 20	0.2	-	-	-	-
HUF 10	0.1	-	-	-	-
Total coins issued	6.7	8.2	10.1	13.3	19.6
<i>of which:</i>					
HUF 200	0.98	1.47	1.86	2.19	2.23
HUF 100	0.05	0.13	0.58	4.44	10.55
HUF 50	0.03	0.07	1.20	2.09	1.96
HUF 20	2.57	2.95	2.78	2.02	1.96
HUF 10	1.13	1.36	1.33	0.99	1.11
HUF 5	0.51	0.63	0.71	0.54	0.60
HUF 2	0.70	0.80	0.82	0.51	0.59
HUF 1	0.46	0.50	0.49	0.27	0.33
HUF 0.50	0.29	0.29	0.28	0.29	0.29
Banknotes and coins held by credit institutions	29.5	27.5	37.6	58.8	61.1
Banknotes and coins in circulation outside credit institutions	371.2	410.6	443.9	497.7	560.2

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (HUF)
Central bank	1	9	0.65	458.1
Financial institutions	283	3,022	3,395	499.3
<i>of which:</i>				
Banks and specialised credit institutions	41	1,222	n.a.	n.a.
Savings co-operatives	242	1,800	n.a.	n.a.
Post Office	1	3,233	-	-
<b>TOTAL</b>	<b>285</b>	<b>6,264</b>	<b>3,395.65*</b>	<b>957.4*</b>
Branches of foreign banks	-	-	-	-

**Table 6****Cash dispensers, ATMs and EFTPOS terminals***(end of year)*

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	1	2	6	7	4
Number of machines	188	308	665	1,089	1,553
Volume of transactions (millions)	1.6	3.4	9.2	22.4	39.5
Value of transactions (HUF billions)	3.9	8.3	23.8	232.9	413.0
<b>EFTPOS terminals</b>					
Number of networks	-	3	4	5	6
Number of points of sale	-	323	3,780	6,488	14,488
Volume of transactions (millions)	-	0.02	0.25	2.32	5.53
Value of transactions (HUF billions)	-	0.54	1.93	31.25	112.72
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (HUF millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (HUF millions)	-	-	-	-	-

**Table 7****Number of payment cards in circulation <sup>1)</sup>***(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	232	390	1,240	1,661	2,409
Cards with a debit/credit function	221	379	754	1,349	2,052
<i>of which:</i>					
<i>cards with a debit function <sup>2)</sup></i>	221	379	754	1,349	2,052
<i>cards with a credit function</i>	-	-	-	-	0.10
Cards with a cheque guarantee function	11	11	7	7	3
Retailer cards	-	-	-	85	151
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.

2) With or without a credit limit.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
Interbank Giro System (IGS)	n.a.	n.a.	31,562	40,660	49,697
Customer initiated transactions	n.a.	n.a.	31,545	40,658	49,695
Interbank/large-value transactions	n.a.	n.a.	17	2.4	1.7
NBH's banking system	n.a.	31*	38*	58	81
Interbank transactions	n.a.	n.a.	n.a.	13	24
Interbank forex settlement transactions	n.a.	31	38	45	57

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(HUF billions)*

	1993	1994	1995	1996	1997
Interbank Giro System (IGS)	n.a.	n.a.	15,629.48	18,278.45	25,534.99
Customer initiated transactions	n.a.	n.a.	11,381.05	17,764.45	25,053.49
Interbank/large-value transactions	n.a.	n.a.	4,248.43	514.00	481.50
NBH's banking system	n.a.	3,812.85*	14,708.52	18,831.43	29,847.52
Interbank transactions	n.a.	n.a.	9,652.93	9,538.56	12,102.52
Interbank forex settlement transactions	n.a.	3,812.85	5,055.59	9,292.87	17,745.00

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities on behalf of customers	Settling cash directly in central bank accounts
Banks and specialised credit institutions	41	41	41
Investment firms	86	85	- <sup>1)</sup>
Ministry of Finance	1	-	-
Cedel Bank	1	1	-
Others	8	-	-
<b>TOTAL</b>	<b>137</b>	<b>128</b>	<b>41</b>

1) *Stockbrokers have an account with KELER.*

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
KELER	n.a.	421.7*	1,638.0	6,146.5	8,891.4
BSE prompt securities settlement (shares)	n.a.	73.7	71.2	170.9	504.8
BSE derivatives settlement	n.a.	n.a.	12 <sup>1)</sup>	242.6	1,461.0
BCE derivatives settlement	67.7	325.5	1,398.2	5,499.5	6,569.7
OTC government securities settlement/DVP	n.a.	0.7 <sup>2)</sup>	131.0	158.8	212.7
Free of payment transfers	n.a.	21.8	37.6	74.6	143.2

1) From 31 March to 31 December 1995.

2) From 12 September to 31 December 1994.

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(HUF billions)*

	1993	1994	1995	1996	1997
KELER	n.a.	4,267.8*	11,114.0	14,688.8	28,968.4
BSE prompt securities settlement (shares)	n.a.	211.2	253.2	1,144.0	6,736.3
BSE derivative settlement	n.a.	n.a.	10.14 <sup>1)</sup>	190.9	1,413.6
BCE derivative settlement	12.3	35.3	178.1	925.8	1,164.6
OTC government securities settlement/DVP	n.a.	781.2 <sup>2)</sup>	6,298.7	6,370.9	8,740.8
Free of payment transfers	n.a.	3,240.1	4,374.0	6,057.3	10,913.3

1) From 31 March to 31 December 1995.

2) From 12 September to 31 December 1994.

**Table 13****Nominal values registered by securities settlement systems***(end of year; HUF millions)*

	1993	1994	1995	1996	1997
KELER					
Government securities	n.a.	1,074,779	1,169,221	2,571,600	3,413,966
Bonds	n.a.	-	5,532	6,700	40,748
Shares	n.a.	11,666	57,853	157,600	312,433
Others	n.a.	8,185	10,044	12,500	15,747
TOTAL	n.a.	1,094,630	1,242,650	2,748,400	3,782,894

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
Cheques issued <sup>1)</sup>	n.a.	n.a.	n.a.	1.2	1.0
Payments by debit and credit cards	n.a.	n.a.	2.0	3.6	7.0
Credit transfers	n.a.	28.5	31.7	38.1	49.5
Direct debits <sup>2)</sup>	n.a.	n.a.	n.a.	31.3	33.9
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	191.7	195.9	190.0	198.3
<b>TOTAL</b>	<b>n.a.</b>	<b>220.2*</b>	<b>229.6*</b>	<b>264.2</b>	<b>289.7</b>

1) *Estimated data for 1996-97.*2) *These payments are carried out by means of bilateral data exchange between the creditor and debtor banks. The volume and value of transactions are neither registered nor reported.*

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**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(HUF billions)*

	1993	1994	1995	1996	1997
Cheques issued	n.a.	n.a.	n.a.	18.34	17.60
Payments by debit and credit cards	n.a.	n.a.	11.75	28.51	70.75
Credit transfers	n.a.	25,558	25,849	27,565	79,544
Direct debits	n.a.	n.a.	n.a.	69.16	99.08
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	4,002	4,005	2,555	2,956
<b>TOTAL</b>	<b>n.a.</b>	<b>29,560*</b>	<b>29,866*</b>	<b>30,236</b>	<b>82,687</b>

**Table 16**  
**Participation in S.W.I.F.T. by domestic institutions**

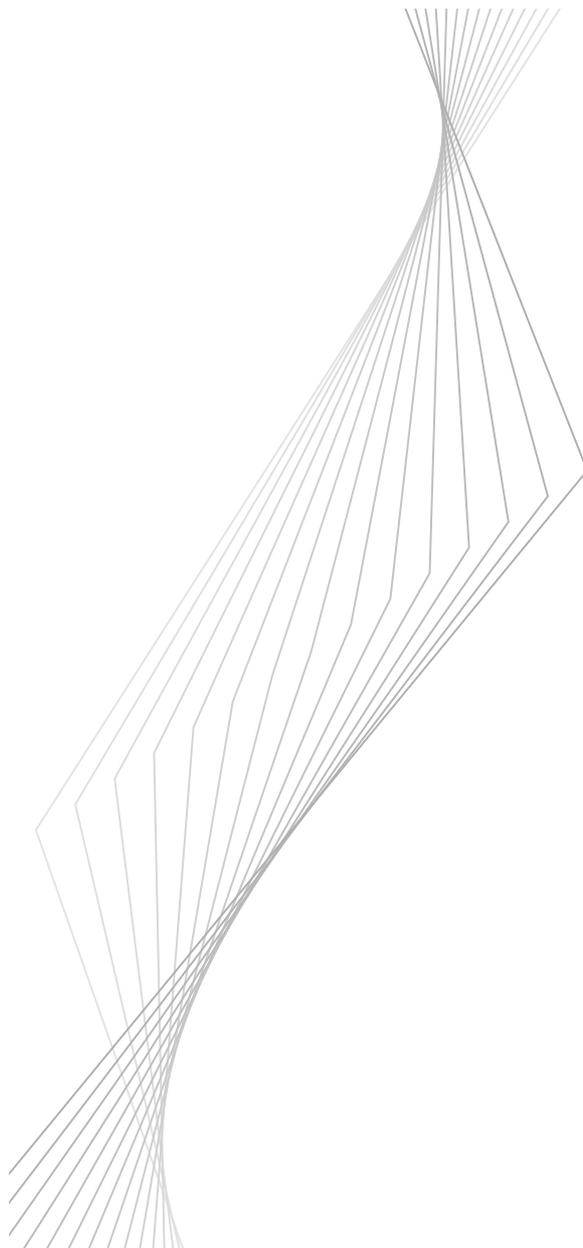
	1993	1994	1995	1996	1997
S.W.I.F.T. users	32	34	35	37	36
<i>of which:</i>					
<i>members</i>	26	28	27	25	24
<i>sub-members</i>	6	6	6	9	9
<i>participants</i>	-	-	2	3	3
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	2,161,679	2,660,237	2,995,615	3,243,657	3,658,652
<i>of which:</i>					
<i>category I</i>	842,272	1,030,960	1,125,615	1,211,653	1,384,793
<i>category II</i>	670,080	897,764	1,042,591	1,060,614	1,167,810
<i>sent to/received from</i> <i>domestic users</i>			817,345	714,315	667,873
Total messages received	1,739,433	2,085,350	2,409,128	2,526,768	2,756,924
<i>of which:</i>					
<i>category I</i>	586,225	711,202	842,193	952,972	1,066,023
<i>category II</i>	177,126	191,333	194,332	172,432	169,761
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556



EUROPEAN CENTRAL BANK



**Latvia**

**August 1999**

Latvia

LV

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**List of abbreviations**

<b>BankServiss</b>	Bank Service Centre
<b>BCC</b>	Baltic Card Centre
<b>EFTS</b>	Electronic Funds Transfer System of the Bank of Latvia
<b>EKS</b>	Electronic Clearing System – <i>Elektroniska kliringa sistema</i>
<b>ICN</b>	Interbank Communication Network
<b>IGSS</b>	Interbank Gross Settlement System of the Bank of Latvia
<b>LCD</b>	Latvian Central Depository; also the securities settlement system operated by the LCD
<b>LKA</b>	Association of Commercial Banks – <i>Latvijas Komerbanku asociacija</i>
<b>LVL</b>	Latvian lats
<b>NPCC</b>	National Payment Consultative Council
<b>PPS</b>	Postal Payment System
<b>RSE</b>	Riga Stock Exchange
<b>SAMS</b>	Name of the RTGS system – <i>Starpbanku automatizeto maksajumu sistema</i>
<b>VNS</b>	Securities settlement system operated by the Bank of Latvia – <i>Vertspapiru norekinu sistema</i>
<b>VTK</b>	Securities Market Commission – <i>Vertspapiru tirgus komisija</i>

## Introduction

Established in the early 1990s, payment and settlement systems in Latvia are relatively new and their development has run parallel to that of the entire banking system and the market economy.

While cash payments, constituting the bulk of retail payments, currently predominate in Latvia (particularly among individuals), banks have been introducing the most advanced payment instruments, using the latest banking services and payment media available in the West. Various instruments and procedures, such as electronic credit transfers, electronic banking, Internet banking and payment cards, are widely in use, particularly among companies and institutions. In recent years their use has increased among individuals as well. The predominance of credit transfers is a distinguishing feature of the payment systems in Latvia.

The domestic settlement systems in Latvia are rather centralised, with interbank settlements conducted through the Bank of Latvia. The Bank of Latvia is heavily involved in the payment system, both by providing settlement services via the banks' settlement accounts with the Bank of Latvia and by administering large-value interbank and retail payment systems.

The Bank of Latvia also plays an active role in the development of payment systems. Along with commercial banks, it has been working on the introduction of the Electronic Clearing System (EKS), which allows all retail payments to be settled electronically. The Bank of Latvia has also started work on the SAMS project, which is aimed at developing a modern and secure real-time gross settlement (RTGS) system for large-value and urgent payments.

## I Institutional aspects

### I.1 General legal aspects

The legal framework for payment and settlement systems in Latvia consists of a set of laws, regulations and agreements. There are no specific laws governing payment systems in Latvia. The Cheque Law of 1938, which is based on the Geneva Convention of 1931, relates to the processing of payment instruments, i.e. the issuing, design and transfer of cheques. The Law on Credit Institutions of 1995 governs the activity of credit institutions and designates the receipt of deposits and other repayable funds as activities exclusive to credit institutions. According to the Law on the Bank of Latvia of 1992, the central bank has the exclusive right to issue banknotes and coins and is responsible for the smooth functioning of payment systems as well as for determining the ways in which payments and settlements are conducted in Latvia.

In order to create a sound legal basis for credit transfers and to harmonise payment services with international and EU legal requirements, the Bank of Latvia has laid down “Regulations for Credit Transfers”. The Regulations cover provisions for domestic and cross-border credit transfers. They also contain the minimum requirements stated in Directive 97/5/EC on cross-border credit transfers with regard to the transparency of conditions for processing transfers and obligations to execute payments within the agreed time limits. The Regulations lay down requirements for banks to refund and compensate the originator or beneficiary in the event of a non-execution of transfers.

The processing of interbank payments is governed by Bank of Latvia regulations and by agreements between banks and the Bank of Latvia. The Law on Credit Institutions and these agreements regulate the relationship between customers and banks. The Law on the Protection of Consumer Rights of 1992 prevents unfair terms and conditions in legal contracts and all agreements with customers must meet this requirement.

The Law on Credit Institutions establishes procedures for the supervision of credit institutions, their insolvency, bankruptcy and liquidation. The Law does not contain the “zero-hour” principle. The Bank of Latvia is entitled to set restrictions on banking activities or even to revoke the licence of a credit institution if the credit institution regularly fails to comply with the requirements of the Law and with Bank of Latvia regulations or if the court has approved the decision to initiate bankruptcy proceedings against the credit institution. Upon establishing restrictions on the provision of payment services by a bank in default or upon revoking the licence, the Bank of Latvia disconnects the bank from the interbank payment and settlement systems operated by the Bank of Latvia.

### I.2 Financial intermediaries that provide payment services

Credit institutions, the Bank of Latvia and the Latvian Post Office are the main providers of payment services in Latvia. Pursuant to the Law on Credit Institutions, a credit institution in the Republic of Latvia operates either as a bank, a credit union or a branch of a foreign bank. Banks play an important role in the financial system by offering non-cash payment services to customers.

The restructuring of the Latvian banking system commenced in 1990, when the country regained its independence, and was completed in 1994. During this period the Bank of Latvia withdrew from commercial banking to concentrate solely on central bank activities. At the same time the commercial banking sector developed and expanded rapidly. During the period 1990-97 the Latvian banking sector underwent various stages of development: establishment and restructuring, a crisis in 1995, as well as a subsequent stabilisation and consolidation of the banking sector in 1996-97. Privatisation of the banking sector continued during this

period. In December 1997 there were only two banks that had government holdings exceeding 50% of their share capital (54.3% and 100% for the Latvian Savings Bank and the Latvian Mortgage and Land Bank respectively).

At the end of 1997 there were 31 banks with 765 branches and outlets. In addition, there were six licensed credit unions, one branch of a foreign bank and one representative office of a foreign bank.

#### *The Latvian Post Office*

The Latvian Post Office, which is authorised under the Law on the Latvian Post Office to issue postal payment instruments, also participates in the Latvian payment system. The Latvian Post Office has the most extensive branch network, with 992 branches throughout the entire country, including the Client Servicing Department of the Postal Settlement Centre. The postal network ensures convenient, fast and secure execution of various payments among private individuals and legal persons, using modern data processing technology and electronic data interchange. This is achieved by means of the Postal Payment System (PPS) developed in 1996 (see Section 2.2.5).

#### *BankServiss and the Baltic Card Centre*

There are two non-bank institutions that provide services to the banking system by processing card transactions and servicing and administering automated teller machine (ATM) and point of sale (POS) networks. Latvian banks founded the first, the Bank Service Centre (BankServiss), in 1992. Subsequently, the Baltic Card Centre (BCC) entered the market in 1996. Initially the BCC was an organisational unit within a single commercial bank, but later it was reorganised into an independent company. Both centres provide services for international debit and credit card products as well as for various domestic and retailer cards.

BankServiss provides services to Latvian banks, several Ukrainian and Lithuanian banks and international oil companies, such as Fortum, Statoil and Shell, as well as to other local companies. The BCC, however, only serves local banks.

In September 1998 BankServiss undertook to organise multilateral clearing for participating banks to facilitate the settlement of their obligations arising from card transactions on banks' settlement accounts with the Bank of Latvia. At the same point in time, in recognition of its competitiveness and the implementation of the quality management system in accordance with international standards, BankServiss was awarded the ISO-9002 certificate by the auditing company Bureau Veritas Quality International.

#### *The handling of central government payments*

The State Treasury, which is subordinate to the Ministry of Finance, administers accounts in its books, across which all central government payments initiated by state budget entities are made. Central government payments to or from banks, including all tax payments, are processed via Treasury accounts held with banks. Transfers of state budget resources between banks are processed via Bank of Latvia payment systems.

### **1.3 The role of the central bank**

#### **1.3.1 General responsibilities**

##### *Statutory responsibilities*

The Bank of Latvia is the central bank of the Republic of Latvia and its activities are governed by the Law on the Bank of Latvia.

Pursuant to Article 4 of the Law, the Bank of Latvia has the exclusive right to issue banknotes and coins. The supply of cash to the banking sector is ensured through the Bank's network of five branches.

Apart from these functions, the Bank of Latvia determines and implements monetary policy by controlling the amount of money in circulation with the aim of maintaining price stability. The financial instruments used by the Bank of Latvia to implement its monetary policy conform with the principles of a market economy (see Section 1.3.3). The Bank of Latvia also grants collateralised credit (i.e. loans and advances) to banks. The Bank manages gold and foreign currency reserves and determines foreign exchange policy. Acting as the Government's financial agent, the Bank of Latvia also provides some services for the State Treasury in the management of government foreign debt. As regards domestic operations, the Bank of Latvia executes State Treasury instructions to transfer state budget resources across banks and Treasury accounts in the Bank of Latvia. The Bank of Latvia also manages primary market auctions and the securities settlement system (VNS) for government debt securities denominated in Latvian lats.

Pursuant to Article 9 of the above-mentioned Law, the Bank of Latvia organises and ensures the functioning of payment and settlement systems in Latvia. To carry out this task, the Bank assumes an active role in the operation of the interbank payment and settlement systems. The Bank of Latvia operates and manages the Electronic Funds Transfer System (EFTS) and the Interbank Gross Settlement System (IGSS) for large-value payments. The Bank also provides various services to the banking sector relating to low-value payments. It operates the Electronic Clearing System (EKS) for corporate and retail payments and provides facilities for settling interbank obligations arising from other payment systems operated by the private sector, such as the Latvian Central Depository and BankServiss.

#### *Establishment of common rules*

The Bank of Latvia is continuously working to modernise payment and settlement arrangements and to promote payments

processing. The Bank of Latvia, together with the 12 largest commercial banks, has set up the National Payment Consultative Council (NPCC) with the aim of ensuring closer co-operation in the development of payment systems. The NPCC regularly discusses various technical, operational and legal issues relating to payment systems. The real-time gross settlement system (SAMS) "detailed design" project and the EKS implementation project have been discussed and agreed upon by the NPCC. Banks are working with the Bank of Latvia to develop common technical and operational standards relating to these projects and other payment arrangements. The Association of Commercial Banks (LKA), which represents the interests of all banks, is also involved in the co-ordination process, ensuring that the proposed procedures and standards are acceptable to the banking industry. The agreed procedures and standards are formalised in rules and regulations issued by the Bank of Latvia.

#### *Supervision and audit*

Pursuant to Article 10 of the Law, the Bank of Latvia performs supervision of credit institutions with the aim of facilitating the soundness, stability and development of the banking sector. The Bank issues banking licences to credit institutions for rendering financial services and supervises them through a combination of both on-site and off-site monitoring. The Bank of Latvia establishes standards for financial statements and financial reporting procedures to be followed by credit institutions. Moreover, the Bank also takes an active role in preparing draft legislation and sets out regulations for banking activities and financial services. The Bank establishes information technology standards and performs information systems auditing in banks.

The financial statements of credit institutions, prepared in accordance with International Accounting Standards, have to be audited in conformity with these standards by internationally recognised auditing firms and

approved by the Bank of Latvia. Since 1993 a limited number of internationally recognised auditing companies have been approved by the Bank of Latvia to carry out annual audits of bank financial statements. At the Bank of Latvia's request and within the framework of an on-call programme, the auditors assess the quality of financial statements regularly submitted to the Bank and review the interim financial statements of banks.

### **1.3.2 Provision of processing and settlement facilities**

#### *Provision of settlement accounts*

In accordance with the Law on the Bank of Latvia, interbank settlements between banks in the Republic of Latvia are effected through their settlement accounts with the Bank of Latvia. The Bank of Latvia is authorised by the Law to open accounts for government bodies, domestic banks, other credit institutions, and for foreign banks and international monetary, financial and credit institutions. The opening of a settlement account for business enterprises and private individuals is not permitted.

Each bank has a single settlement account with the Bank of Latvia, which is used both to meet the compulsory reserve requirements and to make interbank payments. These accounts do not bear interest. To enable them to participate in the securities settlement or interbank payment systems operated by the Bank of Latvia, such accounts have also been opened for some international financial institutions and for the Latvian Central Depository (LCD). The accumulation, maintenance and distribution of state budget resources are effected via the Treasury's account with the Bank. All of the above-mentioned accounts are held centrally at the Bank of Latvia's head office in Riga.

Balances on the banks' settlement accounts are available for payment purposes free of charge. The Bank of Latvia settles interbank payments only against sufficient available funds on the

settlement account. Available funds consist of the actual credit balance on the account and the collateralised intraday credit facilities.

#### *Provision of credit facilities*

The Bank is authorised to issue only collateralised short-term credits to banks. The Bank of Latvia provides standing liquidity facilities through which it grants two types of lombard credit to banks: on demand and automatic lombard credits. These credits are secured by government debt securities registered in the securities settlement system (VNS) operated by the Bank of Latvia. (For the types of securities used in monetary policy operations, see Section 1.3.3.)

Demand lombard credits are granted for a specified period of time that may not exceed 14 consecutive days. These liquidity arrangements are subject to a special agreement concluded at the request of a bank.

In order to smooth the functioning of payment systems and to facilitate interbank settlements, banks can use collateralised intraday credit facilities in the form of overdrafts on settlement accounts. Overdrafts may not exceed the lombard credit limit calculated for each bank in real time, using 80% of the value of securities held in the VNS, provided that these securities are freely available to the respective bank for making securities transfers. Debit balances are secured by pledging the corresponding value of securities in the VNS. These intraday credits are interest free. At the end of the settlement day, the Bank of Latvia arranges automatic lombard credits that are extended overnight to those banks that have uncovered debit balances on their accounts. These overnight credits are subject to interest. The Bank of Latvia always closes its books with positive or zero balances on the banks' settlement accounts.

The Bank of Latvia fixes the lombard rate for both demand and automatic lombard credits, thus setting an upper ceiling for the interest

rate in the interbank overnight money market. The lombard rate depends on the number of days for which the credit is used and increases over time.

#### *Pricing policies*

The Bank of Latvia's Executive Board determines the pricing policy and establishes the charges applied for the processing of interbank payments and securities transfers. Until 1995 the Bank of Latvia did not charge banks for its services. In 1995, when the EFTS and the Electronic Securities Delivery Services were implemented (both using S.W.I.F.T. for communication), the Bank of Latvia began to set transaction fees for electronic transfers to cover processing costs in the EFTS.

Within the framework of the SAMS and the EKS projects, the Bank of Latvia has revised the pricing policy to recover the Bank's operating costs in respect of all payment systems (EFTS, IGSS and EKS). In order to encourage the use of electronic transfers, the new pricing policy has established charges for paper-based transfers which provide a disincentive to use them.

### **1.3.3 Monetary policy and payment systems**

The Bank of Latvia has various monetary policy instruments to regulate liquidity in the banking system. Open market operations, such as repos, foreign exchange swaps (USD/LVL), and outright purchases and sales of securities, are used to implement monetary policy and to develop the money market. All open market operations are processed through specialised auctions, whereby the Bank of Latvia accepts bids submitted by banks, executes the auctions, notifies banks about the auction results and effects cash and securities transfers. Overnight lombard operations represent another important monetary policy instrument (see Section 1.3.2).

The legal arrangements relating to the procedures for monetary policy operations are based on the rules adopted by the Bank of Latvia and bilateral agreements concluded between each bank and the Bank of Latvia. These are standard agreements that specify the obligations of both parties and set out operational and technical procedures with the aim of ensuring an efficient delivery versus payment (DVP) service and providing a sound legal basis for such operations.

Since exchange rate stability has been set as a medium-term monetary policy target, the Bank of Latvia intervenes in the money market and in the foreign exchange market by purchasing from and selling to banks Latvian lats against special drawing rights in (SDR) basket currencies. The purchasing and selling of LVL to and from banks is an important means of withdrawing liquidity from and injecting liquidity into the banking sector.

The Bank of Latvia's minimum reserve requirement for banks is set at 8% of the monthly average (calculated at four intervals during the month) for deposits from the public and bonds and other debt instruments issued. Banks have to meet the minimum reserve requirement on their settlement accounts with the Bank of Latvia. The average cash holdings (vault cash) in banks may also be taken into account, but the cash component may not exceed 50% of the required reserves. Banks must meet the reserve requirement on a monthly basis as an average of the end-of-day balances. No interest is paid on compulsory or excess reserves. Balances on banks' settlement accounts with the Bank of Latvia are freely available for interbank payments.

Money market transactions are settled on a gross basis through payment systems operated by the Bank of Latvia. The implementation of the EFTS in 1995 ensured a fast channel for the settlement of money market transactions, facilitating market development, increasing the number of market participants, reducing the float and

decreasing the amount of excess reserves held with the Bank of Latvia.

The Bank of Latvia's securities operations are forwarded to the VNS to ensure DVP processing on a gross settlement basis for both legs of the transaction – cash and securities (see Section 4.3). All government debt securities registered in the VNS are used as collateral in Bank of Latvia monetary policy operations. At the end of 1997 Treasury bills and Treasury notes were registered in the VNS. Only those securities that are freely available and owned by the banks (not those pledged or owned by customers) may be used as collateral in monetary policy operations.

#### ***1.3.4 Main projects and policies being implemented***

In 1997 with technical assistance from the Phare programme of the European Commission, the Bank of Latvia commenced a project to implement the SAMS, an RTGS system. The SAMS will replace the present systems at the Bank of Latvia – the EFTS and the IGSS – for processing large-value and urgent transactions. The project is divided into three stages, two of which, the “Initial requirement and outline design” and the “Detailed design of the RTGS”, were completed in February 1997 and May 1998 respectively. The implementation of the SAMS is scheduled to be completed in the year 2000 (see Section 3.2).

In September 1997 the Bank of Latvia, in co-operation with commercial banks, undertook to replace the existing paper-based processing of low-value interbank payments in the clearing

system operated by the Bank of Latvia with electronic exchange and processing. The Bank of Latvia was responsible for the development of the Electronic Clearing System (EKS), which became operational in November 1998 (see Section 3.5).

In parallel to the EKS project, the Bank of Latvia initiated a project to build a specialised interbank communications network (ICN). The ICN, which is used for the transmission of payment instructions in the EKS and for the delivery of banking statistics from the banks to the Bank of Latvia, became fully operational at the end of October 1998. In the future, the SAMS will also use the ICN for communication between banks and the Bank of Latvia.

#### **1.4 The role of other private and public sector bodies**

The Association of Commercial Banks (LKA) represents the interests of the Latvian banking sector. All banks operating in Latvia are represented by the LKA. The LKA was created in 1992 as a public, non-profit-making organisation aimed at enhancing the development of a modern and reliable banking sector in Latvia. The LKA organises working groups and holds regular meetings with banks to discuss various aspects of banking business and issues of common interest relating to banking operations and payment systems. The LKA represents the interests of the banking sector in the EKS and the SAMS projects as well. The LKA also assists in drafting laws and regulations that govern the activities of banks.

## 2 Payment media used by non-banks

### 2.1 Cash payments

The Latvian national currency, the Latvian lats (LVL), is issued in banknotes with denominations of LVL 5, 10, 20, 50, 100 and 500. Banknotes of LVL 500 have been issued since July 1998. There are also coins with nominal values of LVL 0.01, 0.02, 0.05, 0.10, 0.20, 0.50, 1 and 2. According to the Law on the Bank of Latvia, only the Bank of Latvia is authorised to issue banknotes and coins in the country. Through its branches, situated in the capital city, Riga, and the four largest towns – Liepaja, Daugavpils, Rezekne, and Valmiera – the Bank of Latvia performs the distribution of cash. The Riga branch of the Bank of Latvia is responsible for checking the banknotes and coins received from the banking sector for authenticity and suitability for circulation.

At the end of 1997 banknotes with the denomination of LVL 10 (ECU 15.2) represented the largest proportion of banknotes and coins in circulation (30% in terms of value). The total stock of cash in circulation on 31 December 1997 amounted to LVL 332.7 million (ECU 504.5 million).

Cash is the most important retail payment instrument in Latvia, especially among private individuals. It is not possible to estimate in figures the number of transactions conducted using cash. The only data available are the cash share in M1, showing a slight decrease from 45.7% at the end of 1994 to 43.5% at the end of 1997, which is very high in comparison with the countries of the European Union (EU).

### 2.2 Non-cash payments

In Latvia non-cash payments are effected by means of credit transfers (83% by value and 35.5% by volume of payment instruments used by non-banks) and postal instruments (0.5% by value and 60% by volume). Other payment instruments, such as cheques, direct

debits, and credit or debit cards, are relatively unimportant, accounting for less than 1% by value and only around 4% by volume of total non-cash payments.

#### 2.2.1 Credit transfers

Credit transfers play a dominant role in effecting payments between customers. In the period 1993-95 most credit transfers were paper-based. Although each bank could establish its own form for payment orders, payments were usually effected by means of more or less standardised forms. In 1996 banks started to enhance their services to customers, including the facilities for handling paperless credit transfers. At present it is common practice for corporate clients to make credit transfers electronically through electronic banking and Internet banking services provided by the banks.

Interbank customer credit transfers in Latvian lats are processed through the EKS, operated by the Bank of Latvia (see Section 3.5). Cross-border payments are executed through foreign correspondent banking arrangements. Domestic transfers in foreign currencies frequently used in Latvia, such as the US dollar and the Deutsche Mark, are also processed via foreign banks.

#### 2.2.2 Cheques

The cheque is rarely used as a payment instrument in Latvia. During the process of restructuring the Latvian banking system, debit payment instruments utilised by the Soviet banking system were still in use. Huge pending queues caused serious and unpredictable delays in receiving payments effected by means of debit instructions. Therefore, by the middle of 1992 banks were refusing to accept this payment instrument and deciding to rely solely on credit transfers. At that point, debit payments practically disappeared. At present, only a small portion

of debit collections and cheques are presented to banks, primarily to receive cash, provided that they are authorised by a payer.

A small volume of collection items in Latvian lats are processed between banks through the IGSS managed by the Bank of Latvia (see Section 3.4).

In parallel to domestic cheques, there are also international travellers' cheques, which are used by international companies, embassies and travellers. The majority of banks accept such cheques. Some banks also accept and collect cheques issued by foreign banks

### **2.2.3 Direct debits**

Direct debits have emerged recently, but only a limited number of banks provide such services to their customers. At present there are no interbank arrangements or systems that process direct debit items. The use of direct debits is limited to intrabank arrangements based on agreements between utilities companies and customers serviced by the same bank.

### **2.2.4 Payment cards**

#### *Debit cards*

The issuance of debit cards began in early 1992. The most widely used debit card in Latvia is Maestro, followed by VISA Electron. There are currently also domestic debit cards in circulation. By the end of 1997 the number of debit cards issued was 139,000. The selection of card schemes offered by any individual bank depends on factors such as risk management, electronic card acceptance, network availability, cost and efficiency of the local communications network and the kind of customers targeted. Debit cards are mainly associated with a customer current account, or, alternatively, a special card account. The amounts transacted are initially blocked and later debited from the appropriate customer account, usually on a next-day basis.

Currently, the most common service for debit card holders is a direct salary payment to the card account.

#### *Credit cards, travel and entertainment cards*

In comparison with debit cards, the number of credit card holders is smaller and mostly limited to business customers. However, owing to promotional efforts undertaken by the companies concerned, the number of locally issued credit cards increased from 900 in 1993 to 45,000 in 1997. Credit cards issued by banks are mainly VISA and Europay products. There is only one domestic credit card issued by a local bank. Holders of these cards are required to pay an annual fee.

Travel and entertainment cards issued by American Express and Diners Club are rarely used in Latvia. Local banks are also issuing some cards which provide cardholders with travel assistance and insurance services.

#### *Retailer cards*

Retailer cards have acquired popularity in the past few years. Retailer cards are mainly issued by petrol companies, such as Statoil, Shell and Fortum, but there is also one petrol card issued by a local bank. By their nature, these cards can only be used at the points of sale controlled by their issuers. They are usually free of charge and offer a number of special advantages, such as discounts on goods and additional services at no extra cost.

#### *Prepaid cards*

Lattelekom launched the first prepaid card scheme in 1995. The scheme is single-purpose-oriented and the cards are used to make national and international telephone calls from payphones. The majority of cards are of the magnetic strip type, but the transition to electronic chip cards is currently in progress.

As at the end of 1997 no other prepaid card or electronic money (e-money) schemes were implemented in Latvia.

#### *ATM and POS networks*

The management of two ATM and POS networks is entrusted to BankServiss and the BCC. In addition, two banks each manage their own ATM networks.

The development of ATM networks began in 1996. By the end 1997 the number of ATMs totalled 99 machines in four networks. The networks are compatible, but the transaction fees may differ in accordance with the pricing policy applied by each network manager and card issuer. Local payment cards are accepted across all ATM networks, as well as various international debit and credit cards.

The first steps towards building a POS network were taken in 1992. At the end of 1997 there were 1,400 electronic POS terminals installed across two networks, one managed by BankServiss and the other by the BCC. The POS network accepts all types of payment cards circulating in Latvia as well as international cards issued by foreign banks.

#### **2.2.5 Postal instruments**

The Latvian Post Office issues various money orders and postal payment orders that are

used as payment instructions in the Postal Payment System (PPS), which is managed by the Post Office. The postal payment orders are numbered and, before being handed out to customers, they are registered in the system that links each order with the respective settlement account. In 1997 the number of accounts in the PPS was 7,683, showing a fourfold increase since 1996 when the PPS was launched. As from 1999 the Latvian Post Office will also issue debit cards.

#### **2.2.6. Other payment instruments**

No other payment instruments play an important role in the Latvian payment system.

### **2.3 Recent developments**

Within the EKS project (see Section 3.5), uniform standards for domestic electronic payment transfer formats were developed in order to facilitate their automated processing. The Bank of Latvia, the NPCC and the LKA were involved in this process. The customer payments in the new electronic format replaced the old paper-based payment orders widely exchanged between customers via banks. The Bank of Latvia and commercial banks have also agreed on minimum standards for customer account statements, which are now used as payment advice slips for beneficiaries.

## **3 Interbank exchange and settlement systems**

### **3.1 General overview**

The Bank of Latvia provides clearing and settlement services for interbank transfers through three payment systems which it operates: the Electronic Funds Transfer System (EFTS), the Interbank Gross Settlement System (IGSS) and the Electronic Clearing System (EKS). All banks participate directly in these systems to transfer funds via

the settlement account each bank holds with the Bank of Latvia.

The large-value and urgent transfers relating to money, foreign exchange and capital markets are processed through the EFTS using the S.W.I.F.T. network (see Section 3.3).

Some large-value interbank transfers and corporate payments are settled on a gross

basis in the IGSS, which uses paper-based interbank orders (see Section 3.4). The Bank of Latvia's operations with banks initiated within the auction system (see Section 4.3.3 in relation to open market operations) are settled electronically in the IGSS, but the settlement notifications and transaction details are given in account statements.

Retail and corporate payments are processed by the EKS, a multilateral net settlement system, which replaced the paper-based clearing system in November 1998. The system accepts credit transfers only for same-day settlement (see Section 3.5).

Apart from managing payment systems, the Bank of Latvia also seeks to facilitate efficiency and risk management in line with the recommendations applied to payment systems within the European Union (EU). While a long-term programme of development is planned, the main focus is currently on the implementation of the SAMS, an RTGS

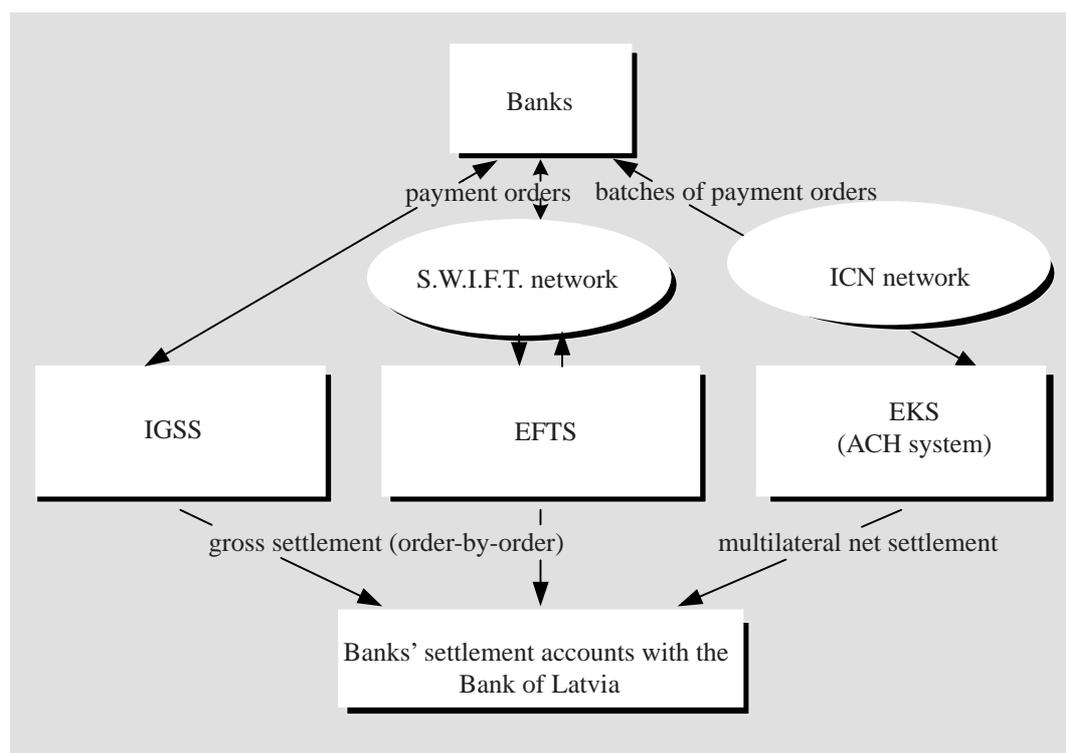
system, which will replace the EFTS and the IGSS systems for large-value and urgent interbank transfers (see Section 3.2).

### 3.2 Real-time gross settlement system (SAMS)

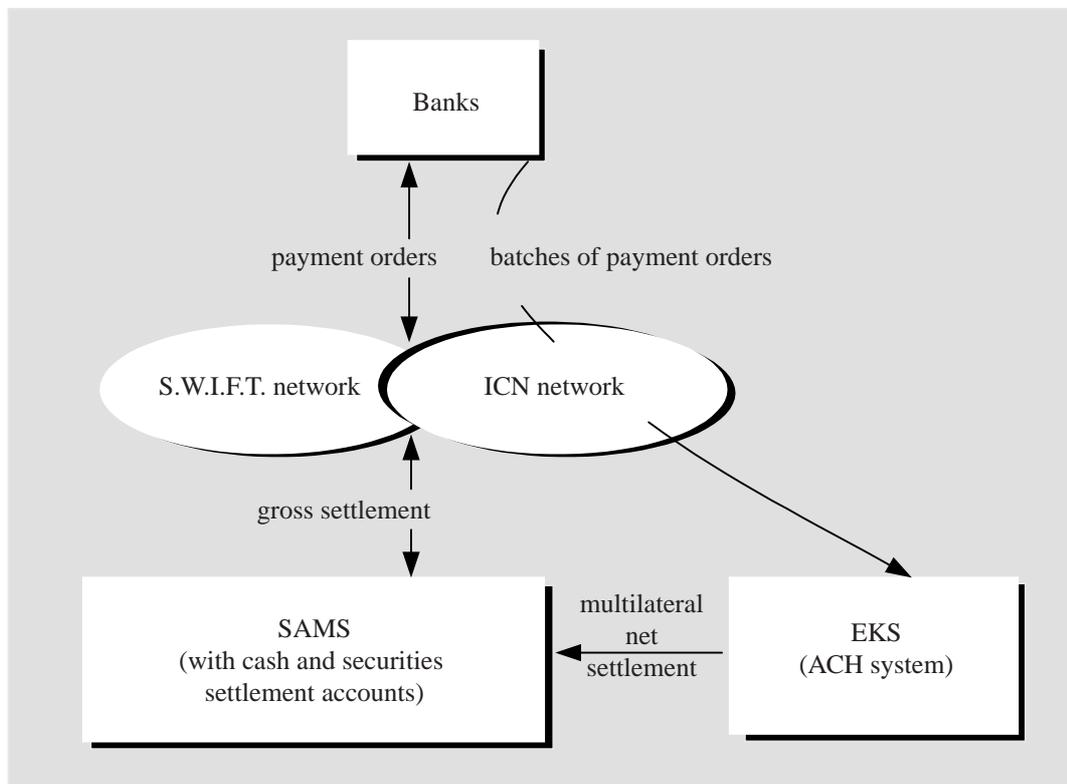
The SAMS project, which began with the technical assistance from the EU Phare programme in December 1996, is a major undertaking by the Bank of Latvia to modernise the national payment system. The objective of the project is to build a system that will provide higher operating standards for settlement risk, security, efficiency and capacity in the future. The SAMS is a structured project organised in several stages, and the system is likely to be fully operational by the second half of the year 2000 (see Section 1.3.4). The features of the SAMS, as described below, are based on the User Requirements and other documents provided by the SAMS project.

**Chart I**

#### Interbank payment and settlement systems in Latvia (current situation)



**Chart 2**  
**Interbank payment and settlement systems in Latvia (in the year 2000)**



The SAMS will have two different functionalities, but they will be provided within an integrated information technology environment. The SAMS will be an RTGS system for fund transfers. Apart from this function, the SAMS will provide DVP settlement services for government securities (see Section 4.3.10). The funds and securities will be settled in real time via cash and securities settlement accounts in the SAMS. The common IT infrastructure will ensure both a sound RTGS system for payments with the provision of the necessary collateral in securities and an efficient DVP settlement for securities with real-time access to cash accounts.

### 3.2.1 Functioning rules

The regulatory framework supporting the implementation of the SAMS will be based on an explicit legal framework combining Bank of Latvia regulations and an agreement between the Bank of Latvia and banks. The following points will be addressed:

- the Bank of Latvia is the regulatory authority with regard to payment systems;
- the Bank of Latvia is the owner and operator of the SAMS;
- the Bank of Latvia executes final settlement in central bank money via participants' settlement accounts with the Bank of Latvia;

- the responsibilities of any third-party service providers will be explicitly defined in an agreement;
- participants will comply with the requirements for admission as direct users of the SAMS, such as compliance with defined rules, solvency requirements and adequate technical capacity with regard to secure and efficient use of the SAMS.

### **3.2.2 Participation in the system**

Generally, direct participation in the SAMS is reserved solely for licensed banks. It is expected that at the outset all banks licensed by the Bank of Latvia will be entitled to participate directly in the SAMS. Indirect and direct participation for a limited range of other regulated financial institutions and clearing and netting service providers will also be supported. To enable direct participation of foreign banks in the SAMS, the system will provide a “remote access” facility. The access criteria for participating in the SAMS will be established by rules and regulations (see Section 3.2.1).

### **3.2.3 Types of transactions handled**

The SAMS will support the rapid and secure settlement of large-value and urgent domestic interbank payments. No minimum value will be set for payments in the SAMS. The primary focus is on the settlement of a relatively small volume of core transactions, typically arising from the settlement of interbank transactions in the money market, the secondary market for government securities, the domestic leg of the foreign exchange market and large-value customer payments.

Another focus is to support final settlement of interbank claims and liabilities arising from other payment circuits operated by clearing and netting providers (e.g. the Clearing System operated by the Bank of Latvia, the Latvian Central Depository, BankServiss, etc.). It is anticipated that other new payment

circuits and clearing schemes might be introduced over time.

To support the government securities market, the system will process settlements of trades in government securities and provide DVP settlement for interbank trades with these securities (see Section 4.3.10).

### **3.2.4 Operation of the transfer system**

The RTGS system is based solely on irrevocable credit transfers for both cash and securities. Credit transfers are initiated either by a participant or a duly authorised agent (i.e. an agent acting on behalf of one of the participants in a payment process).

The core RTGS system operates in a real-time processing environment. The communication between the participants and the core RTGS system is sufficiently rapid to meet the indicated performance benchmarks (by using the ICN network or S.W.I.F.T. store and forward messaging). Both messaging and real-time monitoring/instruction submissions are supported by the RTGS gateway.

Queuing mechanisms are incorporated in order to reduce rejection and re-entry processing as well as to minimise the network traffic overheads.

The Linked Transactions Queue is used to support final settlement of conditional (linked) DVP settlement instructions in real time at a specified time.

### **3.2.5 Transaction processing environment**

From the technical point of view, the SAMS will comprise two main components: the RTGS communication component and the RTGS Core Process (processing component). Delivery of submissions is accomplished in electronic form across the Electronic Delivery System either through the ICN (interactive sessions) or the S.W.I.F.T. (message-based) network. Participants will be

able to operate the RTGS system for all critical processes by using S.W.I.F.T. terminals, but may alternatively choose to implement an RTGS gateway, which is based on S.W.I.F.T.-type messages, but supports additional interactive monitoring and instruction submission facilities. The RTGS gateways will attract lower telecommunications costs than those of S.W.I.F.T.

### **3.2.6 Settlement procedures**

The SAMS will support the settlement of both funds and government securities transfers (for securities settlement, see Section 4.3.10). Participants must maintain domestic currency accounts with the Bank of Latvia to settle domestic payments. Participants wishing to avail themselves of DVP services and automatic collateralised liquidity facilities supported by the SAMS must maintain government securities in the books of the Bank of Latvia. Daily settlement and accounting processes will be undertaken by the SAMS via participants' accounts for both funds and securities held within the system. The transfers will become final and irrevocable immediately upon settlement. (There is simultaneous notification of participants.)

### **3.2.7 Credit and liquidity risk**

Interbank transfers will be settled via settlement accounts only against credit balances or collateralised liquidity facilities. The SAMS will support intraday and end-of-day collateralised liquidity facilities, including an automated process which accesses asset accounts (e.g. securities accounts) held with the Bank of Latvia by the relevant participant. Intraday liquidity facilities will be provided in the form of the automatic extension of overdrafts collateralised by securities. The system will automatically convert the intraday credit into an overnight lombard credit in the event of a participant's settlement account still showing a debit balance at the end of the day.

Participants will be assisted in proactively managing their liquidity by using a range of real-time balance, transaction and limit monitoring facilities supported by the RTGS gateway, or by using standard account and transaction queries supported by S.W.I.F.T. The SAMS will provide the participants with an efficient means of operating, monitoring and managing collateral.

### **3.2.8 Pricing**

The Bank of Latvia may seek to recover the costs of the SAMS by means of both fixed subscription fees and transaction charges levied on the participants. In addition, variable transaction charges are regarded as an important operational management tool for the Bank of Latvia (i.e. to provide incentives for participants to minimise delivery of submissions during the peak use period). Accordingly, a comprehensive and flexible pricing and invoicing facility will be provided by the SAMS.

### **3.2.9 Main projects and policies being implemented**

(See Section 1.3.4.)

## **3.3 Electronic Funds Transfer System (EFTS)**

### **3.3.1 Functioning rules**

As operator and manager of the EFTS, the Bank of Latvia has established functioning rules for the EFTS, which are incorporated in the "Regulations for interbank settlements effected by the Bank of Latvia". The Regulations govern the handling of interbank payments through all three payment systems managed by the Bank of Latvia (the EFTS, the IGSS and the EKS), including operational and technical standards to be met by the participants and the Bank of Latvia.

### **3.3.2 Participation in the system**

Banks licensed by the Bank of Latvia, foreign banks and international financial institutions can participate in the EFTS. The participants must be S.W.I.F.T. users and meet the criteria for opening a settlement account with the Bank of Latvia; they also have to have signed an agreement with the Bank of Latvia on participation in the EFTS and comply with the rules and regulations. At the end of 1997, 23 of the 32 banks operating in Latvia were participating in the EFTS.

### **3.3.3 Types of transactions handled**

The EFTS is used for the settlement of electronic large-value interbank credit transfers, such as urgent interbank payments typically arising from the money, foreign exchange or capital markets. In addition, the system supports third-party interbank transfers initiated by participants acting as intermediaries for the execution of foreign banks' correspondent banking payments in Latvian lats. The S.W.I.F.T. Financial Institution Transfer Message is used in the communication. S.W.I.F.T. is also used for messages relating to cover payments for customer transfers. No minimum value is set for payments processed via the EFTS.

### **3.3.4 Operation of the transfer system**

The EFTS processes transfers individually on a first in, first out basis as soon as they are received from participants. After the validation of a message, the EFTS settles payments via the banks' settlement accounts with the Bank of Latvia, provided that the payer has the necessary credit balance or liquidity facilities available. If funds are insufficient, the transaction is forwarded to a pending queue until the necessary funds become available. Once a transaction has been settled, the payment is irrevocable and the system prepares and sends notification of settlement to the respective participants. Participants may only cancel a payment message if the transaction has not yet

been executed or has been placed in a pending queue. The processing of interbank transfers in the EFTS is not fully automated, as some manual interventions are still required (i.e. when forwarding prepared messages to S.W.I.F.T. and when checking the availability of funds for transactions that are placed in a pending queue). This may result in a transaction processing lag of 10 to 20 minutes. The system is open for accepting and executing interbank transfers from 8.30 a.m until 3.30 p.m. on each banking day. The cut-off time at 3.30 p.m. is the same for all types of transfers.

### **3.3.5 Transaction processing environment**

Participants use the S.W.I.F.T. network to send and receive payment instructions, notifications and other messages. The messages are sent and received through standard S.W.I.F.T. terminals installed in each bank.

### **3.3.6 Settlement procedures**

An interbank transfer is settled after the receipt and validation of a payment message, provided that the payer has the necessary funds available. Settlement takes the form of appropriate debit and credit entries on banks' settlement accounts with the Bank of Latvia. A transfer becomes irrevocable and final once settled.

### **3.3.7 Credit and liquidity risk**

The EFTS operates on a gross settlement basis, thus minimising credit risk. The Bank of Latvia supplies collateralised intraday and overnight (lombard) liquidity facilities to the system participants (see Section 1.3.2).

### **3.3.8 Pricing**

Apart from the telecommunications and S.W.I.F.T. costs covered by the participants, the Bank of Latvia charges transaction fees

for the execution of interbank transfers. The initiator pays a transaction fee to cover the operational costs incurred by the Bank of Latvia. At the end of 1997 the interbank transfer fee was LVL 0.20, with a fee of LVL 0.50 for payment cancellations (ECU 0.30 and ECU 0.76, respectively). To reduce risks in the EFTS and to assist participants in liquidity management, the Bank of Latvia provides information on transactions settled, account positions and balances upon request and free of charge.

### **3.3.9 Main projects and policies being implemented**

(See Section 1.3.4.)

## **3.4 Interbank Gross Settlement System (IGSS)**

### **3.4.1 Functioning rules**

The operational and technical procedures of the IGSS are governed by Bank of Latvia regulations (see Section 3.3.1).

### **3.4.2 Participation in the system**

All banks licensed by the Bank of Latvia are direct participants in the IGSS. At the end of 1997, 31 domestic banks and one branch of a foreign bank were participating in the IGSS. The Bank of Latvia also uses the system to settle open market and lombard operations with the banks and to execute payments initiated by the LCD and the State Treasury.

### **3.4.3 Types of transactions handled**

The IGSS processes fund transfers based on payment orders delivered by banks on paper. Transactions arising from the interbank market, the Bank of Latvia's operations and payments as well as settlement of the cash leg of securities trades are handled through the IGSS. Banks which are not users of

S.W.I.F.T. are unable to use the EFTS; therefore they settle interbank market transactions through the IGSS. The IGSS also handles debit items in the form of interbank collection orders. This represents a very small portion of the total volume and value of transactions processed.

### **3.4.4 Operation of the transfer system**

The IGSS operates on a gross basis. Banks deliver customer or bank payment orders to the Bank of Latvia by courier. The operators of the IGSS process each order manually by entering payment details into the system, accept it and then settle it via the banks' settlement accounts with the Bank of Latvia.

The open market operations of the Bank of Latvia and its primary market operations are initiated within a specialised auction system and settled electronically through the IGSS (see Section 4.3.3 in relation to open market operations).

The funds are available for the beneficiary bank at the time of settlement. At the end of the settlement day the beneficiary bank receives an account statement with information about settled transactions and payment details.

As regards debit items, each collection order is registered in the system and delivered to the payer's bank within an account statement as a value-dated transaction. These items are settled two days later, provided that the payer's bank has not rejected the collection order by the settlement day.

The system operates daily from 8.30 a.m. to 4 p.m.

### **3.4.5 Transaction processing environment**

The IGSS operates on a central server located on the premises of the Bank of Latvia and is equipped with "hot backup" facilities.

### **3.4.6 Settlement procedures**

(See Section 3.3.6.)

### **3.4.7 Credit and liquidity risk**

The IGSS operates on a gross basis. The credit and liquidity risk reduction measures are the same as those for the EFTS (see Section 3.3.7).

### **3.4.8 Pricing**

Until 1999 the Bank of Latvia did not levy charges on banks with regard to the processing of paper-based transfers in the IGSS. The pricing policy of the Bank of Latvia has been changed in order to recoup the costs of running the new electronic payment and settlement system (see Section 1.3.2 in relation to pricing policy). The Bank of Latvia charges the initiator bank a transaction fee of LVL 1.00 (ECU 1.52).

### **3.4.9 Main projects and policies being implemented**

(See Section 1.3.4.)

## **3.5 The Electronic Clearing System of the Bank of Latvia (EKS)**

The new multilateral net settlement system, the EKS, was implemented in November 1998 as a replacement for the paper-based clearing system. The EKS is an automated clearing house (ACH) system, which handles bulk payments in electronic form. The changeover from paper-based processing of payment orders to electronic exchange was gradual. A transition period of five months was established, during which, in parallel with the EKS, a limited portion of payments were processed in paper form through the manual clearing system. Since the end of this transitional period the Bank of Latvia has

accepted only electronic payments in the clearing circuit.

### **3.5.1 Functioning rules**

The Bank of Latvia formulates and applies the rules for the operation of the EKS. These rules and procedures are incorporated into Bank of Latvia regulations (see Section 3.3.1).

### **3.5.2 Participation in the system**

Participation in the EKS is restricted to the banks operating in Latvia and to the Bank of Latvia. Owing to the risks involved in the net settlement system, non-banks (the LCD and the State Treasury) are not authorised to take part in the EKS. At the end of 1997, 31 domestic banks and one branch of a foreign bank were participating in the EKS.

### **3.5.3 Types of transactions handled**

The EKS processes corporate and retail payments. Only electronic credit transfers are handled by the system.

### **3.5.4 Operation of the transfer system**

The EKS is a multilateral net settlement system, which settles bulk payments on the same day. Banks prepare sets of payment instructions (batches) in electronic form that are then submitted to the Bank of Latvia daily from 8.30 a.m. until 10.30 a.m. The ICN network (see Section 1.3.4) is used for the exchange of the payment instructions. The EKS validates the payment messages received and informs the sending bank of the processing results. The banks also receive notification of the accepted and rejected messages. The calculation of the clearing results takes place at 11 a.m. and the multilateral net positions are settled via banks' settlement accounts with the Bank of Latvia. In the event of a bank's failure to cover its debit position, final settlement is

postponed until that bank receives the necessary funds. Funds can be received from other banks, settled either through the EFTS or the IGSS, but by no later than by 1 p.m. on the same day. This is when the system initiates the unwinding procedure, cancels all payment orders sent and received by any bank in a default position, and net positions for the remaining banks are recalculated. After the execution of final settlement, the EKS submits to receiving banks the accepted sets of payment instructions with the clearing results.

### **3.5.5 Transaction processing environment**

(See Section 3.4.5.)

### **3.5.6 Settlement procedures**

The final settlement of multilateral net positions is achieved through a series of debit and credit entries made across the banks' settlement accounts with the Bank of Latvia. The credit positions are settled provided that all debit positions are covered. In order to guarantee successful debiting, the necessary amounts are blocked (against credit balances or available liquidity facilities (see Section 1.3.2)) in the settlement accounts prior to final settlement.

### **3.5.7 Credit and liquidity risk**

The EKS is a retail net settlement system. However, the Bank of Latvia is seeking to minimise systemic risk in the EKS by adhering to the Lamfalussy standards. The EKS operates according to rules defined in the regulations as follows:

- direct participation in the system is granted to all banks. Non-bank entities are not authorised to participate in the system. Procedures are also set out for removing a participant from the system;
- the operational procedures of the system ensure that any bank in default is able to arrange for the necessary funds in the interbank market to cover its debit position;
- an unwinding procedure exists for use in exceptional circumstances, such as cases where a bank fails to meet its obligations by a specified cut-off time;
- in order to minimise liquidity and credit risks, the Bank of Latvia supplies collateralised liquidity facilities to the banks. The implementation of the intraday liquidity facility in 1995 substantially reduced the occurrence of delays in final settlement;
- the Bank of Latvia ensures the provision of reliable operational and technical facilities for the completion of the daily processing activities of the EKS.

### **3.5.8 Pricing**

To cover the Bank of Latvia's operational costs, banks are charged a transaction fee of LVL 0.02 (ECU 0.03) for the processing of payment messages in the EKS.

### **3.5.9 Main projects and policies being implemented**

(See Section 1.3.4.)

## 4 Securities settlement systems

### 4.1 Institutional aspects

#### 4.1.1 General legal aspects

##### *Legal framework concerning securities markets*

The Law on Securities of 1995 governs the procedures for the public issue, registration, trading and transfer of securities. It also outlines the responsibilities of custodians, issuers, investors, intermediaries and supervisory bodies in the Latvian securities market. The Securities Market Commission (VTK) grants licences to banks and brokerage companies for performing custody services in the Latvian securities market. The Law ensures, among other things, dematerialisation, segregation of the assets of participants and their customers, and the passing of the title of securities on the trade date. The LCD and the VTK have laid down rules establishing standards for accounting for customer assets in the books of each participant.

#### 4.1.2 The role of the central bank

##### *General responsibilities*

The Law on the Bank of Latvia does not define the responsibilities of the Bank of Latvia with regard to the securities settlement system. The issue and transfer of government debt securities are regulated in accordance with the provisions of the Cabinet of Ministers. These provisions state that government debt securities are issued through Bank of Latvia auctions and registered in book-entry form in the VNS, the securities settlement system operated by the Bank of Latvia (see Section 4.3). As operator and manager of the VNS, the Bank of Latvia sets the rules, procedures and operational standards to be followed by the system participants.

##### *Oversight and audit*

The Bank of Latvia has no statutory responsibility to supervise and audit securities settlement systems in Latvia. The Bank oversees and audits the VNS, which it operates, while the VTK supervises the securities settlement system operated by the LCD.

##### *Provision of settlement facilities*

The Bank of Latvia provides cash settlement facilities for both securities settlement systems, the VNS and the LCD (see Section 4.4). Participants such as banks, foreign banks, the LCD and the State Treasury hold cash settlement accounts with the Bank of Latvia.

##### *(i) Securities accounts*

The Bank of Latvia maintains government debt securities accounts for all participants in the VNS. Each participant has three categories of accounts: non-pledged securities owned by participants, pledged securities owned by participants and securities owned by customers of a participant. Individual accounts exist for each securities issue. (ISIN numbers are used for the identification of securities.)

##### *(ii) Securities lending*

The Bank of Latvia does not provide securities lending facilities. The participants may conclude bilateral agreements on securities lending and then instruct the Bank of Latvia to deliver securities free of payment or as pledges in the VNS.

##### *Provision of operational facilities*

(See Section 4.3.)

##### *Monetary policy operations and securities settlement systems*

(See Section 4.3.)

*Main projects and policies being implemented*

(See Section 4.3.10.)

**4.1.3 The role of other public sector bodies***Stock exchange authorities*

The Riga Stock Exchange (RSE) is the sole licensed stock exchange in Latvia. It is owned by 29 financial intermediaries – banks and brokerage companies – and is incorporated as a non-profit joint stock company. The RSE operates a fully automated electronic continuous trading system based on a public order book. Any bank or duly licensed brokerage company can become a shareholder and thus a member of the RSE.

*Other authorities (e.g. supervisory authorities)*

The VTK is the main regulatory and supervisory body in the Latvian securities market. The VTK has the task of promoting the development of the Latvian stock market, ensuring fair competition and protecting the rights of investors. The VTK is also responsible for the authorisation and supervision of market participants and market institutions (the LCD and the RSE).

**4.1.4 The role of other private sector bodies***Central Securities Depository*

The LCD is a private non-profit institution. The LCD operates in accordance with the Law on Securities and has a monopoly on the registration of public securities issues, the settlement of securities transactions concluded in the Latvian securities market, and the management of corporate actions (e.g. dividend payments). The main regulations of the securities settlement system operated by the LCD are laid down in LCD rules and regulations.

*Clearing house*

There are no separate clearing houses.

**4.2 Summary information on securities markets****4.2.1 Main features of the different securities markets**

Since its establishment in 1995 the Latvian capital market has developed and expanded. Dematerialised instruments as well as settlement services and systems have been created in a relatively short time.

There are two basic categories of instruments traded in the Latvian securities market:

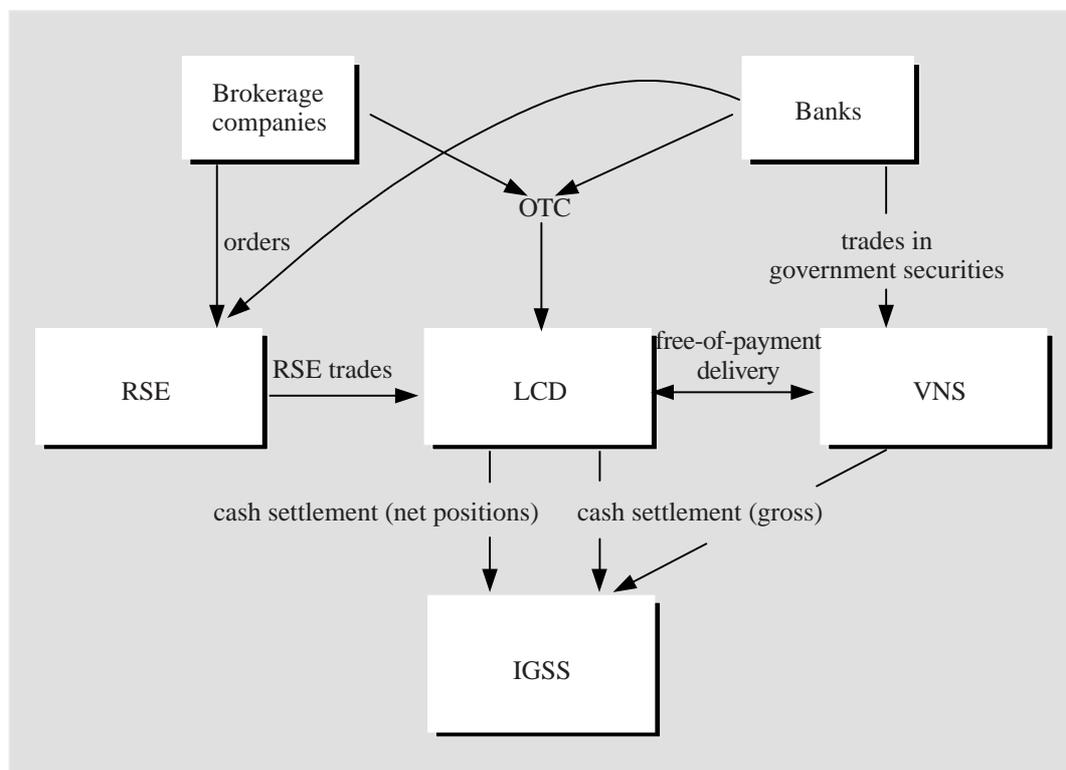
- Government securities traded on the over-the-counter (OTC) market. Interest-bearing, fixed rate Treasury notes are issued with a maturity of two years, whereas Treasury bills' maturities range from one to 12 months. These securities are registered in the VNS and are mainly used in the money market.
- Equity shares and other securities (excluding government debt) traded on the RSE or the OTC market. Settlement of these securities is made through the LCD either on a gross or net basis, but always using DVP.

At present there is no central market for derivatives, although some banks issue and trade such instruments with their customers and other banks.

**4.2.2 Basic quantitative aspects**

At the end of 1997 the value of Treasury bills and notes registered in the VNS was LVL 122 million (ECU 185 million) and LVL 34 million (ECU 51.6 million) respectively. The turnover for 1997 between direct participants in the secondary market was LVL 1,554 million (ECU 2,356 million). At the end of 1997 the

**Chart 3**  
**Securities settlement systems in Latvia**



value of securities registered at the LCD totalled LVL 328 million (ECU 497 million). In 1997 the LCD settled securities transactions worth LVL 1,062 million (ECU 1,610 million). All the above-mentioned figures are expressed at nominal value. Neither the LCD nor the VNS register transactions among the customers of participants.

#### **4.2.3 Financial intermediaries operating in different securities markets**

Banks and brokerage companies are the main participants in the Latvian capital market. For details on the difference between banks and brokers as well as other participants, such as non-licensed non-residents, see Section 4.4.2.

As regards the money market for government securities, direct participants in the market and the VNS are the Bank of Latvia, domestic

banks, foreign banks and international financial institutions (see Section 4.3.2).

#### **4.2.4 Recent developments**

The introduction of continuous trading at variable prices with automatic order matching by the RSE in 1997 was an event of paramount importance. The automatic matching tools provided by the Trading System of the RSE permit fully automated routing, execution, and confirmation of orders.

One of the most important projects of the LCD in 1997 was the establishment of a new settlement system which provides real-time DVP and confirmation of transactions. New cash settlement procedures were established between the LCD and the Bank of Latvia to support DVP on a continuous gross settlement basis. The new system was established in accordance with the experience

gained from the global securities industry, and following the recommendations of investors and custodian banks.

In 1997 a co-operation agreement was concluded between the LCD and the Estonian Central Securities Depository for the free transfer of Estonian and Latvian securities between the two countries. This arrangement strengthens links between both capital markets and facilitates the flow of foreign investment. As a result, at the end of 1997, an initial public offering from a Latvian issuer was for the first time held simultaneously in Latvia and Estonia.

The most important project of the LCD in 1998 was the establishment of an automated securities lending/borrowing system.

### **4.3 The securities settlement system of the Bank of Latvia (VNS)**

#### **4.3.1 Major regulations**

(See general responsibilities under Section 4.1.2.)

#### **4.3.2 Participation in the system**

Banks, branches of foreign banks licensed by the Bank of Latvia, foreign banks and international financial institutions which have a settlement account in Latvian lats with the Bank of Latvia (i.e. a cash account) may be participants in the VNS. Special users are the LCD and the Ministry of Finance. The Bank of Latvia also uses the VNS to settle its open market operations and register operations with collateral.

#### **4.3.3 Types of transactions handled**

The system processes operations with government securities in the primary and secondary markets. All operations in the secondary market registered by the VNS are OTC transactions.

#### *Primary market transactions*

The Bank of Latvia acts as the government's fiscal agent.

Government debt securities are sold in the primary market through the Bank of Latvia auction system. Prior to the auction, the Government announces the auction details: auction date, settlement date, offered amount, ISIN numbers, etc. The Bank of Latvia forwards this information to market participants by electronic means. On the auction date (T), the system processes a competitive auction based on the bids submitted by participants using S.W.I.F.T. or paper forms. After the auction has been completed, the participants receive information about the results. On the settlement date (usually T + 2), DVP transactions are initiated in the VNS. Each trade is settled individually in the VNS by debiting the issue account of the Treasury and crediting the participant's account with the number of securities sold. At the same time, the cash amount is automatically withdrawn from the participant's settlement account and transferred to the Treasury's account with the Bank of Latvia through the IGSS. The amount of securities issued is always equal to the amount of securities bought in the auction.

#### *Secondary market transactions*

##### *(i) Interbank transactions*

Securities can be transferred between two participants free of payment. A participant can also pledge securities in favour of another participant.

##### *(ii) Open market operations*

Outright and reverse transactions, where the Bank of Latvia acts on its own behalf to implement monetary policy, are executed in the form of tenders. Banks that are willing to enter into a deal with the Bank of Latvia submit bids to the Bank of Latvia via S.W.I.F.T.

On the basis of concluded trades, the tender system initiates the respective transactions to be executed in the VNS. Each deal is settled individually on a DVP basis on the trade date (T). (For details of DVP, see Section 4.3.6.)

*(iii) Transactions with collateral*

The VNS processes operations with collateral for daylight credits and lombard credits concluded between commercial banks and the Bank of Latvia. A bank may access the liquidity facilities provided by the Bank of Latvia at any time during a settlement day by sending a request to the Bank of Latvia. When the credit balance on the settlement account with the Bank of Latvia is insufficient to settle the cash transfer instruction in the Bank of Latvia payment system, this is automatically considered to be a request to access the liquidity facilities. Upon receiving the request, the Bank of Latvia calculates the necessary amount of collateral and initiates a DVP transfer in the VNS. The collateral is transferred from a participant's securities account to a pledge account to be held until repayment of the loan. The Bank of Latvia releases collateral by sending a DVP instruction to the VNS.

*(iv) Transfers between the VNS and the LCD*

The VNS and the LCD have established a bilateral correspondent relationship to transfer customer-owned securities purchased by banks in the primary market

from the VNS to the LCD. The LCD is responsible for controlling the records of individual ownership rights in the books of each participant. The redemption of government securities takes place in the VNS. Therefore, one day prior to redemption, the LCD transfers customer-owned securities back to the VNS. All securities transfers between the LCD and the VNS are free of payment.

#### **4.3.4 Operation of the transfer system**

The VNS is a continuous gross settlement system. The daily operating hours are from 9 a.m. until 4 p.m., local time (two hours ahead of Greenwich Mean Time). The VNS operates every day except Saturday, Sunday and public holidays. The cut-off times in the VNS are indicated in the table below.

#### **4.3.5. Transaction processing environment**

In 1995 the Bank of Latvia introduced the Electronic Securities Delivery Service in the VNS. The S.W.I.F.T. network is used between the Bank of Latvia and the participants to transfer securities. The transactions are processed individually in real time. Those banks which are not S.W.I.F.T. users can use paper forms and submit them by courier. The Bank of Latvia converts these instructions into electronic form and enters them in the VNS.

**Table**

**Schedule of transfer operations**

<b>Transaction type</b>	<b>Local time</b>
Free-of-payment settlement	9 a.m. to 4 p.m.
Buying of securities in the primary market	11 a.m.
Outright transactions with the Bank of Latvia	2 p.m.
Pledging for demand lombard credits	2 p.m.
Repo operations	1 p.m.
Pledging for daylight credits	4 p.m.
Pledging for foreign exchange deals with the Bank of Latvia	4 p.m.
Interbank transfers, pledging and release operations	4 p.m.
Pledging for overnight automatic lombard credits	4 to 4.30 p.m.

#### **4.3.6 Settlement procedures**

The VNS settles securities either on a DVP or on a free-of-payment basis.

DVP gross settlement is used to settle primary market transactions and trades with the Bank of Latvia that are concluded in the secondary market. The VNS has an online link to the IGSS, so that the cash settlement accounts can be accessed if necessary. Trades are initiated either by tender systems or by the Bank of Latvia at the request of a participant (see Section 4.3.3). If there are insufficient balances on the securities accounts in question, the VNS blocks the securities and initiates the cash movement in the IGSS. If the cash position is sufficient, the IGSS transfers the cash and the VNS transfers the securities.

Free-of-payment transfers are used to settle interbank transactions, pledge securities and transfer securities between the VNS and the LCD. The deliverer of securities sends an unconditional credit transfer order either in paper or in electronic form as a S.W.I.F.T. message. The VNS checks the balance of the account of the deliverer. If the relevant papers are in the account, the account is debited, the account of the receiver is credited and the two parties are notified of the transaction.

At the end of each business day the VNS informs participants of their closing positions by sending statements of holdings and other settlement-related information.

#### **4.3.7 DVP arrangements**

The VNS uses the first model of DVP: both legs of a transaction, securities and cash, are settled on a real-time gross settlement (trade-by-trade) basis with final and irrevocable transfers of securities taking place simultaneously with the final transfer of funds.

#### **4.3.8 Pricing policies**

The operating costs of the Bank of Latvia for electronic securities delivery services are charged to VNS participants. The participant which initiates a securities transfer pays a variable transaction fee depending on the type of transfer. The participants themselves cover the telecommunications and S.W.I.F.T. transmission costs. The processing of paper-based orders is free of charge. There are no custody fees for holding securities in the VNS.

#### **4.3.9 Credit and liquidity risk control measures**

As the operator of the VNS, the Bank of Latvia itself is not subject to the credit or liquidity risks associated with securities settlements. The Bank of Latvia does not grant advances in securities to participants. The VNS handles only securities credit transfers, executes transactions on a gross settlement basis and, throughout the banking day, informs participants about the transactions settled. If necessary for settling the cash leg of a DVP transaction, a participant may obtain collateralised credit on its cash settlement account (see Section 1.3.2).

#### **4.3.10 Main projects and policies being implemented**

In order to introduce a fully automated RTGS system in Latvia under the SAMS project (see Section 3.2), the Bank of Latvia will replace the Electronic Securities Delivery Service currently used in the VNS with functionality provided by the SAMS. All trades in securities will be settled in real time across securities accounts in the SAMS. In addition, more services will be introduced for participants, e.g. interbank DVP operations, online enquiries and monitoring of securities positions, queues, and transactions that are not currently provided by the VNS. Use of the domestic interbank network will allow

the participants (including those which are not S.W.I.F.T. users) to use the electronic message handling service.

#### **4.4 The securities settlement system of the Latvian Central Depository (LCD)**

##### **4.4.1 Major regulations**

(See Central Securities Depository under Section 4.1.4.)

##### **4.4.2 Participation in the system**

The LCD participants are banks, brokerage companies, investors and securities issuers. Banks and brokerage companies licensed by the VTK to operate in the securities market are direct participants and can operate as intermediaries for third parties. Both can also act as custodians. Brokerage companies, however, are not allowed to open cash accounts and conduct cash settlements. Therefore, their cash settlements are executed on the basis of an agreement with a bank that is an LCD participant.

Institutional investors and investment funds can open securities accounts with the LCD and be sub-participants in the LCD. A sub-participant has securities accounts with the LCD and participates in the VNS via a direct participant. The direct participant undertakes the recording of securities on behalf of the sub-participant. There are also special terms and conditions for non-resident participants, enabling them to open a securities account with the LCD.

An issuer is anyone who has registered public or private issues in book-entry form at the LCD. For securities trading, individual investors use banks or brokerage companies that are direct participants in the LCD.

##### **4.4.3 Types of transactions handled**

- DVP settlement for all transactions concluded and registered at the RSE;
- DVP settlement for OTC transactions;
- free-of-payment settlement for OTC transactions;
- transfers of securities portfolios;
- registration of pledging rights with regard to securities;
- corporate actions (dividend payments, etc.) and other payments linked to the obligations of securities owners and issuers.

##### **4.4.4 Operation of the transfer system**

The securities settlement system of the LCD is a book-entry system for all publicly issued securities registered by the LCD. Data transfer between the LCD and its members takes place in electronic form. At present, there are the following forms of communication between the LCD and participants:

- S.W.I.F.T. messages sent through the S.W.I.F.T. network;
- message files using dial-in access; and
- message files in a diskette sent by courier.

Prior to the transmission of the message file, it is signed and encrypted using asymmetric public or private key cryptography. This is to ensure the identification of the sender and the integrity of the data transmitted. The exchange of message files between the LCD and its participants is a reciprocal process. After the LCD has processed a file received from a participant, it prepares and sends an affirmation file, which contains information about the operations accomplished, an account statement and other relevant information.

#### 4.4.5 Transaction processing environment

- *Trades concluded at the RSE.* At the end of a trading session, the LCD receives trade details from the RSE via an AS/400 terminal. The transactions specify whether the confirmation is mandatory or not. Where mandatory confirmation has not been specified, the transactions are considered to be matched. Otherwise, the LCD matches the trade and confirmation details before settlement takes place. According to the RSE rules, general settlement terms are on day T + 3 on a net basis.
- *OTC transactions.* The LCD receives “deliver-against-payment and receive-against-payment” messages from its participants, sent by S.W.I.F.T. or via dial-in access. The LCD matches the transactions and, if specified, requires confirmation prior to settlement. According to LCD rules, the settlement period for OTC transactions is from T + 0 to T + 360. The processing is on a real-time gross basis.
- Free of payment transactions are executed on an RTGS basis.

#### 4.4.6 Settlement procedures

There are two types of settlement used by the LCD to settle securities transactions: net settlement and gross settlement.

Net simultaneous settlement of securities and cash (DVP) is used to settle trades that are concluded or registered at the RSE. Trades are concluded at the RSE on day T (the trade date). On the same day, the RSE sends the results of the trading session to the LCD. The settlement day for trades that are concluded on the stock exchange is T + 3. One day before the settlement day (on T + 2), the LCD checks whether all trade confirmations have been received from custodians and calculates net positions for securities and cash. If securities positions are

sufficient for settlement, the LCD sends a request for cash reservation to the Bank of Latvia. If cash positions are sufficient at the close of business, the Bank of Latvia informs the LCD by means of a standard instruction of the amount of reserved cash. At the beginning of the settlement day (T + 3), the LCD sends to the Bank of Latvia an irrevocable instruction to transfer cash. Finally, on that day, the Bank of Latvia transfers cash and the LCD transfers securities.

Gross simultaneous settlement of securities and cash (DVP) is used to settle trades that are concluded in the OTC market. Trades can be settled on a real-time basis if the parties so wish. To settle a trade concluded in the OTC market, the broker and the custodian send “deliver-against-payment or receive-against-payment” messages to the LCD. The LCD matches these instructions and, if any trade confirmations requested have been received, the LCD checks whether the seller has a sufficient securities position. If the amount of securities is sufficient, the LCD blocks securities and sends an instruction to transfer cash to the Bank of Latvia. If the cash positions are sufficient, the Bank of Latvia transfers cash and the LCD transfers securities. LCD participants can choose a settlement day from T + 0 (real-time basis) to T + 360.

If there is a sufficient securities position, the free of payment transfers are processed on a gross basis as soon as possible. This type of settlement is used to settle free of payment securities transfers between the LCD participants, between the LCD and the VNS (see Section 4.3) and between the LCD and the Estonian Central Depository for Securities.

#### 4.4.7 DVP arrangements

All securities transfers against payment are executed by the LCD as DVP settlements. For the settlement of trades concluded on the RSE, the LCD uses the third DVP model:

net simultaneous settlement of securities and cash. For OTC transactions, the LCD uses the first model: gross simultaneous settlement of securities and cash.

#### **4.4.8 Pricing policies**

Since the LCD is a non-profit institution, the purpose of the fees charged by the LCD and payable by participants is to cover the costs of services rendered. The LCD offers rebates to those participants which are shareholders of the LCD. A reduction in LCD costs has been achieved by the dematerialisation of securities safekeeping and the use of electronic means of communication with participants, the RSE and the Bank of Latvia. The LCD applies different types of fees: entry fees, regular custody fees and transaction fees.

#### **4.4.9 Credit and liquidity control measures**

The LCD excludes principal risk by providing DVP settlement facilities to participants. With regard to liquidity risk, the LCD has developed an automated securities lending system that enables participants to avoid shortages of securities. Participants can avoid cash-related credit and liquidity risk by using the facilities provided by the Bank of Latvia (see Section 1.3.2).

#### **4.4.10 Main projects and policies being implemented**

(See Section 4.2.4.)

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	2,586	2,548	2,516	2,491	2,469
Gross domestic product (LVL millions)	1,467.0	2,042.6	2,349.2	2,829.1	3,211.2
Exchange rate vis-à-vis ECU <sup>1)</sup>	0.7929	0.6641	0.6896	0.6996	0.6595

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; LVL millions)

	1993	1994	1995	1996	1997
Banknotes and coins	152.8	213.1	209.5	264	332.7
Transferable deposits	237.2	253.5	259.8	318.6	431.9
Narrow money supply (M1)	390	466.6	469.3	582.6	764.6
Transferable deposits in foreign currencies	-	-	-	-	-
Transferable deposits owned by non-residents	11.7	91.4	137.8	273.5	411.2
Outstanding value on electronic money schemes	-	-	-	-	-
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	-	-	-

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; LVL millions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	11.1	32.9	24.2	34.1	48.8
Free reserves held at the central bank	40.1	5.6	7.9	8.7	15.3
Transferable deposits at other institutions	104.9	210.8	184.9	278.9	368.1
<i>of which at:</i>					
<i>domestic institutions</i>	13.8	21	2.8	10.4	21.5
<i>foreign banks</i>	91.1	189.8	182.1	268.5	346.6

**Table 4****Banknotes and coins***(total value, end of year; LVL thousands)*

	1993 <sup>1)</sup>	1994	1995	1996	1997
Total banknotes issued	159,262	215,720	209,177	264,872	339,864
<i>of which:</i>					
LVL 100	-	9,093	14,186	19,827	35,795
LVL 50	-	11,122	17,745	27,357	53,787
LVL 20	32,234	58,432	56,779	73,395	97,224
LVL 10	23,028	63,448	63,514	84,821	98,128
LVL 5	104,000	73,625	56,953	59,472	54,930
Total coins issued	19,459	16,380	16,694	17,730	19,489
<i>of which:</i>					
LVL 2	7,235	5,220	4,839	5,018	5,233
LVL 1	5,693	4,764	5,131	5,467	6,092
LVL 0.50	3,620	2,941	2,910	3,093	3,415
LVL 0.20	1,072	1,110	1,190	1,328	1,557
LVL 0.10	864	757	848	895	996
LVL 0.05	538	508	566	634	708
LVL 0.02	279	296	366	414	493
LVL 0.01	158	232	306	369	451
Commemorative coins	-	552	538	512	544
Banknotes and coins held by credit institutions	26,379	19,045	16,332	18,605	26,699
Banknotes and coins in circulation outside credit institutions	152,753	213,055	209,539	263,997	332,654

1) At the end of 1993 Latvian rubles (LVR) were also in circulation, amounting to LVL 410,400. Thus the national currency in circulation was LVL 179,132 thousand.

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (LVL millions)
Central bank	1	6	0.1	11
Commercial banks	32	766	1,376.2	831.4
Credit unions	6	6	n.a.	0.2
Post Office	1	992	7.7	0.5
<b>TOTAL</b>	<b>40</b>	<b>1,770</b>	<b>1,384.0*</b>	<b>843.2</b>
Branches of foreign banks	1	1	n.a.	n.a.
<i>of which EU banks</i>	<i>1</i>	<i>1</i>	<i>n.a.</i>	<i>n.a.</i>

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	-	-	3	4	4
Number of machines	-	-	7	24	99
Volume of transactions (thousands)	-	-	3.6	55.8	788.5
Value of transactions (LVL millions)	-	-	0.1	3.1	24.6
<b>EFTPOS terminals</b>					
Number of networks	-	-	2	2	2
Number of points of sale	153	362	968	1,620	2,860
Number of machines	55	n.a.	156	527	1,391
Number of readers	55	n.a.	156	527	n.a.
Imprinters	98	n.a.	1,085	1,093	1,469
Volume of transactions (thousands)	13.9	190	238.6	295	933.5
Value of transactions (LVL millions)	1.6	5.9	7.8	14.2	37.7
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (LVL millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (LVL millions)	-	-	-	-	-

**Table 7**  
**Number of payment cards in circulation <sup>1)</sup>**

(end of year; thousands)

	1993	1994	1995	1996	1997
Cards with cash function	1.2	11.7	17.8	38.2	189.8
Cards with a debit/credit function	1.2	11.7	17.8	38.2	184.2
<i>of which:</i>					
<i>cards with a debit function</i>	0.3	1.2	3.3	21.4	139.2
<i>cards with a credit function</i>	0.9	10.5	14.5	16.8	45.0
Cards with cheque guarantee function	-	-	-	-	0.1
Retailer cards	1.7	2.0	2.5	3.0	23.8
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
EFTS	-	-	0.31	5.87	18.83
Credit transfers	-	-	0.31	5.87	18.83
IGSS	48.81	33.31	48.01	53.89	40.97
Credit transfers	48.81	33.31	48.01	53.60	39.83
Collection items	-	-	-	0.29	1.14
Clearing System	1,425.14	2,141.08	2,673.87	3,433.03	4,272.16
Credit transfers	1,424.80	2,137.91	2,670.22	3,429.77	4,272.16
Collection items	0.34	3.16	3.65	3.26	-

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(LVL millions)*

	1993	1994	1995	1996	1997
EFTS	-	-	48.29	1,407.94	4,253.95
Credit transfers	-	-	48.29	1,407.94	4,253.95
IGSS	1,533.59	4,497.51	3,989.06	4,010.22	3,951.20
Credit transfers	1,533.59	4,497.51	3,989.06	4,009.49	3,948.05
Collection items	-	-	-	0.72	3.15
Clearing System	2,248.48	2,574.93	3,055.80	3,059.32	3,887.01
Credit transfers	2,247.71	2,480.03	3,051.86	3,057.91	3,887.01
Collection items	0.77	94.90	3.94	1.41	-

LV

**Table 10**  
**Participants in securities settlement systems**  
*(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
VNS	33	30	33
Commercial banks	29	29	29
Bank of Latvia	1	-	1
Latvian Central Depository	1	-	1
Ministry of Finance	1	-	1
Foreign banks, international securities houses	1	1	1
Latvian Central Depository	30	28	21
Commercial banks	20	20	20
Stockbrokers	8	8	-
Estonian Central Depository	1	-	-
Bank of Latvia	1	-	1

**Table 11**  
**Transfer instructions handled by securities settlement systems:  
 volume of transactions**

	1993	1994	1995	1996	1997
VNS	-	907	2,016	6,276	4,717
Treasury bills	-	907	2,016	6,276	4,463
Treasury notes	-	-	-	-	254
Latvian Central Depository	-	-	570	14,206	66,082
Government securities	-	-	26	1,053	668
Bonds	-	-	-	42	62
Shares	-	-	544	12,665	65,340
Warrants	-	-	-	446	-
Investment certificates	-	-	-	-	12

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(LVL millions)*

	1993	1994	1995	1996	1997
VNS	-	195.01	402.09	1,268.00	1,554.00
Treasury bills	-	195.01	402.09	1,268.00	1,370.00
Treasury notes	-	-	-	-	184.00
Latvian Central Depository	-	-	28.22	822.64	1,062.44
Government securities	-	-	3.74	634.65	586.02
Bonds	-	-	-	3.07	69.95
Shares	-	-	24.47	177.40	405.94
Warrants	-	-	-	7.52	-
Investment certificates	-	-	-	-	0.53

**Table 13****Nominal values registered by securities settlement systems***(end of year; LVL millions)*

	1993	1994	1995	1996	1997
VNS	1.60	39.00	83.86	133.00	156.00
Treasury bills	1.60	39.00	83.86	133.00	122.00
Treasury notes	-	-	-	-	34.00
Latvian Central Depository	-	-	24.67	224.28	327.63
Government securities	-	-	1.80	147.21	155.60
Bonds	-	-	-	2.06	18.64
Shares	-	-	22.87	75.01	147.79
CDs	-	-	-	-	5.10
Warrants	-	-	-	-	-
Investment certificates	-	-	-	-	0.50

LV

**Table 14**  
**Indicators of use of various cashless payment instruments:**  
**volume of transactions**

(thousands)

	1993	1994	1995	1996	1997
Cheques issued	11.0	20.1	31.8	39.3	50.0
Payments by debit and credit cards	33.6	258.9	350.9	547.9	2,618.1
Paper-based credit transfers	21,057.3	20,762.8	43,217.6	26,139.5	16,203.9
<i>of which:</i>					
<i>customer initiated</i>	11,526.0	12,209.8	14,223.7	15,578.1	8,660.5
<i>interbank/large-value</i>	23.6	16.5	47.0	98.5	125.0
<i>money orders</i>	9,507.7	8,536.5	28,946.9	10,463.0	7,418.3
Paperless credit transfers	120.4	242.2	1,571.1	4,090.8	10,832.4
<i>of which:</i>					
<i>customer initiated</i>	102.2	210.7	1,469.7	3,930.5	10,582.4
<i>electronic banking</i>	23.9	15.4	217.2	539.3	896.0
<i>Internet banking</i>	-	-	14.2	13.6	56.1
<i>interbank/large-value</i>	18.2	31.5	101.4	160.3	250.0
Direct debits	5.0	60.0	150.0	230.0	301.6
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others: Postal payments	25,304.8	30,609.7	35,708.3	39,383.6	45,441.6
<b>TOTAL</b>	<b>46,532.1</b>	<b>51,953.6</b>	<b>81,029.7</b>	<b>70,431.1</b>	<b>75,447.5</b>

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions**

(LVL millions)

	1993	1994	1995	1996	1997
Cheques issued	2.7	5.7	10.7	12.4	18.7
Payments by debit and credit cards	1.9	7.6	24.3	61.2	191.5
Paper-based credit transfers	6,552.1	11,473.7	12,571.6	17,818.2	24,863.8
<i>of which:</i>					
<i>customer initiated</i>	5,466.3	9,839.4	10,409.5	15,026.7	18,998.0
<i>interbank/large-value</i>	384.0	334.8	210.8	295.0	1,598.7
<i>money orders</i>	701.8	1,299.5	1,951.3	2,496.4	4,267.2
Paperless credit transfers	2,197.4	4,142.1	16,244.0	33,689.8	55,528.6
<i>of which:</i>					
<i>customer initiated</i>	1,602.9	3,605.4	11,742.8	26,357.7	44,014.0
<i>of which:</i>					
<i>electronic banking</i>	17.4	93.3	1,120.9	5,937.4	8,194.5
<i>Internet banking</i>	-	-	84.8	129.3	388.1
<i>interbank/large-value</i>	594.5	536.7	4,501.2	7,332.1	11,514.6
Direct debits	n.a.	n.a.	n.a.	n.a.	0.9
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others: Postal payments	408.2	430.6	279.2	350.1	443.7
<b>TOTAL</b>	<b>9,162.3*</b>	<b>16,059.7*</b>	<b>29,129.8*</b>	<b>51,931.7*</b>	<b>81,047.2*</b>

**Table 16****Participation in S.W.I.F.T. by domestic institutions**

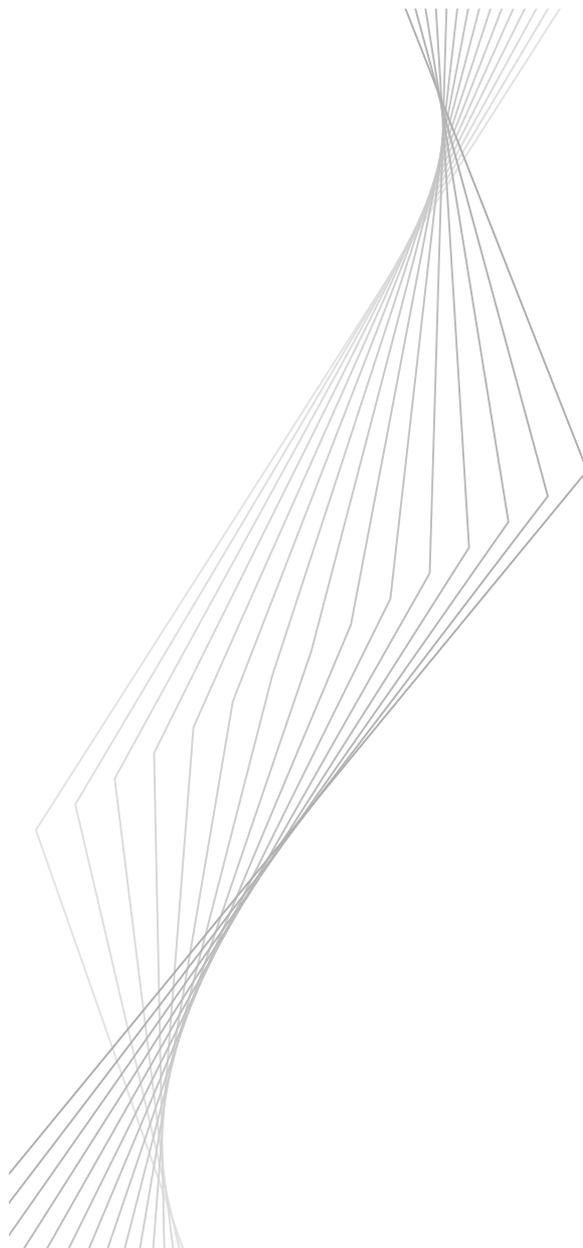
	1993	1994	1995	1996	1997
S.W.I.F.T. users	9	12	21	23	27
<i>of which:</i>					
<i>members</i>	9	12	20	22	23
<i>sub-members</i>	-	-	1	1	2
<i>participants</i>	-	-	-	-	2
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	1,460	114,431	330,585	833,639	1,424,956
<i>of which:</i>					
<i>category I</i>	556	77,194	211,825	554,710	935,452
<i>category II</i>	67	17,144	61,243	142,238	253,664
<i>sent to/received from domestic users</i>			38,693	137,077	315,802
Total messages received	2,696	140,359	336,063	750,332	1,319,393
<i>of which:</i>					
<i>category I</i>	1,387	58,968	149,249	371,627	661,474
<i>category II</i>	13	4,236	9,180	29,867	53,500
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556



EUROPEAN CENTRAL BANK



**Lithuania**

**August 1999**

Lithuania

LT

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### List of abbreviations

<b>LCVPD</b>	Central Securities Depository of Lithuania – <i>Lietuvos centrinis vertybinių popierių depozitoriumas</i>
<b>LTL</b>	Lithuanian litas
<b>NVPB</b>	National Stock Exchange of Lithuania – <i>Nacionalinė vertybinių popierių birža</i>
<b>TARPBANK</b>	The Bank of Lithuania's interbank funds transfer and settlement system – <i>Lietuvos banko tarpbankinė lėšų pervedimo ir atsiskaitymų sistema</i>

## Introduction

The aims of the Bank of Lithuania, in recent years, have been to create a reliable banking system, to reinforce market competition, and to develop monetary policy instruments.

The payment system in Lithuania is highly centralised at present. Credit transfers are the main instrument used for small and large-value cashless payments. The Bank of Lithuania operates the only funds transfer and settlement system for these kinds of transactions. In addition, the Bank of Lithuania provides cash settlement services for securities transactions.

As regards monetary policy instruments, the Bank of Lithuania has developed and introduced open market operations. It has also established a short-term collateralised

loan facility to enable its payment system to operate smoothly.

Cash is still used for a high percentage of payments in Lithuania, in comparison with other European countries. At the same time, rapid growth in electronic payments is evident. The latest developments include the extension of payment card transactions, most notably the recent introduction of electronic money instruments.

With a view to modernising the payment system, a new automated system with real-time gross settlement is under development. The introduction of this system will be the last stage in the automation of the national payment system.

## I Institutional aspects

### I.1 General legal aspects

The Bank of Lithuania, as the central bank of the Republic of Lithuania, is responsible for the reliable functioning of the payment system. This is laid down in the Law on the Bank of Lithuania (1 December 1994, No. I-678). Under this Law, the Bank of Lithuania issues and revokes licences of commercial banks which, inter alia, provide funds transfer services and issue payment instruments. The Law also gives the Bank of Lithuania the exclusive right to issue banknotes and coins and the obligation to ensure the stability of the currency.

The Law on Commercial Banks of Lithuania (21 December 1994, No. I-720), which regulates the activities of commercial banks, does not specifically contain guidance with regard to payments. The purpose of the Law is to regulate the activities of commercial banks in order to ensure a stable, reliable, efficient and safe banking system. It defines the terms and conditions for establishing and licensing banks; the specific characteristics of their activities; as well as their reorganisation and liquidation. Other legal acts also regulate banking activities and specify standards for these activities.

The Law on the Currency of the Republic of Lithuania (1 July 1993, No. I-199) establishes that the monetary unit of the Republic of Lithuania is the litas, which comprises one hundred centas. The litas is the only legal tender for making payments and settlements in the Republic of Lithuania. The Law on Foreign Currency in the Republic of Lithuania (7 July 1993, No. I-202) provides that foreign currency may only be used for the settlement of transactions with foreign legal entities and natural persons located outside the Republic of Lithuania.

The Law on the Credibility of the Litās (17 March 1994, No. I-407) specifies that the litās put into circulation by the Bank of Lithuania shall be fully covered by the gold

and foreign currency reserves of the Bank of Lithuania. The official exchange rate of the litās is established against the currency chosen as the anchor currency (currently the US dollar), according to the procedure laid down in this Law.

The Law on Bills of Exchange and Promissory Notes and the Law on Cheques pertain to these instruments. The two laws are in accordance with the respective international Geneva Conventions. Other payment instruments and the usage thereof are partially governed by the regulations issued by the Bank of Lithuania and the Government.

The Technology of Interbank Settlements (12 May 1994, No. 31), approved by a resolution of the Board of the Bank of Lithuania, regulates the interbank funds transfer and settlement system.

The Law on Public Trading in Securities (16 January 1996, No. I-1169) provides a legal basis for the safe, open and efficient functioning of the securities market. It seeks to maximise the security of all investors and to ensure competition among market participants. The Law stipulates that all securities issued in Lithuania are to be in book-entry form. The Law does not regulate securities settlements. Instead, these settlements are subject to specific rules and agreements concluded by financial intermediaries, the National Stock Exchange of Lithuania (NVPB), the Central Securities Depository of Lithuania (LCVPD) and the Bank of Lithuania.

The issue and use of credit and debit cards as well as of electronic money are based on agreements signed between card issuers and holders. The Bank of Lithuania is currently evaluating the need for legal acts in this area.

The Law on the Prevention of Money Laundering (19 June 1997, No. VIII-275) specifies measures to prevent money laundering and establishes the state

institutions responsible for the implementation of these measures.

The Law on the Protection of Consumers' Rights (10 November 1994, No. I-657) establishes and guarantees the rights of consumers and protects their economic and social interests.

The Law on Bankruptcy (17 June 1997, No. VIII-270) does not contain the so-called "zero-hour rule".

## **1.2 Financial intermediaries that provide payment services**

The structure of the Lithuanian payment system consists of the Bank of Lithuania and commercial banks. There are no savings banks in Lithuania, and credit co-operatives (credit unions) do not provide payment services. Commercial banks carry out all types of banking operations. Payments are made from customer current accounts at banks. All interbank payments and settlements are carried out in the Bank of Lithuania's interbank funds transfer and settlement system (TARPBANK).

In addition to the Bank of Lithuania and commercial banks, other financial institutions also perform certain functions in the payment system. The Bank Cards Centre authorises payment cards. The LCVPD and the NVPB perform functions related to the settlement of securities transactions. These institutions process the information presented by their clients and provide settlement positions to commercial banks (the Bank Cards Centre) or directly to TARPBANK (the NVPB and LCVPD) for further processing.

The Law on Communications (30 November 1995, No. I-1109) establishes the exclusive right of the State Post Office to provide specific payment functions/giro services. These services are not yet in use.

### **1.2.1 Banks**

The year 1990, after Lithuania had regained its independence, saw the start of domestic commercial banking. The boom in the establishment of banks in 1994 was evidenced by the existence of 28 commercial banks in Lithuania. However, many were formed too hastily and were not well capitalised. Some of these banks went bankrupt. At the end of 1997, 11 domestic commercial banks were active in Lithuania and they had, in total, 204 branches. One branch of a foreign bank was also operating in the market. All of these banks provided payment services.

In 1997 the state owned nearly 45% of the share capital of all domestic banks. That capital was concentrated in three banks. The five largest banks held the dominant portion of assets and deposits, and their financial success predetermined the general performance indicators of the banking system. The remaining six commercial banks held 16% of the assets, 9% of the loan portfolio and nearly 16% of deposits.

### **1.2.2 Clearing houses**

The interbank funds transfer and settlement system of the Bank of Lithuania, TARPBANK, is administered by its structural unit, called the Settlements Centre (Clearing House). The TARPBANK system was initially designed to perform interbank clearing and settlement. In 1995, aiming to ensure the reliable operation of the securities market, the Bank of Lithuania allowed the participants in the securities market to participate directly in the TARPBANK system by limiting their rights to the settlement of the cash leg of securities transactions. Prior to this, the settlement of the cash leg of securities transactions had been carried out by a commercial bank. However, it failed to satisfy the growing demand for high-quality service. The direct participation of the securities market participants in the TARPBANK system resulted in more favourable conditions for securities settlements (see Sections 3 and 4).

### 1.3 The role of the central bank

#### 1.3.1 General responsibilities

##### *Statutory responsibility*

The Bank of Lithuania is the central bank of Lithuania and is independent of the Government of the Republic of Lithuania. The principal objective of the Bank, as stated in the Law on the Bank of Lithuania, is to achieve stability of the national currency. In order to accomplish this objective, the Bank of Lithuania must ensure the reliable functioning of the money market and of the payment system. In order to implement these tasks, the Bank of Lithuania has the exclusive right to put banknotes and coins into circulation. It conducts monetary policy, selects the instruments used to implement this, and manages the gold and foreign currency reserves. Furthermore, it operates as the banker to the Government and fulfils the function of fiscal agent in the distribution of government securities.

##### *Establishment of common rules*

The Law on the Bank of Lithuania gives the Bank the right to stipulate procedures for the settlement of transactions in domestic and foreign currency by banks and other economic entities. The actions of the Bank of Lithuania within the payment system promote the assurance of a smooth, efficient (i.e. enabling money to circulate rapidly and economically) and financially reliable (i.e. minimising financial risk related to money circulation) functioning of the system. The role of the Bank of Lithuania in the activities of the interbank funds transfer and settlement system and in specifying technical and legal provisions on payment instruments is of great importance.

##### *Supervision and audit*

The Law on the Bank of Lithuania establishes the Bank of Lithuania as the supervisory

authority for banks which, inter alia, render payment services. The Bank has the right to specify the information on financial and payment services that banks must present to clients.

Under these powers, the Bank of Lithuania must ensure the prudent management of banks. It also encourages the efficiency and competitiveness of the overall financial system.

#### 1.3.2 Provision of processing and settlement facilities

In addition to maintaining accounts for the banks, the Bank of Lithuania is the sole entity providing interbank funds transfer and settlement services used by the commercial banks in Lithuania. Owing to imperfect information systems at some banks, their branches also have direct access to this service and can act as direct participants in the system.

The system established by the Bank of Lithuania ensures the rapid and reliable processing of interbank payments, for both large-value and retail payments, as well as their final settlement.

##### *Provision of settlement accounts*

Commercial banks and branches of foreign banks operating in Lithuania open settlement accounts with the Bank of Lithuania and use these to hold both their required reserves and funds that can be used for payments. In the TARP BANK system clearing accounts are opened for commercial banks, for those of their branches which are direct participants in the system and for branches of foreign banks. The overall amounts of payments sent and received by a participant during each clearing are presented on the clearing accounts. Branches of banks acting as direct participants settle the balance on the clearing account of the respective commercial banks twice a day. If the balance of payments in the

commercial bank's clearing account is negative, the balance on the settlement account is reduced, and if it is positive, the balance on the settlement account is increased.

Securities market intermediaries (financial brokerage enterprises and banks) as well as the LCVPD and NVPB maintain settlement accounts at the Bank of Lithuania. Financial brokerage enterprises and banks may open several special purpose settlement accounts for settling different securities transactions. They may have a general settlement account for intermediate payments, a primary securities market settlement account for use in settling the primary market transactions in government securities, a secondary securities market settlement account to accumulate funds for the settlement of secondary market transactions concluded on the NVPB, and a special settlement account to settle over-the-counter (OTC) transactions. The range of accounts available to intermediaries ensures the reduction of credit risk for different types of transactions.

No interest is paid on participants' settlement accounts.

#### *Provision of credit facilities*

To ensure commercial bank liquidity during settlement, the Bank of Lithuania grants collateralised overnight loans. The legal acts entitled Regulations Governing the Granting of Overnight Credit by the Bank of Lithuania (12 December 1997, No. 295) permit banks to receive overnight credit for 80% of the value of marketable government securities held in a special custody account.

#### *Pricing policies*

The Bank of Lithuania establishes prices for all payment and settlement services, as well as for account management. The prices charged enable the Bank to recover the direct and indirect costs that arise from these activities.

### **1.3.3. Monetary policy and the payment system**

At present Lithuania operates a modified currency board arrangement that was established on 1 April 1994. However, the limitations of this arrangement prompted the Bank of Lithuania to adopt a plan for withdrawing from the currency board arrangement. The strategy is contained in the Monetary Policy Programme 1997-99 (16 January 1997, No. 14). The Programme provides monetary policy objectives and development stages for the above-mentioned period.

As part of the implementation of this Programme, the Bank introduced open market operations in 1997. At the start of 1998 it established the collateralised lending facility described in Section 1.3.2. Open market operations and collateralised overnight loans are settled and administered within the TARP BANK system.

The Bank also uses reserve requirements as a policy instrument and to help to ensure the liquidity of the banks. The Rules for Required Reserves of Commercial Banks (12 December 1993, No. 52) stipulate that banks should meet their reserve requirements by maintaining the amount required on average over the reserve maintenance period (one month). In addition, banks can use all of their reserves held in litas to meet settlement obligations.

The Bank can also act as a lender of last resort. In so doing, the Bank only grants loans to banks that are illiquid but not insolvent. These loans must be collateralised.

### **1.3.4 Main projects and policies being implemented**

The Bank of Lithuania has started to develop a new interbank funds transfer system. This system will be put into operation in 2002 (see Section 3.1).

#### 1.4 The role of other private and public sector bodies

While the Association of Lithuanian Banks represents the interests of banks, the State Service for Competition and the Protection

of Consumers' Rights of the Government of the Republic of Lithuania is responsible for consumer (bank customers') protection. Furthermore, the National Association of Financial Brokers represents the interests of securities market intermediaries.

## 2 Payment media used by non-banks

### 2.1 Cash payments

Although cash is widely used for retail payments in Lithuania, its importance has declined slightly. At the end of 1997 currency in circulation comprised 50% of the narrow money supply (M1).

Recently the greater use of non-cash means of payment has become evident. Employers have started to contract with banks for the automatic transfer of wage and salary payments to the bank accounts of their employees. As a result, the number of payment cards and ATMs is increasing rapidly. However, irrespective of the growing use of payment cards, the historical importance of cash suggests that its use will probably diminish at a slow pace.

The Bank of Lithuania introduced litas and centas into circulation on 25 June 1993. Currency in circulation consists of banknotes in the denominations of LTL 1, 2, 5, 10, 20, 50, 100 and 200 and coins in the denominations of 1, 2, 5, 10, 20 and 50 centas and LTL 1, 2 and 5.

Banknotes are printed abroad, whereas coins are minted at the Lithuanian Mint.

At the end of 1997 banknotes amounted to 99% of the value of all currency in circulation, and coins accounted for the remaining 1%.

No limits are applied to cash payments in Lithuania. If the amount of cash used in a transaction exceeds the sum specified in the Law on the Prevention of Money Laundering (19 June 1997, No. VIII-275), banks and other

credit institutions are obliged to identify the client and notify the state institution with jurisdiction in this matter.

### 2.2 Non-cash payments

#### 2.2.1 Credit transfers

Credit transfers are the most commonly used instrument for non-cash payments in Lithuania. They account for 98% of the total value of such payments. A client instructs its bank in writing or by electronic message to transfer funds from its account to the beneficiary's account. In fact, all large-value payments are made by credit transfer, and this instrument also dominates retail transactions. Usually payment instructions are presented to banks in writing, while the banks forward the information to the TARP BANK system in the form of electronic notifications. TARP BANK processes interbank settlements within half a day. Once the interbank settlement has been carried out, the payer's bank mails to the payee's bank a written instruction for the verification of the payment. Delivery of a written instruction, which takes one or two days, is still necessary in Lithuania, since only paper documents are legally valid.

In the household sector, special forms are used to pay for electricity, gas and heating. The forms are submitted to banks accompanied either by instructions to debit the payer's account or by delivery of the cash. The banks process the forms and transfer the funds to the bank accounts of the companies providing the services.

Cross-border transfers are made using correspondent accounts that Lithuanian banks hold with foreign banks.

### 2.2.2 Cheques

Cheques are not popular in Lithuania. They are used in a very small share of payment transactions. As a result, there are no procedures for the truncation of cheques. Banks in Lithuania are not interested in the development of this payment instrument owing to the added credit risk and sizable administration costs.

Bank drafts are used more widely in Lithuania. These drafts are issued by banks for the amounts deposited in cash at the time of issue or debited from the applicant's account. Bank drafts are often used to pay foreign suppliers for goods and services.

### 2.2.3 Direct debits

In Lithuania direct debits have been used since 1997, although the opportunities for the use of this payment instrument are still very limited. Direct debits may be used by individuals wishing to pay for telecommunications services. For this type of payment, a three-party contract is made between the telecommunications enterprise, its client and the bank where the client's account is held. According to this contract the bank is permitted to debit the client's account and transfer the funds to the account of the telecommunications enterprise.

### 2.2.4 Payment cards

#### *Debit and credit cards*

At the end of 1997 payment cards were distributed by eight commercial banks in Lithuania. They are a recent development and most banks have introduced them only in the past one or two years. Debit cards are more popular than credit cards and accounted for 70% of the market at the end of 1997.

A substantial share of the market is held by the domestic cards issued by individual banks. A "Globus" card is issued by several banks and the "Vilniaus bank card" is issued by the Vilniaus Bank. The number of banks that are members of VISA and Eurocard/MasterCard is increasing rapidly and they are adding these international cards to their existing offerings.

An increase in the number of debit and credit card holders is occurring in response to greater investment and marketing efforts in this area by banks. For the time being, however, payment cards are used mainly in large cities.

#### *Retailer cards*

No statistical information is available on the spread and use of retailer cards in Lithuania. They are offered by petrol stations and other enterprises with many individual clients. They are usually free of charge and companies encourage their use by offering discounts on selected goods and services. These enterprises are more attuned to the needs of their consumers than banks, because the customer's needs are specific and obvious.

#### *Prepaid cards*

The largest market share, in terms of the number of bank payment card holders, is maintained by the IMPAR card. This is a prepaid bank payment card and is described in Section 2.3.1. One bank issues these cards and they accounted for 44% of the total amount of bank payment cards outstanding at the end of 1997.

Single-purpose prepaid cards, issued by the telecommunications company "Lietuvos telekomas", are also used in Lithuania. There are two types of telephone cards, those with a magnetic stripe and those with a microchip. Currently the number of cards with a magnetic stripe is contracting noticeably and they should soon be obsolete.

In 1994 and 1995 the amount of outstanding telephone cards stood at LTL 0.66 million (ECU 0.14 million) and LTL 2.72 million (ECU 0.52 million) respectively, whereas in 1996 the number of telephone cards bought by consumers of telecommunications services peaked at LTL 13.12 million (ECU 2.58 million).

#### *ATMs and POS networks*

There are three networks that service payment cards. One of them services the international VISA payment cards and the domestic cards of the Vilniaus Bank. The second network services Eurocard/MasterCard international cards and the local "Globus" cards. These networks are not linked. Therefore, a card issued by one bank and serviced by one system cannot be serviced by the networks of banks that have installed another system. The third network services the system of the IMPAR card.

Owing to the fact that the Lithuanian banking system is in the process of development, banks have only just started to invest in ATM networks. Thus far, card holders have been able to use them to effect cash withdrawals and consult the balance on their account.

Although payment cards started to be issued in Lithuania in 1994, the first POS network commenced its operations only at the end of 1995. Prior to that time, card holders could only perform operations by using mechanical equipment, namely imprinters. At the end of 1997 nearly 4,000 POS accepted cards, but only one in four of them was equipped with an EFTPOS terminal. All transactions processed via EFTPOS are authorised by ordinary telephone communication, thus influencing the speed of the authorisation procedure.

#### **2.2.5 Postal instruments**

There are no specific postal instruments used for payments in Lithuania.

#### **2.2.6 Other payment instruments**

Payment requests are widely used in Lithuania to settle purchases of agricultural and related products. This instrument accounts for nearly 10% of the volume of all non-cash payments, but only 1.7% of their value. This system was used very widely in the former Soviet Union. An agricultural company delivering agricultural output to a processor, or a processor delivering processed output to a trading company, issues a payment request. It sends this document to its bank which, in turn, remits the request to the payer's bank. Alternatively, the agricultural enterprise may submit an issued payment request directly to the payer's bank. The payer has three days to refuse the payment request. If it does not, the request is treated as accepted and the payer's bank debits its client's account and transfers the funds to the beneficiary's bank. As the use of this payment instrument is cumbersome and time-consuming, the Bank of Lithuania intends to abandon the use of this instrument.

### **2.3 Recent developments**

#### **2.3.1 IMPAR card**

The IMPAR card, which is a prepaid payment card, was introduced in Lithuania in 1996 by Snoras Bank. The IMPAR card contains a microchip that stores monetary value. Holders can "load" their cards at one of 70 ATMs by transferring funds from their bank accounts.

A wide service network which developed immediately after this card appeared in Lithuania made the IMPAR card more popular than the international VISA and Eurocard/MasterCard that were introduced at about the same time. The value of electronic money (e-money) which can be loaded onto the card is not limited and the operation relies on the verification of codes and of the availability of funds. Payments are made in litas, although it is technically possible to extend the system to other currencies. The amount of a

transaction is not limited, although the card holder must enter a PIN code. The value of e-money taken from the card is transferred to the retailer's device (of which there were 168 at the end of 1997), which, once a day, communicates the stored aggregate amount to Snoras Bank, which, in turn, credits the retailer's account. In 1997 the value of the operations carried out using these cards amounted to LTL 107 million (ECU 23.6 million), including cash withdrawals from ATMs. The average value of one transaction was equal to LTL 240 (ECU 53). Retailers also give discounts to holders of IMPAR cards.

The issuers of the card envisage the expansion of the system in the near future and plan to issue multi-function cards that can be used to pay car parking and telephone charges.

### 2.3.2 Telephone banking

At present, telephone banking in Lithuania is in an early phase of development.

## 3 Interbank exchange and settlement system

### 3.1 General overview

The interbank funds transfer and settlement system TARP BANK is the only system of its kind operating in Lithuania. TARP BANK is managed by the Bank of Lithuania and is designed to make settlements through its participants' accounts with the central bank.

Participants in the system include Lithuanian banks and their branches, foreign bank branches operating in Lithuania and participants in the securities settlement system (see Section 3.2.2).

Settlements are made in litas, although technically it would be possible to settle in various currencies.

The TARP BANK system is able to handle both credit and debit payments.

The TARP BANK system is a designated-time settlement system. Settlements are made twice a day. The procedure is described in Section 3.2.6.

The development of the banking sector in the country, and Lithuania's efforts to join the European Union (EU) and Economic and Monetary Union (EMU), led the Bank of Lithuania to start developing a new interbank funds transfer system (IFTS) at the end of

1997. It will consist of a real-time gross settlement (RTGS) subsystem and a designated-time settlement (DTS) subsystem. The IFTS will eliminate the need for the circulation of paper documents and provide the possibility of transferring funds not only at designated times but also in real time.

The strategy for its implementation and the principal technical requirements have already been approved by the Bank of Lithuania. As the IFTS project is still at an early stage of development, it is not presented in more detail.

### 3.2 TARP BANK system

The automated TARP BANK system was designed and implemented by the Bank of Lithuania. It began operations in June 1990, the year that the Bank of Lithuania was reopened. Initially, the system conducted operations in Russian roubles.

In October 1992 the TARP BANK system was restored. In order to make settlements with the republics of the former Soviet Union, settlement accounts of the central banks of these republics were opened at the Bank of Lithuania, and settlement accounts of the Bank of Lithuania were opened at the central

banks of these republics. The Bank of Lithuania no longer makes settlements with the republics of the former Soviet Union through such settlement accounts.

Starting in April 1993, the TARPBANK system began to use electronic mail (cc:Mail) to transmit and receive information. Since May 1994 settlements have been limited to the funds available to the participants.

In June 1995 securities market participants were allowed to use the system with limited rights. The functions of the TARPBANK system have been expanded considerably during its existence. It is used for securities settlement transactions and primary market auctions of government securities. The securities settlement system is reviewed in Section 4.

The exchange of payment instructions and their processing are fully automated in the system. However, participants are also obliged to exchange payment documents issued in writing, since it is still the case that only written documents are legally valid.

Interbank payment instructions and information related to payments are transmitted in coded notifications. The standards applied for coding are the original TARPBANK system standards defined by the Bank of Lithuania.

### **3.2.1 Functioning rules**

The TARPBANK system is owned by the Bank of Lithuania and its activities are administered by the Settlements Centre of the Bank of Lithuania. Although the system is maintained and developed by the central bank, any system changes are considered by and discussed with all the participants.

The TARPBANK rules are specified in the Technology of Interbank Settlements approved by the Board of the Bank of Lithuania on 12 May 1994. The basic technical and financial requirements are established in

bilateral agreements between the Bank of Lithuania and each system participant. The right to participate is determined by the Bank of Lithuania.

In operating the system, the Bank of Lithuania can automatically include restrictions on payments, for example with regard to the use of required reserves for effecting interbank payments.

### **3.2.2 Participation in the system**

The participants in the TARPBANK system may include the following:

- Commercial banks operating in Lithuania that hold a licence issued by the Bank of Lithuania and branches of foreign banks authorised by the Bank of Lithuania to operate in the country. Branches of commercial banks may also participate in the system if their parent banks request this. At the end of 1997 the 11 commercial banks, 154 branches of commercial banks and 1 branch of a foreign bank were participating in the system.
- Participants in the securities market. These include the LCVPD, the NVPB, commercial banks and the financial brokerage companies licensed and supervised by the Securities Commission. At the end of 1997 11 commercial banks and 47 financial brokerage companies were participating in the system.

### **3.2.3 Types of transactions handled**

The TARPBANK system processes all interbank non-cash payments in Lithuania. Additionally, the system permits the settlement of the cash leg of securities transactions (see Section 4).

The TARPBANK system is able to execute both credit and debit transfers of funds. Credit transfers are used for interbank payments, while debit transfers are used

solely for certain types of transactions with the Bank of Lithuania.

### **3.2.4 Operation of the transfer system**

In the TARP BANK system payment instructions can be transmitted between 8 a.m. and 3 p.m. Participants can submit an unlimited number of payment instructions.

The TARP BANK system conducts an automatic examination of the information in the payment instructions at the moment when this information is received. If it is not in compliance with the agreed conditions for use of the system, it is immediately returned to the sender. Accepted payment instructions are arranged in queues according to both their priority (ordinary or urgent) as indicated by participants and the time at which they were received. Participants can revoke any payment instruction that is still held in a queue.

### **3.2.5 Transaction processing environment**

The TARP BANK system is based on a V-shaped message flow. Participants transmit payment instructions to the Settlements Centre of the Bank of Lithuania for processing. Payment instructions are sent in information packages by electronic mail (cc:Mail) via the external telecommunications network and the Metropolitan Area Network of the Bank of Lithuania. The TARP BANK system provides participants by electronic mail with the results of the processing of their payment instructions and the settlements.

The Bank of Lithuania distributes standard software to all participants. Using this software, participants transfer to and receive from the TARP BANK system the information on payment instructions and settlement. The software has a standard link with the information systems of the participants.

### **3.2.6 Settlement procedures**

There are two clearings each business day. The first starts at 10.50 a.m. and the second at 2.50 p.m. First, the system determines the amount of funds each participant has available for settlement. Then, the separate payment instructions (incoming and outgoing) in the queues and the amount of funds available for settlement are estimated on a multilateral basis. During the estimation process, payment instructions for which there are insufficient funds are eliminated. Ordinary payment instructions are eliminated first and, within those instructions, the elimination starts with the last one to have been entered. Instructions eliminated during the first clearing are held in queues for the next clearing. However, those eliminated during the final clearing are cancelled. The results of processing the net value are entered in participants' settlement accounts managed by the Bank of Lithuania at 11 a.m. for the first clearing and at 3 p.m. for the second clearing. At that moment, the payment becomes final and irrevocable. Each participant is notified by electronic message of the payment instructions that were not settled owing to a shortage of funds. In addition, a list of the payments received and the final balance on the settlement accounts is sent to each participant.

### **3.2.7 Credit and liquidity risk**

The TARP BANK system only processes payment instructions when the participants have sufficient funds available to meet net claims. The prohibition on participants exceeding the funds available for settlement – the balance on the participant's settlement account with the Bank of Lithuania less any amount restricted (for example, with regard to the use of required reserves for effecting interbank payments) plus the amount available as an overnight loan (80% of the nominal value of government securities pledged to the Bank of Lithuania) – helps to avoid credit risk.

Twice a day each participant receives a statement of its accounts. This allows it to optimise the use of its funds. One hour before the final clearing of the day, the system calculates preliminary positions. The participants are informed of the results of the operation.

### **3.2.8 Pricing**

The Bank of Lithuania maintains the TARP BANK system and covers all maintenance and improvement costs. System participants cover the expense for their use of the system.

The Bank of Lithuania sets a processing fee for each payment instruction. The fee per payment instruction applied to banks is LTL 0.13 (ECU 0.03). The fee for participants in the securities market group is LTL 0.19 (ECU 0.04). Furthermore, the securities market participants pay a monthly fee of LTL 30 (ECU 6.61) per account for the management of their settlement accounts.

### **3.2.9. Main projects and policies being implemented**

The TARP BANK system is undergoing continuous improvement and development. Changes in the system have become necessary because of the introduction of new monetary policy instruments and the development of the Metropolitan Area Network of the Bank of Lithuania. In addition, the requests and wishes of system users influence the expansion of its functions and the introduction of new procedures.

In the first half of 1997 the introduction of repo transactions by the Bank of Lithuania was accompanied by procedures for settling these transactions. Procedures applicable to the overnight collateralised loan facility were introduced in early 1998.

The improvement of the technical basis of the system provides the participants with the possibility to be connected to the system through switched lines and the Metropolitan Area Network of the Bank of Lithuania.

## **4 Securities settlement systems**

### **4.1 Institutional aspects**

#### **4.1.1 General legal aspects**

The Law on Public Trading in Securities (16 January 1996, No. I-1169) is the principal law regulating the securities market of Lithuania. This Law regulates securities issuance, trading and accounting, as well as the activities of securities market participants and of the supervisory authority. The Law on State Debt (22 August 1996, No. I-1508) provides that the Government of the Republic of Lithuania can borrow by issuing government securities, including those issued in book-entry form. Accounting for these is carried out by the LCVPD. The Law on Investment Companies (5 July 1995, No. I-1018) regulates the activities of companies mainly engaged in securities investments and trading.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

The Bank of Lithuania has no obligations under the laws that govern the securities settlement system. However, the Bank of Lithuania bears the responsibility for ensuring settlement in general and has therefore decided to play a role in securities settlement. The Bank of Lithuania also acts as the fiscal agent of the Government and organises the issue and redemption of government securities as well as the payment of interest on them.

##### *Provision of settlement facilities*

The interbank funds transfer and settlement system, TARP BANK, managed by the Bank of

Lithuania, provides interbank settlement services (see Section 3). These include the cash settlement of securities transactions. Securities market participants – commercial banks operating in Lithuania, financial brokerage companies, the LCVPD and the NVPB – have special purpose settlement accounts in the Settlements Centre of the Bank of Lithuania.

#### *Provision of operational facilities*

The Bank of Lithuania participates in the formulation of the policy on the guidelines for securities settlements through its representation in the LCVPD. However, the Bank of Lithuania does not perform any functions related to the operational services of the LCVPD, except for the servicing of settlement accounts used for the cash settlement of securities transactions. Operational services are provided by the LCVPD and NVPB.

#### *Monetary policy operations and the securities settlement system*

Deposit auctions, repos and reverse repos are used by the Bank of Lithuania in its open market operations. Securities issued by the Government of the Republic of Lithuania are eligible for repo transactions.

Open market operations involving securities are carried out through securities accounts in the LCVPD and settled through special purpose accounts at the Settlements Centre of the Bank of Lithuania.

#### **4.1.3 The role of other public sector bodies**

##### *The institution supervising the securities market*

The Securities Commission of Lithuania is the supervisor and to some extent the regulator of the capital market, established according to the Government Resolution of 3 September 1992. The Commission was

initially under the jurisdiction of the Ministry of Finance. Since January 1996 the Securities Commission has been organising its activities according to the Law on Public Trading in Securities. This Law established it as an independent capital market supervisory institution, reporting directly to the Seimas of the Republic of Lithuania (the Parliament). It authorises capital market intermediaries, registers securities and issues regulations on the securities market.

#### **4.1.4 The role of other private sector bodies**

##### *The Stock Exchange*

The NVPB is an institution engaged in the electronic trading of securities. The NVPB was established in 1993 and, at present, it is the only stock exchange in Lithuania. Exchange rules, regulations and schedules of charges are issued by the NVPB and must be approved by the Securities Commission.

##### *The Central Securities Depository of Lithuania*

The LCVPD began its activities on 30 August 1993 as a structural unit of the NVPB. Since 25 February 1994 it has been an independent institution. The LCVPD organises its activities according to the Law on Public Trading in Securities.

The owners of the LCVPD are:

the Bank of Lithuania	60%
the Ministry of Finance	32%
the NVPB	8%

Capital market intermediaries (banks and financial brokerage companies) authorised according to the Law on Public Trading in Securities, together with issuers of securities, are engaged in the public trading of securities and can participate in the LCVPD.

The participants settle transactions in book-entry form. Each transfer of securities in the LCVPD system takes place on a gross basis.

No netting is carried out.

The main functions of the LCVPD are to conduct the general accounting of book-entry securities and to specify accounting procedures for its members. It also services and supervises the accounts. Furthermore, the amendments to the Law on Public Trading in Securities permit the LCVPD itself to manage securities accounts for third parties.

The LCVPD is also authorised: to prepare and present to the Securities Commission for approval the rules for accounting of securities; to open and operate securities accounts for members; and to prepare and implement measures which ensure the integrity and security of the system of securities accounting and other systems.

#### *The National Association of Financial Brokers*

The National Association of Financial Brokers is an organisation of the securities market intermediaries that are licensed by the Securities Commission. The principal objectives of the National Association of Financial Brokers, as a self-regulating institution, are as follows:

- to express the views of its members on any problems in the operation of the securities markets;
- to regulate relations among members, represent their interests and provide them with advice.

In addition, it analyses the development of conditions and explores the situation in the securities market.

In the pursuit of its objectives, the Association actively participates in improving the legal environment in the securities market, as well as the trading, accounting and settlement systems. It co-operates closely with the Securities Commission, the NVPB and the LCVPD.

#### *Clearing house*

There is no special clearing house for securities.

## **4.2 Summary information on securities markets**

### **4.2.1 Main features of the securities market**

All securities issued in Lithuania are in book-entry form. Currently, equity shares and bonds of enterprises and government Treasury bills (with a maturity of up to one year) and bonds (with a maturity of over one year) are traded in the market. Only shares of enterprises and Treasury bills are traded publicly. (At the end of 1997 no marketable government bonds were issued in Lithuania.)

The only organised market-place is the NVPB, where securities are traded on the central market or in block trading directly negotiated between the buyer and the seller. The central market applies the methods of fixed price (all transactions in a given security are concluded at a single price during the day) and continuous trading (as soon as the system receives an order, it is automatically matched against other orders in the book and if a match is found, the order will be executed immediately) using a system of electronic transmission of orders.

The NVPB lists securities for trading on two different lists – the official list and the current one. It also has a tier of unlisted securities.

The official trading list consists of government bonds (if such bonds are issued) and the securities of rapidly developing, profitable and financially stable (solvent) companies.

The current list includes securities of other enterprises, which comply with certain requirements, and Treasury bills.

The unlisted securities tier may include any security eligible for public trading. Unlisted securities are traded over the counter (OTC).

However, upon a decision of the NVPB, such securities can be traded on the NVPB. (Central market procedures can be applied to these securities even if they are not included in the official or current list.)

#### **4.2.2 Basic quantitative aspects (basic statistical data)**

At the end of 1997 the nominal value of the shares issued by Lithuanian companies amounted to LTL 13,899 million (ECU 3,064 million), the nominal value of corporate bonds stood at LTL 411 million (ECU 91 million), and the nominal value of government securities accounted for LTL 2,200 million (ECU 485 million).

The total turnover of the NVPB in 1997 was LTL 1,463 million (ECU 323 million). Shares accounted for LTL 959 million (ECU 211 million) and government securities totalled LTL 504 million (ECU 111 million). At the end of 1997 the total NVPB capitalisation of the market value of shares issued by Lithuanian companies amounted to LTL 8,691 million (ECU 1,916 million), and that of government securities equalled LTL 1,511 million (ECU 333 million).

#### **4.2.3 Intermediaries operating in the different securities markets**

Permits to trade on the NVPB are issued by the Board of the NVPB. Only members of the NVPB – financial brokerage enterprises in category A or B (according to the requirements for own funds) and banks – have the right to trade on the NVPB. Other market participants can trade securities through these intermediaries.

### **4.3 Securities settlement system of Lithuania**

#### **4.3.1 Major regulations**

The basic rules prescribed for securities settlements are regulated by the resolutions

of the Securities Commission, the instructions of the NVPB and the LCVPD, trilateral agreements between the NVPB, LCVPD and the Bank of Lithuania, and other bilateral agreements between the said institutions and securities market intermediaries.

#### **4.3.2 Participation in the system**

Financial brokerage companies licensed by the Securities Commission and banks can be members of the securities settlement system. As members, they must hold special purpose settlement accounts (for cash payments) with the Settlements Centre of the Bank of Lithuania, and securities accounts with the LCVPD.

#### **4.3.3 Types of transactions handled**

Trades in securities concluded in the NVPB are settled by the Stock Exchange via the Settlements Centre of the Bank of Lithuania for the cash leg and the LCVPD for the securities leg. The transactions arising from OTC trades, repos and securities lending are settled by the LCVPD according to the instructions (against payment or free of payment) of the parties.

#### **4.3.4 Operation of the transfer system**

The LCVPD, NVPB and the Settlements Centre of the Bank of Lithuania operate the securities transfer system. The settlement of the cash leg of transactions made at the Stock Exchange is managed by the NVPB, while the cash leg of OTC transactions is managed by the LCVPD. Both the NVPB and the LCVPD settle the cash leg through settlement accounts of the intermediaries at the Settlements Centre of the Bank of Lithuania.

For stock exchange transactions, the NVPB transmits information on traded securities to the LCVPD and on the amount of intermediaries' funds needed for settlement to the Settlements Centre of the Bank of

Lithuania. On the settlement day the NVPB receives fund limits based on the cash available in intermediaries' settlement accounts from the Settlements Centre of the Bank of Lithuania and checks the information received with the initial information on the funds needed for settlement. If the information on funds matches, the NVPB merely retransmits the information on funds to the LCVPD to confirm the availability of the securities. If intermediaries have insufficient funds, the NVPB informs the LCVPD of which trade should be excluded from the settlement. When the LCVPD confirms the availability of the securities, the NVPB sends payment orders to the Settlements Centre of the Bank of Lithuania to transfer the intermediaries' funds, and settlement orders to the LCVPD. If the LCVPD informs the NVPB of a deficiency of securities, the NVPB provides the LCVPD with information on which trade should be excluded from the settlement and sends payment orders, according to re-estimated results, to the Settlements Centre of the Bank of Lithuania to transfer intermediaries' funds from one settlement account into another.

For the OTC transactions, intermediaries submit orders for securities and funds transfers to the LCVPD. The LCVPD matches the orders of the counterparties. The positions of securities accounts are checked at the LCVPD, and balances of funds are entered in the LCVPD accounting system. After receiving confirmation of the coverage of funds from the Settlements Centre of the Bank of Lithuania, the LCVPD sends to the Settlements Centre of the Bank of Lithuania orders to transfer funds from one settlement account to another. Securities transfers between accounts are executed at the LCVPD.

#### **4.3.5 Transaction processing environment**

Transactions are processed using computer systems that operate in the NVPB, the LCVPD and the Settlements Centre of the Bank of Lithuania and are interfaced with each other.

#### **4.3.6 Settlement procedures**

Settlement is on T + 1 for central market transactions in government securities and on T + 3 for the central market transactions in other securities, where T is the trade date. The cycle for the settlement of block trading transactions in all types of securities may last from day T + 0 until day T + 5. The cycle for the settlement of OTC transactions may last from day T + 1 until day T + 30.

Settlement of the fixed price central market transactions is executed according to the net position of market intermediaries calculated by the NVPB. For all other trades (continuously traded central market transactions, block and OTC transactions), securities and funds are transferred on a gross basis. Instructions on securities transfers are processed by the information system of the LCVPD in a single daily batch processing cycle.

The Settlements Centre of the Bank of Lithuania processes instructions for the transfer of funds in two processing cycles. During the first cycle, the intermediaries, according to information received from the NVPB on the trade day, deposit funds in their special purpose settlement accounts at the Settlements Centre of the Bank of Lithuania by 11 a.m. on the settlement day; during the next cycle the cash leg of the transactions is settled at 3 p.m. on the settlement day. All payments arising from securities transactions are in Lithuanian litas.

OTC transactions are executed only after the instructions given by the transacting parties have been matched. These instructions are entered in the information system of the LCVPD by the parties to the transaction, and the system then matches them. If they are found to match, the Settlements Centre of the Bank of Lithuania, according to the instruction from the LCVPD at 3 p.m. on the settlement day, settles the cash leg of the transaction.

#### **4.3.7 DVP arrangements**

The Settlement Centre of the Bank of Lithuania notifies the LCVPD shortly after 11 a.m. each day of the intermediaries' funds deposited in their special settlement accounts for settling transactions made both on and off the NVPB. For transactions executed on the Stock Exchange the information is transmitted through the NVPB to the LCVPD. For OTC transactions, it is sent directly to the LCVPD. From this point onwards, the intermediaries' funds are blocked until the availability of securities is confirmed. The LCVPD matches the information on securities to be delivered with the positions in the securities accounts. For transactions on the Stock Exchange, the LCVPD conveys the results to the NVPB. The NVPB then submits instructions on credits and debits to and from the intermediaries' settlement accounts to the Settlements Centre of the Bank of Lithuania. For OTC transactions, the payment instructions are sent directly from the LCVPD to the Settlements Centre. At the same time, and for all transactions, the LCVPD starts the daily securities processing cycle in order to transfer the securities in order of priority between the relevant accounts. Settlement of the cash leg is made final at 3 p.m. on the settlement day and the securities leg is made final when the daily batch processing cycle at the LCVPD is over.

#### **4.3.8 Credit and liquidity risk control measures**

The settlement procedures eliminate credit risk. The cash and securities positions of transactors are matched against instructions prior to settlement via the trading system. In addition, the NVPB operates a Guarantee Fund to ensure settlement of the central market transactions.

If a market intermediary has insufficient securities to cover a central market securities

transaction, this particular transaction is suspended and the intermediary is allowed three trading days to deliver the necessary securities. In the event of a failure to deliver them, the NVPB holds a special auction to buy the necessary securities. The buyer of the securities is indemnified by the intermediary.

If a market intermediary has insufficient funds to pay for central market transactions at the Settlements Centre of the Bank of Lithuania, the NVPB covers the deficiency out of the Guarantee Fund. The Guarantee Fund, in return, obtains ownership rights over the securities which the defaulting intermediary should otherwise have received.

The aim of the Guarantee Fund is to secure full settlement of central market transactions. All market intermediaries authorised to trade at the Stock Exchange must contribute to the Guarantee Fund, which covers only central market transactions.

#### **4.3.9 Pricing policies**

The participants in the LCVPD pay the following fees:

- a fixed fee per transaction;
- a quarterly account administration fee per securities account depending on the balance on the last day of the quarter;
- an annual account administration fee.

The fees charged by the Settlements Centre of the Bank of Lithuania for funds transfer services are indicated in Section 3.2.8.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population (thousands) <sup>1)</sup>	3,730	3,721	3,715	3,710	3,706
Gross domestic product (LTL billions)	11.6	16.9	24.1	31.6	38.2
Exchange rate vis-a-vis ECU <sup>1)</sup>	5.0870	4.7313	5.2320	5.0790	4.5362

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; LTL millions)

	1993	1994	1995	1996	1997
Banknotes and coins	791.2	1,334.3	1,907.0	1,899.3	2,535.5
Transferable deposits <sup>1)</sup>	955.3	1,141.4	1,581.4	1,711.6	2,574.4
Narrow money supply (M1)	1,746.5	2,475.7	3,488.4	3,610.9	5,109.9
Transferable deposits in foreign currencies	419.7	513.5	552.4	807.7	1,049.2
Outstanding value on electronic money schemes	-	-	-	0.9	7.6
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	0.9	7.6
<i>on network-based products</i>	-	-	-	-	-

1) This category does not include transferable deposits of non-residents.

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; LTL millions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	280.6	394.9	447.7	483.2	551.3
of which can be used for settlement	196.8	264.0	280.0	396.8	390.0
Free reserves held at the central bank	43.4	23.9	33.5	205.4	19.4
Transferable deposits at other institutions	285.6	336.8	227.3	431.6	461.3

**Table 4****Banknotes and coins***(total value, end of year; LTL millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	791.8	1,394.9	1,964.2	1,975.1	2,701.8
<i>of which:</i>					
<i>LTL 200</i>	-	-	-	-	212.1
<i>LTL 100</i>	247.7	728.8	1,170.8	1,286.7	1,773.6
<i>LTL 50</i>	247.8	378.9	463.4	396.4	442.5
<i>LTL 20</i>	173.8	152.6	174.3	147.0	120.5
<i>LTL 10</i>	106.2	84.3	98.5	86.1	68.3
<i>LTL 5</i>	16.3	28.6	31.7	31.4	49.8
<i>LTL 2</i>	-	13.9	16.1	17.2	22.1
<i>LTL 1</i>	-	7.8	9.4	10.3	12.9
Total coins issued	42.5	16.6	19.5	23.4	27.8
<i>of which:</i>					
<i>LTL 5</i>	14.0	1.6	1.2	1.1	1.0
<i>LTL 2</i>	12.0	1.7	1.2	1.1	1.1
<i>LTL 1</i>	9.3	2.0	1.5	1.4	1.5
<i>LTL 0.5</i>	2.3	2.9	4.0	5.3	6.0
<i>LTL 0.2</i>	2.0	3.2	4.9	5.7	7.1
<i>LTL 0.1</i>	2.1	3.7	4.8	6.3	8.1
<i>LTL 0.05</i>	0.4	0.6	0.8	1.1	1.3
<i>LTL 0.02</i>	0.2	0.5	0.6	0.8	0.9
<i>LTL 0.01</i>	0.2	0.4	0.5	0.6	0.8
Banknotes and coins held by credit institutions	43.1	77.2	76.7	99.2	194.1
Banknotes and coins in circulation outside credit institutions	791.2	1,334.3	1,907.0	1,899.3	2,535.5

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**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (LTL millions)
Central bank	1	2	n.a.	218.2
Credit institutions	12	204	n.a.	4,011.2
<b>TOTAL</b>	<b>13</b>	<b>206</b>	<b>n.a.</b>	<b>4,229.4</b>
Branches of foreign banks	1	-	n.a.	n.a.
<i>of which EU banks</i>	-	-	-	-

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	-	-	-	2	2
Number of machines	-	-	-	10	57
Volume of transactions (thousands)	-	-	-	53.08	219.14
Value of transactions (LTL millions)	-	-	-	21.07	69.16
<b>EFTPOS terminals</b>					
Number of networks	-	-	1	2	2
Number of points of sale	-	-	17	227	854
Volume of transactions (thousands)	-	-	1.52	214.23	467.34
Value of transactions (LTL millions)	-	-	0.59	110.13	213.95
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	12	70
Volume of transactions (thousands)	-	-	-	44.7	318.7
Value of transactions (LTL millions)	-	-	-	12.2	98.7
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	79	168
Volume of transactions (thousands)	-	-	-	14.1	115.2
Value of transactions (LTL millions)	-	-	-	0.3	2.9

**Table 7**  
**Number of payment cards in circulation <sup>1)</sup>**

(end of year; thousands)

	1993	1994	1995	1996	1997
Cards with a cash function	-	2.0	4.5	11.5	54.8
Cards with a debit/credit function	-	2.0	4.5	11.5	54.8
<i>of which:</i>					
<i>cards with a debit function</i>	-	2.0	3.6	9.3	38.2
<i>cards with a credit function</i>	-	-	0.9	2.2	16.5
Cards with a cheque guarantee function	-	-	-	-	-
Retailer cards	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money cards	-	-	-	7.4	24.2

1) A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
TARPBANK system	n.a.	n.a.	6.35	7.49	9.02

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(LTL billions)*

	1993	1994	1995	1996	1997
TARPBANK system	n.a.	n.a.	n.a.	81.56	109.82

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
LCVPD	127	59	63
Banks	11	11	11
Stockbrokers	47	47	47
Mutual funds	57	-	-
International financial organisations	7	-	-
Cedel/Euroclear	-	-	-
Others	5	1	5

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions**

	1993	1994	1995	1996	1997
LCVPD	65	1,581	10,118	22,790	82,374
Government securities	-	n.a.	3,830	9,597	5,734
Shares	65	1,581	6,288	13,193	76,640

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(LTL millions)*

	1993	1994	1995	1996	1997
LCVPD	1.2	77.9	499.9	509.6	1,463.4
Government securities	-	12.3	351.6	320.7	504.3
Shares	1.2	65.6	148.3	188.9	959.1

**Table 13****Nominal values registered by securities settlement systems***(end of year; LTL millions)*

	1993	1994	1995	1996	1997
LCVPD	-	n.a.	8,501.4	13,814.6	16,509.1
Government securities	-	n.a.	739.5	1,289.3	2,199.6
Bonds	-	-	-	0.4	411.0
Shares	-	n.a.	7,761.9	12,524.9	13,898.5

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions <sup>1)</sup>***(thousands)*

	1993	1994	1995	1996	1997
Cheques issued	121.6	74.9	167.6	164.2	141.4
Payments by debit and credit cards	-	n.a.	234.9	333.0	613.6
Paper-based credit transfers	2,838.0	3,674.5	4,585.1	5,762.9	8,053.1
Paperless credit transfers	2,284.3	2,558.1	3,043.1	2,665.1	3,695.2
Direct debits	-	-	-	-	0.1
Electronic money	-	-	-	14.1	115.2
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	14.1	115.2
<i>payments by network-based products</i>	-	-	-	-	-
Others	448.0	572.5	786.1	903.9	1,436.7
TOTAL	5,691.9	6,880.0*	8,816.8	9,843.2	14,055.3

1) Does not include data for banks bankrupted in the period 1993-98.

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions <sup>1)</sup>***(LTL millions)*

	1993	1994	1995	1996	1997
Cheques issued	150.0	120.3	181.1	185.7	225.2
Payments by debit and credit cards	-	n.a.	65.0	129.2	235.5
Paper-based credit transfers	18,457.4	29,161.3	50,127.2	70,310.9	103,291.9
Paperless credit transfers	13,207.7	19,552.7	25,821.1	38,387.4	92,654.6
Direct debits	-	-	-	-	0.1
Electronic money	-	-	-	0.3	2.9
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	0.3	2.9
<i>payments by network-based products</i>	-	-	-	-	-
Others	1,285.0	1,412.8	2,036.5	2,462.0	3,318.8
<b>TOTAL</b>	<b>33,100.1</b>	<b>50,247.1*</b>	<b>78,230.9</b>	<b>111,475.5</b>	<b>199,729.0</b>

1) Does not include data for banks bankrupted in the period 1993-98.

**Table 16****Participation in S.W.I.F.T. by domestic institutions**

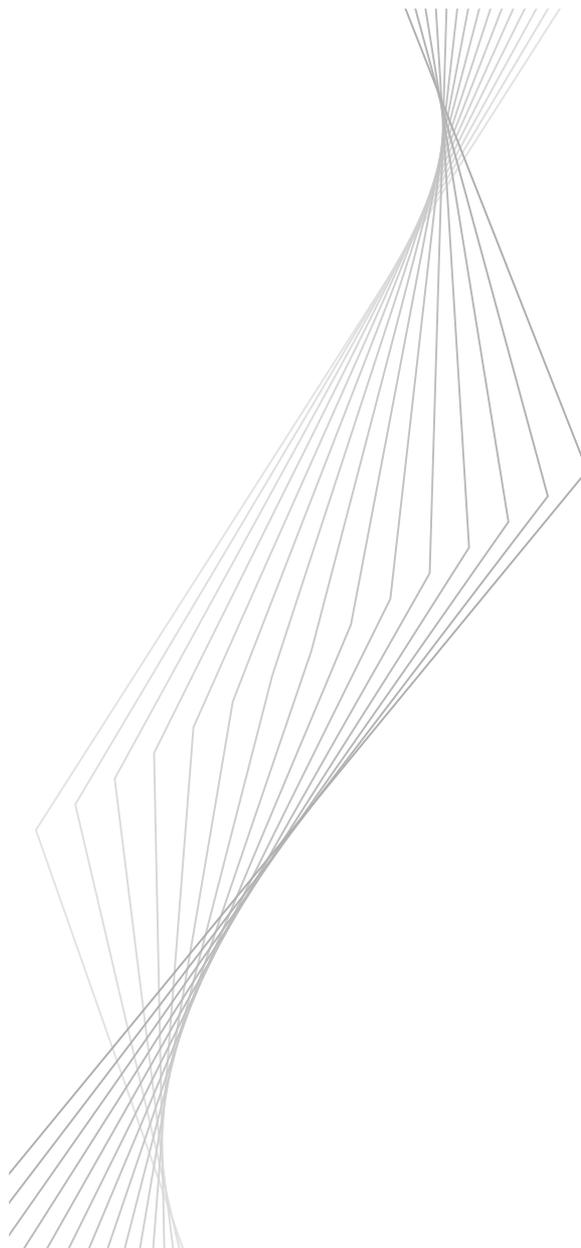
	1993	1994	1995	1996	1997
S.W.I.F.T. users	10	11	13	11	11
<i>of which:</i>					
<i>members</i>	10	11	13	11	9
<i>sub-members</i>	-	-	-	-	1
<i>participants</i>	-	-	-	-	1
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	2,961	107,831	233,657	311,383	417,430
<i>of which:</i>					
<i>category I</i>	1,623	72,332	153,714	207,400	272,584
<i>category II</i>	116	11,317	29,096	38,666	54,840
<i>sent to/received from domestic users</i>			20,229	16,786	17,463
Total messages received	3,625	137,073	279,658	353,255	515,019
<i>of which:</i>					
<i>category I</i>	2,017	61,862	121,891	161,793	249,770
<i>category II</i>	89	4,091	9,402	8,551	9,580
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556



EUROPEAN CENTRAL BANK



**Poland**

**August 1999**

Poland

PL

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**List of abbreviations**

<b>BFG</b>	Bank Guarantee Fund
<b>BRIR</b>	Regional Branch of KIR SA
<b>CRBS</b>	Central Register of Treasury Bills
<b>CTO</b>	Central Quotation Table
<b>DPPK</b>	Monetary and Credit Policy Department in the NBP
<b>ELIXIR</b>	System for the exchange of electronic payment orders in KIR SA
<b>GOWD</b>	Main Branch of Foreign Exchange in Warsaw
<b>GPW</b>	Warsaw Stock Exchange
<b>KDPW</b>	National Securities Depository
<b>KIR SA</b>	National Clearing House
<b>KPWIG</b>	Securities and Exchange Commission
<b>KSR</b>	Special settlement system for payment card transactions operated by PolCard
<b>NCH</b>	National Clearing House (see KIR SA)
<b>NBP</b>	National Bank of Poland – <i>Narodowy Bank Polski</i>
<b>PGF</b>	Polish Financial Exchange
<b>PLN</b>	Polish zloty
<b>RBP</b>	NBP Bills Register
<b>RWKB</b>	Bank Card Issuers' Board
<b>SKARBNET</b>	Book-entry system for Treasury bills
<b>SEBOP</b>	Book-entry system for NBP bills
<b>SORBNET</b>	System for Banks' Accounts Servicing at the NBP Head Office (RTGS system)
<b>SYBIR</b>	System for the exchange of paper-based payment orders in KIR SA
<b>ZBP</b>	Polish Bankers' Association
<b>ZUS</b>	Social Insurance Institution

## Introduction

In 1989 Poland experienced major political changes which were followed by a transformation from a centralised to a market economy. Its payment systems were also subject to substantial transformations.

During the period in which there was a centrally planned economy the system for interbank settlements was based on the exchange of paper documents. There was no clearing house to intermediate in the exchange of payment orders between banks. Branches of commercial banks held current accounts with regional branches of the National Bank of Poland (NBP). Settlement documents were sent between banks by post, and copies were then submitted separately to NBP regional branches for the purpose of updating banks' accounts. Debits in the current accounts of sending banks and credits in the current accounts of receiving banks were not made on the same day.

In the light of the move towards a market economy it became obvious that the old payment systems would have to be changed. The first stage of the transition, which was completed in the first half of 1992, focused on the consolidation of banks' current accounts. Since then each bank operating in Poland has had only one current account with the NBP.

New, uniform interbank settlement principles became effective on 5 April 1993. At first these were only binding on shareholders of the National Clearing House (KIR SA), i.e. for 17 banks, but, since 1 July 1994 they have applied to all banks operating in Poland.

In April 1993 the NBP introduced a real-time gross settlement system (SORB) designated for large-value interbank transactions. The introduction of a new version of the RTGS system, the SORBNET, the use of which is

mandatory for all banks holding an account with the NBP, was completed by the end of 1998. The system fulfils the requirements of a modern RTGS system, i.e. payments are processed in electronic format, in real time and on a gross basis, and, once settled, they are final and irrevocable.

In retail payments cash still plays a central role, although the use of payment cards has increased dramatically. As far as non-cash payments are concerned, transfer orders are still the predominant form; cheques have never been a popular payment instrument in Poland.

The number of banks operating in Poland increased rapidly until the end of 1997. Several foreign banks and banks with foreign ownership, absent from the Polish market before 1990, have since been established, demonstrating the opening-up of as well as the growing interest in the Polish market.

The use of paper documents within the payment systems has been declining. Since April 1994 the KIR SA has been operating the ELIXIR system, in which the exchange of payment instructions is carried out in electronic form.

During recent years the Polish banking system as a whole, and in particular the payment systems, has undergone dramatic changes. Within a relatively short period of time modern solutions, comparable with those in other countries, have been developed. This does not mean that the Polish payment system has stopped developing and changing. The prospect of Poland's accession to the European Union calls for further enhancement of functional mechanisms in line with European Central Bank (ECB) recommendations.

## I Institutional aspects

### I.1 General legal aspects

For banks operating in Poland the Banking Law of 29 August 1997 (Banking Law) regulates, in particular, principles for conducting banking activities, establishing and organising banks and exercising banking supervision as well as procedures related to rehabilitation, liquidation and bankruptcy proceedings. As economic entities, banks are also subject to other uniform regulations, such as the Commercial Code and the Labour Code, which cover aspects not provided for in the Banking Law.

The basic tasks and organisation of the central bank are set out in the Act on the National Bank of Poland of 29 August 1997 (NBP Act). Both the Banking Law and the NBP Act replaced previous legal acts dating from 1989 and give either the NBP President or the NBP Management Board powers to specify detailed regulations within the competence of the NBP.

In terms of payment systems, the NBP President determines means of payment and procedures for the performance of settlement via banks (Regulation of 29 May 1998) and the manner of clearing interbank settlements (Regulation 2/98 of 5 March 1998). Moreover, the NBP Act gives the NBP Management Board powers to set the terms and conditions for opening and maintaining accounts of commercial banks with the NBP. Details relating to the servicing of current accounts of banks are specified in a bank account agreement made with each bank.

According to Article 67 of the Banking Law, banks may establish clearing houses in order to exchange payment instructions and to keep records of mutual claims and liabilities arising from such instructions. Rules governing the exchange of payment instructions via the KIR SA are set out in KIR Regulations. These Regulations determine the mutual obligations of the KIR and banks, the time schedules for the exchange of payment orders in the two systems, SYBIR and ELIXIR, operated by

the KIR SA and describe the unwinding procedures in the event of there being a lack of funds during settlement.

The Polish legal system does not provide for other regulations directly related to payment systems. Principles for the co-operation between a bank and its customers, related in particular to the settlement of payment instructions, are regulated in bank account agreements. By contrast with previous centralised regulations, banks are free to establish their relations with customers themselves, provided that the provisions of the relevant agreements do not breach superior laws (acts and resolutions).

One Section of the Banking Law relates to bankruptcies. Matters that are not regulated by the Banking Law are governed by the provisions of the Bankruptcy Law of 24 October 1934.

According to Article 15 of the Bankruptcy Law, the date of bankruptcy shall be the date of the court decision declaring the bankruptcy. However, in Polish legislation this decision is the last step in bankruptcy proceedings and has no effect on the payment system. Such an effect results from the order of the Commission for Banking Supervision to suspend the bank's operation, because pursuant to Article 159.1.1 of the Banking Law, while a bank's operations are suspended, the bank shall not settle its liabilities. Once the decision on suspension has been issued at the beginning of the day the bank concerned can no longer send payments to the RTGS system. In the case of retail payments, the suspended bank is excluded from the settlement and payments are no longer settled on that day (the unwinding procedure, as described in Section 3.3.6, is performed by the KIR SA). The unwinding is related to transactions which have not yet been settled by banks and therefore not yet credited to beneficiaries. During a suspension, the suspended bank is only allowed to execute payments which have been approved

by the Commission for Banking Supervision. Poland has binding regulations on consumer protection related to trade and services. However, they do not cover services provided by the banking sector. Banks' customers are protected by certain provisions of the Banking Law (e.g. confidentiality rules) and the provisions of the Act on the Bank Guarantee Fund of 14 December 1994. According to the latter, funds in bank accounts up to the equivalent of ECU 1,000 are 100% guaranteed by the Fund, while funds up to the equivalent of ECU 5,000 are covered by a 90% guarantee.

## 1.2 Financial intermediaries that provide payment services

Banks, including commercial banks, co-operative banks, savings banks and foreign banks, plus the State Enterprise Polish Post Office are all financial intermediaries providing payment services in Poland.

Pursuant to Article 5.4 of the Banking Law, an economic activity within banking operations, as specified in item 1 of the Article, can be performed exclusively by banks. These activities include deposit-taking, the operation of bank accounts, the extension of credit and settlement activities.

At the end of 1998 there were 1,498 banks registered in Poland, of which 1,406 were co-operative banks and the rest universal banks. Every bank has the right to perform the full range of activities provided for under the Banking Law. Since the end of 1997 the number of banks has diminished. This is due to the consolidation process within the banking sector (two mergers of big commercial banks and several in the co-operative sector) and some bankruptcies among co-operative banks.

Co-operative banks differ from other banks to the extent that in areas not regulated by the Banking Law they are governed by the Co-operative Law of 16 September 1982. Owing to the local nature of such banks,

their activities are often limited compared with those of other banks. Among other things, for settlement purposes they are associated with banks (central money institutions) that perform functions similar to those which banks' head offices perform for their own branches.

Foreign banks and banks with foreign ownership are licensed by the NBP in the same way as any domestic bank; the same legal regulations apply both to the establishment and operation of any bank.

Branches of foreign banks are allowed to operate in Poland; these are licensed upon application by the Commission for Banking Supervision (see Section 1.3.1) in consultation with the Ministry of Finance. Currently two branches of foreign banks operate in Poland, the head offices of which are in France and the Netherlands.

Under the Communication Law of 23 November 1990 and the executive regulations thereto, Poczta Polska (the Post Office) is authorised to perform certain banking activities, excluding opening and maintaining customer accounts. The Post Office, however, performs an important role in the clearing system by:

- providing settlement between individuals who do not hold bank accounts (in this case funds are transferred between two Post Office branches and paid out in cash to the beneficiary);
- transferring cash payments to bank accounts (in this case the Post Office is a customer of a bank which operates its account);
- cashing cheques from cheque accounts up to the amount specified in the agreement with the bank concerned.

Moreover, the Post Office pays out a considerable amount of pension and disability allowances to individuals who have no bank accounts.

### 1.3 The role of the central bank

#### 1.3.1 General responsibilities

##### *Statutory responsibilities*

The NBP is subject to the provisions of the NBP Act and the Banking Law insofar as the general provisions of the latter are binding on all banks. The main objective of the NBP is to maintain price stability, and at the same time to act in support of government economic policies, to the extent that this does not constrain the pursuit of its basic objective.

The Monetary Policy Council, an NBP body chaired by the NBP President, draws up monetary policy guidelines and submits these to Parliament for information. The Council defines, in particular, the procedures governing the reserve requirement and the “reserve ratio”, the NBP base interest rates and the principles applicable to open market operations.

The NBP has an exclusive right to issue banknotes and coins, which are manufactured outside the central bank and distributed through the network of NBP regional branches (13) and offices (26).

The NBP holds and manages foreign exchange reserves for the State. It may also act as a financial agent to the Government in concluding and carrying out loan agreements and in servicing the State’s foreign debt; the NBP is not, however, liable for the obligations of the Treasury in this respect. The NBP operates a centralised account for the State budget, and, moreover, NBP branches maintain accounts for budgetary (state) units such as Treasury offices, customs, police and army units.

The NBP’s functions in the field of payment systems are referred to in Article 3.2 of the NBP Act. They comprise organising monetary settlements and establishing the conditions necessary for the development of the banking system. In Article 51 the Act specifies entities

for which the NBP operates bank accounts. These include banks, central government, the Bank Guarantee Fund and, with the consent of the NBP President, other legal persons.

##### *Establishment of common rules*

Article 68 of the Banking Law authorises the NBP President to specify in two regulations the means of payment and procedures for settlements via banks, and the manner of clearing interbank settlements.

Regulation 2/98 on interbank settlements constitutes the basic legal act relating to domestic payment systems. It determines the basic rules for the execution of retail payments (on a net basis, through the intermediation of the KIR SA) and the basic principles for the processing of large-value payments (on a gross basis in the NBP, no overdraft facility). It also provides a basis for bilateral bank account agreements concluded by the NBP and banks.

According to Article 17.3.2 of the NBP Act, the NBP Management Board may adopt resolutions on matters not falling under the exclusive authority of other NBP bodies, i.e. the NBP President and the Monetary Policy Council. The Management Board may also issue regulations relating to payment systems.

On 1 July 1998 the NBP Management Board established the Payment System Council to act as its advisory body. The Council consists of the First Deputy President of the NBP (chairman), the presidents of four commercial banks and representatives of the Polish Bankers’ Association (ZBP), the Ministry of Finance, the KIR SA, the National Securities Depository (KDPW), PolCard (see Section 2.2.4), the Polish Post Office and Telbank.

The tasks of the Payment System Council include the analysis and evaluation of the Polish payment system, and formulating proposals on the system’s adjustment to the requirements of the European Union.

*Supervision and audit*

Supervision of banks' activities is exercised by the Commission for Banking Supervision, chaired by the NBP President. The decisions of the Commission and the responsibilities it assigns are carried out and co-ordinated by the General Inspectorate of Banking Supervision, a separate organisational unit within the NBP structure.

The NBP Act does not authorise the NBP directly to oversee the payment system; the only provision on this matter is Article 3.2.1, under which the NBP is responsible for organising monetary settlements.

**1.3.2 Provision of processing and settlement facilities***Provision of settlement accounts and credit facilities*

The NBP's main function in relation to payment services is servicing 76 current accounts of banks (71 of which are in the SORBNET system for the processing of large-value transactions between banks) and, in particular, providing interbank settlements. The NBP is the owner and operator of the RTGS system (SORBNET), which settles on a gross basis banks' credit transfers submitted mainly in electronic form to the NBP. It is linked with the SKARBNET (see Section 4.3) and SEBOP (see Section 4.4) systems, which allow, in accordance with model I delivery versus payment (DVP) (see the detailed description of SORBNET in Section 3.2), the settlement of individual transactions relating to securities recorded in the systems (i.e. Treasury bills and NBP bills).

The NBP is also a direct participant in the exchange of retail payment instructions via the National Clearing House (KIR SA). It transfers to and receives from the KIR SA payments associated with claims and liabilities of budgetary units whose accounts are operated by the NBP. Net claims and liabilities of banks, resulting from the exchange via the KIR SA, are cleared by

SORBNET during settlement sessions held during hours agreed with the NBP. In servicing accounts of its customers, the NBP carries out payment instructions provided that the accounts contain sufficient funds to cover the settlement. (No overdraft facilities are provided.)

*Pricing policy*

The NBP's servicing of accounts for its retail customers (i.e. budgetary units) is free of charge. However, banks are charged fees specified in the "Tariffs of Fees and Commissions" set by the NBP Management Board. The fees and commissions charged by the NBP are based on the full cost recovery principle set out in the document entitled "Minimum common features for domestic payment systems".

**1.3.3 Monetary policy and payment systems**

The basic objective of the NBP is to maintain price stability. Control over money supply growth is exercised by setting NBP base rates at an appropriate level and by using other monetary instruments such as open market operations and required reserves.

The central bank interest rates form a basic instrument used to influence internal demand. The lombard rate is of fundamental importance since it normally provides an upper ceiling for the interbank overnight money market interest rate. Control over interest rates also involves setting a floor through short-term open market operations. Open market operations are carried out through issuing NBP bills.

An important source of intraday liquidity is the possibility of using required reserves for settlement purposes. Moreover, banks may draw lombard credits collateralised by Treasury securities (Treasury bills and Treasury bonds). These assets are recorded and settled in two separate depositories:

Treasury bills at the NBP and Treasury bonds at the KDPW (see Section 4.5). SKARBNET, which services the Central Register of Treasury Bills (CRBS), is a real-time gross securities settlement system, and, since it facilitates the immediate provision of collateral for central bank credit, it is used for this to a much greater extent than the KDPW system.

Up until 1994 banks kept their required reserves in two separate accounts, of which only one was interest-bearing. These reserves could not be used for settlement purposes. Since August 1994 banks holding a current account with the NBP have been allowed to use the non-interest-bearing part of their required reserves for settlement purposes. In November 1994 the non-interest-bearing accounts were liquidated, and the funds transferred to banks' NBP current accounts. Since January 1998 no interest has been payable on required reserves. Banks have therefore either transferred their entire reserves to their NBP current accounts or, in the case of banks using correspondent banking, to their non-interest-bearing required reserves accounts (which can also be used for settlement purposes). At present the bulk of required reserves are held in banks' NBP current accounts.

#### ***1.3.4 Main projects and policies being implemented***

Poland is one of the candidates applying for accession to the European Union (EU). Therefore the NBP, when modernising and developing the payment systems, takes into consideration recommendations of both the European Central Bank (ECB) and other institutions of the European Communities. The NBP is planning further enhancement, among other things, of the settlement of

large-value customer payments and the establishment of systems compliant with those of EU countries. Moreover, the NBP is intending to modernise the system for stock exchange transactions by taking over the role of settlement agent for transactions in securities registered in the KDPW (see details in Section 4.5.9).

#### **1.4 The role of other private and public sector bodies**

Other entities that participate in payment services in Poland include:

- the National Clearing House SA (KIR SA), established in November 1991 as a company with equity capital by 17 commercial banks, the Polish Bankers Association and the NBP (see details in Section 3.3);
- the National Securities Depository (KDPW), a central depository institution for public trade in securities: the Law on public trade in securities of 21 August 1997 authorises it to organise and perform settlement transactions (see details in Section 4.5);
- PolCard, an institution established by banks for the settlement of transactions made using payment cards (see details in Section 2.2.4).

The Polish Bankers' Association plays an important role as a co-ordinator of standardisation and regulatory work. Moreover, numerous working groups act under the auspices of the Association, dealing with payment system problems, related in particular to payment cards, electronic banking and direct debits.

## 2 Payment media used by non-banks

According to Article 68 of the Banking Law, the NBP President specifies the means of payment and procedures for the performance of settlement via banks. The Regulation of 29 May 1998 concerning retail payments, issued under this Act, provides that a payment can be effected either in cash or by certain non-cash instruments and that the means of payment is selected by the participants. The Regulation also differentiates between a cashier's and a settlement cheque; the former is classified as a cash payment and the latter as a non-cash payment.

### 2.1 Cash payments

On 1 January 1995 a currency reform was effected in Poland: the old currency was converted to the new one at a rate of 10,000:1. The old currency ceased to be legal tender on 1 January 1997. However, it is subject to an unlimited exchange up to the end of 2010 at all NBP regional branches. Furthermore, other banks have also been obliged, by the NBP President, to perform this activity.

The new Polish zloty (PLN) has the following denominations:

- banknotes in denominations of PLN 10, 20, 50, 100 and 200;
- coins in denominations of PLN 0.01, 0.02, 0.05, 0.10, 0.20, 0.50, 1, 2 and 5.

At present banknotes account for 97% of the total value of currency in circulation. No data are available on the number and value of cash payments. However, it can be assumed that the share of cash payments, despite a dynamic growth of non-cash settlements, is still higher than in the western European states. It is not common to have a bank account: hence, a large number of salaries, pensions and disability allowances are paid out in cash. A relatively small number of shops and services

outlets accept non-cash forms of payment, particularly those outside big cities.

Deposits in bank accounts and cashier's cheques are the most popular forms of cash payment performed via banks. Banks charge fees specified in their own tariffs for cash deposits in bank accounts, since the processing of cash payments is time-consuming (counting, sorting, packing and transportation).

A cashier's cheque is an instruction given by the issuer to the drawee to debit his/her account with the amount stated in the cheque, and to pay out this amount to the cheque holder or the person designated in the cheque. For this type of cheque, those related to savings accounts are of the greatest importance. The majority of such cheques serve not as a payment medium, but as an instrument for making cash withdrawals from customers' own accounts. Given the increasing number of ATM facilities, their importance has been diminishing.

### 2.2 Non-cash payments

Non-cash payments comprise credit transfers, settlement cheques and direct debits. Parties can also use payment cards on terms and conditions set out in bilateral agreements with their bank.

The Banking Law does not specify value dates for the performance of customers' instructions. According to Article 54.2 a bank account agreement should specify, in particular, the manner in which funds held in accounts can be used, and the time given by the account holder for the performance of payment instructions.

The existing system for the settlement of customers' transactions via the KIR SA enables credit transfers between customers of two different banks to be settled within two working days in SYBIR, the paper-based

system, and on the same day in ELIXIR, the electronic system. For cheques the period extends to three working days (see details in Section 3.3.6).

The Act on Economic Activity of 23 December 1988 imposes an obligation on economic entities to settle in cashless form transactions in excess of ECU 3,000. If the turnover between two entities exceeds ECU 10,000 per month the obligation is applicable to every transaction of over ECU 1,000.

### **2.2.1 Credit transfers**

Credit transfers are the main instrument for non-cash payments made in Poland. A debtor initiates the settlement and files with its bank an instruction to debit its account and credit the account of the creditor.

In previous regulations the procedures for effecting a credit transfer, and in particular the time within which the transfer had to be performed, were specified by the NBP President. Nowadays bank account agreements regulate the duties of a bank to its customers.

### **2.2.2 Cheques**

As a payment medium, cheques are subject to the Cheque Law of 28 April 1936. They have never been widely used for payment purposes in Poland, and given the recent rapid development of the payment card market, their importance has diminished further. In Polish legislation the cashier's cheque is considered as a cash payment (see Section 2.1) and the settlement cheque as a non-cash payment. In Poland only a bank can be a drawee of a cheque. A settlement cheque provides exclusively for transfers between a debtor's account and the account of the cheque holder or a person designated in the cheque with no possibility for cash withdrawal. The settlement cheque is used as a payment medium in the economy. However,

its importance is negligible when compared with credit transfers. A cheque can be presented to any bank, but it must be delivered to the drawee. Settlement details are presented in Section 3.3.6.

### **2.2.3 Direct debits**

Direct debits were introduced by the NBP in October 1997 under the amended regulation of the NBP President on means and procedures for the performance of settlements via banks. A direct debit is an instruction given by the creditor to the bank to debit the debtor's bank account with a specified amount and credit the creditor's account with the same amount.

Direct debits are allowed, provided that both the creditor and the debtor hold a bank account with a bank that has entered into the agreement on direct debits, the debtor has authorised the creditor to debit its account on agreed payment dates and in connection with specified liabilities, and the debtor and the bank have entered into an agreement on direct debits. This form of payment is used for payments not exceeding the equivalent of ECU 1,000 for individuals and ECU 10,000 for other debtors.

The creditor's account is credited as soon as sufficient funds to cover the payment due have been received from the debtor's bank. The debtor has the right to revoke a single instruction within 30 calendar days after it has been effected, for individuals, or 5 days for other debtors, as well as to revoke at any time the authorisation given to the creditor.

Following the introduction of direct debits, banks have prepared the text of an agreement regulating their use, which specifies, in particular, the scope of the mutual responsibilities of banks and signatories, the grounds on which the debtor bank can refuse to effect the debit, examples of uniform forms, and the principles for effecting direct debits via electronic data carriers.

It is assumed that the settlement of direct debits will be performed exclusively via the electronic ELIXIR system in the KIR SA. At the end of June 1998 21 banks had signed an agreement providing for the instrument to be brought into use; the first transactions were effected in July 1998.

#### 2.2.4 Payment cards

The most rapid increase in non-cash payments in Poland has been in the use of payment cards. Recent years have brought about a considerable increase in the number of cards in circulation and the number of transactions made. In December 1994 the number of payment cards amounted to 21,900, while in June 1998 they amounted to 1,546,000 (a 70-fold increase). Despite this dynamic increase in the use of payment cards, their share of total non-cash payments in Poland remains very small.

However, given the fact that more and more Polish banks are offering payment cards, further growth in the number of cards issued and transactions effected is expected in the near future.

In April 1994 the Bank Card Issuers' Board (RWKB) was established by the Polish Bankers' Association. Most Polish banks issuing payment cards are members of the RWKB, which was established to support banks in their relations with organisations linking banks issuing cards (such as VISA and Europay), co-operate with the state administrative bodies regarding legal regulations related to payment card activities in Poland, and co-operate on card development, promotion and the establishment of the uniform technical infrastructure necessary for card operations.

Simultaneously, two other organisations linking banks with members of international organisations were established: VISA Forum Poland and Europay Forum Poland. Their tasks are, inter alia, to exchange experience and prevent unfair or harmful competition.

Cards issued by Polish banks usually carry the logo of one of the international organisations, i.e. VISA International or Eurocard/MasterCard International, which facilitates access to entities accepting payment cards. Domestic cards may carry the logo of PolCard or only the logo of the issuing bank.

PolCard is a company, owned by the Polish Bankers Association and a group of banks, which acts as an authorisation and clearing centre for card transactions throughout the country. PolCard co-operates with banks issuing cards. It offers ATM services on an online basis, has introduced facilities providing access to the ATMs of other banks and maintains a special settlement system established for offsetting claims and liabilities arising from card transactions (KSR). At present PolCard offers its services to 27 Polish banks.

Another authorisation and clearing centre operating throughout the country is the Centre of Cards and Cheques Polska Kasa Opieki SA, Group Pekao SA. Moreover, some institutions operate their own organisational units acting as local authorisation and clearing centres, mainly for payment card transactions made by their parent banks. This group also comprises non-banks such as American Express.

In the case of payment cards, the settlement mechanism is similar for both debit and credit cards. The only difference lies in bank-customer relations. If the service provider has no POS terminal, it must submit a paper slip giving the details of the transaction to the settlement centre with which it has signed a settlement agreement. (The agreement can be made directly with the clearing centre or via the nearest branch of the bank participating in the system.) The agreement provides for a specific period for effecting the settlement.

Cards issued by Polish banks carry magnetic strips. Cardholders must sign paper receipts when purchasing goods and services and use a personal identification number (PIN) when

withdrawing cash from ATMs. Polish banks are considering equipping cards with microprocessors. A few banks have commenced testing such card products.

#### *Debit cards*

Debit cards and deferred debit or charge cards account for the majority of payment cards being issued by banks operating in Poland. Generally these cards can be used at ATMs and POS terminals or with manual imprinters. At the end of June 1998 Polish banks had issued 1,021,000 debit cards and 441,000 charge cards.

Initially many banks were issuing cards that allowed only for cash withdrawals at the ATMs of the issuing bank. Since then payment functions have been added to these cards. Some banks issue debit cards with no embossing (VISA Electron, Maestro, PolCard BIS). Their use is therefore limited to ATM and POS terminals only (6,850 terminals as at the end of June 1998).

#### *Credit cards and travel and entertainment cards*

Credit cards and travel and entertainment cards are issued by a small group of Polish banks. These cards carry the logo of International VISA, Eurocard/MasterCard or American Express systems. 82,900 credit cards had been issued as at the end of June 1998.

#### *Retailer cards*

This category of cards does not exist in Poland.

#### *Prepaid cards*

In Poland no prepaid cards ("electronic purses") are in circulation. However, there are telephone cards, issued by Telekomunikacja Polska SA. These only

enable telephone calls to be made from telephones adjusted to read such cards. These cards cannot be reloaded.

#### *ATM and POS networks*

At the outset of the introduction of ATMs banks established their own ATM networks and issued cards for cash withdrawals only at the ATMs of the issuing banks. This policy resulted in the establishment of 15 separate ATM networks, and customers of a given bank could only use their own network. Subsequently a number of banks have concluded bilateral agreements on the mutual recognition of ATM cards. In June 1997 a group of domestic banks entered into an agreement on the provision of services to domestic cardholders in the interbank online network, and introduced a domestic switch serviced by PolCard. As at the end of June 1998 the agreement covered about 1,100 ATMs throughout the country, belonging to 12 banks. Some other banks have declared their readiness to join the agreement and to allow access to their ATMs in the near future. The extension of the agreement to all banks operating in Poland would result in mutual recognition of cards in all ATMs installed throughout the country.

In addition, a company called Bankomat 24/Euronet Ltd. has established its own independent ATM network, which accepts both cards from international systems – VISA, Eurocard/MasterCard, American Express and Diners Club – and domestic cards issued by Polish banks. As at end-June 1998 the network had 378 ATMs.

#### **2.2.5. Postal instruments**

As mentioned in Section 1.2, the Polish Post Office is authorised to perform some banking activities, including offering postal transfers, payments via the Post Office to bank accounts and payment of pension and disability allowances.

The basic postal network includes about 7,600 Post Office branches, which do not have accounts with banks. The accounts are held by larger Post Office branches, each supervising several smaller offices.

Postal transfers are used for transferring money between individuals who do not have bank accounts. In this case one Post Office branch accepts a cash payment (against a fee) and another one pays the amount to the receiver; the operation is performed outside the banking system. The transfer, as a paper document, must be physically delivered to the paying Post Office branch before the transaction can be effected. Therefore, the transaction can take a couple of days to complete. In the case of urgent payments a wire transfer can be ordered, which means that the Post Office branch is obliged to deliver money within eight hours of the receipt of the instruction.

In the case of cash payments to a bank account, a customer pays in cash plus a fee and fills in a special form. At the end of the day the form is submitted to the Post Office branch holding the bank account. The following day the Post Office branch files a transfer order for the total sum of all instructions received with the branch of the bank maintaining its current account. Further settlement is performed via the KIR SA as is the case for the other bank customers.

For pensions and disability allowance payments, those NBP regional branches which hold current accounts of the Social Insurance Institution (ZUS) transfer adequate funds via the KIR SA to accounts of regional Post Office branches (there are several throughout the country). The Post Office branch is provided directly by ZUS with individual documents for beneficiaries so that, once the information from ZUS has been received, it can immediately start making the relevant payments.

### **2.2.6 Other payment instruments**

No other payment instruments are used in the Polish payment system.

### **2.3 Recent developments**

Direct debits have been in use as a new form of payment instrument since July 1998. Pursuant to the interbank agreement, direct debits are settled during the third settlement session of the KIR SA, when the money market has already closed. As the volume of direct debits increases, the relevant agreement will have to be revised, in particular with regard to the timing of settlement.

Electronic money (e-money), in the form of prepaid cards, is not yet in use in the Polish market. However certain Polish banks, in co-operation with international institutions such as Eurocard/MasterCard and VISA International, have been investigating the possibility of its introduction, although this is still some way off.

The payment card market has been expanding dynamically. Every year the number of cards and units accepting cards has grown substantially. Banks have concluded bilateral agreements on the mutual recognition of cards and established common ATM networks. Moreover, banks associated with VISA wish to replace the magnetic strip with a microprocessor, which will considerably enhance card protection and expand card functionality.

In recent years banks operating in Poland have been offering a new corporate banking service. Many operations previously performed on a bank's premises can now be carried out on a customer's premises via the use of special software delivered by the bank. This service is provided by 40 banks in Poland.

### 3 Interbank exchange and settlement circuits

#### 3.1 General overview

Within the framework of interbank settlements, Polish banks exchange payment instructions, record mutual claims arising from such instructions and submit their instructions to the NBP. Pursuant to existing legal regulations, the first two activities can be performed via the National Clearing House (KIR SA), banks holding current accounts for other resident banks and the direct exchange of instructions between banks.

Since all banks operating in Poland are members of the KIR SA, either directly or indirectly, most interbank transactions are settled through this clearing house.

The KIR SA operates two retail net settlement systems: SYBIR – a paper-based system – and ELIXIR – an electronic system.

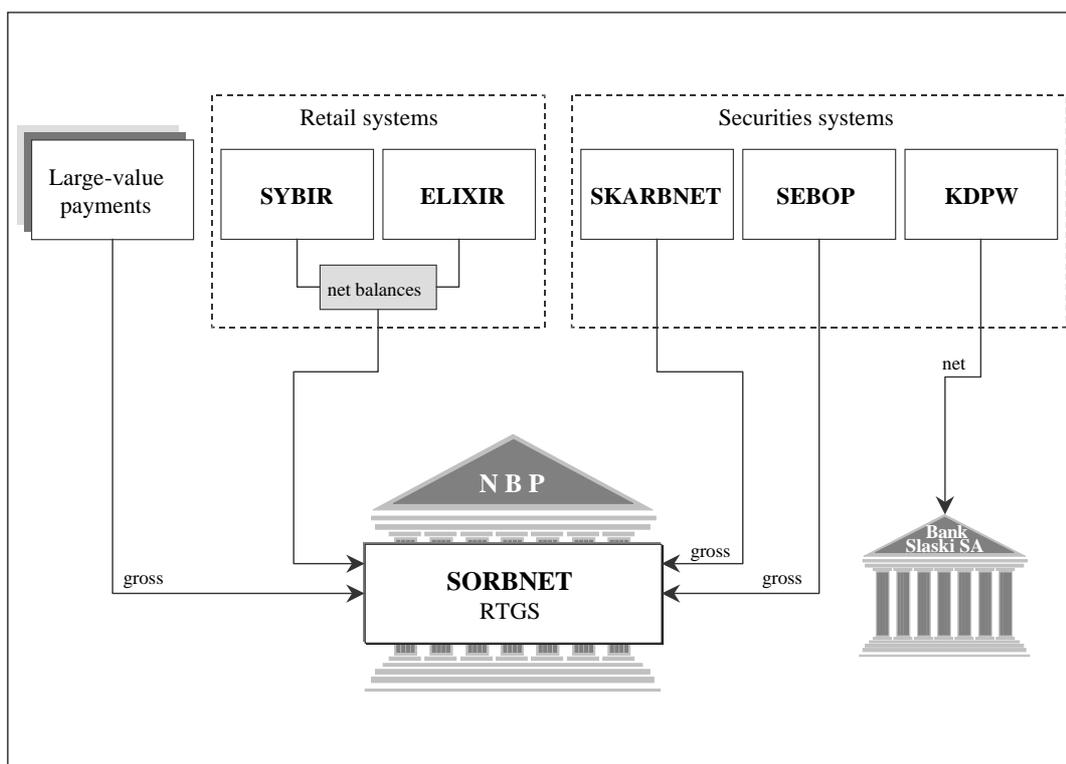
Detailed descriptions of these systems are provided in Section 3.3.

Final settlement arising from the aforementioned systems is performed at the NBP in the System for Bank Accounts Servicing, SORBNET. (NET reflects the fact that the system is operated as a network, as opposed to one based on terminals, as was previously the case.) This real-time gross settlement system also processes payment instructions from banks. Details of the system are given below in Section 3.2.

#### 3.2 Real-time gross settlement (RTGS) system

SORBNET was launched in April 1996, replacing SORB, which had been in operation since April 1993. Although SORB had fulfilled

**Chart I**  
**Interbank exchange and settlement systems in Poland**



the basic requirements of an RTGS system, it had not been a fully efficient system, because banks could present their payment instructions only on paper or on a floppy disk. Since March 1998 banks have been able to transfer their instructions via electronic means.

### **3.2.1 Functioning rules**

The NBP, as the central bank and pursuant to Article 29 of the Act on the NBP, maintains current accounts for 76 banks (71 banks in the SORBNET system and 5 banks in regional branches of the NBP, for which the NBP is a correspondent bank) and performs interbank settlements through these accounts. Only in exceptional cases and with the consent of the NBP President can accounts of entities other than banks (except for centralised accounts of the state budget and budgetary units) be maintained by the NBP. Currently there are no specific regulations concerning the possibility for international bodies or foreign banks to open current accounts with the NBP.

### **3.2.2 Participation in the system**

At present there are 71 participants in the SORBNET system, all of which are direct participants in the KIR SA. There are currently no formal prerequisites to be fulfilled by banks wishing to become participants in SORBNET. Prerequisites such as financial soundness and technical infrastructure are, however, to be specified in a Resolution of the NBP Management Board on opening and maintaining bank accounts, which is to be introduced in the future. Banks wishing to open a current account with the NBP are only required to meet the following basic criteria: they need to receive a positive opinion from the Banking Supervisors and to have the consent of the NBP President.

### **3.2.3 Types of transactions handled**

SORBNET services banks' payment instructions related to interbank money, foreign exchange and securities markets transactions and operations with the NBP. SORBNET can currently only be used for a bank's own payments and not for third party payments. There are no limits on the value of individual payments. The system is also used for settling banks' obligations arising from clearing systems. Work has been under way to incorporate banks' customer instructions into the system. This type of instruction is likely to be subject to some limits.

The average daily number of transactions passing through SORBNET amounts to 2,000. Banks' instructions are submitted in electronic form (91%), on floppy disk (5%) and on paper (4%). The proportion of instructions submitted in electronic form has been increasing as a result of banks' access to the NBP's electronic system of data exchange.

### **3.2.4 Operation of the transfer system**

SORBNET participants transfer their instructions via a special application, the banking module, and the electronic post via TELBANK's network. Depending on the balance available in a bank's account, instructions are immediately effected or rejected. Where funds are available, the payer's account is debited and the beneficiary's account is credited simultaneously. The payer receives confirmation of the transaction while the beneficiary receives confirmation that its account has been credited. Where no funds are available in the current account, the instruction is rejected.

Banks may ask the NBP for details of any balances on their accounts. At the end of the day the system automatically prints out and sends to banks statements of their current accounts.

Participants can access the system between 7.30 a.m. and 6 p.m. After 6 p.m. new payment messages are no longer accepted.

Messages transferred to banks are ciphered for confidentiality purposes, and an electronic signature is used to ensure authenticity, integrity and non-repudiation.

### **3.2.5 Transaction processing environment**

The flow of information between banks and SORBNET is V-shaped. Banks send the payment orders to the central bank, which informs the sending and receiving bank of the settlement.

Banks' instructions can be transferred to the system via electronic post and, in the event of any system disruptions, on a floppy disk or on paper (including via fax). Instructions filed on paper must be registered at the NBP.

The electronic transmission is made using client-server technology via the electronic post system X-400 within TELBANK's network. The system works under UNIX; messages are created in accordance with the EDIFACT standard.

### **3.2.6 Settlement procedures**

SORBNET provides for real-time gross settlement via the current accounts of banks held with the NBP. The system processes payment instructions presented by banks, the NBP and the KIR SA.

Banks may only make credit transfers by sending the order to debit their own accounts. Banks' instructions are processed according to instruction numbers. Processing is not delayed if numbered transactions cannot be processed consecutively. Instructions are processed provided that a bank has a sufficient balance on its account.

The NBP's own instructions relating to the sale of legal tender, interest and fee payments, are processed in the same way as any other transactions. The net balances arising from the different clearing schemes in the KIR SA are settled in SORBNET in three settlement

sessions during the day (see Section 3.3.6 for details).

### **3.2.7 Credit and liquidity risk**

SORBNET, an RTGS system, provides for credit risk minimisation. Banks have no access to intraday overdraft facilities. This is not, however, a liquidity constraint, since banks do have access to liquidity through the intraday use of their relatively large required reserves and by drawing secured lombard loans with the NBP. The secured lombard facility can be drawn on throughout the day. In order to minimise the time necessary for all the formalities related to the lombard loan to be fulfilled, credit agreements are concluded in advance and the loan can be used whenever necessary.

### **3.2.8 Pricing**

Since October 1997 the NBP has been charging fees for the maintenance and servicing of banks' current accounts. Banks pay a flat fee for opening a current account, and a quarterly fee is paid for the maintenance of accounts. Additionally, a bank is charged for the processing of every individual instruction. These fees depend on the manner in which payments are transmitted. Lower fees are charged for instructions transmitted via electronic means and higher ones for paper documents that require registering.

Currently these fees do not fully cover the costs. However, the NBP Management Board has decided that the NBP will, step by step, implement the full cost recovery rule by the end of 2002.

### **3.2.9 Main projects and policies being implemented**

The main task for the near future is to incorporate large-value payments by banks' customers into SORBNET. At the moment

such instructions are processed via the KIR SA regardless of their value.

A shift of such instructions into SORBNET would mean that all large-value payments would be settled through the RTGS system. If, as a result, the number of instructions processed rose substantially and the level of required reserves were lowered, there could be a need to introduce queuing and queue management mechanisms to enhance the system's efficiency.

To ensure the availability of a communications network in the event of failure of the electronic mail system, the use of the S.W.I.F.T. network as a backup solution is being considered. The final decision will be taken in 1999.

The ultimate objective is to adjust SORBNET in such a way as to bring it into line with the technical and other requirements for accession to the TARGET system.

### 3.3 Retail payment systems

According to the Banking Law (Article 67), banks may establish clearing houses in the form of registered companies in order to exchange payment instructions and agree their mutual claims and liabilities arising from such instructions. The Regulation of the NBP President on procedures for the performance of interbank settlements specifies that banks should exchange payment instructions and register mutual claims and liabilities arising therefrom. These activities can be performed either through a clearing house (direct participation) or via correspondent banking.

The Regulation also authorises the KIR SA to issue regulations specifying all necessary details of the KIR SA's and its participants' activities.

#### 3.3.1 Functioning rules

Until now the KIR SA has been the only clearing house providing the above-

mentioned functions. It operates two different systems – SYBIR and ELIXIR – the operational rules of which are specified in KIR SA regulations. The KIR SA is a joint stock company established under the Commercial Code of 27 June 1934. Its shareholders include the NBP, the Polish Bankers' Association and 17 commercial banks. The Supervisory Board comprises shareholders' representatives, each holding one vote. The activities of the KIR are managed by a management board.

The KIR SA's organisational structure comprises the head office in Warsaw and 17 regional clearing houses (BRIRs) located in Poland's major cities. Every branch of a participant is connected to one BRIR. Thanks to this structure, the KIR SA links all bank branches operating throughout the country. This is especially important for the paper-based SYBIR system.

#### 3.3.2 Participation in the system

Each bank wishing to participate in the exchange of payment instructions carried out via the KIR SA must be licensed to perform banking activities in Poland, have the approval of the KIR SA's supervisory board, have signed a bank account agreement with the NBP and have met technical requirements specified by the KIR SA.

In order to receive the approval of the Supervisory Board a bank must meet certain economic criteria. The above requirements and criteria, which are uniform for all banks, are set out in the KIR SA Regulation. Each participant is obliged to pay its own liabilities and, ultimately, the liabilities of any bank for which it acts as settlement intermediary. Since July 1998 each KIR SA participant (and all its branches) must be a participant in both the SYBIR and ELIXIR systems.

### 3.3.3 Types of transactions handled

Both systems intermediate in the settlement of different types of payments ordered by banks' customers. The paper-based SYBIR system provides the exchange of credit-related documents (credit transfers and payment slips) and debit-related documents (cheques). Until very recently ELIXIR, the electronic system, dealt exclusively with credit transfers, but since July 1998 it has also handled direct debits.

### 3.3.4 Operation of the transfer system

The KIR SA operates five days a week, except when there is a holiday during the week. In the SYBIR system, bank branches submit payment instructions received from their customers to their regional BRIRs once a day according to a schedule agreed in advance. The instructions are sorted into packages (a group of documents presented by the bank branch to another bank branch). Along with the documents subject to settlement the branch submits a floppy disk with an electronic record of all paper items delivered for settlement; calculation of clearing balances at the KIR SA is performed on the basis of these records.

At night the documents are delivered to the relevant BRIRs, and, following NBP settlement, submitted to beneficiaries' branches. In cases where cheques have not been accepted by the issuers' branch, the documents are sent back to the relevant BRIR and are not subject to debit documents settlement at the NBP.

In the electronic ELIXIR system the branch delivers instructions to the relevant BRIR electronically or on a floppy disk, or directly to the KIR SA head office (electronically). Since ELIXIR offers three daily settlement cycles, the processing takes place according to the following schedule:

#### First cycle:

- opening (to enable data transmission) at 6.30 p.m. on the previous day;
- closure at 9 a.m. for floppy disks and at 9.30 a.m. for teletransmission;
- presentation of the KIR SA clearing balances to the NBP at 10.30 a.m.;
- morning settlement session at the NBP between 10.30 a.m. and 11.00 a.m.;
- transmission of files to beneficiaries' branches after 11 a.m.;

#### Second cycle:

- opening at 10 a.m.;
- closure at 1 p.m. and 1.30 p.m.;
- presentation of clearing balances to the NBP at 2.30 p.m.

#### Third cycle:

- opening at 2.30 p.m.;
- closure at 5.30 p.m. and 6 p.m.;
- presentation of clearing balances to the NBP at 7 p.m.

### 3.3.5 Transaction processing environment

In SYBIR banks deliver paper documents plus a floppy disk to the relevant BRIR; they are sorted into settlement packages for each receiving bank branch.

In ELIXIR the exchange of information is made by means of floppy disks, X-25 transmission or X-400 electronic post serviced by BPT TELBANK SA.

Security is guaranteed by virtue of quality software and cryptography equipment using the RSA algorithm for electronic signature. The algorithm uses asymmetric keys. Each participant has a private key to use with the decryption algorithm and a public key to use with the encryption algorithm. The public key of the sending participant is available to anybody wanting to communicate with the former.

### 3.3.6 Settlement procedures

#### *SYBIR – credit documents*

The settlement mechanism for credit documents (credit transfers, payment slips) in SYBIR enables the transfer of funds between accounts of customers of different banks within two working days.

Payment instructions delivered in paper form by customers are, once debited from the accounts concerned, filed by the branch holding their accounts. The branch groups the instructions into settlement packages and delivers these together with a floppy disk to the relevant BRIR according to a schedule agreed in advance, but no later than 6 p.m.

Before 7 p.m. each BRIR prepares a preliminary settlement list of instructions received; this is sent to the KIR SA head office, where a net settlement list is generated for the whole country. This represents an estimate of the amounts to be transmitted between banks on the next day during the settlement session. Head offices of participants are notified of such amounts by 8 p.m., giving them a basis on which to gather funds to cover their liabilities. The estimate is also submitted to the NBP after 8 p.m.

The KIR SA's carriers transport the paper documents between BRIRs during the night. In the morning of the second day, once the BRIRs have received all the instruction packages, they calculate the final net position of each bank resulting from payments sent and received by its branches participating in

the BRIR, and transmit their results to the KIR SA head office, where a net settlement list for the whole country is generated. The results of the SYBIR paper clearing are then combined with the results of the first exchange under ELIXIR, and are then presented to the NBP for clearing in the morning settlement session held between 10.30 a.m. and 11 a.m. at the Payment Systems Department of the NBP.

After 11 a.m., once the KIR SA head office has been notified of the successful completion of the settlement, it in turn notifies all BRIRs. On the basis of this confirmation BRIRs can commence issuing documents to banks' branches. Funds related to the payment instructions delivered to the beneficiary's branch have already been paid by the sending bank, and the branch can provide the beneficiary with the funds received.

In cases where settlement cannot take place owing to insufficient funds of one of the SYBIR participants, the NBP head office notifies the KIR SA thereof, and returns its payment instruction. The bank that fails to meet its payment obligations is excluded from the settlement process via the KIR SA, and its instructions are unwound. The KIR SA recalculates the claims and liabilities of the remaining participants and transmits these to the NBP head office. The NBP performs the second session.

If another participant (or participants) is/are in default, the unwinding procedure and recalculation of claims and liabilities is repeated until the surviving participants have met their payment obligations.

Payment instructions rejected from the settlement round are unwound and left unsettled. Given that they are delivered (including credits in favour of customers of defaulting banks) to a relevant BRIR during the night, they will be returned unprocessed to the initiating branches next day.

*SYBIR – debit documents*

The system provides for cheque settlement within three working days, i.e. one day longer than in the case of credit documents.

After having been presented to a bank, cheques are transported with the credit documents and delivered on the second day via a BRIR to the branch of the issuer's bank, but by contrast with credit documents, which are paid during the morning settlement session, cheques are not paid.

Preliminary net positions are prepared by BRIRs in the evening on the first day. If sufficient funds are not available in the issuer's account, the issuer's branch can refuse to make payment. In such cases the branch has to notify its BRIR before 6 p.m. by returning the refused cheque to the BRIR. In this case, the issuing bank's preliminary net position is adjusted by the amount rejected. If the BRIR is not notified of any refusal to pay, the cheque will be paid. The settlement session for debit documents is effected on the second day in the cycle between 7 p.m. and 7.30 p.m.

On the third day, if the issuer's bank has not refused the cheques, the beneficiary's bank can credit its customer's account with the cheque amount.

In the event of there being insufficient funds in the account of any SYBIR participant, the procedures relating to the recalculation of claims and liabilities are identical to those for credit documents.

*ELIXIR – credit transfers*

Payment instructions – in the form of credit transfers – recorded on magnetic data carriers (floppy disks, a file for transmission) are subject to clearing in this system. The system operates on a net basis, the net balances being settled at the NBP head office. The unwinding mechanism and the procedure for recalculating claims and liabilities are the same as in SYBIR.

There are, however, the following differences:

- banks deliver to the ELIXIR individual transactions, not packages as in SYBIR;
- thanks to electronic data transmission, time-consuming transportation of documents is avoided, which speeds up the settlement cycle;
- there are three clearing cycles in ELIXIR (only one in SYBIR);
- final settlement is provided in three settlement sessions (two for SYBIR);
- banks have online access to their position in the system, which reduces the risk of uncovered positions at the moment of interbank settlement.

*ELIXIR – debit transfers*

Direct debits are the only form of debit transactions settled by ELIXIR. They are processed according to the schedule agreed in advance by banks in the interbank agreement.

Direct debits are delivered by the beneficiary's bank to the KIR SA via a special message to the first daily session. The instruction is sent by the KIR SA to the debtor's branch, which until 6 p.m. can refuse to pay for reasons specified in the agreement. Where no notification is given of a refusal to pay, the transaction is settled on a net basis during the evening settlement session at the NBP.

**3.3.7 Credit and liquidity risk**

The procedures applied in the event of a participant's failure to pay are described in Section 3.3.6 above. At present neither SYBIR nor ELIXIR incorporate risk management procedures. However, banks are notified of the estimated results of the exchange of payments.

Apart from the interbank market, banks may use two facilities offered by the NBP to obtain liquidity to meet their settlement obligations. First, banks have been able, since August 1994, to use their required reserves for settlement purposes. Second, lombard credit is also available from the NBP on condition that Treasury bills registered at the NBP or Treasury bonds registered at the KDPW are provided as collateral.

### 3.3.8 Pricing

Banks are charged according to the tariffs determined by the KIR SA. In SYBIR a fee is charged for each settlement package. The fees charged are the same regardless of the distance between BRIRs involved in the exchange. The fee is charged equally to both the sending and receiving bank.

In ELIXIR the message is the basis for charging any fee. However, the amount of the fee depends on the message type and transmission media. The KIR SA gives preference to electronic transmission by

charging lower fees. In ELIXIR the message is cheaper than SYBIR's package, although the settlement package can include several payment instructions.

In ELIXIR it is planned to differentiate the fees according to the time of the delivery of files to the KIR SA.

### 3.3.9 Main projects and policies being implemented

At present work is under way on the establishment of a new, uniform regulation for the KIR SA (currently SYBIR and ELIXIR have separate regulations). This has been made possible by the resolution of July 1998 of the General Annual Meeting of ZBP on the incorporation of all banks in ELIXIR. Until now banks joining the KIR SA have been obliged to join SYBIR, while participation in ELIXIR has been voluntary. With effect from 1999 each bank which becomes a KIR SA participant will automatically be deemed a participant of both systems.

## 4 Securities settlement systems

In Poland there are three different systems for public trades in securities, for the settlement of transactions and the safekeeping of securities. The first is designated for securities quoted on the Warsaw Stock Exchange and on the Central Quotation Table (CTO – the company which organises the over-the-counter (OTC) market), for which the National Securities Depository acts as a depository and settlement agent. The second is related to Treasury bonds issued by the Minister of Finance, where the NBP acts as an issuing, depository and settlement agent in the primary market. The third relates to bills issued by the NBP, for which the NBP performs the clearing and settlement function. All types of securities are dematerialised.

### 4.1 General legal aspects

The Law on public trade in securities Act of 21 August 1997 constitutes the legal basis for the functioning of the major capital market institutions. Under the Act the following institutions operate in the securities market:

- the Securities and Exchange Commission (KPWiG), exercising supervision and control over the securities market;
- the Warsaw Stock Exchange (GPW), organising primary and secondary trade in securities at the exchange market;
- the Central Quotation Table (CTO), organising primary and secondary trade in securities over the counter;

- the National Securities Depository (KDPW), acting as a depository and settlement agent for securities quoted on the GPW and CTO;
- Bank Slaski SA in Katowice, a settlement agent for transactions settled via KDPW;
- the Minister of Finance (MF), as the issuer of Treasury securities;
- the National Bank of Poland (NBP), as an issuing agent for Treasury bills and the issuer of NBP bills, and a depository and settlement institution for these securities;
- public companies participating in issuing securities and
- companies and banks dealing in brokerage – entities acting as intermediaries in the primary and secondary markets.

Trade in the majority of securities, except for Treasury bills and NBP bills, takes place on the GPW. Transactions in Treasury bills, in both the primary and secondary markets, are registered at the Central Depository for Treasury Securities (CRBS) operated by the NBP. The NBP also keeps the Register of NBP Bills (RBP). Moreover, the NBP holds auctions for one-year indexed Treasury bonds, two-year and five-year bonds with fixed interest rates, and three-year and ten-year bonds with floating rates, settled and held in custody by KDPW.

#### **4.1.1 Legal framework concerning financial (securities) markets**

Stock exchange transactions are subject to the Law on public trade in securities of 21 August 1997 and the Foreign Exchange Law of 2 December 1994 for funds transfers from and to Poland relating to the acquisition or sale of securities.

The legal framework governing the issuance of Treasury securities is laid down in the Budget Law, the Act on the Minister of Finance's office, tax offices and chambers, the annual budget laws, and Regulation No. 23 of the Minister of Finance on the issuance of Treasury bills of 24 April 1995, as well as resolutions of the Minister of Finance on the issuance of Treasury bonds.

The activity of the CRBS is governed by the following acts: Regulation No. A/1/95 of the NBP President on the establishment of the Central Register for Treasury Bills of 14 June 1995 and Regulation No. A/2/95 of the NBP President on the introduction of procedures related to the maintenance of depository accounts for Treasury bills by the NBP of 14 June 1995.

NBP issues bills under the Act on the NBP of 29 August 1997 (Article 48). The RBP's activities are regulated by Regulation No. A/1/96 of the NBP President on the "Introduction of regulation on sale, trade in and opening and maintenance of depository accounts for NBP bills in book-entry form" of 15 April 1996.

Under the above regulations both the CRBS and the RBP are operated by the Monetary and Credit Policy Department of the NBP head office.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

Provisions of the Act on the NBP of 29 August 1997 related to the securities market do not explicitly specify any particular supervisory role for the NBP. They only provide for the NBP's role as an issuing agent for Treasury securities and as an organiser of trading in the securities it issues and in Treasury securities (Article 48 and 49).

*Provision for settlement facilities*

Settlement of funds related to trading in Treasury securities, registered at the CRBS, and in NBP bills, registered at the RBP, is effected in central bank money held on accounts maintained by the NBP Payment Systems Department (DSP). The settlement of transactions in other securities, for which KDPW is the depository and settlement agent for the cash leg, takes place at the Bank Slaski SA, the settlement bank, which is itself also quoted on the stock exchange.

The CRBS and the RBP adopted procedures for the real-time gross settlement of Treasury and NBP bills and delivery versus payment (DVP) principles pursuant to model 1 for participants having current accounts in the DSP, i.e. real-time settlement of individual instructions related both to securities and cash. This facilitated the creation of a highly liquid market for such securities.

The operational functions relating to securities transactions are performed by two systems: SKARBNET for Treasury bills and SEBOP for NBP bills – designed and used by the NBP (for details, see Sections 4.3 and 4.4).

*Monetary policy operations and securities settlement systems*

In view of the excess liquidity which exists within the Polish banking system, since 1998 the NBP has been using its bills to absorb excessive funds (until the end of 1997 Treasury bills were used for this purpose).

Securities used by the NBP as monetary policy instruments are NBP bills, used in open market operations, and Treasury bills and bonds that may be used as collateral to obtain credit in the lombard facilities.

The registration of transfers of NBP bills is performed in SEBOP, operated by the DPPK, and the settlement of funds related to transactions in NBP bills takes place in central

bank money held in current accounts maintained by the DSP.

In the event of potential shortages in the banking sector's liquidity, the NBP offers lombard facilities collateralised by Treasury bills or bonds. The registration of Treasury bills is performed by SKARBNET and the registration of transactions in Treasury bonds by the securities settlement system operated by the KDPW.

*Main projects and policies being implemented*

At present work is being carried out to increase the liquidity of the Treasury bond market, since existing procedures applied to trading in Treasury bonds are complicated and time-consuming. On the one hand, some types of bonds are offered at auctions addressed mainly to institutional investors and, on the other, they are offered to retailers via the agent of the issuers, i.e. Bank Polska Kasa Opieki-Grupa Pekao SA for one-year and three-year Treasury bonds. The KDPW acts as a depository for all types of securities. The settlement of funds related to trading in Treasury bonds is effected, regardless of the place of acquisition, via the settlement bank.

In line with standards applied by the EU, the NBP is going to take over the role of settlement agent for Treasury bonds and all other securities registered by the KDPW and currently settled by Bank Slaski SA.

**4.1.3 The role of other institutions***Securities and Exchange Commission*

The Securities and Exchange Commission (KPWiG) is a central state body dealing with public trade in securities and the activities of commodity exchanges, exchange clearing houses and entities operating brokerage companies in the exchange of goods market. The KPWiG is responsible, in particular, for ensuring compliance with rules of fair trading

and competition, ensuring the smooth functioning of the securities market, and preparing draft legislation relating to the functioning of the market.

The KPWiG also approves securities for public trading and issues licences for brokerage activity.

#### *The National Securities Depository*

In view of the various activities of the National Securities Depository (KDPW), its functions can best be divided into:

##### *(i) Depository functions, including:*

- safekeeping and registration of publicly and non-publicly traded securities;
- oversight of the respective amounts of securities issued;
- checking that the amount of securities in circulation is no higher than the amount of securities issued;
- keeping deposit accounts for entities entitled to keep securities in the KDPW; and
- providing services to issuers and exercising proprietary rights over securities, including payments of dividends and accrued interest.

##### *(ii) Settlement functions, including:*

- DVP settlements in securities; and
- guaranteeing settlements.

##### *(iii) Self-regulatory functions, including:*

- setting rules of operation for itself and its participants, including the development of securities clearing and settlement procedures.

#### *The Polish Financial Exchange*

In March 1996 13 Polish banks and the Polish Bankers' Association (ZBP) established a joint stock company which, since July 1998, has acted as the Polish Financial Exchange (PGF).

The main purpose of the PGF is to establish a derivatives market. As a first step a cash market was established.

This market has existed since January 1997 and consists of secondary markets in Treasury bills and NBP bills. Deals are transacted via a special system used by the PGF, which matches offers sent by participants. Settlement of every transaction is made in central bank money through the SORBNET system and in securities through the SKARBNET and SEBOP systems immediately after the matching of the offers. Participants send payment instructions to SKARBNET and SEBOP on their own.

There are 14 direct participants in this system (banks), all of which are required to have a securities account at the CRBS and a current account at the NBP.

The derivatives market began operating on 22 September 1998. The market is served by a fully electronic system. Further development of the market is planned in two stages. At first only banks will be able to participate in the market, then in the second stage banks' customers will also be able to participate via an intermediary (the bank). At present it is possible to enter into a contract denominated in US dollars or Deutsche Mark. Since the beginning of 1999 it has been possible to trade in contracts in euro, and once the next stage has been implemented it will be possible to trade in interest rate contracts.

## 4.2 Summary information on securities markets

### 4.2.1 Main features of different securities markets

In Poland all securities are maintained in book-entry form. Transactions in Treasury and NBP bills are serviced by the relevant systems operated at the NBP, namely SKARBNET (the CRBS) and SEBOP (the RBP).

The settlement of transactions in Treasury and NBP bills for the participants which have current accounts at the DSP takes place according to DVP model I (gross settlement of both the cash and the securities leg).

The NBP acts as a depository and settlement agent for Treasury and NBP bills.

Transactions in other publicly traded securities, in particular Treasury bonds issued by the Minister of Finance and shares, are controlled and serviced by the KPWiG, KDPW, GPW, CTO, brokerage companies, and banks dealing in brokerage.

The KDPW performs depository and settlement functions for the above-mentioned securities. Transactions are settled at the KDPW, and the settlement of related funds is made via Bank Slaski SA. The DVP principle is fulfilled here in line with model 2, i.e. securities are settled in real time on a gross basis, and funds on a net basis.

### 4.2.2 Basic quantitative aspects (basic statistics)

During the first three years of the Polish stock market (1991-93) there was only a slight increase in the number of share issues. Since 1994, however, the growth has been dramatic. In the beginning the increase was exclusively a result of the privatisation of state-owned enterprises, but since 1996 issues of shares in newly established companies have prevailed.

In terms of the number of securities issued, 1997 was a record year. 131 new issues worth PLN 18 billion were deposited at the KDPW. In the same year the number of issues quoted on the over-the-counter market (CTO) increased from 2 to 13.

In December 1997 the total number of issues held in custody at KDPW amounted to 280, including 143 issues quoted on the GPW and 13 quoted on the CTO.

The value of transactions in these securities in 1997 amounted to PLN 69,823 million. Since 1994 the Treasury bond market has been growing steadily by contrast with the equity market, which has been rather more volatile. Investment in Treasury bonds has been increasing continuously, as these securities are deemed a safe and an attractive alternative to bank deposits.

In 1997 municipal bonds and enterprise shares were deposited for the first time.

In December 1997 there were 47 series of Treasury bonds deposited at the KDPW.

The Central Register of Treasury Bills (CRBS) has been operating since 1995, creating a very important securities market. Because the SKARBNET system operates on a gross basis, Treasury bills are the basic source of collateral used by banks to obtain short-term liquidity.

The number and value of transactions have been growing steadily in both the primary and secondary markets. In 1997 the CRBS processed transactions worth PLN 51,631 million (in nominal terms) in the primary market and PLN 279,979 million in the secondary market.

### **4.2.3 Financial intermediaries operating in the different securities markets**

In the Polish financial system only banks and brokerage companies operating in the securities markets can be financial intermediaries.

In the more liquid market serviced by SKARBNET, deposit accounts are held by 76 participants, 46 of which (banks) also maintain deposit accounts for their customers.

The RBP keeps accounts for 47 banks, through which 15 banks service transactions of their customers.

The KDPW has 76 participants, 54 of which hold securities accounts for their customers.

## **4.3 Central Register of Treasury Bills (CRBS)**

### **4.3.1 Major regulations**

The CRBS functions under Regulation of the NBP President No. A/1/95 on the establishment of the Central Register for Treasury Bills of 14 June 1995, and Regulation No. A/2/95 of the NBP President on the introduction of procedures related to the maintenance of depository accounts for Treasury bills by the NBP of 14 June 1995. Transactions in Treasury bills are serviced by SKARBNET and the settlement of funds takes place in SORBNET.

### **4.3.2 Participation in the system**

Depository accounts with CRBS can be held by:

- the National Bank of Poland;
- auction participants, i.e. entities that meet the requirements specified in Regulation No. 23 of the Minister of Finance on the issuance of Treasury bills of 24 April 1995;

- domestic banks;
- branches of foreign banks operating in Poland; and
- the National Securities Depository (KDPW).

Apart from depository accounts, the CRBS maintains issue accounts for the Treasury bill issuer; the account reflects the actual stock of Treasury bills issued.

### **4.3.3 Types of transactions handled**

The system services purchases of Treasury bills in the primary market, purchases/sales in the secondary market and open market operations.

### **4.3.4 Operation of the transfer system**

The CRBS participants file paper instructions for transactions in Treasury bills, including submissions by fax to the NBP. Information from instructions is entered in and automatically processed by SKARBNET. Treasury bills can be registered at the CRBS once payment has been made. SKARBNET generates payment instructions for electronic transmission to SORBNET. Once the instructions have been effected the Treasury bills are finally registered in SKARBNET. After each operating day resulting in changes in a participant's balance on the CRBS account, the participant receives a paper statement.

### **4.3.5 Transaction processing environment**

Information is exchanged between CRBS participants and the NBP on paper, and delivered either personally or transmitted by fax. The processing of transactions in Treasury bills in SKARBNET and the settlement of funds in SORBNET are carried out automatically via servers operating under UNIX and local area networks.

### 4.3.6 Settlement procedures

#### *Primary market – auction service*

An auction participant, purchasing Treasury bills in the primary market, places its offer with the NBP accompanied by an authorisation to debit its current account with the purchase amount, both on its own behalf and on behalf of its customer. If the participant has no account with the NBP, the account of the designated bank is debited; this bank is obliged to ensure that sufficient funds are placed on its account before 2 p.m. on the second day following the auction.

If the offer has been accepted, on the second day following the auction a payment instruction is automatically generated and electronically transmitted to SORBNET. As soon as payment has been settled according to the payment instruction, Treasury bills purchased are registered in the account of the CRBS participant.

#### *Secondary market*

For purchase/sale transactions, CRBS participants holding current accounts with the NBP submit instructions to register the transaction, and, additionally, the purchasing party sends payment instructions to debit its account and credit the seller's account. The instructions can be transmitted between 8 a.m. and 3 p.m. on the transaction day, or between 8 a.m. and 7 p.m. on the day prior to the transaction.

If the information included in both instructions is consistent, and it has been checked that the selling party actually has Treasury bills and can dispose of them, bills are blocked on the transaction day in the selling party's account and payment instructions are transferred to SORBNET. Following the settlement of the payment, the securities are automatically registered in the CRBS.

For transactions between entities of which at least one does not have an account with the NBP, both parties file consistent instructions to register the purchase/sale transaction in Treasury bills not accompanied by any payment instruction. This means that the NBP is not responsible for the performance and correctness of settlement, which is performed outside the NBP via the KIR SA.

In addition, for transactions within the account of one participant, the movement of securities between its own portfolio and the portfolio of its customer is based exclusively on the instruction to register the purchase/sale of bills without the settlement made by the NBP.

#### *Redemption of Treasury bills*

On the redemption day the NBP determines, according to the balance on depository accounts, the amount of securities on each participant's depository account. Redemption is then effected by crediting participants' accounts held with the NBP or, for participants serviced by intermediaries, the accounts of designated banks.

### 4.3.7 DVP arrangements

The solutions adopted in SKARBNET used by the CRBS, and those in SORBNET used by banks, provide for consistency with model I DVP (the securities leg and the cash leg are settled on a gross basis).

### 4.3.8 Credit and liquidity risk

For purchase/sale transactions in Treasury bills a check is made to ensure that the selling party is in possession of the relevant securities and is authorised to dispose of them. On the transaction day bills are blocked in the seller's account and payment instructions transferred to the buyer's account. Following the settlement of the payment instruction the transaction is registered in the CRBS.

The current liquidity of banks is supported by the NBP through the provision of the lombard facility collateralised by Treasury securities and the possibility of using total required reserves held in current accounts with the central bank.

#### **4.3.9 Pricing policies**

The NBP is an issuing agent for Treasury bills. Under the agreement made on 27 June 1995 between the NBP and the Ministry of Finance, activities associated with the service of subsequent issues are free of charge. Each participant is charged a fee for the transmission of statements of depository accounts by fax.

#### **4.3.10 Main projects and policies being implemented**

The scope of the system will be enhanced with the provision of interbank loans collateralised by Treasury securities and open market operations between the NBP and commercial banks based on Treasury securities. The new system will also be capable of facilitating the settlement of instructions at the NBP which are related to the secondary market trade in Treasury bills and involve entities of which at least one has no current account with the NBP.

Solutions allowing for the exchange of data in electronic form will also be adopted.

### **4.4 NBP Bills Register (RBP)**

#### **4.4.1 Major regulations**

The RBP functions under Regulation No. A/1/96 of the NBP President on the introduction of regulation on the sale of, trading in, and opening and maintenance of depository accounts for NBP bills in book-entry form of 15 April 1996. Transactions in NBP bills are serviced by the NBP through the SEBOP system, while the settlement of related funds is effected through SORBNET.

#### **4.4.2 Participation in the system**

The following entities can have accounts with the RBP:

- domestic banks and branches of foreign banks operating in Poland which have current accounts with the NBP – separate sub-accounts should be held for banks' own portfolios and the portfolios of customers; and
- the Bank Guarantee Fund (BFG).

Primary dealers can purchase NBP bills in the primary market. In the secondary market domestic banks and branches of foreign banks operating in Poland can buy them.

Apart from deposit accounts, the RBP also maintains the issuing account, reflecting the total value of bills issued by the NBP.

#### **4.4.3 Types of transactions handled**

The system is used for purchases of NBP bills in the primary market, purchases/sales in the secondary market and the redemption of bills by issuers.

#### **4.4.4 Operation of the transfer system**

RBP participants submit paper instructions (including by fax) to the NBP of transactions in NBP bills. Data from the documents are manually entered in and automatically processed by the SEBOP system. NBP bill transactions can be registered at the RBP provided that prior payment has been made. The NBP Payment System Department (DSP) receives by electronic means payment instructions to debit the current account of the bank concerned; once the instruction has been effected, the final registration of bills is carried out in SEBOP. If the BFG is the payer, the payment instruction is sent in paper form to the Main Branch of Foreign Exchange in Warsaw (GOWD). The BFG account is debited and the final registration of bills is

carried out in SEBOP. After each operational day on which there are changes in the deposit account, RBP participants receive an account statement.

#### **4.4.5 Transaction processing environment**

To exchange information between RBP participants, NBP paper documents are used, either filed personally or transmitted via fax. The processing of transactions in NBP bills and the settlement of related funds takes place automatically via servers operating in UNIX and local area networks.

#### **4.4.6 Settlement procedures**

##### *Primary market – auction*

An auction participant acquiring NBP bills in the primary market places its offer and gives authorisation to debit its current account with the relevant amount. Payment is made on the same day.

If the offer is accepted, a payment instruction is issued and submitted to SORBNET or the to GOWD, which maintains the BFG account. When the payment is made according to the instructions, purchased NBP bills are registered in the RBP deposit account of the participant.

##### *Secondary market*

In the case of transactions between RBP participants, parties send the NBP instructions to register the transaction at the RBP and, additionally, a buyer provides an instruction to debit its own account and credit the seller's account. The documents should be submitted:

- on the transaction day (payment day):

between 8 a.m. and 5 p.m. in cases where domestic banks and branches of foreign banks operating in Poland are the parties; or

between 8 a.m. and 2 p.m. where the BFG is one of the other parties;

- one day before the transaction day:

between 8 a.m. and 7 p.m.

If the information included in both instructions is consistent, and a check has been made to ensure that the seller is in possession of and can dispose of the bills, on the transaction date the bills are blocked in the seller's account and payment instructions are sent to SORBNET or the GOWD. Following receipt of payment the transaction is registered at the RBP.

In the case of a transaction between two portfolios (a bank's own and its customer's) held by a single bank (or a branch of the foreign bank operating in Poland) which holds a deposit account with the RBP, the bank only sends instructions to the NBP for the bills to be transferred between accounts without a payment instruction. This means that the NBP is not responsible for effecting and controlling the accuracy of the funds settlement.

##### *Redemption of NBP bills*

On the day preceding the redemption, the NBP provides information on the amount of securities due on redemption. Redemption is effected by crediting the current accounts of participants in SORBNET or at the GOWD.

#### **4.4.7 DVP arrangements**

Solutions adopted in SEBOP, servicing the RBP, and in SORBNET, servicing banks' accounts, ensure consistency with DVP model I (both the cash and the securities leg settled on a gross basis).

#### **4.4.8 Credit and liquidity risk**

Similarly to the CRBS, the DVP model I approach adopted at the RBP ensures a

maximum reduction of credit risk. Funds settlement is made in central bank money through current accounts of banks held with the NBP, where liquidity is supported by the NBP, and through the BFG's account held with the GOWD.

#### **4.4.9 Pricing policies**

The NBP charges a flat rate for opening a deposit account for NBP bills, and levies a quarterly fixed charge for its maintenance. Moreover, a fee is charged for every fax transmission of the statement of account.

#### **4.4.10 Main projects and policies being implemented**

Ways of facilitating the exchange of data in electronic form are to be adopted in future.

### **4.5 The National Securities Depository (KDPW)**

#### **4.5.1 Major regulations**

The Act on public trade in securities of 21 August 1997 governs the functions of the KDPW. In particular, Chapter 8 of the Act refers to the KDPW, defining its tasks and authorising it to issue two regulations.

The first specifies, in particular:

- the rights and obligations of KDPW participants;
- the manner of securities registration;
- the manner of and procedures related to the settlement of transactions made by participants;
- the functioning of the settlement system;
- the system for supporting liquidity for settlement purposes; and

- calculation methods and the amounts of charges for activities carried out on behalf of participants.

The second regulation specifies the manner of establishing and using the settlement fund providing for an accurate settlement of transactions concluded. Details related to the fund are discussed in Section 4.5.8.

#### **4.5.2 Participation in the system**

The following entities may be participants in the KDPW: issuers of securities and financial institutions, including brokerage companies, banks, the central bank, and other financial institutions whose scope of activities comprises, pursuant to relevant regulations, the maintenance of deposit accounts or securities accounts (e.g. trust funds).

With the consent of and on terms specified by the KPWiG, non-resident entities acting as central securities depositories or settlement agents for transactions in securities may also be participants (currently there are no such participants).

Participation can be direct or indirect. Private sector brokerage firms may be indirect participants, if, because of their low capital and the high participation costs, they do not wish to be – or cannot be – direct participants.

#### **4.5.3 Types of transactions handled**

The KDPW registers different types of operations, which are divided into two major groups:

- operations resulting in a payment, e.g. stock exchange transactions made in the regulated market at the uniform rate system; transactions made outside the regulated market; OTC transactions; public trade in new shares; movements of securities owing to the settlement of Treasury bond auctions; and

- operations other than the above, e.g. transfers of customers' portfolios; conversion of registered shares into bearer shares; and
- operations related to the realisation of issuers' liabilities towards shareholders.

The KDPW also settles transactions made in forward markets.

#### **4.5.4 Operation of the transfer system**

Information passed between the GPW and the KDPW is transmitted directly via a telecommunications network. For communication with the KDPW, the participants can use the electronic system for the distribution of information (ESDI) based on the X-400 electronic post system. Messages transmitted through the ESDI are coded and marked with an electronic signature.

#### **4.5.5 Settlement procedures**

The KDPW settles transactions by moving securities between deposit accounts of its participants and issuing cash transfer orders on net claims to be cleared between bank accounts of participants with the settlement bank, i.e. Bank Slaski SA.

The settlement cycle for transactions made on the GPW and the CTO is three days for stocks. For transactions in bonds and CTO package transactions (transactions with a strictly defined volume of securities) the cycle is two days, and for package transactions at the GPW, primary market transactions, the interbank bond market and transactions in the regulated market, the settlement date is agreed between the parties to each transaction.

Each counterpart that intends to deal in the capital market must hold a current account and securities account with a brokerage firm or a bank. Each GPW or CTO participant

dealing in a given market must have a deposit account with the KDPW and a bank account with the settlement bank.

Customers' instructions are filed with a broker who then transmits them to the GPW or the CTO. In the case of a sale, the broker checks whether the securities to be sold are blocked in the investor's account. On the basis of the orders, purchases/sales transactions are concluded by the GPW participants or the CTO. The GPW and the CTO prepare and send to their members the agreements on the transactions concluded.

An expert in the security concerned fixes the rate and prepares notification of the transactions concluded, which have to be submitted to the broker. The broker sends transaction confirmations to the customer. At the end of the session the GPW submits to the KDPW information on the transactions made; the KDPW calculates net positions to be settled for each participant. With the participants' authorisation the KDPW issues payment instructions for the relevant amounts, which are effected on the accounts at the settlement bank on the same day, according to the type of transaction.

Following confirmation of the possibility of settlement, funds on the accounts in the settlement bank and securities in the accounts of its participants are moved in parallel by the KDPW.

The Clearing House for Derivatives was established by the KDPW to settle forward transactions. Its main function is to calculate what is required to cover the open positions of investors, as well as to settle forward contracts based on individual accounts maintained by the Clearing House where the investors' positions are registered and settlements in cash and derivatives are effected.

The KDPW is the counterpart for each forward transaction. The other counterpart is a participant which settles transactions made in its own name or on behalf of a customer.

#### 4.5.6 DVP arrangements

All transactions made via the KDPW are made in compliance with DVP model 2 (net settlement in the cash leg and gross settlement in the securities leg).

#### 4.5.7 Credit and liquidity risk

In order to protect the settlement of transactions made between the GPW and the CTO special funds have been created to guarantee settlement of transactions in these markets. The special funds comprise a basic and a reserve element. Payments to the basic part are made by participants and are calculated for a two-week settlement period. Following the period they are revised and updated (any excess is returned to and shortages supplemented by participants). For payments into the CTO fund the calculation period is one week.

In the event that funds are insufficient to cover the participants' liabilities, the participants are obliged to pay in additional contributions.

In forward markets the settlement guarantee system comprises the following protection measures which are applied as the need arises:

- an initial settlement deposit consisting of an amount paid in by participants before the market commences activity;
- a guaranteed deposit determined for each participant for the protection of daily settlements based on open positions;
- a settlement fund made up of contributions from each participant calculated as a ratio of the value of transactions settled; if the fund is used up, participants are obliged to make supplementary contributions in proportion to their share;
- own capital of the KDPW.

Two major weaknesses of the system are that a commercial bank, while at the same time quoted on the GPW, acts as a settlement agent, and the lack of a real-time system for the recording of securities.

#### 4.5.8 Pricing policy

Although the KDPW is defined as a non-profit-making institution, given the need to gather considerable funds for investment, related in particular to the information technology infrastructure, the pricing policy of the KDPW is, in fact, profit-oriented. Pursuant to its Regulation, the KDPW charges the following fees and commissions for activities performed on behalf of the participants:

- a flat charge for the conclusion of the membership agreement and the registration of securities;
- an annual charge for direct participation;
- a quarterly charge for the maintenance of securities deposits;
- a monthly operational charges for operations on a participant's account;
- charges related to the settlement of transactions; and
- special charges on other operations carried out by the KDPW.

The amounts of charges are specified in the tariffs, which are set out in an appendix to the KDPW Regulations.

#### 4.5.9 Main projects and policies being implemented

One change to be introduced within the securities settlement of transactions registered at the KDPW is that the NBP is to take over the settlement agent function. The KDPW is to act as a clearing house, holding a

technical account with the NBP, similar to the account maintained by the KIR SA. During settlement sessions KDPW participants will settle via banks' current accounts with the NBP. In addition to other advantages, such an option will shorten the settlement cycle for transactions serviced by the KDPW. Work on this project will probably start this year following the NBP's acquisition of part of the KDPW.

A major project for the KDPW is the establishment of an RTGS system for securities recording, and the linking of this system with the central bank's RTGS system, which will be consistent with the principle of DVP model I. Moreover, the KDPW is aware of the need to establish links with other central depositories for securities, in particular those of EU Member States.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	38,504	38,581	38,609	38,639	38,660
Gross domestic product (PLN billions)	155.8	210.4	288.7	362.8	445.1
Exchange rate vis-a-vis ECU <sup>1)</sup>	2.1213	2.7029	3.1719	3.4234	3.7189

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; PLN millions)

	1993	1994	1995	1996 <sup>1)</sup>	1997 <sup>1)</sup>
Banknotes and coins	9,982.4	12,273.8	19,529.4	23,563.9	27,255.9
Transferable deposits	9,655.0	15,177.8	17,823.5	37,491.9	44,900.5
Narrow money supply (M1)	19,647.4	27,451.6	37,352.9	60,055.8	72,156.3
Transferable deposits in foreign currencies	4,697.5	157.7	261.6	-	-
Outstanding value on electronic money schemes	-	-	-	-	-
of which:					
on card-based products	-	-	-	-	-
on network-based products	-	-	-	-	-

1) In 1996 the methodology for calculating M1 was changed. Since 1996 M1 has included deposits in foreign currencies and transferable deposits of non-banks financial institutions.

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; PLN millions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	3,194.1	3889.2 <sup>1)</sup>	5,766.4	7,181.3	12,761.7
of which can be used for settlement	-	3,287.8	5,025.9	6,543.4	6,598.8
Free reserves held at the central bank	582.4	213.7	216.8	418.0	960.1
Transferable deposits at other institutions	7,330.5	6,036.0	9,192.8	11,601.9	15,088.6

1) Since August 1994 part of the required reserves can be used for payment purposes.

**Table 4a****Banknotes and coins (before re-denomination)***(total value in new zloties, end of year; PLN millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	11,038.9	14,722.3	13,642.7	982.1	-
<i>of which:</i>					
<i>PLN 2,000,000</i>	809.0	1,474.3	1,763.0	222.7	-
<i>PLN 1,000,000</i>	3,943.7	6,459.4	7,159.5	440.0	-
<i>PLN 500,000</i>	4,340.3	4,766.4	4,182.7	207.4	-
<i>PLN 100,000</i>	1,344.0	1,359.1	386.4	45.8	-
<i>PLN 50,000</i>	329.7	368.7	78.9	17.8	-
<i>PLN 20,000</i>	7.2	5.0	6.0	3.8	-
<i>PLN 10,000</i>	159.4	163.6	24.2	14.0	-
<i>PLN 5,000</i>	54.2	69.9	14.3	8.5	-
<i>PLN 2,000</i>	3.0	2.9	0.7	2.7	-
<i>PLN 1,000</i>	30.3	31.4	13.5	8.5	-
<i>PLN 500</i>	9.6	12.1	6.9	5.0	-
<i>PLN 200</i>	1.1	1.1	1.0	1.0	-
<i>PLN 100</i>	5.3	6.3	5.5	5.1	-
<i>PLN 50</i>	1.8	2.0	-	-	-
<i>PLN 20 and 10</i>	0.2	0.2	-	-	-
Total coins issued	30.4	45.3	-	-	-
<i>of which:</i>					
<i>PLN 50,000</i>	0.6	0.6	-	-	-
<i>PLN 20,000</i>	1.1	7.3	-	-	-
<i>PLN 10,000</i>	12.5	14.4	-	-	-
<i>PLN 500</i>	0.6	0.6	-	-	-
<i>PLN 100</i>	0.6	0.6	-	-	-
<i>PLN 50</i>	0.3	0.3	-	-	-
<i>PLN 20</i>	0.9	0.9	-	-	-
<i>PLN 10</i>	0.6	0.6	-	-	-
<i>PLN 5, 2, 1</i>	0.6	0.6	-	-	-
<i>others</i>	12.7	19.4	-	-	-
Banknotes and coins held by credit institutions	1,086.9	2,493.9	-	-	-
Banknotes and coins in circulation outside credit institutions	9,982.4	12,273.8	-	-	-

**Table 4b**  
**Banknotes and coins (after re-denomination) <sup>1)</sup>**

(total value, end of year; PLN millions)

	1995	1996	1997
Total banknotes issued	8,488.9	26,255.9	31,669.2
<i>of which:</i>			
<i>PLN 200</i>	1,406.2	5,105.4	8,365.1
<i>PLN 100</i>	1,912.2	11,727.7	15,524.3
<i>PLN 50</i>	3,137.6	7,199.6	5,700.3
<i>PLN 20</i>	1,198.5	1,211.5	1,068.1
<i>PLN 10</i>	834.4	1,011.7	1,011.2
Total coins issued	706.4	815.6	927.1
<i>of which:</i>			
<i>silver <sup>2)</sup></i>	2.0	4.2	6.4
<i>gold <sup>3)</sup></i>	1.6	4.1	6.3
<i>PLN 5</i>	312.6	338.1	365.9
<i>PLN 2</i>	152.9	177.5	205.5
<i>PLN 1</i>	114.1	127.3	143.9
<i>PLN 0.50</i>	58.1	66.6	76.4
<i>PLN 0.20</i>	29.9	41.4	50.3
<i>PLN 0.10</i>	22.0	33.3	40.9
<i>PLN 0.05</i>	7.9	13.1	17.2
<i>PLN 0.02</i>	3.1	5.4	7.4
<i>PLN 0.01</i>	2.5	4.7	7.0
Notes and coins held by credit institutions <sup>4)</sup>	3,308.6	4,490.4	5,340.3
Notes and coins in circulation outside credit institutions	19,529.4	23,563.1	27,255.9

1) Since January 1995 the NBP has issued new Polish zloties (10,000 old zł = 1 new zł). Old and new Polish zloties circulated in parallel for two years. Since January 1997 old Polish zloties have been withdrawn from circulation. They can be exchanged for new Polish zloties until 31 December 2010.

2) Silver commemorative coins.

3) Gold commemorative coins.

4) Total amount of old and new banknotes and coins in 1995 and 1996.

**Table 5**  
**Institutional framework**

(end of 1997)

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (PLN millions)
Central bank	1	50	24	2,104.5
Credit institutions	88	9,636	18,140	40,453.7
Co-operative banks	1,444	1,883	n.a.	2,342.3
Post Office <sup>1)</sup>	1	7,697	-	-
<b>TOTAL</b>	<b>1,534</b>	<b>19,266</b>	<b>18,164</b>	<b>44,900.5</b>
Branches of foreign banks <sup>2)</sup>	2	2	n.a.	n.a.
of which EU banks	2	2	n.a.	n.a.

1) The Post Office does not hold deposits for customers.

2) Other foreign banks are established as subsidiaries and act as independent banks.

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	3	3	5	12	14
Number of machines	91	118	214	523	1,440
Volume of transactions (thousands)	210	358	1,070	7,990	25,528
Value of transactions (PLN millions)	41.09	59.96	88.29	962.20	4,499.75
<b>EFTPOS terminals</b>					
Number of networks <sup>1)</sup>	1	2	2	2	2
Number of points of sale	6,800	12,347	19,352	27,884	38,702
equipped with EFTPOS terminals <sup>2)</sup>	174	389	1,227	2,580	4,581
Volume of transactions (thousands) <sup>3)</sup>	610	882	1,510	2,530	5,093
Value of transactions (PLN millions) <sup>3)</sup>	165	272	441.6	751.1	1,354.8
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (PLN millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (PLN millions)	-	-	-	-	-

1) PolCard and the Centre of Cards and Cheques PKO SA.

2) The other points of sale are equipped with imprinters.

3) Figures include manually processed transactions (via imprinters).

**Table 7**  
**Number of payment cards in circulation <sup>1)</sup>**  
*(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	36.09	75.93	251.14	713.16	1,668.39
Cards with a debit/credit function	6.17	21.93	107.64	425.46	1,066.46
<i>of which:</i>					
<i>cards with a debit function</i>	0.63	7.13	43.21	280.36	704.04
<i>delayed debit cards</i>	5.54	14.56	55.70	125.35	317.97
<i>cards with a credit function</i>	-	0.24	8.73	19.76	44.45
Cards with a cheque guarantee function	0.26	0.21	0.29	153.05	378.08
Retailer cards	-	-	-	-	-
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.

**Table 8**  
**Payment instructions handled by selected interbank funds transfer systems:  
 volume of transactions**  
*(millions)*

	1993	1994	1995	1996	1997
SORBNET (RTGS)	0.12	0.25	0.30	0.37	0.45
Credit transfers	0.12	0.25	0.30	0.37	0.45
Systems of KIR SA	53.19	109.72	141.55	179.15	217.13
ELIXIR	-	0.36	2.43	6.82	13.73
Credit transfers	-	0.36	2.43	6.82	13.73
SYBIR	53.19	109.37	139.13	172.33	203.40
Credit transfers	50.12	102.96	132.19	165.02	196.61
Cheques	3.08	6.41	6.94	7.31	6.78

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(PLN billions)*

	1993	1994	1995	1996	1997
SORBNET (RTGS)	318.00	809.97	1,306.82	1,926.94	3,014.45
Credit transfers	318.00	809.97	1,306.82	1,926.94	3,014.45
Systems of KIR SA	209.23	477.94	683.92	954.30	1,380.62
ELIXIR	-	3.86	32.97	124.07	413.19
Credit transfers	-	3.86	32.97	124.07	413.19
SYBIR	209.23	474.08	650.95	830.22	967.44
Credit transfers	202.36	460.51	634.76	812.64	950.45
Cheques	6.87	13.57	16.19	17.59	16.98

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
SKARBNET	76	46	68
Banks	67	46	67
Insurance companies	1	-	-
Others	8	-	1
SEBOP	48	15	48
Banks	47	15	47
Others	1	-	1
KDPW	76	54	-
Banks	46	27	-
Brokerage houses	27	27	-
Insurance companies	1	-	-
Others	2	-	-

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
SKARBNET	-	-	38.76	43.08	78.29
Treasury bills	-	-	38.76	43.08	78.29
SEBOP	-	-	-	2.22	5.92
NBP bills	-	-	-	2.22	5.92
KDPW	-	5,111.99	2,095.45	2,836.75	4,817.87
Shares	-	4,902.29	2,038.54	2,355.02	4,146.64
Bonds	-	30.14	47.83	351.34	347.83
Mass Privatisation Programme Certificates	-	-	-	105.47	301.00
Others	-	179.56	9.09	24.93	22.38

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(PLN billions)*

	1993	1994	1995	1996	1997
SKARBNET	-	-	31.92	224.31	380.68
Treasury bills	-	-	31.92	224.31	380.68
SEBOP	-	-	-	36.03	122.10
NBP bills	-	-	-	36.03	122.10
KDPW	-	28.25	30.92	61.35	108.91
Shares	-	24.90	16.26	36.31	69.82
Bonds	-	3.24	14.66	21.66	31.50
Mass Privatisation Programme Certificates	-	-	-	3.35	7.54
Others	-	0.11	0.01	0.02	0.05

**Table 13****Nominal values registered by securities settlement systems***(end of year; PLN billions)*

	1993	1994	1995	1996	1997
SKARBNET	-	-	16.26	27.07	32.26
SEBOP	-	-	-	12.53	14.37
KDPW	2.35	5.78	14.15	26.94	36.70

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions <sup>1)</sup>**

	1993	1994	1995	1996	1997
Cheques issued	3.1	6.4	6.9	7.3	6.8
Travellers' cheques	0.1	-	0.2	0.3	0.3
Payments by debit and credit cards	0.6	0.9	1.5	2.5	5.1
Paper-based credit transfers	50.1	103.0	132.2	165.0	196.6
Paperless credit transfers	-	0.4	2.4	6.8	13.7
Money orders	0.4	0.6	0.7	0.9	1.0
Direct debits	-	-	-	-	-
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others <sup>2)</sup>	129.6	133.2	131.6	137.2	130.5
<b>TOTAL</b>	<b>183.9</b>	<b>244.5</b>	<b>275.5</b>	<b>320.0</b>	<b>354.0</b>

1) Interbank transfer systems, excluding SORBNET.

2) Postal instruments: postal transfers (between individuals who do not have bank accounts) and pension disability allowances.

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions <sup>1)</sup>**

(PLN billions)

	1993	1994	1995	1996	1997
Cheques issued	6.87	13.57	16.19	17.59	16.98
Travellers' cheques	0.01	0.01	0.05	0.07	0.11
Payments by debit and credit cards	0.17	0.27	0.44	0.75	1.35
Paper-based credit transfers	202.36	460.51	634.76	812.64	950.45
Paperless credit transfers	-	3.86	32.97	124.07	413.19
Money orders	18.88	29.09	42.61	59.89	110.57
Direct debits	-	-	-	-	-
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	n.a.	n.a.
<b>TOTAL</b>	<b>228.29</b>	<b>507.30</b>	<b>727.02</b>	<b>1,015.01</b>	<b>1,492.65</b>

1) Interbank transfer systems, excluding SORBNET.

**Table 16**  
**Participation in S.W.I.F.T. by domestic institutions**

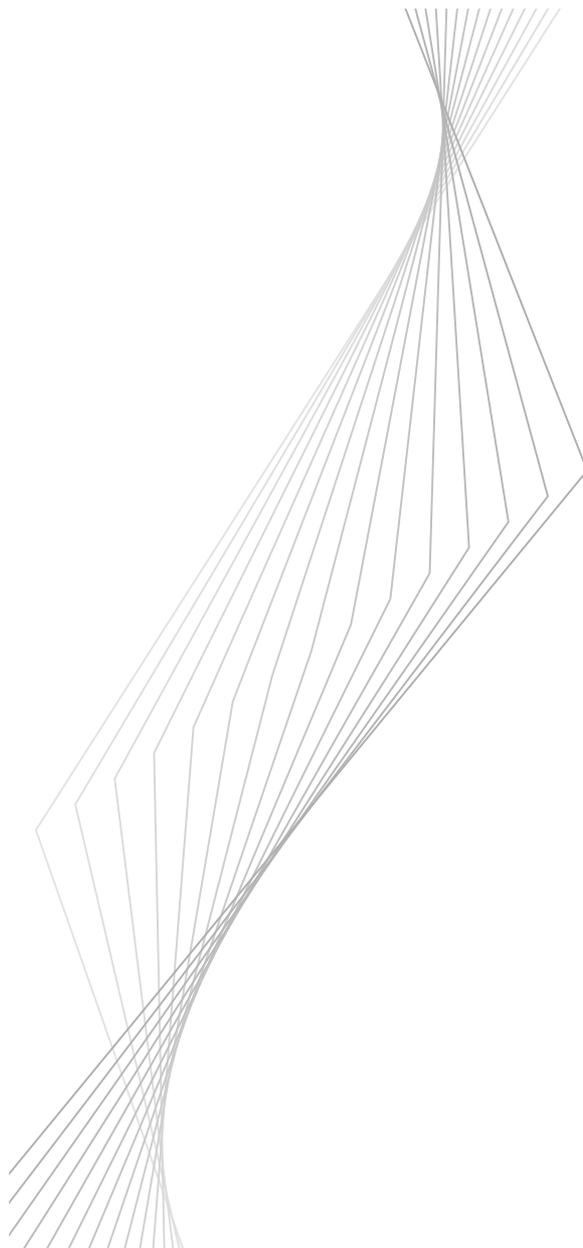
	1993	1994	1995	1996	1997
S.W.I.F.T. users	29	34	39	44	49
<i>of which:</i>					
<i>members</i>	25	30	33	36	37
<i>sub-members</i>	4	4	6	8	10
<i>participants</i>	-	-	-	-	2
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
members	2,091	2,412	2,693	2,874	2,969
sub-members	1,797	2,025	2,259	2,404	2,590
participants	98	188	277	354	606

**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	1,417,543	1,952,539	2,610,890	3,632,414	4,331,308
<i>of which:</i>					
<i>category I</i>	817,406	1,069,184	1,380,767	1,852,636	1,977,735
<i>category II</i>	287,185	465,951	646,982	872,270	1,077,815
<i>sent to/received from</i>					
<i>domestic users</i>			488,254	886,817	946,795
Total messages received	1,536,612	2,064,139	2,660,242	3,455,810	3,922,272
<i>of which:</i>					
<i>category I</i>	801,997	1,059,570	1,379,174	1,786,521	1,886,103
<i>category II</i>	52,444	85,257	109,608	137,423	162,083
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556



EUROPEAN CENTRAL BANK



**Romania**

**August 1999**

Romania

RO

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**List of abbreviations**

<b>ABVB</b>	Bucharest Stock Exchange Association – <i>Asociatia Bursei de Valori Bucuresti</i>
<b>ANSVM</b>	National Association of Securities Companies – <i>Asociatia Nationala a Societatilor de Valori Mobiliare</i>
<b>BNR</b>	National Bank of Romania – <i>Banca Nationala a Romaniei</i>
<b>BVB</b>	Bucharest Stock Exchange – <i>Bursa de Valori Bucuresti</i>
<b>CEC</b>	Savings Bank – <i>Casa de Economii si Consemnatiuni</i>
<b>CIP</b>	Payment Incidents Bureau – <i>Centrala Incidentelor de Plati</i>
<b>CNVM</b>	National Securities Commission – <i>Comisia Nationala de Valori Mobiliare</i>
<b>DECONT-BNR</b>	National Payment System – <i>Sistemul National de Plati si Informare Bancara</i>
<b>RASDAQ</b>	<i>Romanian Association of Securities Dealers Automated Quotation</i>
<b>ROL</b>	Romanian leu – the domestic currency of Romania
<b>SNCDD</b>	National Securities Clearing, Settlement and Depository Company – <i>Societatea Nationala de Compensare, Decontare si Depozitare pentru Valorile Mobiliare</i>

## Introduction

Since 1995 the payment system in Romania has undergone a broad process of modernisation, improvement and diversification, developed in accordance with the fundamental changes in the Romanian financial and banking system that have occurred during this period and in accordance with the implementation of monetary policy goals. One result has been a gradual shift in the relative importance of the various payment services and instruments in the Romanian banking industry.

The current Romanian payment system is the result of the enforcement between 1992 and 1998 of a homogeneous legal framework, based on the new banking laws. These new laws, inter alia, give commercial banks and the State Treasury the right to issue and manage the payment media and explicitly designate the central bank (i.e. the National Bank of Romania (BNR)) as the regulatory body in the area of payments.

Since April 1995, when the new payment system started to operate, the BNR, which plays the leading role in the Romanian payment system, has constantly promoted the full integration of all participants into this system in order to increase competition among them, and thus raise the quality of banking payment services and increase the

use of central bank money as a source of certainty and stability for the whole financial system.

In order to achieve these goals, the BNR has focused on:

- the regulation of payment instruments, interbank funds transfers and final settlement procedures;
- the operational procedures of the interbank transfer and settlement subsystems and their integration within the payment system as a whole;
- the management of the payment system; and
- risk monitoring and prevention measures in relation to the payment system.

The most important result of these major measures is the present sole interbank payment system, the National Payment System (DECONT-BNR), which is fully owned and managed by the central bank. All commercial banks licensed by the BNR as well as other financial institutions that provide banking intermediation are participants, and all have equal rights and obligations.

## I Institutional aspects

### I.1 General legal aspects

In 1998 a new legal framework related to banking activities came into force in Romania. It consists of Law No. 58/1998 on Banking, Law No. 101/1998 on the Statute of the National Bank of Romania and Law No. 83/1998 on Banking Bankruptcy.

Accordingly, banks may, *inter alia*, provide payment services as a regular part of their business.

In order to protect the interests of consumers, the legal framework stipulates that all funds transfer systems, as well as all paper-based payment instruments, shall be licensed by the BNR prior to their introduction or issuance.

Interbank netting and settlement arrangements are also subject to the authorisation of the BNR. The Law on Banking stipulates that “in order to strengthen cashless payments and to reduce the cost of banking activities, the BNR can license, on demand, any legal entity to act as an interbank clearing house”.

The use of paper-based debit instruments (cheques, bills of exchange and promissory notes) and the discharge of financial obligations are governed by the provisions of the Civil Code and other specific laws based on the Geneva Convention.

The Law on Banking Bankruptcy sets out the conditions according to which a bank becomes insolvent, and does not stipulate a “zero-hour rule”. The Law states that the court decision only becomes effective from the moment of notification to the BNR. When such a situation occurs, the central bank has an obligation to close the current account of the bank declared insolvent. The provisions of the Law do not explicitly state how the claims arising from a netting or a settlement arrangement should be solved, but they allow the BNR to regulate this matter.

The legal framework (Law No. 88/1997 concerning the establishment and functioning of the Deposits Insurance Fund in the Banking System) ensures consumer protection by reimbursing bank customers with a certain amount of their deposits when a bank becomes insolvent.

At the end of 1998 this maximum reimbursement was around ROL 31 million (approximately ECU 2,500).

Two institutions that do not fall within the scope of the Law on Banking – the State Treasury and the Romanian Post plc – are nevertheless allowed to provide payment services. According to Law No. 83/1996 on Postal Services and to Government Decision No. 371/1998, the Romanian Post plc can provide domestic and international payment services such as postal money orders (wire or paper-based) and foreign exchange operations.

The structure and range of activities of the Savings Bank (CEC) are defined by Law No. 66/1996 on the reorganisation of the Savings Bank as a public limited company. Although this Law allows the CEC to carry out the whole range of banking activities, it entitles this institution to a large degree of autonomy with regard to central bank powers of supervision and control.

According to Law No. 109/1996 on the Organisation and Functioning of Credit Co-operatives, credit co-operatives are allowed to operate in Romania. Law No. 58/1998 on Banking stipulates that the provisions of the aforementioned laws on the CEC and on credit co-operatives shall be modified in order to allow the BNR to supervise the activity of these institutions, which have to comply with the regulations of the central bank. From the payment systems point of view, this means that, in the near future, credit co-operatives will have to hold

a current account with the BNR and follow the rules of DECONT-BNR.

## **1.2 Financial intermediaries that provide payment services**

The main providers of payment services are the commercial banks, the BNR, the State Treasury and the Romanian Post plc.

### *Commercial banks*

In recent years the banking system has expanded, partly as a result of the increasing demand for payment services. In 1998 the banking system comprised 36 commercial banks – Romanian legal entities with 3,804 branches (including 2,247 which belonged to the CEC) and 11 branches of foreign banks (including eight from the European Union (EU)). Of the total number of banks, seven were state-owned, 16 were funded by a mixture of domestic and foreign capital, five were owned by private domestic capital and eight were funded by private foreign capital. The legal framework of the payment system treats Romanian and foreign commercial banks on equal terms.

A process of privatisation is under way at two of the most important state-owned banks, BancPost and Banca Romana pentru Dezvoltare.

Since 1997, owing to the enforcement of the Law on the Reorganisation of the Savings Bank as a public limited company, the CEC has started to reorganise its activities in order to offer cashless payment services to its customers. Since it has always been regarded as a bank, the CEC holds a current account with the BNR and is a participant in the operations of DECONT-BNR with equal rights and obligations.

### *State Treasury*

On the basis of Law No. 72/1996 regarding Public Finance, all 290 branches of the State Treasury operate the accounts of public entities, which involves making payments ordered by the latter and collecting the revenues of the State from taxpayers.

### *The Romanian Post plc*

The Romanian Post plc has neither the status of a credit institution nor the right to administer giro accounts; therefore, for the time being, the payment services it provides are limited to cash-to-cash transfer services for individuals (including the cash payment of pensions). Postal money orders are processed and settled within the Romanian Post plc's own network. In the near future, in order to increase cashless payment transactions by individuals, the integration of postal and banking networks will be of great importance.

## **1.3 The role of the central bank**

### **1.3.1 General responsibilities**

The National Bank of Romania (BNR) is the central bank of Romania, its main goal being to ensure the stability of the domestic currency in order to contribute to the stability of prices. To accomplish this goal, the BNR draws up, implements and bears responsibility for monetary policy as well as foreign exchange, credit and payment policies. It also has the role of licensing and supervising the banking system and actively participates in the general state policy to develop a market-oriented financial system.

The independence of the BNR is laid down in the Law on the Statute of the National Bank of Romania, which states that the "the Governor of the BNR, on behalf of the Board of Administration, presents to the Parliament the annual report of the BNR" and that "in order to accomplish its main goal, the BNR's opinion will be requested by the public

authorities before the issue of regulations related to monetary policy, banking activity, foreign exchange policy and public debt. When the central public administration budgets are drafted, the BNR shall provide advice as regards the requirements that public sector loans have to fulfil.”

The BNR is the sole authority that issues banknotes and coins accepted as legal tender in Romania. It has its own system for designing and printing banknotes, for replacing worn-out or damaged ones, and for detecting counterfeits and forgeries.

#### *Statutory responsibilities*

The provisions of the Law on the Statute of the National Bank of Romania stipulate that the central bank shall open a current account for each bank and each branch of a foreign bank licensed to operate in Romania.

The BNR can open settlement accounts and other accounts for resident interbank clearing houses, other central banks and non-resident international institutions.

The BNR is designated by law to hold in its books the State Treasury general current account, opened on behalf of the Ministry of Finance. The functioning of the State Treasury general current account and the way the operations are recorded in it are laid down in conventions agreed between the BNR and the Ministry of Finance.

In 1994 the payment system reform was promoted and the co-ordinating role was assumed by the BNR according to the provisions of the legal framework in force at that stage and in compliance with the international trend towards strengthening the role of central banks in payment systems management.

In 1994 the involvement of the BNR as the only interbank payment services provider was determined by:

- the urgent need to improve the efficiency and quality of the activities in this sector (i.e. the ability to make money circulate rapidly and cost-effectively); and
- the important task of achieving the financial reliability of the payment system (i.e. the ability to minimise financial risks associated with money circulation).

Apart from its functions as a final settlement agent and overall regulatory body for payments in Romania, the Law allows the BNR to organise clearing houses and operate other intermediary settlement arrangements (e.g. settlement on a gross basis) alone or in co-operation with the banking system.

The powers given to the BNR (Law on the Statute of the National Bank of Romania, Article 23) enable it to play a controlling and guiding role in the payment systems area, carrying out the following functions:

- regulation of the payment system;
- direct provision of clearing and settlement services to the whole banking sector;
- oversight of the compliance of the banking sector with the payment systems regulations;
- supervision and oversight of the functioning of other payment systems of national importance;
- monitoring and prevention of payment system risks.

#### *Supervision and audit*

The Law on Banking designated the BNR as the authority responsible for supervising all banks, based on their prudential reports, and for deciding when to place a bank under either the special supervision procedure or the special management procedure.

### **1.3.2 Provision of processing and settlement facilities**

#### *Provision of processing facilities*

Since 1995 the BNR has operated a new payment system based on the following principles:

- the daily settlement of all interbank payments in commercial banks' current accounts held with the BNR, and a drastic reduction in the possibilities for the use of correspondent accounts between banks;
- the channelling of payments in different payment subsystems, taking into account the category to which the payers and payees belong and the amounts of these payments;
- the establishment within each payment subsystem of a compulsory set of rules for all commercial banks regarding the submission, exchange and settlement of payment instruments, targeting an increase in the speed of the operations, a decrease in the daily liquidity necessary to cover all interbank payments and a limitation of payment failure risks;
- the provision of greater transparency and protection for commercial banks' customers regarding the time needed to complete transactions and accompanying charges for their processing by the central bank; and
- the integration of all payment subsystems into a unique payment system co-ordinated and monitored at the national level by the BNR.

The implementation of the new operational procedures for the payment system led to the settlement of all interbank payments in central bank money and also to an increased turnover of funds through the commercial banks' current accounts. Consequently, all the subsystems of DECONT-BNR settle daily over ROL 8,000 billion (approximately

ECU 800 million), and annually DECONT-BNR finally settles more than five times the gross domestic product of Romania. In 1998 the total value of the payments ultimately and finally settled by the BNR through DECONT-BNR was almost ROL 2,109,000 billion (approximately ECU 210 billion, at an average exchange rate of ROL 10,000 to ECU 1).

#### *Provision of settlement and credit facilities*

Since 1995 the BNR has been carrying out its role in controlling the liquidity, credit and systemic risks through the provision of current account and refinancing services and the implementation of specific pricing policies.

According to its statute, the BNR must provide current account services for all commercial banks which it has licensed.

Under the present regulations the compulsory reserves are held by each commercial bank on its current account.

As a result of these legal provisions, the current accounts are used by commercial banks both to facilitate interbank settlements and to keep their compulsory reserves with the BNR.

The BNR manages the centralised depository for Treasury bills and also keeps in its books the current account of the State Treasury.

The BNR acts as the final settlement agent for the Romanian Association of Securities Dealers Automated Quotation (RASDAQ) and the Bucharest Stock Exchange markets, for the domestic-currency denominated payment card operations (VISA, Europay) and for the Deposits Insurance Fund.

Within the main legal framework, the Law on the Statute of the National Bank of Romania (Article 20) states that the BNR is allowed to grant short-term credits to banks; these credits must be fully collateralised with Treasury bills, bills of exchange and

promissory notes, warrants and call funds taken by the BNR. The granting of overdrafts by the BNR is forbidden. This provision also extends to intraday overdrafts.

In accordance with these legal provisions, the BNR allows the commercial banks to use its credit facilities only if the operations they wish to conduct also meet the goals of its monetary policy. In order to fulfil this objective, it is envisaged that a new regulation will be enforced. It concerns open market operations, of which repo agreements constitute the most important category. Commercial banks will be allowed to use the central bank credit facilities in order to settle the whole range of their daily payments.

The BNR is allowed to grant uncollateralised short-term credits, within certain legally established limits, to the State Treasury in order to cover any imbalances in its general current account. The interest due on these credits equals the daily average of the interest rate for interbank deposits. The current debt of the State Treasury with the BNR cannot be more than twice the amount of the capital and reserve fund of the BNR, as stipulated in the provisions of Article 29 of the Law on the Statute of the National Bank of Romania.

#### *Pricing policies*

At present, the BNR pricing policy for the payment system provides for the recovery of running costs and consists of a fixed fee per transaction.

Since 1995 charges have also been imposed to penalise commercial banks which disregard the compulsory provisions of the clearing procedures related to the maximum time periods for the paper-based payment instruments circuits.

### **1.3.3 Monetary policy and payment systems**

For the conduct of its monetary policy operations, the BNR uses specific means and

procedures such as money market transactions and reserve requirements for liquidity management. On behalf of the State, the banks or any other eligible legal entities, the BNR is allowed to buy, sell and conduct transactions in government securities, claims and other assets and may call funds from banks in order to fulfil the monetary policy targets.

The BNR establishes the limits of the reserve requirements that banks must keep on their current accounts held with it. The reserve requirements are established as a monthly average on the basis of a rate periodically set by the BNR according to its monetary targets. This rate is applied, once a month, to the level of the banks' declared liabilities, such as deposits and other types of debt related to individuals and legal entities. The daily level of the reserves may fluctuate between 40% and 130% of the average level required over the month. For the reserve requirements, the BNR pays a very low monthly interest rate. If the level of the monthly average balance on the current account equals or exceeds the established level of the reserve requirements, the interest rate is calculated and paid based on the latter level. When the level of the monthly average balance of the current account is less than the established level of the reserve requirements, the interest rate is calculated and paid on the basis of the former level.

The BNR determines the exchange rate policy and the foreign exchange regime in Romania and oversees compliance with the latter.

The interest rate policy mainly consists of two elements: establishing the official rates and pursuing a liquidity policy. By setting up and publicly announcing its rates, the BNR indicates the targeted movement of short-term interest rates. The BNR can also influence money market rates by means of its liquidity management. In this regard it intervenes in the money market and in the foreign exchange market on a daily basis, either meeting the need for liquidity or absorbing the liquidity surplus.

Banks can also deposit cash in excess of the reserve requirement limit with the BNR. For these deposits the BNR pays an interest rate that is negotiated with each banking institution separately, according to its monetary targets.

All the monetary policy operations performed by the BNR with the commercial banks are settled, on a gross basis, through DECONT-BNR. Owing to the permanent surveillance of interbank flows, DECONT-BNR provides the central bank with a source of information on a daily basis and with a powerful and effective tool for both controlling the access of commercial banks to the refinancing facilities of the central bank and minimising the liquidity, credit and systemic risks.

#### ***1.3.4 Main projects and policies being implemented***

Since 1991 the BNR has taken major systematic steps to prepare for its decisive operational involvement in the reform of the payment system, which is an important part of the overall modernisation of the Romanian economy and society.

The regulation and standardisation of the most important payment instruments and the regulation concerning surveillance procedures for the risks associated with the use of these payment instruments, according to international standards, led to the reintegration of cheques, payment orders, bills of exchange and promissory notes as payment instruments in the activity and culture of commercial banks, individuals and legal entities. In addition, a legal framework intended to ensure the sound evolution of domestic currency-denominated card transactions was set up.

These measures resulted in increasing confidence among customers in cashless payment instruments at the national level and also in an increase in the creditworthiness of the Romanian banking system. Since 1994:

- regulations concerning payment instruments and the surveillance of the risks associated with the use of these payment instruments have been issued, enforced and constantly updated by the BNR;
- a database has been set up for specimens of the payment instruments newly issued by commercial banks with the prior approval of the BNR; and
- all the main payment instruments – cheques, payment orders, bills of exchange, promissory notes – and their interbank settlement circuits have been standardised, aimed mainly at making these circuits function more rapidly and increasing the turnover of funds.

As regards interbank funds transfers procedures, the BNR regulated and determined the setting-up of more specialised payment subsystems with distinctive operational procedures, which cover the following:

- multilateral clearing of low-value paper-based interbank payments;
- bilateral clearing of State Treasury low-value collections and payments;
- bilateral clearing of BNR payments and of the commercial banks' payments to the BNR, including cash transactions;
- large-value funds transfers ordered by the commercial banks' customers and by the State Treasury;
- the interbank money market, interbank foreign exchange market, and interbank Treasury bills transactions in the primary market recorded in the commercial banks' current accounts;
- final settlement of the RASDAQ and the Stock Exchange market;

- final settlement of domestic currency-denominated card transactions;
- commercial banks' deposits with the central bank;
- crisis management, i.e. special settlement procedures for commercial banks which are likely to become insolvent.
- the development of an automated clearing house network, enabling the electronic exchange of payment instruments between credit institutions.

#### **1.4 The role of other private and public sector bodies**

Other public sector organisations worth mentioning are the Romanian Bankers' Association and the Deposits Insurance Fund.

In the process of reforming the payment system, the BNR has constantly been developing its dialogue with the Romanian Bankers' Association, a professional syndicate whose members are all the banks and branches of foreign banks licensed to operate in Romania.

The Deposits Insurance Fund was established by Law No. 88/1997 for the purpose of guaranteeing commercial banks' customers (individuals only) the reimbursement of a specific maximum amount of their deposits (reviewed twice a year), in the event of a bank failure. Membership of the Deposits Insurance Fund is compulsory for all banking institutions operating in Romania.

By regulating the final settlement of banking transactions, between 1995 and 1998, the BNR laid the foundations and developed a unique centralised bookkeeping system for the commercial banks' current and deposit accounts held with the BNR. Owing to this centralised system, it was possible to set up a statistical database recording all the money flows in the national economy, which can be used in the daily process of analysing and forecasting the macroeconomic and monetary ratios.

New projects which are being considered for implementation in the near future in DECONT-BNR are:

- the introduction of a large-value payment system based on real-time gross settlement procedures, according to the EU guidelines; and

## **2 Payment media used by non-banks**

### **2.1 Cash payments**

The BNR, through its 41 branches, circulates banknotes and coins and ensures that the needs of the public are met in both quantitative and qualitative terms. Banknotes and coins are the predominant retail payment media (61.20% of MI, as at the end of August 1998).

The amount of MI in Romania at the end of August 1998 was ROL 17,906.3 billion (approximately ECU 1.8 billion), of which currency outside banks amounted to ROL 10,959 billion (approximately ECU 1.09 billion).

In 1998 in Romania, there were in circulation banknotes with denominations of ROL 500, 1,000, 5,000, 10,000, 50,000 and 100,000 coins with denominations of ROL 1, 5, 10, 20, 50 and 100.

### **2.2 Non-cash payments**

The volume of non-cash payments has constantly increased during the past years owing to the establishment of DECONT-BNR, which processes transactions in a transparent manner and more rapidly.

### 2.2.1 Credit transfers

The payment order is the most commonly used cashless payment instrument in Romania. The legal framework for payment orders, issued by the BNR, comprises several regulations concerning the use of payment orders, the discharge of financial obligations and the standardisation of paper-based payment orders. The provisions of these BNR regulations stipulate that a credit transfer may be performed either in paper-based form or electronically. For the time being all interbank payment orders are paper-based and only approximately 1% of the volume of intrabank payment orders is processed electronically.

Approximately 34,000 standardised paper-based interbank payment orders are issued daily, enterprises being the main users of credit transfers.

In accordance with a convention agreed between the BNR and the Ministry of Finance, the State Treasury and Social Insurance Budget, payments and collections are performed by means of a special regulated and standardised form of payment order.

The interbank circuit for the credit transfer is regulated by special rules taking into account the value of payment orders: low-value (less than ROL 500 million – approximately EUR 50,000) payment orders are multilaterally cleared and large-value (more than ROL 500 million) payment orders are processed on a gross basis. Both procedures provide for the settlement of transactions in the commercial banks' current accounts (held with the BNR); the execution of payments within predetermined time-limits and information for customers related to the maximum time needed to execute each individual credit transfer.

At present all paper-based payment orders with a value of less than ROL 500 million (retail payments) used for interbank payments are cleared and settled in the 42 BNR interbank clearing houses. The average time between the value date and the final

settlement of these payment orders is 3.67 days. All interbank payment orders with a value higher than ROL 500 million (wholesale payments) are regarded as large-value payment instruments and are settled, through the BNR network, on the day on which they are issued.

### 2.2.2 Cheques

Cheques are regulated by Law No. 59/1934 on Cheques (based on the Geneva Convention) which was re-enforced, with slight alterations, in September 1994. Pursuant to this Law, at the end of 1994 the BNR issued regulations concerning the standardisation of this payment instrument.

Compared with payment orders, cheques are used less (in 1997 9,151 interbank cheques were settled, on average, each day).

All crossed cheques – issued by individuals or legal entities or issued for the benefit of a person who is a customer of a commercial bank – are cleared on a multilateral basis, unless the drawee bank is the BNR.

Those cheques for which the drawee bank is the BNR are bilaterally netted and settled in the current accounts of the commercial banks held with the central bank.

The interbank circuits for cheques and the maximum time periods within which the banks must make the funds available to payees are regulated by the BNR.

The time it takes the banks to credit funds to payees still remains longer than that for payment orders, because cheques are still perceived by banks as a risky means of payment, involving higher administrative costs in order to prevent fraud or overdrafts. The average gap between the value date and the final settlement of a debit instrument is 5.16 days.

### 2.2.3 Direct debits

Although direct debits are regulated by the BNR, this payment instrument is still not widely used in interbank circuits. Some branches of foreign banks offer their customers intrabank services based on this means of payment.

### 2.2.4 Payment cards

Domestic currency-denominated cards are issued by a small number of commercial banks, under the VISA or Europay logo, to be used by their customers – either individuals or legal entities.

Card-based schemes in Romanian leu are rather new in Romania. This business dates from 1992 when six commercial banks became VISA members and started accepting transactions made by using cards issued in foreign countries.

#### *Debit cards*

In Romania, cards denominated in Romanian leu have been issued since 1997 and, for the time being, there are only debit cards with either a dual function, i.e. cash withdrawal and debit function at POS, or a single function, namely cash withdrawal.

All transactions are cleared (authorised and processed) by VISA or Europay processing centres. Transactions to be cleared are transmitted electronically to VISA and Europay processing centres either by banks or by ROMCARD – a joint stock company established by five major banks – which specialises in collecting and transmitting these transactions. The BNR is the final settlement agent for these transactions based on the agreements signed both with VISA and Europay.

#### *Prepaid cards*

As regards prepaid cards, there is only one operator in the market, ROMTELECOM. It started to issue telephone cards in 1993. For the time being, no statistics on prepaid cards are available.

#### *ATMs and POS networks*

In Romania there are no interbank networks or service providers for ATMs or POS. For the time being, ATMs have only a cash dispenser function. The management of ATMs is organised within the issuing banks' own networks; the same is true for the POS devices that banks supply to the business sector.

### 2.2.5 Postal instruments

The Romanian Post plc operates a special category of payment instruments – the postal money order, which is used only for cash transfers, at the request of individuals or businesses, between different Post Office branches. The processing of postal money orders was renewed with a special offer giving the option of an instant (real-time) transfer. As the Romanian Post plc does not hold accounts for customers, the funds transferred by this means can only be withdrawn in cash.

### 2.2.6 Other payment instruments

Banks may receive and process bills of exchange and promissory notes pursuant to Law No. 58/1934 on Bills of Exchange and Promissory Notes (based on the Geneva Convention), which was re-enforced, with slight amendments, in September 1994.

These two negotiable papers and payment instruments are still not widely used by banks' customers owing to the absence of an efficient financial infrastructure needed to strengthen public confidence. For instance, during 1997 only 12,267 bills of exchange and

promissory notes were issued and settled in the entire country. Bills of exchange and promissory notes are processed, upon maturity, as debit payment instruments and settled after their submission to one of the BNR clearing houses.

### 2.3 Recent developments

The BNR and the banking community are developing a dialogue in order to promote the use of direct debits and standing orders on a wider basis.

SNP PETROM (the national state-owned company for oil and gas distribution) has recently submitted to the BNR an application to be licensed to implement a network for prepaid cards to be used for the payment of purchases at its petrol stations.

The Payment Incidents Bureau (CIP), which became operational in February 1997, after the BNR had issued the corresponding regulation, is the national centre for data exchange and administration regarding payment incidents involving cheques, promissory notes and bills of exchange. This national centre is meant to increase settlement discipline, enforce the existing regulations, encourage customers to use cashless payments and evaluate and limit the risks related to bad debts.

Major payment incidents for cheques require the bank to suspend the banking activity of the account holder responsible (a one-year ban on issuing cheques). Only the declaring bank may revoke the suspension of banking activity when the ban has been requested as a result of a mistake. This is the only legal possibility for a registered person to be removed from the "black list".

Data transmission to the CIP is carried out electronically through the interbank communications network connecting the BNR headquarters with all the banks' headquarters and through the BNR's internal network. The inputting of the data into the system is carried out by the reporting institutions (bank branches, bank headquarters and BNR branches).

Data on payment incidents collected by the CIP are managed by means of national files assigned to each payment instrument. All major payment incidents (forgeries, unpaid debit instruments as a result of insufficient available funds, falsely dated cheques issued, etc.) recorded in these files are automatically routed to the National Risk File, which received more than 12,000 files in the first year.

The information in the CIP database is disclosed to users on request (banks, public authorities, legal entities or individuals) or on the CIP's own initiative.

Any individual or legal person needing information from the CIP about him/herself or any other person can obtain it by applying to any branch of a commercial bank, which will forward the request to its headquarters or to the nearest BNR branch. The CIP database is accessed afterwards and immediately provides the answer.

The information which the CIP discloses on its own initiative relates to:

- notification of the suspension of an account holder, transmitted to all bank headquarters; and
- notification of a lost, stolen, damaged or cancelled cheque sent to the payer's bank.

### 3 Interbank exchange and settlement systems

#### 3.1 General overview

At present the BNR is the only interbank payments operator (domestic correspondent accounts are subject to the approval of the central bank and granted only as an exception, on a case-by-case basis). Within this framework, the BNR interbank network provides the final settlement for nearly all interbank cashless payments in Romania, through its payment system, DECONT-BNR. The architecture of DECONT-BNR comprises three interbank exchange and settlement subsystems running intraday, which are designed to lend themselves easily to the developments required by an emerging market (Chart 1). The subsystems settle their transactions irrevocably and finally on a same-day basis. All commercial banks are allowed to take part in the operations of the interbank exchange and settlement subsystems. Indirect participation (sub-participation) in DECONT-BNR is not permitted for the time being.

#### 3.2 Gross settlement subsystem

##### 3.2.1 Functioning rules

The gross settlement subsystem was created in December 1995. It was set up in response to the need of the banks' customers and of the banking institutions to have their accounts credited more rapidly, on a same-day basis, with large amounts and amounts related to interbank transactions. Since then this subsystem has undergone several changes as a result of the evolution of banking activity in Romania, consisting in the development and diversification of transactions in the interbank market during this period.

The gross settlement subsystem functions on the basis of the regulations issued by the BNR which focus on the transactions handled, the operational procedures, the time frame and the fees charged.

#### 3.2.2 Participation in the subsystem

As previously mentioned, in the Statute of the BNR it is stipulated that all the banks licensed by it have to hold a current account in the books of the central bank. Thus in DECONT-BNR and by implication in its subsystems all the banking institutions have the right and the obligation to participate directly in interbank funds transfer processing and settlement. At present the direct participants in this subsystem are the following:

- 46 bank headquarters and the State Treasury, at the BNR headquarters;
- 541 bank branches and 47 State Treasury branches, at the local branches of the BNR.

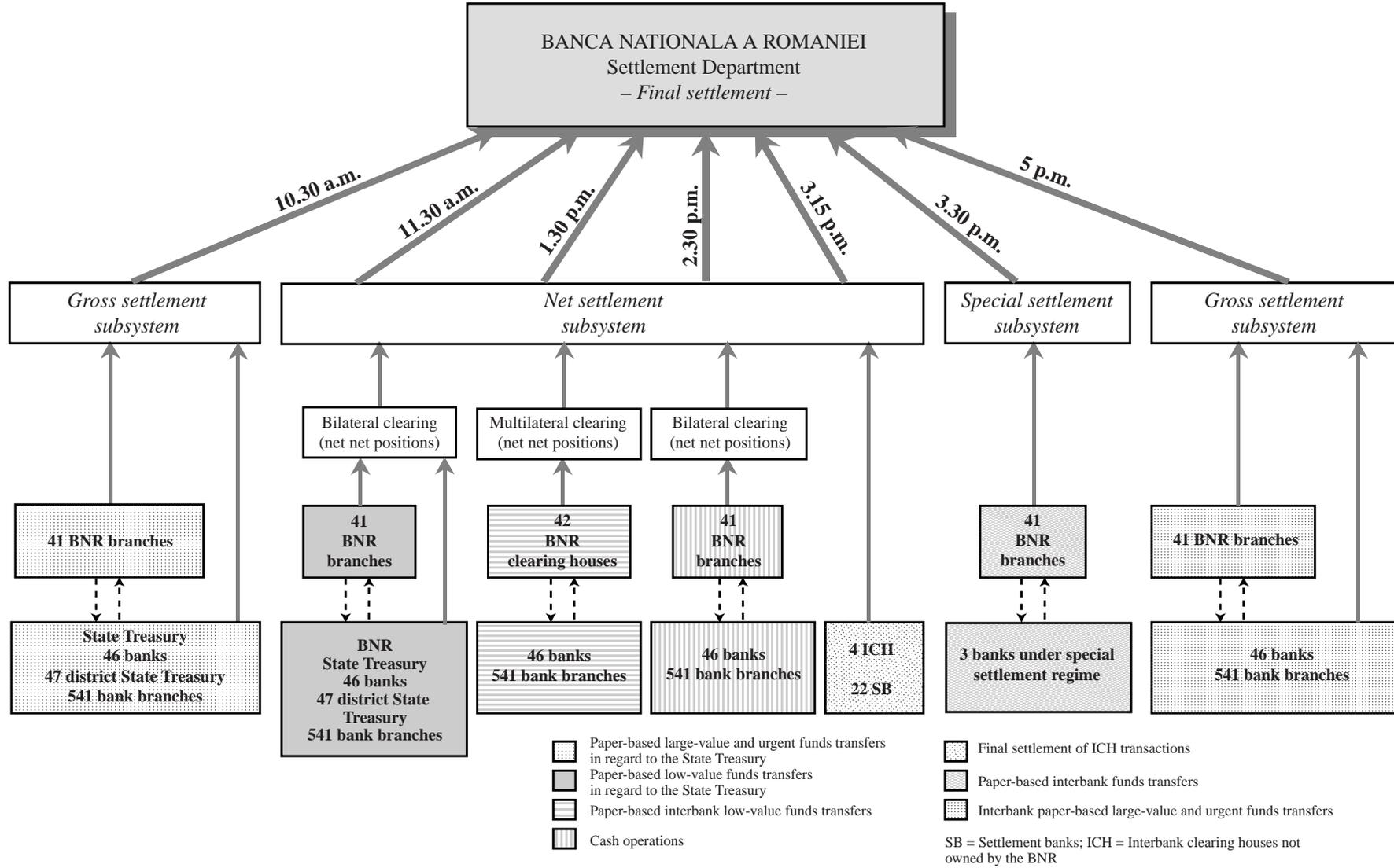
#### 3.2.3 Types of transactions handled

At present, the gross settlement subsystem processes the following categories of payments on a daily basis:

- large-value transfers in relation to the State Treasury;
- interbank large-value transfers ordered by the customers of the banks; and
- interbank transfers related to the Treasury bills primary market, money and foreign exchange markets.

The large-value transfers concerning the State Treasury and those ordered by the customers of the banks are all transfers in excess of ROL 500 million. The interbank transfers related to the Treasury bills primary market, money and foreign exchange markets are processed and settled by this subsystem regardless of their amount. All the transactions are irrevocable as from the moment they are submitted to this subsystem by a participant.

Chart I



### **3.2.4 Operation of the transfer subsystem**

In order to increase efficiency and to limit commercial banks' access to refinancing resources, since December 1995 the BNR has implemented compulsory rules concerning:

- the time frame for the submission of interbank payments;
- the processing of each individual transaction on a gross basis;
- the settlement of these operations, which is performed only when sufficient funds are available in the payer's current accounts, whether a commercial bank or the State Treasury; and
- the rejection of all transactions that exceed the available funds of the commercial banks or the State Treasury.

### **3.2.5 Transaction processing environment**

For large-value transfers ordered in paper-based form by the customers of the banks and by the State Treasury, the gross settlement subsystem relies on telex transmission between the BNR branches and their headquarters.

These interbank transactions are electronically settled by the BNR headquarters only in the commercial banks' current accounts and in the general current account of the State Treasury, without any involvement of the commercial banks, State Treasury or central bank networks.

Since this subsystem has no electronic connection with the banking system, there is no information on incoming payments before end-of-day settlement. The participants anticipate their final position on the basis of data provided by their customers or by their own network.

### **3.2.6 Settlement procedures**

The BNR headquarters performs the settlement of these operations on the day on which they are submitted. The gross settlement subsystem operates as an end-of-day gross settlement subsystem because the payment orders are processed one by one throughout the day, while final settlement is performed on a gross basis at the end of the day. The daily schedule of the BNR network for this subsystem is from 8 a.m. until 5 p.m., with two distinct cut-off times at 10.30 a.m. and 5 p.m. Large-value transfers in relation to the State Treasury are settled on a gross basis at 10.30 a.m. because their processing period starts on the previous day at 12.30 p.m.

### **3.2.7 Credit and liquidity risk**

As it is a gross end-of-day settlement subsystem, there are no credit or liquidity risks involved because the payment orders are settled only if sufficient funds are available on the current accounts of the senders.

### **3.2.8 Pricing**

The fees charged by the BNR for these services are fixed amounts per transaction, set in order to cover fully the central bank costs involved in the processing and settlement of these operations.

### **3.2.9 Main projects and policies being implemented**

In the near future, the BNR aims to implement the S.W.I.F.T. transmission standards for payment messages in order to lay down the required conditions for the achievement of real-time gross settlement of these categories of funds transfers.

### 3.3 Net settlement subsystem

#### 3.3.1 Functioning rules

The net settlement subsystem consists of three components, as follows:

- multilateral clearing with net settlement of interbank payments;
- bilateral clearing with net settlement of low-value transactions in relation to the State Treasury or with the BNR; and
- multilateral clearing of interbank payments with net settlement performed by clearing houses other than those owned by the BNR.

This subsystem functions in accordance with a set of regulations, of which the most important are:

- the BNR Regulation on Multilateral Clearing No. 10/1994, which states that all interbank exchanges of paper-based instruments are channelled through one of the 42 BNR clearing houses;
- the Convention agreed between the BNR and the Ministry of Finance comprises a set of operational rules based on the principles of daily bilateral clearing and of the recording of the bilateral net net positions resulting from low-value transactions of the commercial banks in relation to the State Treasury; and
- BNR Regulation No. 8/1996 regarding the National Bank of Romania Special Settlement Regime and the Interbank Clearing House Licensing which is the legal framework for the final settlement for securities and card transactions performed by the BNR.

#### 3.3.2 Participation in the subsystem

In accordance with the provisions of the legal framework, which allows the central bank to

establish clearing houses, in April 1995 the BNR started to operate its own clearing network consisting of 41 district interbank clearing houses (one in each BNR branch) and one interbank clearing house located at the BNR headquarters, for all the banks' headquarters.

All the commercial banks, including the CEC, participate directly in the clearing procedures with no more than one of their branches in each district of the country. 541 commercial bank branches currently participate in the clearing and settlement process, i.e. 39.8% more than on the day on which the system was introduced, the difference being partially due to the last two years of geographical development in the banking system.

The State Treasury and its 47 branches, as well as all 541 bank branches holding an account at BNR branches, participate directly in the bilateral clearing with the net settlement component of this subsystem.

At present this subsystem also provides final settlement of the multilateral clearing operations in the RASDAQ (over-the-counter) market that became operational in 1996 and in the BVB market, and has been used for VISA and Europay card operations denominated in Romanian leu since 1997. For each of these interbank clearing houses, which are not owned by the BNR, the number of settlement banks which are direct participants differs according to the contracts concluded between the clearing institutions and the central bank. The BNR is the institution entitled to grant banks the status of settlement bank related to each of these interbank clearing houses.

#### 3.3.3 Types of transactions handled

Within the BNR clearing houses this subsystem processes the paper-based payment orders with a value lower than ROL 500 million and cheques, bills of exchange and promissory notes, regardless of their value.

Collections and payments related to the State Treasury's activities are performed in the bilateral clearing. Payment orders concerning cash operations of the banks and fund transfers in relation to the BNR as an institution are also processed in this component of the subsystem.

For the clearing houses that are not owned by the BNR, this subsystem provides final settlement of the net position of each settlement bank. These positions are calculated daily and submitted to the BNR by each clearing house. The participants in this subsystem are not allowed to revoke their ordered transactions during the clearing cycle.

#### **3.3.4 Operation of the transfer subsystem**

The operational procedures of this subsystem for the multilateral clearing performed by the BNR clearing houses specify:

- the compulsory clearing circuits and the maximum time periods in each case for each type of paper-based payment instrument (according to the provisions of the regulations, the payment instruments must be submitted to a specific interbank clearing house, taking into account the destination and the characteristics of the commercial bank network submitting the instrument, within compulsory time frames);
- the daily schedule for the clearing sessions, which is between 10 a.m. and 11.30 a.m.;
- the rule according to which the net balances of the accounts of commercial banks' branches participating in the clearing procedures, which are calculated separately at the end of each clearing session by each clearing house, are transferred on the same day to the commercial banks' current accounts held at the BNR headquarters, where the net net positions are calculated.

Although the State Treasury and the BNR perform payments to and collections from the commercial banks, the former two entities are not yet participants in the interbank payments multilateral clearing because of the characteristics of their organisational structure or the level of development of their network. Thus, all fund transfers of the commercial banks in relation to the BNR and all low-value fund transfers in relation to the State Treasury are cleared bilaterally by BNR branches.

To process the commercial banks' transactions in relation to the State Treasury, its own payments and also the banks' cash transactions, the BNR performs a daily bilateral clearing. The net positions resulting from the bilateral clearing are transmitted by the BNR branches at a fixed cut-off time to the BNR headquarters, which calculates the net net positions settled by the subsystem.

The net final settlement of multilaterally cleared operations in the capital markets and for ROL cards denominated in Romanian leu is provided individually by the subsystem according to the contracts concluded between the BNR and each clearing institution. The time frame for these net final settlements is daily, between 2 p.m. and 3.15 p.m.

#### **3.3.5 Transaction processing environment**

With the exception of the fund transfers in relation to the State Treasury, which are transmitted by means of telex, all other operations are paper-based. All the payment transactions cleared by the BNR clearing houses are finally settled one or more days after they have been submitted. The provisions of the BNR Regulation on Multilateral Clearing No. 10/1994 establish the compulsory interval between the value date and the final settlement date.

The clearings performed by the BNR clearing houses are performed manually. At the BNR headquarters the multilateral clearing house

sets up the balance using an automated procedure. The aggregation of the net positions of each of the participating banks, registered by all the BNR clearing houses, the calculation of the bilateral and multilateral net positions and their registration in the accounts held in the BNR books are carried out electronically.

### **3.3.6 Settlement procedures**

The subsystem settles all the bilateral or multilateral net positions on the day on which they are calculated or submitted to the BNR, in the commercial banks' and State Treasury current accounts, or in the settlement accounts of the interbank clearing houses which are not owned by the BNR.

### **3.3.7 Credit and liquidity risk**

Because the BNR is not allowed to grant uncollateralised credits, the settlement of the net debit positions is only completed if the commercial banks or the State Treasury have sufficient funds or collateral to cover them. There are special regulations in force related to the amounts and procedures for the pledging of collateral by banks, which may consist of Treasury bills, interbank deposits or call funds with the BNR. If a bank has insufficient funds in its current account to cover the debit position, the settlement is carried out by the BNR which, in exchange, takes over the ownership of the pledged collateral.

For each clearing house not owned by the BNR, a similar system functions for pledging collateral and, in addition, if the amount of collateral is insufficient, the BNR may apply a loss-sharing scheme that has been agreed on a contractual basis with all the settlement banks.

### **3.3.8 Pricing**

The BNR charges fees per transaction on a fixed amount basis in order to recover all the costs it incurs in respect of the clearing and settlement procedures. The operations registered in the general account of the State Treasury are free of charge.

### **3.3.9 Main projects and policies being implemented**

A short-term project of the BNR within the net settlement subsystem of DECONT-BNR is the automation of the procedures of its clearing houses and the settlement of the bilateral and multilateral net positions on a real-time basis.

## **3.4 Special settlement subsystem**

### **3.4.1 Functioning rules**

The special settlement subsystem is designed to carry out daily, on a gross basis, all the fund transfers related to insolvent banks. For the time being, this subsystem functions on the basis of regulations issued by the BNR on a case-by-case basis, according to the decisions taken by the BNR Board regarding the particular banks being subjected to the legal insolvency procedure or a special supervision procedure of the central bank. These regulations, as part of the complete set of regulations issued by the BNR before 1998, will be renewed according to the provisions of the Law on Banking Bankruptcy. These new regulations will establish rules related to the collections and the permitted payments of the banks subject to the legal bankruptcy procedure and will detail the procedures performed for the processing of the fund transfers between these banks and other banks.

**3.4.2 Participation in the subsystem**

At present there are two banks subject to a legal procedure and one bank subject to a special supervision procedure of the central bank for which this subsystem settles the fund transfers.

**3.4.3 Types of transactions handled**

All kinds of payment instructions mentioned in the context of the previous two subsystems may be processed by this subsystem.

**3.4.4 Operation of the transfer subsystem**

The payment instruments transmitted, whether paper-based or via telex, are processed on an individual basis during the time frame of this subsystem between 8 a.m. and 3.30 p.m.

**3.4.5 Transaction processing environment**

The transaction processing environment is the same as that described in relation to the gross settlement subsystem (Section 3.2.5).

**3.4.6 Settlement process**

The settlement process is based on a gross end-of-day procedure according to which the value of each payment instruction is compared with the funds available in the current account of each bank settling within this subsystem.

**3.4.7 Credit and liquidity risk**

There is neither credit nor liquidity risk involved in the procedures of this subsystem because no payment with a value exceeding the amount available in each bank's current account is settled.

**3.4.8 Pricing**

Pricing is as presented in Section 3.2.8.

**3.4.9 Main projects and policies being implemented**

The main project concerning this subsystem is the development of a real-time gross settlement procedure.

**4 Securities settlement systems****4.1 Institutional aspects**

Trading in equities in Romania dates back to 1882, a year after the legal framework had been approved. With the exception of the periods of the two world wars and the economic depression, the market grew to significant levels covering banks, as well as oil, mining, industrial, insurance and transport companies. However, in 1948 the stock market had no more public companies to list owing to the nationalisation of the whole economy. When a new legal framework was laid down in 1994, Romania had not had a functioning securities market for almost 50 years.

At present two capital markets operate in Romania: the Bucharest Stock Exchange (BVB) and the over-the-counter (OTC) market (RASDAQ), both only for equities (shares) issued by private and/or state-owned companies. The BNR performs, for the time being, the settlement of primary market operations for government debt instruments. There is no regular secondary market for debt instruments. The trades which take place on the BVB are settled within this institution. The trades which take place on the OTC market are settled by the National Securities Clearing, Settlement and Depository Company (SNCDD). The shares of the

companies listed and traded on the BVB cannot be traded on the RASDAQ market (i.e. the OTC market); the shares of the companies listed on the RASDAQ cannot be traded on the BVB. The final settlement of the cash clearing performed by both securities settlement systems takes place through DECONT-BNR.

#### **4.1.1 General legal aspects**

Romanian securities markets are governed by Law No. 52/1994 on Securities and the Stock Exchange (Securities Law). It governs the overall activities of the securities markets and financial institutions dealing with securities. The law focuses on investor protection and defines the statute of the National Securities Commission (CNVM), which is responsible for all regulation and supervision of the capital markets, including the activity of the self-regulatory licensed entities.

According to the licences issued by the CNVM, the BVB and the SNCDD are self-regulatory bodies. In this regard they can adopt rules and regulations for the registration of members, listing standards, trading mechanisms, transfer, clearing, settlement, and registration activities. They may also adopt regulations and perform other functions and activities according to any delegation of powers by the CNVM.

According to the Securities Law, banks cannot be involved directly in securities transactions, but only through securities subsidiaries. Foreign banks are subject to the same requirements for trading in Romanian securities, provided that they already have a securities subsidiary. Foreign securities companies are allowed to operate in the Romanian securities market only through a subsidiary incorporated under Romanian law.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

According to the Law on the Statute of the National Bank of Romania, the central bank has responsibility for setting up and co-ordinating the implementation of monetary policy and promoting a sound financial system. In this regard, the BNR has constantly focused on the regulation and control of the interbank market, but it has no responsibilities concerning the regulation of the capital markets.

##### *Provision of settlement facilities*

Because the Statute of the BNR stipulates that only banks or interbank clearing houses are allowed to hold a cash account with the central bank, non-bank participants in the BVB and the OTC market have to arrange their cash settlement through settlement banks. In order to be able to provide settlement services for these two markets, the BNR has authorised both the BVB and the SNCDD to act as interbank clearing houses and to hold a settlement cash account with the BNR. The BNR plays a role related purely to the final settlement of banks' net balances in these two institutions. These net balances consist of the sum of the net balances of their non-bank customers dealing on the capital markets.

##### *Provision of operational facilities*

The BNR has no involvement in the operation of either the Bucharest Stock Exchange or the OTC market.

##### *Monetary policy operations and securities settlement systems*

In accordance with the provisions of its Statute, the BNR is allowed to act as the agent of the State Treasury. In this respect, it may sell Treasury bills or other negotiable

papers issued by the State. The BNR performs the registry and depository functions for these securities.

*Main projects and policies being implemented*

At present the BNR and the Ministry of Finance are working on a project to create a secondary market for government securities. This aims to provide the banks with a facility enabling them to have access to liquidity based on market conditions. It would also provide the BNR with the possibility of carrying out its monetary operations using open market operations. However, it has not yet been decided whether these securities will be eligible to be traded on the BVB or the RASDAQ or whether a third market would be created.

**4.1.3 The role of other public sector bodies**

*National Securities Commission (CNVM)*

The CNVM's activity is regulated by the Securities Law. The authority of the CNVM is exercised throughout the whole territory of Romania. Its main objectives are to ensure the sound functioning of securities markets, to enforce the investors' protection against unfair and abusive practices and to increase the transparency of public information concerning the activity of the securities markets.

Five commissioners, appointed by the Parliament, are responsible for the management of the CNVM.

In accordance with the BNR regulations, the CNVM has to advise the BNR on the process of authorising an interbank clearing house which is to perform the netting function for cash in the securities markets.

**4.1.4 The role of other private sector bodies**

*National Association of Securities Companies (ANSVM)*

The ANSVM is a non-profit-making professional association of securities intermediaries. The ANSVM was set up in 1995 with the approval of the CNVM. The main purposes of the ANSVM are to:

- participate in the process of developing the regulatory framework for the securities markets;
- support the development and promotion of the securities markets;
- co-operate with government and non-government institutions, as well as with foreign institutions, in order to contribute to the meeting of these markets' objectives; and
- increase the professional standards of participants.

The ANSVM is an organisation that provides operational assessment, training and the OTC market supervision of member companies located throughout Romania.

*Romanian Association of Securities Dealers Automated Quotation (RASDAQ)*

The RASDAQ is the OTC market network operator. It is composed of privately owned legal entities which meet the requirements stipulated by the Securities Law, i.e. banks, brokers, insurance companies, etc.

*National Securities Clearing, Settlement and Depository Company (SNCDD)*

The SNCDD provides its direct users (i.e. brokers, dealers and custodial agents), that are also direct users of the RASDAQ system, with the following services for securities issued

as part of the Mass Privatisation Programme in Romania:

- recording of all trades executed between direct users on the OTC market as reported by the RASDAQ;
- trade clearing and delivery of securities and funds on behalf of direct users; and
- custody and safe-keeping of the securities traded on the OTC market.

#### *Bucharest Stock Exchange (BVB)*

The BVB is a non-profit-making public entity managed by its members. The BVB is open to new members; initially there were 24 securities companies that formed the Stock Exchange Association, whereas now there are 190. The BVB provides its members with the following services:

- recording of all trades executed;
- trade clearing and delivery of securities and funds on behalf of its members; and
- custody and safe-keeping of the securities traded on this market.

A general meeting of shareholders of a company with shares issued and traded on the OTC market as part of the Mass Privatisation Programme may decide to seek the BVB's approval for its shares to be traded on the BVB market instead of the OTC market.

#### *The Bucharest Stock Exchange Association (ABVB)*

The ABVB is a non-profit-making professional association established within the BVB. Its aim is to provide assistance in order to improve the performance of the BVB. Membership of the ABVB is granted only to those securities companies which have been licensed by the CNVM to trade on the BVB.

#### *Central Securities Depository*

Although central securities depositories (CSDs) are mentioned in the Securities Law, there is no CSD in Romania as yet. The custodial agents are currently carrying out the functions of a CSD.

#### *Custodial agents*

According to Article 2 of the CNVM's Regulation No. 14/1996, custodial services can be provided by any stock exchange, securities company, bank or credit institution dealing with the clearing, settlement and custody of securities as well as any insurance company or any other legal entity licensed by the CNVM to perform the clearing and settlement of securities trades.

Specialised private companies, such as the Romanian Shareholders Register, perform the function of registrar with regard to the shares of listed companies.

## **4.2 Summary information on securities markets**

### **4.2.1 Main features of different securities markets**

At present, on both securities markets (BVB and OTC) the only traded securities are shares. These shares are registered in dematerialised form in book-entry systems.

The BVB is operated by a single entity that performs the issuance, membership, trading, clearing, settlement, depository and registrar functions. The OTC market operations are performed by three different entities, the SNCDD, the RASDAQ and the Romanian Shareholders Register.

The BVB and the OTC markets have a two-tier structure with direct and indirect participation and their operations are supported by highly developed technology for quotation, trading, communication, clearing,

settlement and the depository function. Applicants which fulfil the provisions of the law and the requirements of the BVB and the RASDAQ respectively are admitted as members.

#### **4.2.2 Basic quantitative aspects**

The basic quantitative aspects are provided in Section 5 on statistical data.

#### **4.2.3 Financial intermediaries operating in the different securities markets**

The Securities Law defines which financial intermediaries are allowed to trade in the securities markets. According to the Law, the CNVM licenses dealers and brokers, as joint stock companies, to participate in the securities markets. Authorisation is given to a securities company to trade either both for its own account and for the account of its customers or only for the account of its customers.

The activities of the securities intermediaries are supervised by the CNVM, which has the legal power to set up control activities and measures related to the infringement of the legal framework.

#### **4.2.4 Recent developments**

The BVB and the OTC market are relatively new markets dating from 1995 and 1996, respectively. At present both institutions are in the process of applying all the measures recommended by the Group of Thirty (G30).

### **4.3 Structure, operation and administration of securities settlement through the Bucharest Stock Exchange (BVB)**

#### **4.3.1 Major legislation and regulations governing the system**

Besides the main legal framework provided by the Securities Law, the Statute of the ABVB and the BVB Ethical Code, the operations of the market are governed by 12 other main regulations issued by the BVB with regard to different areas, such as membership, listing requirements, trading procedures, clearing and settlement, ownership transfer, risk management, taxation and the Insurance Fund.

#### **4.3.2 Participation in the system**

Securities companies which are authorised by the CNVM and accepted as members by the BVB for trading activities automatically participate in the settlement system of the BVB. They participate for their own account and/or on behalf of their customers. The process of the clearing and settlement of trades on the BVB is performed according to the functioning principles of a clearing house and is based on the participation of the banks in the settlement of the cash leg. A bank must be licensed by the BNR to participate in the final settlement of the cash leg of this secondary market.

#### **4.3.3 Types of transactions handled**

Only shares traded on the BVB can be handled by the securities settlement system of the BVB. Once a company has been approved for listing on the BVB, its shares book has to be transferred to the register of the BVB before any trade can take place.

#### **4.3.4 Operation of the transfer system and transaction processing environment**

The trading system is organised in such a way that each time a participant inputs a sell order, the system will automatically check the account of the seller in order to verify whether there are enough securities to be delivered.

On the trade date (T) the system issues transaction reports that have to be checked by the counterparties. On day T + 1 securities companies, custodial agents and the settlement banks may confirm, cancel or postpone the settlement of the transactions. On day T + 2, the counterparties that have requested the postponement must send an instruction to the BVB either confirming or cancelling the settlement of the transactions. All the transactions are matched before they enter the settlement process (by the end of day T + 2).

#### **4.3.5 Settlement procedures**

Settlement takes place in the form of a daily batch cycle. The securities are settled on a T + 3 gross basis. Each securities company has to hold a cash account with a settlement bank. At present 20 banks are licensed by the BNR as settlement banks. The settlement banks settle the cash through their current accounts opened in the cash system of the central bank.

The BNR settles daily the balances provided by the BVB if the settlement banks make available the required liquidity or collateral to settle their customers positions. After the BNR has notified the BVB of the finality of the cash settlement, the BVB transfers the securities from the sellers' accounts to the buyers' accounts and notifies all participants of the final settlement of the trades.

#### **4.3.6 DVP arrangements**

A real delivery versus payment arrangement is not yet in place because, for the time being, the securities transfer instructions are settled on a gross basis only after the final net settlement of the cash has occurred in central bank money. The time lag between the BNR notification and the BVB settlement of securities is relatively short (one hour).

#### **4.3.7 Credit and liquidity risk control measures**

In order to limit the risk exposure of the participants, the BVB sets trading limits for the securities companies. If a securities company does not have sufficient funds in its settlement account, the settlement bank may credit its account with the necessary amount within previously established limits. If this amount is not sufficient, the securities company can pledge the securities from its own account (house account) to the bank as collateral for the loan. Unless the bank grants the loan or unless the amount granted covers the debt amount, the BVB uses the Insurance Fund.

If the amount in the Insurance Fund is not sufficient to cover the obligation of the defaulting company, all securities companies which are members of the ABVB will be required to share the losses in order to cover the unsettled amount.

#### **4.3.8 Pricing**

Fees are charged by the BVB to securities issuers, securities companies and custodial agents. The fees are composed of annual fixed amounts and variable amounts, calculated in proportion to the value of transactions. The registration, clearing and settlement fees are included in the fee charged for trading.

### **4.3.9 Main projects and policies being implemented**

The BVB envisages implementing a DVP mechanism in the very near future and is prepared to introduce the trading of derivatives. The BVB will also launch securities lending facilities and the listing of domestic financial investment companies.

## **4.4 Structure, operation and administration of securities settlement through the National Securities Clearing, Settlement and Depository Company (SNCDD)**

### **4.4.1 Major legislation and regulations governing the system**

Initiated as part of international co-operation to develop the capital markets in Romania, the SNCDD has been organised as a joint stock company owned by 242 Romanian financial institutions. The activities of the SNCDD are governed by the Securities Law, CNVM Regulation No. 8/1996 and the corresponding by-law. The set of rules covers all the main areas of concern, such as membership, eligible securities, trading, clearing, settlement, reporting, and taxation.

### **4.4.2 Participation in the system**

Currently, the SNCDD has 205 direct users, of which 192 are brokers and dealers and 13 are banks that act as custodial agents. According to the SNCDD regulations, any Romanian legal entity can become a direct user if it is licensed by the CNVM and complies with the SNCDD rules. All direct users are linked to the system using an X25 or an IP network from remote locations throughout Romania. The system facilitates online report retrieval, enquiries, data entry and interaction with registries for the movement of customer shares to and from the depository. The CNVM has authorised 13 banks to act as custodial agents. The process of the clearing and settlement of

transactions traded on the RASDAQ is performed according to the functioning principles of a clearing house and is based on the participation of the settlement banks. A bank must be licensed by the BNR to participate in the final settlement of this secondary market.

### **4.4.3 Types of transactions handled**

The SNCDD processes trades related only to shares that are regarded as eligible (i.e. authorised to be traded on the OTC market). The SNCDD is provided with information on the status of shares (eligible/non-eligible) by the CNVM, issuers and direct participants.

### **4.4.4 Operation of the transfer system and transaction processing environment**

Communications between the SNCDD and direct users are established on an electronic assigned communication network, with real-time systems for securities transfers and cash settlements available.

At the close of the trading session, on day T, the RASDAQ sends to the SNCDD an end-of-day transmission reflecting all trading activities. This transmission is completed by 2.45 p.m. when the end-of-day transaction reports are available through remote PC terminals to all participants. On T + 1 the participants must confirm all transactions or cancel any specific transaction as necessary. On T + 2 the SNCDD sends to the settlement banks the Settlement Projection Report for T + 3 (i.e. a projection of the funds to be settled related to all transactions that were accepted by participants). On T + 3 the settlement banks send confirmation of the funds to be settled by them to the SNCDD.

### **4.4.5 Settlement procedures**

The settlement performed by the SNCDD is a gross settlement for securities and a net

settlement for cash. The SNCDD was licensed in 1996 by the BNR to act as an interbank clearing house and holds a settlement account in the books of the central bank.

On T + 3, based on the payments accepted, the SNCDD calculates and sends to the BNR, at 2.30 p.m., the Final Settlement Report including the daily net balance of each cash settlement bank.

The final cash settlement process is performed by the BNR according to the same conditions as those described for the BVB. At 4 p.m. on T + 3, after having received confirmation from the BNR of the final settlement of the cash, the SNCDD transfers the securities into the participants' accounts with finality and irrevocability.

#### **4.4.6 DVP arrangements**

A real delivery versus payment arrangement is not yet in place because, for the time being, the securities transfer instructions are settled on a gross basis only after the final net settlement of the cash has occurred in central bank money. The time lag between the BNR notification and the BVB settlement of securities is relatively short (one hour).

#### **4.4.7 Credit and liquidity risk control measures**

The SNCDD's regulations stipulate that each direct user should take all the necessary

measures to limit risk exposures. If a securities company does not have sufficient funds in its settlement account, the settlement bank may credit its account with the necessary amount within previously established limits. In order to avoid risks emerging from a situation in which a direct participant fails to cover its payment obligations, the SNCDD manages an Insurance Fund for both cash and securities. It is compulsory for each direct user to participate in the Fund with the amounts or quantities of securities set by the SNCDD in advance.

#### **4.4.8 Pricing**

The SNCDD Board sets the fee levels on a reasonable and non-discriminatory basis. They are compulsory for all direct users and consist of fees charged for the main account, supplementary accounts, transfers from the Registry to the SNCDD or vice versa, transfers between direct users, each transaction processed, and custodial services.

#### **4.4.9 Main projects and policies being implemented**

The SNCDD is planning to implement S.W.I.F.T. message standards in the first quarter of 1999. Other projects address the registrar activities for the nominee accounts, the implementation of cross-border linkages, and the improvement of the buy-in and affirmation procedures.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	22,755	22,731	22,681	22,608	22,546
Gross domestic product (ROL billions)	20,035.7	49,773.2	72,135.5	108,390.9	249,750.2
Exchange rate vis-à-vis ECU <sup>1)</sup>	890.0186	1,968.7627	2,659.5506	3,920.7021	8,159.4934

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; ROL billions)

	1993	1994	1995	1996	1997
Banknotes and coins	1,048.7	2,200.6	3,760.5	5,382.7	9,200.1
Transferable deposits	1,182.6	2,333.6	3,322.7	5,790.6	9,531.8
Narrow money supply (M1)	2,231.3	4,534.2	7,083.2	11,173.3	18,731.9
Transferable deposits in foreign currencies	1,055.0	1,622.0	2,760.0	4,529.0	9,439.0
Outstanding value on electronic money schemes	-	-	n.a.	n.a.	n.a.
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	n.a.	n.a.	n.a.

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; ROL billions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	168.1	403.5	904.4	1,370.4	2,770.7
Free reserves held at the central bank	170.1	441.7	808.0	1,590.2	2,789.8
Transferable deposits at other institutions <sup>1)</sup>	n.a.	n.a.	-	-	-

1) Correspondent accounts in ROL between banks have not been allowed since 1995.

**Table 4****Banknotes and coins***(total value, end of year; ROL billions)*

	1993	1994	1995	1996	1997
Total banknotes issued	1,105.8	2,370.6	3,910.7	5,860.5	9,583.9
<i>of which:</i>					
ROL 50000	-	-	-	699.1	5,314.9
ROL 10000	-	963.5	2,285.8	3,693.9	3,186.5
ROL 5000	812.9	1,108.5	1,281.0	1,196.0	915.9
ROL 1000	192.1	209.5	249.0	183.4	84.3
ROL 500	94.4	85.7	94.5	88.1	82.3
ROL 200	1.8	0.8	0.4	-	-
ROL 100	4.5	2.6	-	-	-
ROL 50 and less	0.1	-	-	-	-
Total coins issued	20.0	28.6	41.9	47.8	46.6
<i>of which:</i>					
ROL 100	10.1	16.3	27.1	32.2	32.2
ROL 50	4.9	7.0	8.9	9.4	9.4
ROL 20	1.8	2.4	2.6	2.8	2.8
ROL 10	1.0	1.1	1.4	1.4	1.4
ROL 5	1.0	0.5	0.6	0.7	0.7
ROL 3	0.3	0.3	0.3	0.3	-
ROL 1	0.5	0.6	0.6	0.6	0.1
Coin	0.4	0.4	0.4	0.4	-
Banknotes and coins held by credit institutions	75.4	197.2	190.9	519.7	426.8
Banknotes and coins in circulation outside credit institutions	1,048.7	2,200.6	3,760.5	5,382.7	9,200.1

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (ROL billions)
Central bank	1	41	-	-
Credit institutions	43	3,809	31,994	9,532
Post Office <sup>1)</sup>	1	7,075	-	-
<b>TOTAL</b>	<b>45</b>	<b>10,925</b>	<b>31,994</b>	<b>9,532</b>
Branches of foreign banks	10	10	5,662	331
of which EU banks	7	7	3,430	291

1) The Post Office does not hold deposit or sight accounts for customers.

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers</b>					
Number of networks	-	-	-	-	-
Number of machines	-	-	9	36	95
Volume of transactions (millions)	-	-	n.a.	0.08	0.90
Value of transactions (ROL billions)	-	-	n.a.	7.60	110.87
<b>EFTPOS terminals</b>					
Number of networks	-	-	-	-	-
Number of points of sale	-	-	1,254	2,877	4,160
Volume of transactions (millions)	-	-	n.a.	0.06	12.40
Value of transactions (ROL billions)	-	-	n.a.	1.10	4.71
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (ROL millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (ROL millions)	-	-	-	-	-

**Table 7**  
**Number of payment cards in circulation <sup>1)</sup>**

(end of year; thousands)

	1993	1994	1995	1996	1997
Cards with a cash function	-	-	0.02	4.10	40.99
Cards with a debit/credit function	-	-	0.02	4.10	40.99
<i>of which:</i>					
<i>cards with a debit function</i>	-	-	0.02	4.10	40.99
<i>cards with a credit function</i>	-	-	-	-	-
Cards with a cheque guarantee function	-	-	-	-	-
Retailer cards	-	-	-	-	-
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(millions)*

	1993	1994	1995 <sup>1)</sup>	1996	1997
DECONT-BNR			7.337*	9.956*	11.671
Net settlement subsystem <sup>2)</sup>	-	-	7.337*	9.935*	11.604
Credit transfers	-	-	5.843	7.649	8.502
Cheques	-	-	1.461	2.240	2.346
Bills of exchange and promissory notes	-	-	neg.	neg.	0.012
Cash operations	n.a.	n.a.	0.033	0.046	0.070
State Treasury payment orders	n.a.	n.a.	n.a.	n.a.	0.674
Gross settlement subsystem	n.a.	n.a.	n.a.	0.019	0.058
Credit transfers	n.a.	n.a.	n.a.	0.019	0.058
<i>of which</i>					
<i>Interbank customer-initiated</i>					
<i>large-value transfers</i>	n.a.	n.a.	n.a.	0.005	0.018
<i>Interbank transactions</i>	n.a.	n.a.	n.a.	0.014	0.040
Special settlement subsystem	-	-	-	0.002	0.009
Credit transfers	-	-	-	0.002	0.009

1) *Figures for April to December 1995.*2) *Large-value debit instruments are included.***Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(ROL billions)*

	1993	1994	1995 <sup>1)</sup>	1996	1997
DECONT-BNR	-	-	321,047.00*	398,261.97	886,686.07
Net settlement subsystem <sup>2)</sup>	-	-	104,600.00	154,794.00	295,607.00
Credit transfers	-	-	30,514.00	51,121.00	92,650.00
Cheques	-	-	3,017.00	6,852.00	14,368.00
Bills of exchange and promissory notes	-	-	neg.	66.00	299.00
Cash operations	n.a.	n.a.	13,453.00	24,605.00	55,580.00
State Treasury payments and collections	n.a.	n.a.	57,616.00	72,150.00	132,710.00
Gross settlement	n.a.	n.a.	216,447.00*	243,361.00	590,267.00
Credit transfers	n.a.	n.a.	216,447.00	243,361.00	590,267.00
<i>of which:</i>					
<i>Interbank customer initiated large-</i>					
<i>value transfers</i>	n.a.	n.a.	n.a.	9,840.00	26,499.00
<i>Interbank transactions</i>	n.a.	n.a.	216,447.00	233,521.00	563,768.00
Special settlement subsystem	-	-	-	106.97	812.07
Credit transfers	-	-	-	106.97	812.07

1) *Figures for April to December 1995.*2) *Large-value debit instruments are included.*

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
BVB	151	-	19
Banks	19	-	19
Stockbrokers	132	-	-
SNCDD	145	13	18
Banks	11	11	18
Stockbrokers	134	2	-

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions**

	1993	1994	1995	1996	1997
BVB <sup>1)</sup>	-	-	379	17,772	607,318
Shares	-	-	379	17,772	607,318
SNCDD <sup>2)</sup>	-	-	-	945	255,553
Shares	-	-	-	945	255,553

1) *The BVB was set up in November 1995.*2) *The SNCDD was set up in November 1996.***Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(ROL billions)*

	1993	1994	1995	1996	1997
BVB <sup>1)</sup>	-	-	2.46	15.16	1,892.26
Shares	-	-	2.46	15.16	1,892.26
SNCDD <sup>2)</sup>	-	-	-	0.60	1,295.40
Shares	-	-	-	0.60	1,295.40

1) *The BVB was set up in November 1995.*2) *The SNCDD was set up in November 1996.*

**Table 13****Nominal values registered by securities settlement systems***(end of year; ROL billions)*

	1993	1994	1995	1996	1997
BVB <sup>1)</sup>	-	-	273.26	626.28	4,731.38
Shares	-	-	273.26	626.28	4,731.38
SNCDD <sup>2)</sup>	-	-	-	0.60	1,295.40
Shares	-	-	-	0.60	1,295.40

1) *The BVB was set up in November 1995.*2) *The SNCDD was set up in November 1996.***Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
Cheques issued	n.a.	n.a.	n.a.	4.1	5.4
Payments by debit cards	n.a.	n.a.	n.a.	0.1	12.4
Payments by credit cards	-	-	-	-	-
Paper-based credit transfers	n.a.	n.a.	n.a.	21.7	19.7
Paperless credit transfers <sup>1)</sup>	-	-	n.a.	n.a.	n.a.
Direct debits	-	-	n.a.	n.a.	n.a.
Postal instruments	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money	-	-	n.a.	n.a.	n.a.
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	n.a.	n.a.	n.a.
Others <sup>2)</sup>	-	-	n.a.	n.a.	n.a.
<b>TOTAL</b>	n.a.	n.a.	n.a.	25.9*	37.5*

1) *Interbank paperless credit transfers do not exist. No figures for intrabank paperless credit transfers are available.*2) *Bills of exchange and promissory notes.*

**Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(ROL billion)*

	1993	1994	1995	1996	1997
Cheques issued	n.a.	n.a.	3,017	15,738	40,788
Payments by debit cards	n.a.	n.a.	n.a.	8.70	115.58
Payments by credit cards	-	-	-	-	-
Paper-based credit transfers	n.a.	n.a.	n.a.	400,193	856,031
Paperless credit transfers <sup>1)</sup>	-	-	-	-	-
Direct debits	-	-	n.a.	n.a.	n.a.
Postal instruments	n.a.	n.a.	n.a.	n.a.	n.a.
Electronic money	-	-	n.a.	n.a.	n.a.
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	n.a.	n.a.	n.a.
Others <sup>2)</sup>	-	-	n.a.	n.a.	n.a.
<b>TOTAL</b>	n.a.	n.a.	3,017*	415,939.7*	896,934.58*

1) *Interbank paperless credit transfers do not exist. No figures for intrabank paperless credit transfers are available.*

2) *Bills of exchange and promissory notes.*

**Table 16****Participation in S.W.I.F.T. by domestic institutions**

	1993	1994	1995	1996	1997
S.W.I.F.T. users	9	17	22	26	35
<i>of which:</i>					
<i>members</i>	8	15	18	19	23
<i>sub-members</i>	1	2	4	7	11
<i>participants</i>	-	-	-	-	1
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

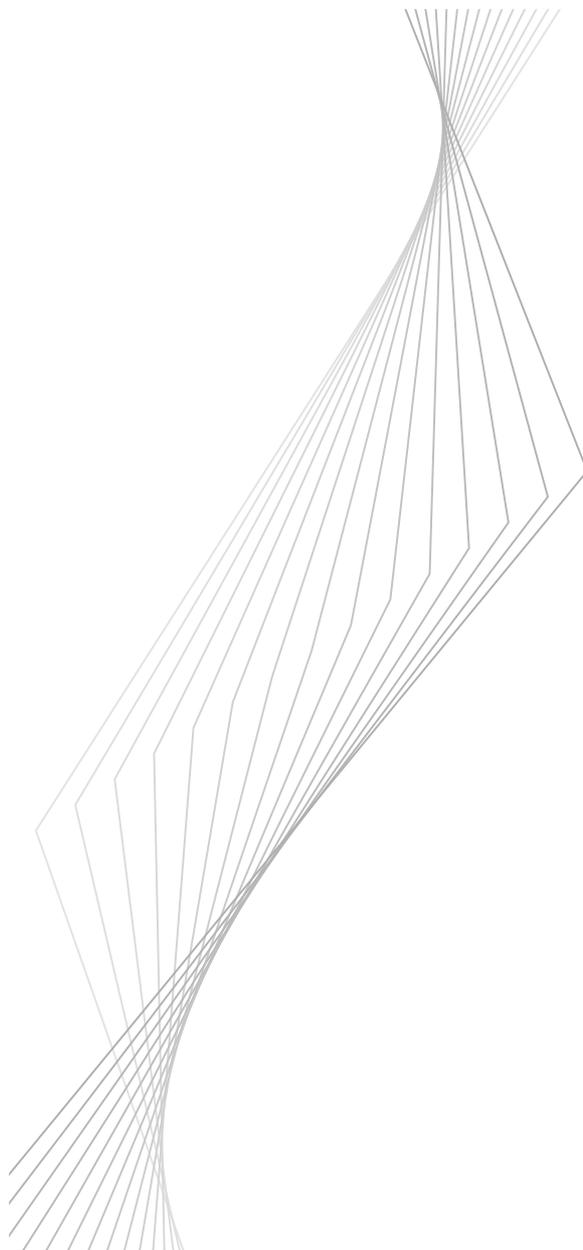
**Table 17****S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	141,307	276,681	525,191	756,257	933,005
<i>of which:</i>					
<i>category I</i>	71,171	149,353	295,643	407,591	483,502
<i>category II</i>	21,186	40,515	75,268	130,730	178,644
<i>sent to/received from   domestic users</i>			146,142	235,786	296,173
Total messages received	254,577	439,405	707,481	949,032	1,191,390
<i>of which:</i>					
<i>category I</i>	112,322	199,088	331,580	446,884	573,240
<i>category II</i>	9,487	16,150	25,035	39,909	49,569
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556





EUROPEAN CENTRAL BANK



**Slovakia**

**August 1999**

Slovakia

SK

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**List of abbreviations**

<b>ABO</b>	Automated Banking Operations
<b>ABS</b>	Association of Banks of Slovakia
<b>ACS</b>	Authorisation Centre of Slovakia, joint stock company
<b>BOFFEX</b>	Bratislava Options and Financial Futures Exchange
<b>BSSE</b>	Bratislava Stock Exchange, joint stock company
<b>CSFR</b>	Czech and Slovak Federal Republic
<b>MKS</b>	Interbank Communications System – <i>Medzibankovy komunikacny system</i>
<b>NBS</b>	National Bank of Slovakia – <i>Národná Banka Slovenska</i>
<b>RMS</b>	RM System Slovakia Stock Market, joint stock company
<b>SBCS</b>	State Bank of Czechoslovakia – <i>Statna banka cesko-slovenska</i>
<b>SC</b>	Securities Centre of the Slovak Republic
<b>SIPS</b>	Slovak Interbank Payment System
<b>SKK</b>	Slovak crown
<b>SNCC</b>	Slovak National Clearing Centre, joint stock company
<b>TKCP</b>	Short-Term Securities Market – <i>Trh kratkodobych cennych papierov</i>
<b>VUB</b>	General Credit Bank, joint stock company – <i>Vseobecna uverova banka, a.s.</i>
<b>WBAG</b>	Vienna Stock Exchange – <i>Wiener Börse A.G.</i>
<b>ZBK</b>	Bank Cards Association – <i>Zdruzenie pre bankove karty</i>

## Introduction

In recent years the payment system of the Slovak Republic has undergone marked changes, especially in comparison with the period before 1990, when a centrally planned economy existed. These changes were associated with a banking reform. In 1990 the "mono-banking" model was replaced by a two-tier system and many new commercial banks were established. At present, there are 28 banks (predominantly universal banks) operating in the Slovak Republic.

The most frequently used payment media are cash payments, but the use of payment cards is rapidly increasing. At the same time, the numbers of automated teller machines (ATMs) and electronic funds transfer at the point of sale (EFTPOS) terminals are also on

the increase. Cheques are not in common use as a payment medium.

All interbank payment transactions are carried out electronically. The clearing of interbank payments is ensured by the Slovak National Clearing Centre (SNCC), the only clearing centre in Slovakia; the processing of transactions is based on electronic data transfer. All commercial banks rendering payment services to customers are obliged to deliver their payments data to the SNCC for processing.

The National Bank of Slovakia (NBS) plays a significant role in the operation and co-ordination of the payment system.

## I Institutional aspects

### I.1 General legal aspects

The current legal framework for the area of payment and settlement adequately covers the activities, rights and obligations of banks operating in Slovakia in this field.

The main role in the operation and co-ordination of the payment system is played by the NBS. The responsibilities and powers of the NBS are laid down in the National Bank of Slovakia Act 566/92 passed by the National Council of the Slovak Republic with subsequent amendments (NBS Act). The principal reference to the role of the NBS in the field of payment systems is made in Article 2, which states that the “NBS shall direct the circulation of money, co-ordinate payments and settlement among banks and ensure the efficient and economical performance of these operations”.

To ensure a unified payment and settlement system, the NBS issued a decree (Notice 275/94) stipulating the principles of the interbank payments and settlement system. Apart from this decree, there is no specific legislation governing the organisational and technical aspects of payment services.

The Banking Act 21/92 as subsequently amended (Banking Act) stipulates, inter alia, the legal status of banks operating in the Slovak Republic (including savings banks), the definition of banking activities, the conditions for the granting of a licence to operate as a bank, the management bodies and internal organisation of banks, liquidity management and prudent banking practices, auditing and mortgage transactions. According to Article 1 of the Banking Act: “Payment and settlement among banks or branches of foreign banks in the Slovak Republic are conducted exclusively through a separate legal entity”, which is the SNCC.

The general rules governing the payment and settlement system, especially the establishment, administration and termination

of accounts for private individuals and legal entities, are contained in the Commercial Code 513/91 and the Civil Code 40/64. The Commercial Code contains, among other things, comprehensive coverage of letter-of-credit contracts, collections, current account contracts and travellers' cheques. In applying these provisions, however, it is also necessary to refer to the Civil Code as a generally applicable regulation.

The financial sector is also covered by the general antitrust regulation (Act 188/94 on the Protection of Economic Competition), by the bankruptcy law (388/91) and by Act 191/50 on Bills of Exchange and Cheques, which was drawn up in accordance with the Geneva Convention (providing a uniform law for bills of exchange and promissory notes and a uniform law for cheques).

The relationship between a bank and its customers regarding the payment system is specified by the General Commercial Conditions, stipulating the principles of managing accounts for customers at banks and the principles of payment and settlement on these accounts. The General Commercial Conditions were drawn up by the NBS in co-operation with commercial banks and were issued by the NBS in 1993 and updated in 1995. They stipulate terms and conditions for the establishment, administration and termination of accounts; forms of payment and settlement; the realisation of payment and settlement; the crediting of interest to accounts; prices for payment services; statements and error handling; and the payment media (bills of exchange, cheques, bank payment cards or letters of credit). The General Commercial Conditions do not represent a set of generally binding legal regulations, but banks undertook to respect them by applying the given principles in dealing with customers, in their commercial conditions or directly in the terms of account agreements.

## 1.2 Financial intermediaries that provide payment services

### *Development of the banking system in the Slovak Republic*

After 1 January 1990, within the scope of the banking reform, one central bank, the State Bank of Czechoslovakia (SBCS), and seven commercial banks were established.

The next three years were marked by the gradual strengthening of the SBCS's position within the federal set-up of the Czech and Slovak Federal Republic (CSFR), which was completed in the field of legislation by the enactment of Act 22/91 on the State Bank of Czechoslovakia. The law delimited the powers of the SBCS and its relationship with the government and other banks, and defined the direct and indirect instruments of monetary policy. The activities of commercial banks were regulated by the Banking Act 21/1991.

The NBS started to perform the functions of a central bank on 1 January 1993, immediately after the dissolution of the former CSFR and the birth of the independent Slovak Republic.

### *Commercial banks*

The status and function of the commercial banks are specified by the Banking Act (see Section 1.1). It defines banks as legal entities (joint stock companies or state-owned financial institutions) permanently based in the Slovak Republic, licensed to operate as banks accepting deposits and offering loans.

On 1 December 1998 25 domestic banks, two branches of foreign banks and nine

representative offices of foreign banks were operating in the Slovak Republic. In legal terms, 23 banks were registered as joint stock companies and two banks as state-owned financial institutions.

The majority of the 27 commercial banks currently operating in Slovakia (apart from the NBS) are universal banks. Aside from basic banking services – the receipt of deposits, the granting of loans, the processing of payments, and settlement – they provide other services as well, such as the issue of payment media (payment cards, travellers' cheques, etc.), opening letters of credit, collections, the issue of bank guarantees, bureau de change services and others.

A special role is performed by two home savings banks (building societies), which accept deposits from customers and grant home improvement loans under special conditions. Their activities are solely aimed at home savings. *Prva stavebna sporitelna, a.s.* (First Building Society) attained an 82% share of the home savings market in 1997. Another bank which has a special position is *Slovenska sporitelna, a.s.* (Slovak Savings Bank), as a result of previous developments. It is a strong commercial bank offering universal banking services under the same licence as any other commercial bank in Slovakia with a dominant share in the market for household deposits (55.7% as at 31 December 1997).

As at December 1997 commercial banks in Slovakia maintained deposit accounts for customers amounting to SKK 450.4 billion (ECU 11.8 billion), of which SKK 50 billion (ECU 1.3 billion) was in foreign currency. In terms of capital share, banks in Slovakia may

**Table**  
**Commercial banks in Slovakia**

Type of bank	Share in the total number of banks	Share in the total value of crown deposits
Without foreign capital interest	37.9%	68.9%
With foreign capital interest	48.3%	27.2%
Branches of foreign banks based in the Slovak Republic	13.8%	3.9%

be divided into three groups, as indicated in the table on page 337.

In terms of the balance sheet, the largest bank on the Slovak market is Vseobecna uverova banka (General Credit Bank, VUB).

*Postova banka, a.s.*  
(Postal Bank, joint stock company)

Postova banka, a.s. has a special role among commercial banks in Slovakia. On the day of the establishment (1 January 1993) of the Slovak Republic, it became the successor to the former federal Postova banka, a.s. In spite of its brief history, Postova banka, a.s. has the most extensive retail network in Slovakia. In addition to its branches and sub-branches, 19 in all, its network includes all 1,619 Post Office branches in Slovakia. All Post Office branches provide retail services to customers, such as deposit services in the form of passbooks and time deposits, personal and business accounts, the sale of certificates of deposit, domestic payment and settlement services, and international postal payment and settlement services. With regard to acquisition activities, it is the Post Office branches which provide Postova banka, a.s. with almost all banking services through an agreed contract on mutual co-operation between the bank and Slovenska posta, s.p. (Slovak Post, state company), which is, at the same time, a shareholder in the bank.

Postova banka, a.s. provides its customers with specialised services associated with international postal payment and settlement services in which it performs the function of a bureau de change. These payments primarily include non-commercial and social security payments made and received by the public and organisations in Slovakia. Postova banka, a.s. joined a specialised payment system within the Eurogiro Network in October 1998.

Despite constant growth in the number of customer accounts in the network of banks in the Slovak Republic and the number of

paperless customer transactions conducted, many payments are still made in cash. Many senders and beneficiaries of payments have already moved away from the traditional forms of postal order payments to a banking system of Postova banka, a.s., which is especially convenient for recurrent payments. It combines the advantages of the interbank payment and settlement system, speed, quality and the comprehensive character of processing with the accessibility of the largest retail network, mainly consisting of Post Office branches.

#### *Financial institutions*

The status and the function of financial institutions are not specified by the Banking Act.

Currently, there is one financial institution operating in Slovakia – the Export-Import Bank of the Slovak Republic (Eximbanka). Eximbanka was established by Act 80/97, which was passed by the National Council of the Slovak Republic to promote the export and import activities of Slovak companies by financing and insuring export credits. Eximbanka has the authorisation of the Government to represent the Slovak Republic in international institutions, the activities of which are connected with those of Eximbanka.

Eximbanka is not supervised or controlled by the NBS.

### **1.3 The role of the central bank**

#### **1.3.1 General responsibilities**

The NBS was founded on 1 January 1993. The NBS is an institution established by law and is thus a legal entity with ownership rights. According to the law, the NBS is the bank of issue, the banker to the banks, the banker to the Government and the guardian of the monetary reserves. The NBS is also responsible for supervising the activities of

commercial banks (see *Supervision and audit* on this page).

The NBS is independent of the government, especially in performing its main task, i.e. ensuring the stability of the Slovak currency. Its independence is clearly reflected in the processes of nomination and recall of board members, the governor and the vice-governors.

#### *Statutory responsibilities*

To meet the demand for money, under Article 16 of the NBS Act “the NBS shall have the exclusive right to issue banknotes and coins as well as commemorative coins which are legal tender”. While the production of banknotes takes place abroad, the minting of coins takes place at the State Mint of Slovakia (see Section 2.1).

Under Article 2.a of the NBS Act, “the NBS shall define the monetary policy” (see Section 1.3.3). The NBS fulfils its obligation to ensure the smooth functioning of domestic and cross-border payments. It also manages the country’s gold reserves and foreign exchange reserves (Article 10.c).

The NBS shall also supervise the performance of banking activities within the scope established by the NBS Act, and the prudential performance and efficient development of the banking system (Article 2.d).

Finally, the NBS shall maintain the revenue and expenditure accounts of the state budget, the records of state financial assets and liabilities and of state funds (Article 25.1).

Within the interbank payment system the NBS fulfils several important tasks. It is responsible for the system’s co-ordination, integrity and effectiveness. The NBS provides the final settlement of payment transactions within the interbank payment system and thereby acts as a settlement agent for the Slovak Republic.

#### *Establishment of common rules*

The NBS works closely together with the Slovak banking sector in co-ordinating the organisational and technical processes applied during the processing of payment transactions and for the use of payment media. For that reason, the NBS organises regular meetings with commercial banks to inform them of new activities in the payment and settlement system. Apart from this, the NBS co-operates closely with the Association of Banks of Slovakia (see Section 1.4, *Association of Banks of Slovakia*) and co-ordinates various activities within the payment system.

#### *Supervision and audit*

The supervision of the activities of individual banks, the prudential operation of the banking system and the activities of persons other than banks which are licensed pursuant to separate regulations, are performed by the NBS within the scope specified in the NBS Act. The legal framework for banking activities was set by the Banking Act, the Protection of Bank Deposits Act, the relevant provisions of the Commercial Code and the Civil Code, and by NBS decrees, which are part of Slovak legislation.

Government inspection of the activities of banks and other persons licensed pursuant to separate regulations is performed by the Ministry of Finance or by an institution which is authorised by such Ministry.

The significant role of the NBS in banking supervision starts right from the licensing procedure. One of the activities which a bank or a branch of a foreign bank may be allowed to undertake is participation in the payment and settlement system.

Apart from granting licences to perform banking activities, banking supervision includes on-site and off-site inspection of compliance with the terms and conditions specified in the licence and in related NBS decrees. Banks are required to compile and

submit to the NBS information and reports (the forms and conditions of which are specified in NBS decrees). If the NBS reveals shortcomings in the activities of banks, it is entitled to impose – in respect of the extent and nature of the detected shortcomings – a penalty or other measure designed to remedy such deficiencies.

Banks and branches of foreign banks are obliged to ensure the verification of financial statements, budgetary performance and the reliability of information systems used for the processing of banking data. This takes place annually through an external auditor according to a special law.

### ***1.3.2 Provision of processing and settlement facilities***

#### *Provision of settlement accounts*

Direct and indirect participants enter into the Slovak Interbank Payment System (SIPS) (see Section 3.2.2). Banks and other financial institutions (direct participants) are obliged to hold reserve accounts with the NBS. These accounts are also used for the final settlement of interbank payments at the NBS. It is not possible to carry out interbank payments and clearing without establishing a reserve account. The NBS settles the balances of these accounts on a daily basis.

The NBS does not provide settlement accounts for indirect participants in the SIPS (see Section 3.2.2).

The banks are obliged to keep the required reserves on their reserve accounts. The level of required reserves is defined as a share of sight and time deposits in domestic and foreign currencies, securities and bills of exchange sold to non-bank customers, domestic and foreign currency deposits of foreign banks and issues of bonds (at present 8% of the sum of the above-mentioned items for all commercial banks with the exception of building societies, for which the share has

been reduced to 3% of the above-mentioned items).

Minimum reserves earn interest at a rate of 1.5%, with the basis for the calculation of interest being the daily actual balance on the reserve account. This is applied only for the amount not exceeding the set level. The required reserves are set for a period of one month at the beginning of the month and the keeping of these is monitored twice a month by the NBS.

Financial institutions keep the reserve accounts with the NBS, on which they are not obliged to hold minimum reserves. The reserve accounts of financial institutions exclusively perform the function of a clearing account and have a different regime from the reserve accounts of banks. The reserve accounts of financial institutions earn no interest.

Although the NBS does not process interbank payments, it is responsible for the co-ordination and the smooth, safe and efficient operation of the interbank payment and settlement system. Banks are not allowed to have a debit position even on a short-term basis during the processing of payment transactions at the SNCC. Therefore banks must adjust the monitoring and management of their liquidity levels in accordance with this requirement. Within a clearing day, there is a precisely defined period of time for the adjustment of bank liquidity (see Section 3.2.6). During this period, banks may bridge their short-term liquidity shortages on the interbank money market, or they have a chance to obtain funds from the NBS as from a lender of last resort, especially through open market operations or by drawing lombard loans.

#### *Provision of credit facilities*

According to Article 24 of the NBS Act, the NBS is entitled to solve problems related to bank liquidity on an individual basis.

Banks have the opportunity to borrow funds from the NBS as from a lender of last resort. At present, such credit takes the form of a lombard loan (1 to 30 days), which may be granted to a bank as a guaranteed loan secured by government securities or securities issued by the NBS which are held by the bank concerned. The volume of the loan may be agreed up to a maximum of 75% of the nominal value of the securities that form the collateral.

For more information about other forms of refinancing, see Section 1.3.3.

#### *Pricing*

The NBS maintains reserve accounts for banks and other financial institutions on the basis of contractual relations established pursuant to the provisions of the NBS Act 566/92.

The NBS does not charge any fees to banks and financial institutions for maintaining reserve accounts.

### **1.3.3 Monetary policy and payment systems**

Pursuant to Article 2 of the NBS Act, the primary task of the NBS is to ensure the stability of the national currency, expressed in terms of the consumer price index and the exchange rate of the currency. To this end, the NBS uses monetary policy instruments, including open market operations, foreign exchange, minimum reserve requirements, bills of exchange deals, lombard loans. By using these tools, the NBS indirectly influences the lending activities of commercial banks and subsequently the development of the money supply. In the area of exchange rate policy, the NBS applies a system of controlled floating, with the exchange rate of the Slovak crown being determined by the supply and demand on the foreign exchange market. The NBS participates in the foreign exchange market through interventions.

The implementation of monetary policy and the operation of the payment and settlement system are closely connected. A smoothly functioning, safe and transparent payment system guarantees that there will be no unexpected fluctuations in the level of bank liquidity, as this could affect the operation of monetary policy. The implementation of monetary policy is quantitatively oriented; the NBS sets the volumes of interventions, not the rates of interest. Through the payment system, the NBS withdraws or injects liquidity from/into the interbank market. On the other hand, sufficient liquidity is a precondition for the smooth processing of payments.

The main instruments of the NBS applied in the management of bank liquidity are open market operations and the minimum reserves that banks are obliged to maintain on accounts with the NBS (see Section 1.3.2). The fulfilment of minimum reserve requirements by banks is checked twice a month in terms of the average balances of commercial banks on reserve accounts held with the NBS at the end of a trading day. Commercial banks may use these balances for payment purposes during the day, which reduces the pressure on the payment system. Debit positions are not allowed during the day. Commercial banks do not have free access to intraday facilities.

#### *Refinancing connected with bank liquidity*

Open market operations are conducted by the NBS with the aim of regulating the liquidity of banks and branches of foreign banks, while upholding the basic goals of monetary policy.

Short-term loans for conserving a bank's liquidity may be granted to a bank for a period of three months. The terms and conditions of such a loan are decided by the Bank Board of the NBS.

*Other forms of refinancing*

In the period 1993-97 the NBS signed the agreement with the Export-Import Bank of Japan concerning Two-Step Loans and the agreement with the European Investment Bank concerning Apex Global Loans. Funds from the above-mentioned loans are earmarked for the support of private business in the Slovak Republic.

The Two-Step Loans (I-III) of the Export-Import Bank of Japan are earmarked especially for the support of small and medium-sized companies, joint ventures and the Slovak entrepreneur projects.

Apex Global Loans (I-III) are earmarked for financing projects in tourism and industry, as well as industry-related services including projects designed to improve environmental protection and achieve a more rational use of energy in the Slovak Republic.

These loans are only provided by commercial banks in accordance with the intermediate agreement which is signed with the NBS.

*Rediscounting of bills*

In connection with the Government's economic policy on agriculture, the NBS rediscounts bills of exchange for commercial banks. In this process, bills of exchange are rediscounted at the discount rate quoted by the NBS on the day on which the bills were purchased.

**1.3.4 Main projects and policies being implemented**

In fulfilment of the objectives relating to the integration of the Slovak Republic into the European Union (EU), the NBS set up a working group for payment systems in June 1998 in order to prepare for entry into the EU. Its members are recruited from among selected experts at the NBS, commercial banks and other institutions actively involved in interbank payments and clearing.

The main purpose of this working group is to co-ordinate and manage the incorporation of the EU requirements into the payment system of the Slovak Republic. The SIPS does not operate along the lines of a real-time gross settlement (RTGS) system as yet. As a matter of fact, the task of turning the SIPS into an RTGS system will constitute one of the fields of activity for this group to consider.

The NBS carried out a complex analysis of the potential risks inherent in the SIPS. The second key step was comparing the SIPS with the requirements of the EU (Minimum Common Features for Domestic Payment Systems, Committee of Governors, November 1993). The analysis and the above-mentioned document represented a starting-point for the beginning of the working group's activities.

**1.4 The role of other private and public sector bodies***Slovak National Clearing Centre, joint stock company*

The main task of the Slovak National Clearing Centre (SNCC) is to create the technical conditions for the processing of interbank payments in Slovakia. For detailed information on the interbank payment system of the Slovak Republic and the functions of the SNCC, see Section 3.

*Bratislava Stock Exchange, joint stock company*

The Bratislava Stock Exchange (BSSE) is a legal entity, the primary task of which is to organise deals in stocks and shares for its direct and indirect members and to prepare the financial settlement of these transactions. For more detailed information, see Section 4.

*Bank Cards Association*

The Bank Cards Association (ZBK) is a professional association of, at present, 19

banks. The primary goals of this association are to create conditions for the utilisation and development of bank payment cards used in the payment system of Slovakia, to ensure the training and further education of bank employees working in card-related businesses and to maintain the co-operation with other banking and non-banking institutions.

*Authorisation Centre of Slovakia, joint stock company*

The Authorisation Centre of Slovakia (ACS) is a joint stock company owned by major Slovak banks. The ACS provides banks with technical services related to bank cards – card database management, generation of card data, card personalisation, card authorisation, transaction data capture, clearing and settlement. For more detailed information, see Section 2.2.4.

*Association of Banks of Slovakia*

The Association of Banks of Slovakia (ABS) is a professional association of financial institutions. The ABS's basic mission is to establish a co-ordination centre for the protection of the common interests of members and to create a sound economic and legal environment for effective co-operation among commercial banks, the NBS, the Ministry of Finance and other financial and government institutions. The strategic goal of the ABS is the harmonisation of the country's legislation with European and global standards. The ABS has joined the Banking Federation of the European Union (FBE).

*National Member Group of S.W.I.F.T. in Slovakia*

The National Member Group of S.W.I.F.T. in Slovakia was established in 1993. At present the group is in the process of transforming itself into a legal entity. Its primary task is to co-ordinate the activities of current and potential S.W.I.F.T. members within Slovakia.

## 2 Payment media used by non-banks

### 2.1 Cash payments

At present, currency in circulation in the Slovak Republic consists of banknotes in seven denominations (SKK 5,000, SKK 1,000, SKK 500, SKK 200, SKK 100, SKK 50 and SKK 20) and seven denominations of coins (SKK 10, SKK 5, SKK 2, SKK 1, 50 hellers, 20 hellers and 10 hellers). In Slovakia the NBS is the sole issuer of banknotes and coins. Cash is mostly used in payment of goods and services by private individuals and companies. Cash withdrawals from bank accounts are made by means of cheques, payment cards and at the cash desks of banks.

Slovak banknotes are accepted by both legal entities and private individuals without restriction. Coins, including commemorative coins, are accepted without restriction by

banks and Post Office branches. Other legal entities and private individuals may refuse to accept coins with a total value in excess of SKK 100 or more than 10 coins of the same face value or commemorative coins.

At the end of 1997 the volume of banknotes and coins in circulation (including cash in bank vaults) totalled SKK 58.5 billion (ECU 1.53 billion), of which banknotes accounted for SKK 57.2 billion (ECU 1.50 billion – 97.8%) and coins (including commemorative coins) SKK 1.3 billion (ECU 34 million – 2.2%). On 31 December 1997 the volume of cash in bank vaults amounted to SKK 9.8 billion (ECU 257 million).

## 2.2 Non-cash payments

Non-cash payments are executed through current accounts maintained at banks. Payments from current accounts held by households are usually effected on the basis of payment orders submitted in written form. Owing to the large number of payments, more and more companies are using electronic data processing.

The most frequently used means of non-cash payment are credit transfers, direct debits and payment cards.

### 2.2.1 Credit transfers

Currently, credit transfers represent the most widespread form of payment by which the payer transfers single payments to the account of the beneficiary.

In 1997 transactions concluded in the form of transfers accounted for more than 98% of the total volume of non-cash payments. Credit transfers are presented to banks by customers either in paper form or electronically. Those presented in paper form are converted by the beneficiary's bank into electronic (book-entry) form and then processed solely in electronic form.

Standing orders are used for making regular payments to the same payee, due on a certain date, and for the regular transfer of fixed amounts (rentals, for example) or amounts from an account above a certain limit, or for the transfer of the entire balance on an account.

### 2.2.2 Cheques

Cheques do not represent a widespread means of payment, for historical reasons. The use of cheques, and the proper form of cheques, are governed by the provisions of Act 191/50 on bills of exchange and cheques. Cheques are used for non-cash payments or for cash withdrawals from banks.

In Slovakia banks issue private cheques to holders of accounts and bank cheques that may be issued even without the existence of an account. (The only condition is that a sufficient amount of money should be paid into the bank's internal account.)

There is a separate guaranteed cheque system (similar to the Eurocheque Scheme) formed by several Slovak banks. A guaranteed cheque may be issued up to the amount of SKK 6,500 (ECU 167.3) and 10 guaranteed cheques (up to the total amount of SKK 65,000, i.e. ECU 1,673) may be presented at any one time. These cheques are used for cash withdrawals at the cash desks of banks (members of the guaranteed cheque system), while the cover of presented cheques is not verified, or they may be used in payment of goods and services at specified trading places. Until now such cheques have been used without guarantee cards; the identity of the holder is verified when the cheque is presented. The bank that accepts the guaranteed cheques collects the amounts that it paid to customers or credited to their accounts from the banks that issued the cheques to the customers. A merchant accepting a guaranteed cheque will present this cheque to its bank together with the direct debit instruction. In this instruction it quotes the sum (in the case of several cheques, the total sum) and the number(s) of the cheque(s). The merchant's bank credits the payee's account directly with the sum of all cheques (including dishonoured cheques). When the cheque is to be paid in cash, the bank pays it and then sends to the payer's bank a direct debit instruction with the same indications as those of the cheques presented by the merchant. The paid cheque remains at the bank which paid the cheque and is not sent back to the issuing bank (truncation). Personal cheques are not honoured immediately after having been presented to the bank, but only once the funds have been received from the payer's bank.

### 2.2.3 Direct debits

A direct debit is a form of payment which is initiated by the payee. It is necessary to

distinguish between one-off payments and standing orders. At present, one-off direct debits are used mainly for the settlement of payments made by means of cheques and payment cards.

Standing orders are used for regular payments, due on certain days, on the basis of a prior agreement between the bank and the customer (such as payments for electricity supply or telephone charges). The present legislation makes it possible for certain entities to issue orders for so-called legal direct debits, i.e. direct debits on the basis of legally valid and enforceable decisions of courts, court executors, administrative bodies in relation to the state budget or the payment of interest and charges for banking services.

#### **2.2.4 Payment cards**

##### *Debit cards, credit cards and travel and entertainment cards*

By 31 July 1998 about 1.15 million payment cards had been issued by banks which are members of ZBK (see Section 1.4). The number of cards has increased to such an extent that now every fifth citizen is a holder of a payment card. Of the total number of cards in circulation, domestic payment cards (usable only in Slovakia) account for 91%. The remaining 9% are international payment cards (usable both in Slovakia and abroad). With regard to domestic and international payment cards, banks issue various types of card products from Europay International (Cirrus, Maestro and Eurocard/MasterCard) and VISA International (VISA or Electron). One bank issues American Express cards for American Express, and another bank issues Diners Club cards for the company Diners Club Austria.

As regards the method of payment, the majority of cards issued by banks in Slovakia are “pay now” products, i.e. debit cards linked usually to current accounts denominated in Slovak crowns or hard currency. Even cards

such as Eurocard/MasterCard or VISA in Slovakia are issued and processed essentially according to the same method as debit cards, i.e. they are issued only after a certain amount has been credited to the customer’s account (according to the general terms and conditions stipulated by the particular bank) or when a certain amount is held on the customer’s account. The transactions are processed so that the funds are debited from the accounts of customers after the bank has been notified of these transactions.

Payment cards are issued to holders of bank accounts (legal entities and private individuals) and are mostly used for the withdrawal of cash from ATMs and less for payments in shops. Typical credit cards, which offer a certain credit limit to customers, are not yet used in Slovakia.

##### *Retailer cards*

Some non-bank entities are also beginning to issue cards for their customers in Slovakia. The customers of these companies can use the cards in the related retail networks (e.g. payments at petrol stations, leasing payments, etc.).

##### *Prepaid cards*

Interest in prepaid chip cards is growing in Slovakia in step with developments in chip technology. Currently, non-banking institutions, such as Slovak telecommunications companies or petrol stations, are issuing single-purpose prepaid cards (e.g. telephone cards).

In accordance with the growing diversity of chip technologies on the market, as well as the existence of pilot projects for multi-purpose prepaid chip cards throughout the world, an increasing number of domestic banks are expressing an interest in this payment instrument. This interest of commercial banks in issuing an “electronic purse” has brought about the need to co-

ordinate the issuance and usage of this payment instrument. With regard to the position and tasks of the NBS in the payment system, as well as the potential impact on the central bank of the expanded use of the electronic purse in the country's payment and settlement system, the NBS made a decision to play a leading role in this development as a co-ordinating authority. The NBS is therefore intending to eliminate the presence of numerous incompatible and closed electronic purse systems in Slovakia and to define national standards for issuers and recipients of electronic purses.

To this end the NBS issued Decree 2/98 stipulating the Terms of Issuance and Use of the Electronic Purse as an Instrument of Payment, published in the Collection of Laws of the Slovak Republic. This Decree is a generally binding legal regulation and establishes the fundamental conditions to be applied for issuing electronic purses.

From December 1997 until June 1998 a working group on chip cards was active at the ACS. This group prepared studies dealing with the possibilities for the deployment of chip products in the country. The subject being analysed was the transition to chip technology from the magnetic strip and the implementation of the electronic purse project. These studies have been submitted for review by Slovak banks.

A more extensive use of domestic chip cards for international payments and a multi-currency electronic purse are anticipated for the future, in parallel with world-wide progress in these areas.

#### *ATM and POS networks*

Cardholders in Slovakia can use a network of 935 ATMs (figure as at 31 July 1998) to withdraw cash. Of this number, a network of 345 ATMs is operated by Slovenska sporitelna, a.s. and a network of 590 ATMs is operated by the ACS. The owners of ATMs are banks that use the services provided by

the ACS. In October 1997 both networks were connected to form a common ZBK ATM network (see Section 1.4).

Payments made using plastic cards for goods and services are offered by merchants which have contracts on the acceptance of payment cards with the pertinent bank. Most of the merchants are equipped with EFTPOS terminals. Of the total number of 2,028 EFTPOS terminals (as at 31 July 1998), Slovenska sporitelna, a.s. owns and operates 508, and the ACS administers 1,520. The owners of these are banks that use the services of the ACS. EFTPOS terminals are installed at petrol stations, shops/shopping malls, supermarkets, hotels, restaurants and casinos, for example.

All the terminals, both ATM and EFTPOS, are connected online to the ACS central system. Each authorisation is performed by matching against the card database at the ACS in real time. However, internal systems at the banks have no online connection to the ACS's central system to date. The card account balances held at the ACS are updated daily by the banks. On the other hand, the ACS generates all the necessary settlement data, reports and statistics for particular ZBK members on a daily basis. Furthermore, the clearing function at the ACS submits the net position of each ZBK member to the SNCC daily on the basis of a third-party order.

Widespread ATM usage began earlier than the development of EFTPOS terminals (see Table 6). This is one of the reasons why cash withdrawals from ATMs prevail over card payments at retailers in Slovakia. The volume of card payments in Slovakia, as at 31 July 1998, made up only about 3% of the aggregate volume of card transactions in the Slovak Republic, and cash withdrawals made up the rest.

#### **2.2.5 Postal instruments**

The services of cash and non-cash payment and settlement systems at Post Office

branches are provided by Slovenska posta, s.p. using its own payment media, i.e. postal order forms for receiving or delivering cash, primarily to the general public. The connection between the account holders which send or receive payments is supplied via the Postova banka, a.s., which carries out cash transfers for Slovenska posta, s.p.

Additionally, Post Office branches receive cash payments for various businesses, such as rent payments, electricity and telephone bills, subscription fees for newspapers and magazines, and subsequently offer non-cash transfers to their partner accounts at banks in the Slovak Republic. A specific feature of the payment system is the cash payment of pensions and social security payments. Acceptance and payment of foreign cheques is, of course, standard.

### **2.2.6 Other payment instruments**

#### *Bills of exchange*

Bills of exchange are only used to a limited extent as payment instruments. They are more frequently used to obtain a loan, mainly in agriculture. The NBS uses bills of exchange rediscounting as one of its monetary policy instruments.

#### *Documentary payments*

Documentary letters of credit and documentary collection are instruments used primarily in cross-border commercial payments.

#### *Luncheon vouchers*

As part of their social welfare programmes, employers provide their employees with luncheon vouchers that can be used in an extensive network of restaurants. The most widely used are "Ticket Restaurant" luncheon vouchers. They can be used to pay for meals in restaurants and to make food purchases in some grocery stores.

## **2.3 Recent developments**

### **2.3.1 EDIFACT Standard**

In 1995 preparatory work began on implementing the EDIFACT project. The SNCC, using its experience in operating an electronic interbank payment and settlement system, prepared the aforementioned project for the electronic interchange of commercial and other documents. Currently, the joint stock company EDIVAN, an affiliate of the SNCC, is carrying out the project. The SNCC is the majority shareholder in EDIVAN, a.s. The aim behind the implementation of this project is to rationalise the interchange of documents of bank customers (including foreign partners), and a fundamental aspect of its design is the use of a world-wide standard for document interchange.

### **2.3.2 New access facilities**

#### *Home banking*

Within their programme to enlarge the range of their services, commercial banks are currently beginning to offer their customers a new electronic banking service, i.e. home banking, based on a remote connection between the bank and the customer. Besides being a modern and safe instrument of contact between a customer and a bank, it also enables a gradual change of strategy in terms of the regional development of a bank.

#### *Global System for Mobile Telecommunication (GSM) Banking*

Some banks offer a supplementary service to customers which own GSM mobile telephones with an activated service for sending and receiving short messages through the network operator. This enables the customer to carry out transactions on an account using a mobile telephone, such as issuing a payment order, displaying a selected transaction on the GSM telephone display, or calling up an exchange rate list, the current

account balance, or the latest turnovers. Correct identification and the security of the customer are guaranteed by access codes.

#### *Internet banking*

This is available to customers 24 hours a day from anywhere in the world that has access

to the Internet. Customers can use the following services: credit transfers and direct debits, file transfers, account balances and account statements. Security is guaranteed by user name, password and access codes required to perform transactions.

## **3 Interbank exchange and settlement systems**

### **3.1 General overview**

An RTGS system has not yet been established. The settlement of payment transactions in the interbank payment system does not occur on the accounts of the NBS in real time. The system processes all domestic interbank large-value and retail payment transactions.

An information security policy is a component of the information protection structure both at the SNCC and the NBS. It is consistently implemented both in the operation of the interbank payment system and in performing other tasks.

### **3.2 Slovak Interbank Payment System (SIPS)**

The SIPS is based on the existence of a single clearing centre and, by law, all banks are obliged to carry out all their domestic payment transactions through this centre. The SNCC is not an organisational unit of the NBS. The SNCC was established in 1992 in connection with the creation of preconditions for interbank payments in the Slovak Republic after the division of the former CSFR into two independent states. The SNCC commenced operations on 8 February 1993 (i.e. the day on which the Slovak currency was introduced) as the sole clearing centre for all domestic interbank payments.

The SNCC was founded by local banks as a joint stock company and the majority

shareholder is the NBS. The other shareholders include commercial banks and the Ministry of Finance, which owns only one share.

#### **3.2.1 Operating rules**

The processing and settlement of transactions are organisationally and technically separated within the SIPS. The SNCC, as system operator, is responsible for processing. Banks and branches of foreign banks execute mutual payments and settlement operations solely through the SNCC. The final settlement of transactions is within the jurisdiction of the NBS, which operates as a settlement agent.

The legal aspects of the SIPS are regulated by the Banking Act and the NBS Decree 275/94 on the principles of the payment and settlement system between banks (see Section 1.1).

The “zero-hour rule” is not stipulated by any law at present. In the event of bankruptcy, the legislation of the Slovak Republic contains Act 328/91 on Bankruptcy and Composition, with subsequent amendments; this, however, does not recognise the concept of the zero-hour clause.

The SIPS design has a “Y” shape (see Chart 1) with processing in the SNCC being performed during the day according to the principle of gross settlement, and final clearing of net positions being conducted by

the NBS on the reserve accounts of banks at the end of the day.

### **3.2.2 Participation in the system**

Participation in the SIPS is classified according to two criteria.

The first is the classification of participants as direct or indirect. Direct participants keep reserve accounts with the NBS and carry out payment transactions “in their own name”. Only banks and other financial institutions established by special laws can be direct participants. Currently, 28 banks, including the NBS, are direct participants in the SIPS, plus one financial institution established by a special law.

Indirect participants do not keep reserve accounts with the NBS and do not conduct payment transactions “in their own name” but are authorised to debit or credit the accounts of direct participants. Indirect participants are legally described as “third parties”. These are exclusively non-bank entities on the capital market and entities contributing to the development of services provided by banks. These entities have access to the SIPS on the basis of a permit issued by the NBS, which is granted after certain conditions are met. Two third parties are now indirect participants, namely the Bratislava Stock Exchange and the Authorisation Centre of Slovakia, which provides clearing of bank card transactions.

Another criterion is classifying participants as active or passive. This classification is used in order to distinguish between the payment system participants with regard to their identification codes included in a catalogue updated by the NBS on a monthly basis. Each participant (bank, financial institution or third party) is given a unique identification code for domestic payments (see below) as soon as it is established. During this period the code is marked as “passive” in the catalogue. The participant is obliged to present evidence of its technical and administrative readiness

to execute payments before being marked as “active”. The catalogue indicates to the other participants and to their customers which identification codes may be used in payment instructions and which are only being tested.

#### *The bank code number*

Banks and financial institutions that are involved in the domestic payment and settlement system are distinguished by their numerical and alphabetical identification codes. Identification codes for domestic payment and settlement are granted to the participants by the NBS. The identification code is an obligatory element of bank connection required in domestic payment operations. The bank connection consists of the account number and the identification code. Numerical or alphabetical codes are used in bank connections; at present the numerical codes are mostly used for bank identification. The account number includes up to 16 digits. The account number consists of two sections. The first section includes up to 6 digits and the second section includes up to 10 digits. Complete bank connection consists of an account number (up to 16 digits) and an identification code (4 digits).

The NBS registers and regularly updates the list of bank identification codes – the so-called converter of identification codes for domestic payments (converter) – and ensures its distribution to all participants in the interbank payment system.

### **3.2.3 Types of transactions handled**

The basic transactions handled in the SIPS are credit transfers and direct debits. The SIPS also processes cheque transactions and net positions of card transactions. As regards card transactions, the ACS supplies banks (which issue and accept payment cards) with clearing files containing the data on the use of payment cards on a daily basis. At the same time, the ACS prepares data for mutual settlement between banks every day and

submits them to the SNCC for processing on the basis of a third-party order. The settlement of transactions for banks is based on the principle of net settlement.

The processing and settlement of credit transfers, from debiting the payer's account at one bank to crediting the beneficiary's account at the other bank, take no more than three days. In the case of direct debits, the payment is initiated by the payee, who applies to the payer to settle the obligations. This operation prolongs the processing and settlement of direct debits by up to five days.

For interbank transactions and balancing liquidity, a specific payment order is used – the so-called “third-party entry order”. This enters processing at the SNCC by fax or the Interbank Communications System (MKS) with the highest processing priority.

An accelerated form of credit transfers and direct debits is now under preparation, i.e. the so-called “rapid payment”, which will have the second highest priority to the third-party entry order. Processing a rapid payment will take a couple of minutes from the moment it enters the SNCC.

### **3.2.4 The operation of the transfer system**

The SNCC operates as an automated clearing house. It processes payment transactions on the same clearing day as that on which it receives them for processing. It is not possible to submit transactions to the system several days in advance in order for them to be settled on a certain value date. The transaction processing environment is fully electronic with the exception of third-party entry orders.

Transactions are processed in the order in which they arrive (first in, first out principle) in respect of pre-determined priorities. Payment transactions between banks have a higher priority in processing than customer transactions. Third-party entry orders have the highest processing priority and they are

processed immediately on technical accounts at the SNCC. However, they are not settled on the reserve accounts at the NBS before the end of the clearing day.

The SNCC works on the basis of a 24-hour cycle called “a clearing day”. The data exchange between banks and the SNCC takes place at time intervals set according to a timetable for submitting and processing data at the clearing centre (see Chart 2). Banks may deliver payment transaction data for processing on a given clearing day up to 1 p.m. on the previous day and 11.30 a.m. on the clearing day in question. The period from 11.30 a.m. to 1 p.m. on the clearing day is reserved for large-value interbank funds transfers. After that, system maintenance is carried out, data carriers are received for processing on the next clearing day and, at the same time, output files for banks are generated and sent to reach banks before 9 a.m. on the following clearing day.

Banks monitor their current balance on the technical account at the SNCC during the day, either electronically or by telephone. This is how they control their liquidity. The NBS is authorised to monitor the technical accounts of all banks with the aim of overseeing and supervising liquidity in the banking sector.

In the case of a bank having insufficient liquidity, the most frequent means of arranging the necessary funds is to borrow them on the interbank money market. The commercial bank which lends the necessary funds to the bank with a liquidity shortage uses the specific payment instrument “third-party entry order”. This transaction has the highest processing priority at the SNCC (see Section 3.2.4). The commercial bank sends a “third-party entry order” usually by fax.

### **3.2.5 Transaction processing environment**

The transfer of data between banks and the SNCC is effected exclusively in electronic form in the clearing format that represents a

national standard (differing from the S.W.I.F.T. format).

Banks send and receive data to and from the SNCC in different ways:

- offline communications:

on magnetic tapes or diskettes;

by fax; or

via a modem.

- online communications:

via a telecommunications network with X.25 protocol (via MKS).

In general, data are sent to the SNCC through online telecommunications networks, and the remaining methods are used as an alternative data transfer.

### 3.2.6 Settlement procedures

The processing and settlement of payment transactions is conducted in two phases:

In the first phase, payment transactions are processed at the SNCC, which manages technical accounts on behalf of direct participants in the SIPS. All payment transactions made during the day are recorded on these technical accounts according to the principles of gross settlement. A payment transaction can only be processed if there are sufficient funds on the technical account. A debit balance of a bank on its technical account at the SNCC is not permitted even for a short time during a clearing day. If at the time in question the payer's bank does not have enough funds to cover a payment transaction, the processing of payment transactions is put in a waiting queue. In the event of the funds on the technical accounts being insufficient, no intraday credit facilities are provided. Banks may overcome a short-term liquidity shortage by borrowing on the interbank money

market, or they may acquire the necessary funds from the NBS (see Section 1.3.2, *Provision of credit facilities*). As soon as the system detects sufficient funding, it resumes the processing, maintaining the order of incoming payment transactions (first in, first out principle).

If the payer's bank does not have enough funds to cover the queued payment transactions at the close of the day, the SNCC will not process these transactions and will return them to the bank. On the basis of processed payment transactions the SNCC generates reports for banks and computes the net positions (final balances) of banks for the NBS.

In the second phase, payment transactions are finally settled by the NBS using reserve accounts at approximately 3 p.m., taking the form of the banks' net positions. Each bank is informed of the balance resulting from the final settlement and its current position on the reserve account by means of a separate statement of account.

The principle that the system must set off every day applies here. This means that at the end of the day, when final settlement occurs, the balance on the technical accounts at the SNCC must be equal to that on the reserve accounts at the NBS, so the initial balances on the technical accounts at the SNCC and the initial balance on the reserve accounts at the NBS are equal at the beginning of the next day.

At present, there is no link between the reserve accounts kept with the NBS and the technical accounts at the SNCC during the processing day. The current administrative and technical arrangements of the SIPS allow the payments to be settled on the reserve account only after being processed via the SNCC. Of course, the NBS intends to incorporate the RTGS principles into the SIPS under the guidance of the working group for payment systems as mentioned under Section 1.3.4.

### **3.2.7 Credit and liquidity risk**

No payment transaction can be processed and settled if there is not sufficient cover. Thus credit and liquidity risk are reduced to a minimum.

The NBS does not offer any intraday credit facilities to the SIPS participants.

### **3.2.8 Pricing**

The pricing policy is aimed at full cost recovery of the services offered. Prices for services provided by the SNCC have been determined on the basis of the contracts between the SNCC and individual SIPS participants. The price of one third-party entry transaction is SKK 1,000 (ECU 25.74). Prices per individual entry item for the other interbank transactions have been set according to the time frames within which they are sent to the SNCC, irrespective of the number of transactions, in the following way: from 1 p.m. to 7 a.m. a maximum of SKK 1.10 (ECU 0.03) depending on the cost of the SNCC; from 7 a.m. to 11 a.m. a maximum of SKK 1.60 (ECU 0.040) depending on the cost of the SNCC; and from 11 a.m. to 11.30 a.m. at SKK 2.50 (ECU 0.06).

The price per individual output item for all payment transactions irrespective of the number of transactions is set at a maximum of SKK 1.20 (ECU 0.03) depending on the cost of the SNCC. The price for maintenance of the account at the SNCC is SKK 420.00 (ECU 10.81) monthly. The one-off price for joining the MKS in August 1995 was SKK 150,000.00 (ECU 3,861.00). The monthly price for the transfer of data through the MKS to the SNCC is SKK 6,000.00 (ECU 154.44).

### **3.2.9 Main projects and policies being implemented**

The number of teleprocessing users is growing constantly. The preparation and

testing of a product called "rapid payment" is continuing. "Rapid payment" does not mean the RTGS system mentioned in Section 1.3.4. It is another project initiated by the SNCC. "Rapid payment" is designed as a new payment instrument with the highest priority from the processing point of view.

Data expressing the net positions of banks and generated at the end of the day at the SNCC are transferred to the NBS in paper form. The electronic transfer project has been successfully tested. The NBS is ready to implement that project at the SIPS after some technical modifications to the internal system.

## **3.3 Cross-border payments**

Under current legislation governing foreign exchange issues Act 202/95 (Foreign Exchange Act), passed by the National Council of the Slovak Republic, all cashless payments to or from abroad must be made either through banks, institutions licensed to handle transactions in foreign exchange, bureaux de change (to the extent specified in their banking or foreign exchange licences) or the NBS. When making payments abroad, the sending institution is required to supply statistical information about the purpose of such payments. The execution of individual payment media (e.g. bills of exchange, cheques, collections, letters of credit and bank guarantees) is regulated according to the legislative arrangements cited in Section 1.1.

In compliance with the reporting obligation, banks and branches of foreign banks furnish the NBS with foreign exchange reports, the main purpose of which is to provide foreign exchange statistics.

The system of cross-border payments is based on interbank correspondent links, and participants follow internationally recognised rules and conventions while respecting the terms and conditions established in agreements acknowledged by banks operating in Slovakia. Some banks join international

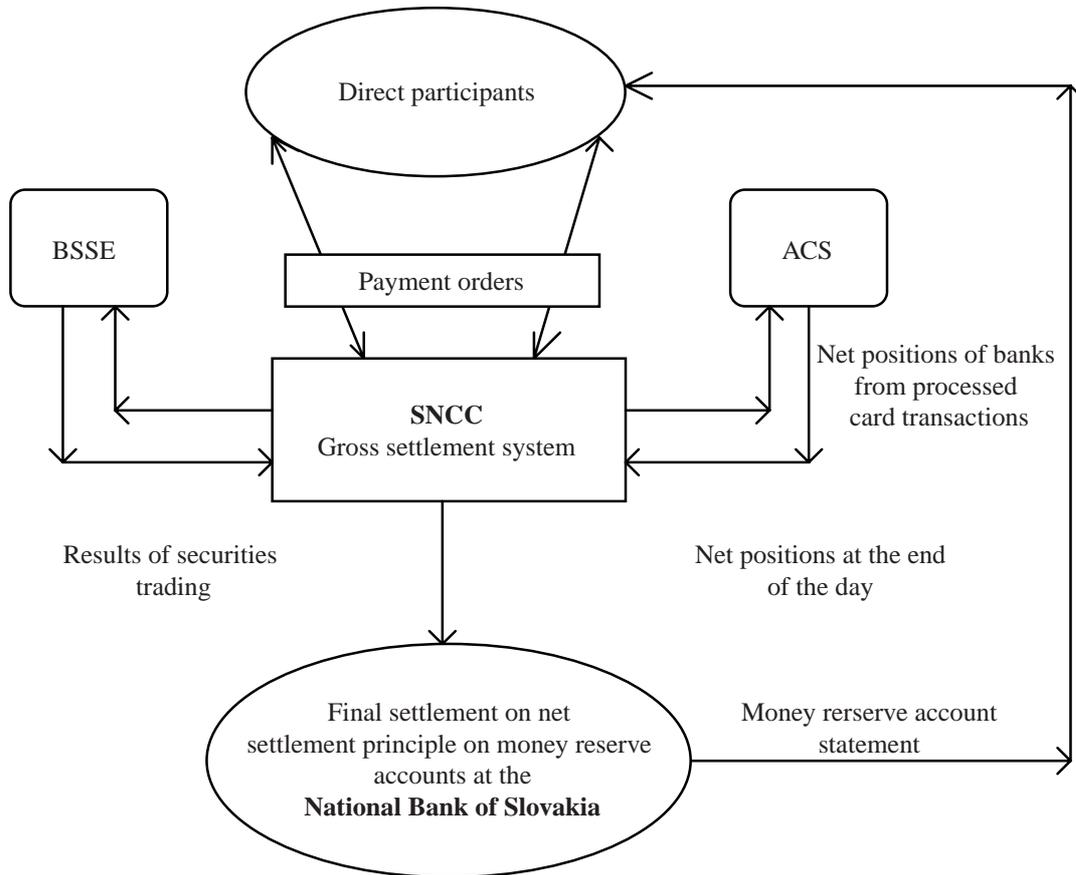
clearing associations (e.g. the Clearing Bank Association).

The most frequently used type is non-documentary payment, i.e. direct funds transfers processed through the S.W.I.F.T. system. The NBS was connected to this global network in December 1993. By the end of 1997 S.W.I.F.T. membership had been granted to 25 banks in Slovakia and the number of messages sent in 1997 reached 1.5 million.

Apart from non-documentary payments, banks in Slovakia also provide documentary payments, such as documentary collections and documentary letters of credit (for which S.W.I.F.T. is also used).

Foreign payments in Slovak crowns are also based on correspondent links, with their settlement taking place at the clearing centre handling domestic interbank payments in Slovakia (see Section 3.2).

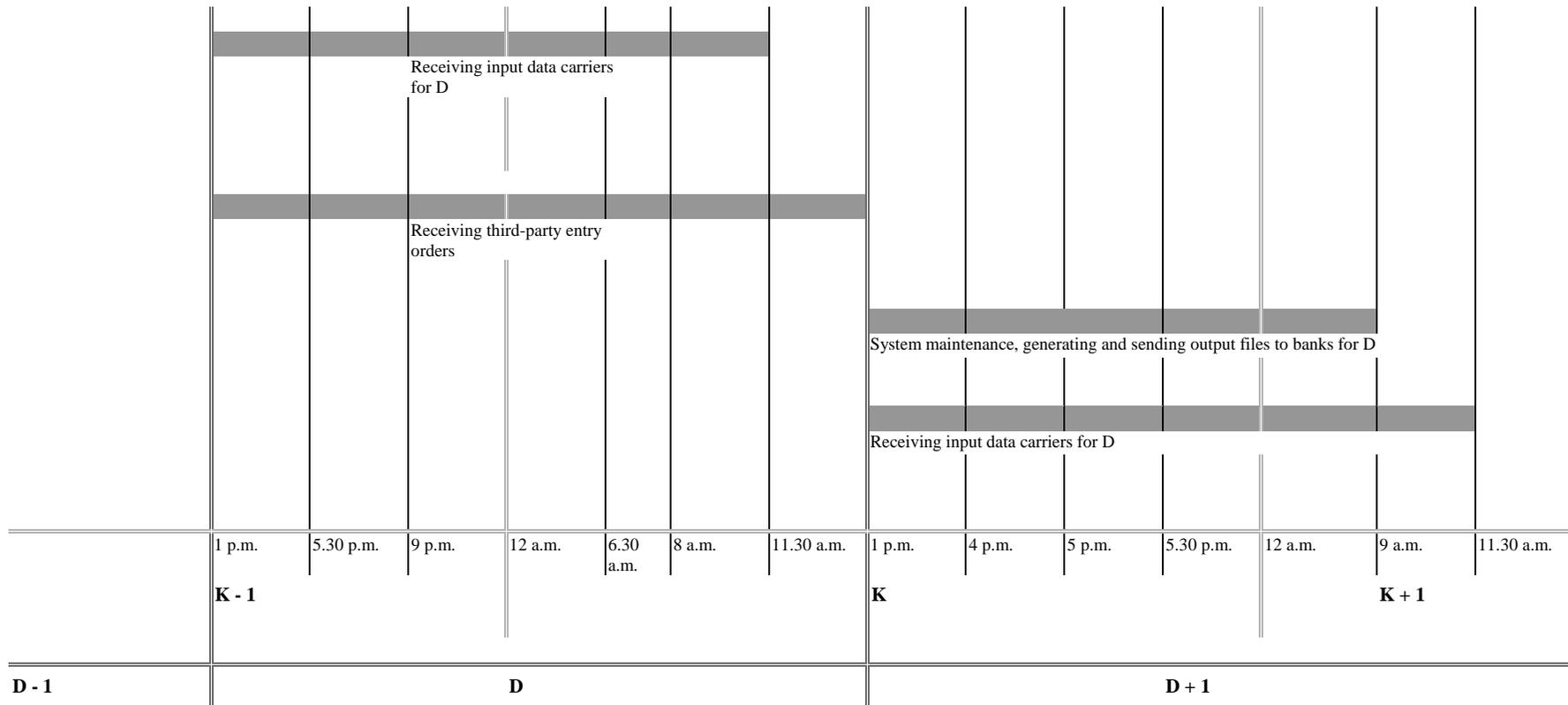
**Chart I**  
**Interbank payment and settlement system in the Slovak Republic**



SK

**Chart 2**

**Timetable for submitting and processing data at the Clearing Centre**



K - calendar day  
D - clearing day

## 4 Securities settlement systems

### 4.1 Institutional aspects

#### 4.1.1 General legal aspects

Until 1992 securities were issued in paper form and all services associated with their custody and ownership transfers were provided by banks authorised to do so. As a result of the first wave of privatisation, a great number of issues of company shares were launched in book-entry form in 1992. These shares were centrally registered at the Securities Centre of the Slovak Republic (SC). In the same year Act 600/92 on Securities (with subsequent amendments) was also approved. This law constitutes a basic legal standard for the trading and clearing of securities transactions. It sets out the categories of securities, parties involved in securities trading, the position of public market operators, the role of the SC and so forth. It has been supplemented by Act 530/90 on bonds (as subsequently amended), which is specially designed to cover debt securities of this type.

At that time the aforementioned law distinguished between two forms of marketable securities, namely securities in paper and book-entry form. In the 1995 amendment to this Act only book-entry securities were defined. Later on, another amendment made it possible again to use non-marketable securities in paper form as a vehicle for new issues. Under the current version of this law, the form of securities is left to the issuer's discretion, but all securities destined for the public market must be in book-entry form. This has implications for the different types of clearing which are in place for securities.

#### *Securities in paper form*

Securities in paper form are held on behalf of their owners by banks which must have a custodian's licence, issued by the NBS. These securities are not traded on the public

market. Information on current holders and ownership changes are not made available to the public.

#### *Book-entry securities issued as non-marketable securities*

Registration of this type of book-entry securities and modifications to the holders' securities accounts are made by the SC. Information on ownership changes is not made public, as the reporting obligation on the part of the SC only applies to marketable securities.

#### *Book-entry securities issued as marketable securities*

All information on the trading in these securities is publicly available. Moreover, the SC is obliged by law to disclose any change of ownership if a 5% share in a given issue is exceeded.

There is no legislation covering the settlement system for transfers of book-entry securities. The system for settlement, which is run by securities market operators, is subject to market regulations to be approved by the Ministry of Finance.

The Slovak capital market is set apart by the fact that it is not legally possible to transfer marketable securities directly at the SC; therefore all transactions in marketable securities are mediated by securities market operators. Consequently, information on trades is given in lists of the quotations for respective markets and statistical surveys prepared by market operators.

The issuing, buying and selling of securities by non-residents is regulated by the Foreign Exchange Act. This Act defines cases in which a foreign exchange licence, issued by the NBS, is required for securities trading by non-

residents or residents. In the event that a non-resident buys securities, thus providing a resident with a credit with a maturity of three or more years, a foreign exchange licence is not required. Likewise, such licence is not required for securities offered for trading in Slovakia if such securities have been issued by an issuer domiciled in a member state of the Organisation for Economic Co-operation and Development (OECD) and are traded on the main market of a foreign stock exchange.

Securities trades between individual entities are cleared by the SNCC. See Section 3 for more details.

Other underlying laws worth a particular mention are: the Commercial Code, the Civil Code, the Act on the Transfer of State Property to Other Persons, the Act on the Stock Exchange, the Act on the National Bank of Slovakia, the Act on Investment Funds and Companies, the Foreign Exchange Act and others. A new legal framework to govern the conditions for the existence of a capital market is being prepared.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

According to the NBS Act, the NBS may buy from or sell to banks securities with a one-year maturity starting from the day of their purchase by the NBS. With a view to regulating the money market, the NBS may issue its own securities with a maturity of up to one year.

The NBS may provide the Government of the Slovak Republic with a short-term credit by purchasing Treasury bills with a maturity of up to three months. The overall position of these credits at any point in time during a year may not exceed 5% of the previous year's revenue in the state budget.

Under the above-mentioned law and the Act on Securities, the NBS administers a Registration Centre, the activities of which

are more closely specified by the Operating Rules for the Short-Term Securities Market (TKCP), which are issued and traded in book-entry form.

##### *Provision of settlement facilities*

All the banks keep money reserve accounts with the NBS in which they are obliged to maintain pre-determined minimum reserves (see Section 1.3.2). These accounts are used for the final settlement of payment transactions including the cash leg of securities transactions.

##### *Provision of operational facilities*

By law, the NBS Registration Centre has been entrusted with the function of keeping records on short-term securities with a maturity of up to one year issued by the Ministry of Finance. This centre, in co-operation with the SNCC, provides for the financial settlement of securities transactions.

The NBS notifies the central securities registrar of any government bond issues, and/or trades, while providing for their crediting to the holders' asset accounts.

##### *Monetary policy operations and securities settlement systems*

One of the tools used by the NBS to implement its monetary policy is the conduct of operations on the over-the-counter (OTC) market.

To pursue its monetary policy objectives, the NBS may both refinance and drain the surplus liquidity of commercial banks through open market operations, which may include direct purchases and sales of securities, individual repo deals or repo tenders, and issues of NBS Treasury bills.

#### 4.1.3 The role of other public sector bodies

##### *Stock exchange institutions*

There are two major institutions operating on the securities market: the Bratislava Stock Exchange, a joint stock company (BSSE), and the RM System Slovakia Stock Market, a joint stock company (RMS).

All activities connected with securities settlement are governed by Act 600/92 on Securities (see Section 4.1.1). According to this law no OTC market is allowed and all transactions in securities are to be executed via stock market operators. Publicly tradable securities are to be issued in book-entry form and they are registered at a central depository, namely the SC. Both the BSSE and the RMS co-ordinate the clearing and settlement process for transactions concluded on their markets. There is direct electronic access to the SC, which enables market operators to send instructions for the transfers of ownership. The SC does not take care of the cash settlement leg. This part of the settlement is the task of the market operators. The BSSE acts for this purpose as a so-called third party in the interbank clearing system and is entitled to send instructions for cash payments to the SNCC. The RMS has an agreement with a commercial bank, and cash settlement takes place on accounts held with that bank.

The RMS is a market operated under the Act on Securities (OTC market). There are no membership requirements. It is open to all individuals and legal entities. It operates a fully electronic trading and clearing system and provides trading for its customers through its wide network of branches all over Slovakia. Like the BSSE, the RMS is licensed by the Ministry of Finance to perform this activity.

##### *Other institutions*

There are some other (mostly regulatory and self-regulatory) institutions operating on the capital market:

- The Office of State Supervision of the Capital Market, a branch of the Ministry of Finance. Market operators, securities dealers and other capital market agents report to it. In the new legislative arrangement, it will be replaced by an independent regulatory and supervisory authority.
- The Association of Securities Dealers, a self-regulatory professional organisation of securities dealers.
- The Association of Investment Funds and Investment Companies, a self-regulatory professional organisation.
- Recently a civic association called the Independent Capital Market Board was formed. It is an independent association of capital market experts.

#### 4.1.4 The role of other private sector bodies

##### *Central Securities Registrar*

The role of a central registrar for book-entry securities is performed by the SC, the position and function of which are defined by the Securities Act. The SC keeps the accounts of issuers and securities holders and provides all types of services associated with the registration of securities, changes in their ownership and other related data, and implements decisions made by the Ministry of Finance. Pursuant to the applicable laws, it also keeps records of rights relating to securities, for example, the right of disposal and suspension, pledges on securities, and so forth.

The SC carries out instructions from market operators to exercise securities transfers. These services are transacted electronically online. All accounts of securities holders are maintained in the names of account holders (which/who may be legal entities or individuals). All securities kept on a securities holder's account are deemed to be the holder's property. Securities transfers due to

trades concluded on the stock exchange are made through the final holder's account (so-called trade-for-trade settlement).

The SC also performs control activity, based on contractual relations with capital market players. Contracts for providing these entities with technology-based services from the SC (online interconnection and/or provision of magnetic diskettes) include obligations on the part of the authority to check the compliance of orders with applicable legislation, focusing on compliance with the Act on Securities, in particular on documenting the orders that give rise to changes in the ownership of securities. However, under current legislation the SC may not check their settlement. The aforementioned agreements have been concluded between the SC and BSSE, RMS and several major users of SC services (e.g. dealers, investment companies and investment funds).

As at 31 December 1997 the SC had registered more than 3.6 million accounts of book-entry securities holders, and more than 1,900 issuers that had launched more than 2,100 issues of different types of securities. The nominal value of these issues amounted to SKK 320.8 billion (ECU 8.4 billion). The SC provides its customers with information, record-keeping and trading services. These services are offered at the head office in Bratislava and nine remote offices.

#### *Clearing centre*

At present, there is no single centre for securities settlement in the Slovak Republic. According to the applicable legislation, marketable securities may only be transferred via securities market operators. Standard settlement systems, built directly by these operators and connected to the banking sector either directly or through the SNCC are therefore used for clearing purposes. (For example, to cover the needs of the derivatives market, the BOFFEX system, which is in preparation at the stock exchange, will incorporate the functions of a clearing house in the Bratislava Stock Exchange division.)

## **4.2 Summary information on securities markets**

The Slovak securities markets comprise bonds, equities and derivatives markets. The NBS organises the market in Treasury bills. Equities and bonds are exclusively traded either on the BSSE or the RMS.

As far as participation in the various securities settlement systems is concerned, membership is required for trading on the BSSE, while the RMS operates without membership requirements. Entry into the BSSE is subject to a licence granted by the Ministry of Finance. Only legal entities (such as banks and stockbrokerage companies) may have access to the BSSE system. The RMS is open to legal entities as well as individuals. As the system run by the NBS (TKCP) is used for monetary policy purposes, its membership and participation are based on different principles. The TKCP is a closed market of three groups of participants – direct participants (banks, insurance companies and dealers), indirect participants (registered legal entities – resident or non-resident) and participants with a special standing (the NBS itself and the Ministry of Finance).

The total value of trading in 1997 reached SKK 164.1 billion (ECU 4.3 billion) on the BSSE floor and SKK 16 billion (ECU 420 million) on the RMS.

The elimination of the risks and the improvement of clearing and settlement procedures are the main and common interest of all market operators. In addition to these efforts, a recodification of the Act on Securities is being prepared.

### **4.2.1 Main features of different securities markets**

#### *Main features of the BSSE*

Membership is required for trading on the BSSE. Securities accepted for trading are placed on one of the three markets mentioned overleaf:

- the listed securities market;
- the registered securities market; or
- the free market.

All three markets have the same operating time and trading conventions. They only differ in terms of the admission requirements and obligations arising from their respective rules. According to the abbreviation of the name and type of security in the trading system, a broker can see the market on which the securities are placed.

In auction trading (fixing), securities transactions are concluded anonymously at the beginning of the trading day. The number of securities per order is not limited.

Unmatched bids are passed into continuous trading. The number of securities per order for this type of trading is also unlimited.

The so-called block transactions form a subsystem of continuous trading and are subject to special rules.

The BSSE determines maximum and minimum limits within which the supply and demand rates may fluctuate.

The BSSE members have the opportunity to conclude direct transactions among themselves. The lower margin for such trades has been set at the common average price resulting from the trades concluded on the BSSE and the RMS minus 10%; the upper margin has not been set.

Upon the close of trading, the members are informed of the balance of trading, which then becomes a basis for clearing and settlement.

#### *Basic quantitative aspects (basic statistics)*

In 1997 918 share issues and 130 bond issues were traded on the BSSE markets, taken as a whole.

At the end of 1997 market capitalisation amounted to SKK 184 billion (ECU 4.8 billion) for shares and SKK 92.8 billion for bonds.

The total value of trading in 1997 reached SKK 164.1 billion (ECU 4.3 billion), of which trades in listed shares amounted to SKK 45.4 billion (ECU 1.2 billion), unlisted shares to SKK 37.3 billion (ECU 0.98 billion), listed bonds to SKK 57.5 billion (ECU 1.5 billion) and unlisted bonds to SKK 23.9 billion (ECU 0.6 billion).

#### *Financial institutions operating on the BSSE market*

Any legal entity which meets the legal conditions for trading in securities may become a member. A licence to carry out this activity is granted by the Ministry of Finance. In addition, some other conditions set out in the Rules for BSSE Membership must also be met.

At the end of 1997 the BSSE had 50 members. Besides the NBS 17 commercial banks and 32 stockbrokerage companies were members of the BSSE.

#### *Main features of the RMS*

No membership is required for the OTC securities market. All individuals and legal entities are allowed to buy and sell securities individually. At the same time, brokerage may only be conducted by licensed securities dealers. All securities traded on the RMS market have to be booked in electronic form at the securities centre, which enables the RMS to perform settlement in real time. Pre-trade validation eliminates the liquidity risk implicit in a system with no membership requirements, but the introduction of membership requirements is envisaged as part of an organisational change.

The RMS operates a secondary market as well as a primary market. Other activities of the RMS comprise the distribution of dividends, the execution of public offers, legal counselling, the

training of customers and information dissemination. The RMS is the only institution in Slovakia which regularly publishes business data from issuers in its Fact Book.

#### *Basic quantitative aspects*

In 1997 there were 81 brokerage houses and 15 banks, and more than 1.59 million individuals participating in trading on the RMS market.

In 1997 1,003 share issues, 31 bond issues and 37 open-ended and closed-ended unit issues were listed on the RMS.

Market capitalisation amounted to SKK 184 billion (ECU 4.8 billion), whereas nominal capitalisation reached SKK 287 billion (ECU 7.5 billion).

#### *Financial institutions operating via the RMS*

Trading on the RMS market is predominantly conducted by non-bank securities dealers. Their main activity consists in collating offers from minor investors into larger units. At the same time, they trade among themselves in smaller securities packages. Banking entities also support this market, which is evidenced by the fact that practically all banks have leased an online terminal giving access to the RMS electronic trading system. Investment companies and mutual funds carry out their trading here via securities dealers.

#### *Recent developments*

The RMS recently introduced so-called block and repo trades on its market. The main goals of the RMS in the future are to minimise risk and improve the ease of trading for all participants in the RMS market.

#### *Main features of the short-term securities market*

As mentioned under Section 4.1.2, the NBS uses operations on the OTC market as one

of the tools of monetary policy. Trading on the OTC market involves securities issued and traded on the book-entry short-term securities market, i.e. Treasury bills, NBS bills and government bonds traded on the stock exchange.

#### *Basic quantitative aspects*

In 1997 the market for short-term securities took in 38 Treasury bill issues (put up for auction) with maturities ranging from 21 to 315 days, worth an aggregate SKK 88.813 billion (ECU 2.33 billion). The average value of an issue worked out at SKK 2.337 billion (ECU 0.06 billion).

There were 11 issues of government bonds in 1997, designed to cover the 1996 budget deficit of SKK 27.9 billion (ECU 0.73 billion).

#### *Financial institutions operating via the TKCP*

The TKCP is a closed market with three types of participants:

- direct participants;
- indirect participants; and
- participants with a special standing.

Their status and entry requirements are specified under Section 4.5.2.

### **4.3 Bratislava Stock Exchange (BSSE)**

#### **4.3.1 Major regulations**

The BSSE is the main operator of the spot market in Slovakia. Its legal framework was laid down in Act 248/92 on the Stock Exchange (with subsequent amendments). Under the provisions of this law the BSSE issues rules which are binding for all its members. Any major modifications to the BSSE rules are subject to approval by the Ministry of Finance, the regulatory authority

for the capital market. The Ministry of Finance supervises the BSSE through a Stock Exchange Commissioner.

#### **4.3.2 Participation in the system**

All members of the Bratislava Stock Exchange are direct participants in the securities settlement system run by the BSSE.

#### **4.3.3 Types of transactions handled**

All transactions concluded on the BSSE floor, either as anonymous or direct trades in bonds and equities, are settled by the BSSE.

#### **4.3.4 Operation of the transfer system**

The BSSE co-ordinates the clearing and settlement of trades concluded by stock exchange members employing an anonymous trading system or those reported in the stock exchange system. Changes in ownership arising from individual trades are settled via a trade-for-trade system.

The transfer of ownership to securities is effected according to the individual trades concluded on the BSSE. In trades where the broker is selling securities on behalf of its customer, the transfer of ownership is effected on the securities accounts held at the SC. At the end of the trading day the BSSE calculates the net position for each broker. The result can be either a debit (obligation to pay) or a credit (receivable to be paid). The obligations are due to be paid on T + 2, and the receivables are due to be paid on T + 3.

Payments to settle trades are made via the SIPS (see Section 3) where the BSSE assumes a third-party role. On T + 2 the BSSE debits the accounts of debtors and collects the funds on its account at the settlement bank. On T + 3 the BSSE credits the accounts of creditors. All payment instructions are irrevocable. In order to achieve DVP, it is

necessary to compare the number of securities blocked in favour of the BSSE at the SC and the funds transferred via the SIPS on T + 2. If the numbers of securities on the broker's or his customer's account at the SC differ, the BSSE will not initiate the respective funds transfer.

#### **4.3.5 Transaction processing environment**

Securities settlement on the BSSE uses the so-called "rolling settlement principle" with DVP settlement on T + 3.

#### **4.3.6 Settlement procedures**

Anonymous trades are settled with payment; direct trades, which are reported on the BSSE, can be settled either with or without payment. Payment can be made bilaterally between the members of the BSSE; securities settlement can only be effected through the BSSE.

#### **4.3.7 DVP arrangements**

On T + 2 the BSSE blocks securities held on the accounts of selling customers (BSSE members) and sends instructions to transfer funds to the SNCC for the amount of payables from members. These funds are transferred to the account of the BSSE maintained at the settlement bank. At the end of T + 2 the BSSE compares the number of successfully blocked securities with payments made through the SNCC. If neither securities nor funds are missing, on the morning of T + 3 the securities are transferred to the buyers' accounts at the SC and the funds are transferred from the BSSE's account to the accounts of the relevant members.

#### **4.3.8 Pricing**

The activities of the BSSE are fully covered by fees for membership and trading paid by

members, for listing issues paid by issuers, and for distributing information paid by agencies and other investors.

#### **4.3.9 Credit and liquidity risk control measures**

Securities to be traded on the BSSE are registered on the accounts of customers at the SC. Members of the BSSE, according to a written agreement with customers, block the required number of securities on the customer's account at the SC before trading takes place. The system of executing instructions at the SC does not allow another member to block the same securities on the same customer's account. Consequently, on T + 2 the BSSE will block all securities on the accounts of members and their customers which were sold on T + 0. These blocking instructions allow only the BSSE to execute transfers of ownership of securities from the seller's to the buyer's account.

Credit and liquidity risk control is ensured through the transfer and settlement procedures as described under Section 4.3.4. The legal framework and structure of the capital market in the Slovak Republic are different from those in other countries. The BSSE organises the whole clearing and settlement process and communicates with both the SC and the SNCC, which operate according to different principles. Transfers of ownership of securities at the SC are executed online from morning until late afternoon. Payment instructions can be sent to the SNCC until noon and await batch processing. In the afternoon the BSSE obtains outputs of the payment processing. Payment instructions initiated in the afternoon are processed the next day at the SNCC. Therefore, it is not possible to debit the accounts, make comparisons with the number of securities available and credit the account within one day.

#### **4.3.10 Main projects and policies being implemented**

A new role will be played by the BSSE after the launch of a derivatives market. The BSSE has developed clearing and settlement procedures for trading in derivatives. The reduction of the risk taken by the counterparty will be achieved by the selection of members, the daily calculation of margins (marked-to-market) and the establishment of a guarantee fund from contributions from the BSSE and its clearing members.

### **4.4 RM System Slovakia Stock Market (RMS)**

#### **4.4.1 Major regulations**

Trading in securities on the market operated by the RMS is mainly regulated by the Trading Rules. These are supported by standards of a less exacting nature, i.e. the so-called Technical Operating Conditions.

#### **4.4.2 Participation in the system**

The RMS is an open market. This is the reason why, in principle, the clearing is made separately on each customer's account. A separate financial account is maintained on behalf of every seller or buyer. It forms part of a uniform bank account, the so-called jumbo account. The jumbo account is a current account of the RMS held with the commercial bank for the purpose of settlement of trades. Through this account, the clearing system is interconnected via standard banking transactions, and the accounts of market participants are held with the same bank or with other banks.

#### **4.4.3 Types of transactions handled**

The following transactions are conducted via the clearing system:

- fund deposits to cover transactions;

- debiting amounts due on executed trades;
- crediting amounts due on executed trades;
- paying off funds accrued through the execution of trades; and
- blocking funds to cover trades, the so-called pre-trade validation.

In addition to these basic transactions, some other operations are also carried out to inform market participants of the current balances credited to their accounts.

#### **4.4.4 Operation of the transfer system**

The funds transfer system is operated online. The individual transactions are performed in the order of the incoming requests for clearing. The transactions consisting of fund deposits on the account to cover trades and payments of funds accrued from executed trades are conducted as the bank's position allows. At present, such trading takes place once a day.

#### **4.4.5 Transaction processing environment**

All transactions are processed in electronic form. Their processing takes place in a client-server environment. They are recorded on the server using the Adabas transaction database developed by the company Software AG (in an Open VMS system environment).

#### **4.4.6 Settlement procedures**

The basic criterion for proper settlement in an open system environment is the security of settlement, meaning that there must be 100% cover for a trade at the time of placing an order to buy and/or sell securities.

The cover for the trade is verified through the so-called pre-trade validation. Every

buying order must be matched with a long position on the jumbo account, and the respective funds are blocked exclusively to execute the said order. The same applies to selling orders, where every order to sell securities is electronically communicated to the SC in real time and the securities to cover the trade are then blocked.

The settlement is conducted in real time.

#### **4.4.7 DVP arrangements**

The DVP principle is strictly observed. In the case of clearing trades in real time, this is made possible by the pre-trade validation of instructions, under which securities, and/or funds are blocked prior to the matching of each instruction with its counter-instruction. This guarantees that the trade will be completed. Notwithstanding this, DVP is also ensured through an arrangement under which, at the time of a successful transfer at the SC, the funds are credited to the seller's account and debited from the buyer's account.

#### **4.4.8 Pricing**

Prices charged by the RMS for clearing are part of the price for exercising a trade. (The trading and clearing systems are practically interconnected.) From the money collected in this way, the RMS subsequently covers the cost incurred by operations conducted by the SC.

The prices charged for the conduct of transactions depend on the value involved.

#### **4.4.9 Credit and liquidity risk control measures**

The RMS system of pre-trade validation rules excludes liquidity risk, i.e. all market participants are obligated to provide proof of the availability of the funds needed to cover a trade beforehand. That is why the RMS does

not apply any other special methods as safeguards against liquidity and credit risks.

#### **4.4.10 Main projects and procedures being implemented**

First and foremost, the RMS aims to internationalise the capital market in the Slovak Republic. In the long run an interconnection of this market with that of the WBAG (Vienna) for trading in derivatives products is envisaged.

The RMS considers the development of the secondary securities market as being complete for the time being. At the same time, it does not rule out the possibility of further intense development of this market along membership lines following structural legislative changes.

As regards the Slovak capital market, preparations are being made for the recodification of the Act on Securities.

### **4.5 Short-Term Securities Market (TKCP)**

#### **4.5.1 Major regulations**

The procedures for trading in securities on the OTC market are governed by the NBS Working Procedure (No. 46/1997).

The procedures for selling and buying securities issued and traded on the book-entry short-term securities market are regulated by the TKCP's Rules of Procedure and, for government bonds, by the Stock Exchange Rules.

Repo deals are executed on the basis of an agreement on the sale and repurchase of securities. The parties communicate the conditions agreed for a repo deal to each other via fax.

#### **4.5.2 Participation in the system**

As trading on the TKCP has a specific objective, it is not accessible to all individuals and legal entities. It is a closed market through which securities may be issued, primarily sold and secondarily traded, or due securities may be repurchased by means of a book-entry procedure. The TKCP participants are divided into three groups:

- direct participants;
- indirect participants; and
- participants with a special standing.

A direct participant may be a commercial bank, insurance company or dealer with which the market administrator (the NBS) has signed an agreement on the conditions of its participation in the TKCP.

An indirect participant may be a resident or non-resident legal entity registered by the Registration Centre on the basis of an agency contract to be performed by a broker authorised to trade on the TKCP.

The participants with special standing are represented by the NBS and the Ministry of Finance. Their special position ensues from their right to issue Treasury bills on the TKCP.

#### **4.5.3 Types of transactions handled**

As a part of trading on the TKCP, the Registration Centre keeps records of the following operations:

- issues of NBS bills;
- issues of Treasury bills;
- securities purchased and sold on the secondary market until the time of their maturity;
- repo deals;

- securities sold and repurchased at auction – the so-called repo tenders;
- maturity dates of NBS bills; and
- maturity dates of Treasury bills.

#### **4.5.4 Operation of the transfer system and transaction processing environment**

The system has been set up and is operated by the NBS, which also has the only direct, electronic connection to the system. Communication with the Registration Centre is maintained by fax.

#### **4.5.5 Settlement procedures**

On working days the Registration Centre accepts fax notifications from market participants from 7.30 a.m. to 12.30 p.m. It is the time of arrival, not the time of sending, that is decisive in this respect. An ordinary issue must be registered no later than two weekdays prior to the placing of purchase orders on securities sold on the primary market. Treasury bills may be marketed on the secondary market from the first weekday following the issue date until the end of the second weekday prior to their maturity. The trades are financially settled by the SNCC on T + 0.

#### **4.5.6 DVP arrangements**

Through the clearing and settlement of transactions, financial liabilities between a

buyer and a seller are to be set off against the transfer of book-entry securities, thus meeting the DVP requirement. In practice, this means that ownership of short-term securities is transferred to the account held at the Registration Centre as soon as the payment has been confirmed. The DVP requirement is ensured for every realised trade at the Registration Centre.

#### **4.5.7 Pricing**

Participation in and trading on the short-term securities market is free of charge.

#### **4.5.8 Credit and liquidity risk control measures**

Risk control is applied at two levels:

- The Registration Centre checks the amount of securities owned by a seller. A trade will only be booked if the participant in question owns sufficient securities. During the booking period, the booked securities cannot be traded.
- The buyer is obliged to remit payments for booked securities to a specified account within a set period. Subsequently, the Registration Centre will send to both the seller and the buyer a confirmation of the executed trade and will transfer the booked securities to the buyer's asset account.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	5,325	5,347	5,364	5,374	5,387
Gross domestic product (SKK billions)	369.1	440.5	516.8	575.7	653.9
Exchange rate vis-à-vis ECU <sup>1)</sup>	36.0317	38.1182	38.8649	38.9229	38.1200

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; SKK billions)

	1993	1994	1995	1996	1997
Banknotes and coins	25.1	28.0	34.5	43.5	48.7
Transferable deposits	91.2	94.8	113.9	130.4	117.4
<i>of which held by:</i>					
<i>households</i>	31.3	31.5	37.4	46.2	46.2
<i>corporate sector</i>	58.9	61.7	75.0	82.5	69.6
<i>other (insurance companies)</i>	1.0	1.6	1.5	1.7	1.6
Narrow money supply (M1)	116.3	128.9	148.4	173.9	166.1
Outstanding value on electronic money schemes	-	-	-	-	-
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	-	-	-

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; SKK billions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	12.5	14.1	17.3	33.6	37.1
Free reserves held at the central bank	1.0	1.8	0.6	1.5	neg.
Transferable deposits at other institutions	3.5	4.2	6.0	5.4	6.8

**Table 4****Banknotes and coins***(total value, end of year; SKK billions)*

	1993	1994	1995	1996	1997
Total banknotes issued	19.06	30.63	38.92	51.21	57.20
<i>of which:</i>					
SKK 5,000	-	-	7.97	16.62	18.73
SKK 1,000	12.86	21.87	22.38	25.64	29.69
SKK 500	2.87	5.69	4.90	4.66	4.43
SKK 200	-	-	0.59	1.27	1.28
SKK 100	2.56	2.38	2.30	2.13	2.14
SKK 50	0.55	0.41	0.45	0.51	0.53
SKK 20	0.22	0.29	0.34	0.38	0.41
Total coins issued	0.49	0.67	0.79	0.94	1.00
<i>of which:</i>					
SKK 10	0.27	0.35	0.43	0.51	0.54
SKK 5	0.12	0.15	0.16	0.17	0.18
SKK 2	0.05	0.07	0.09	0.10	0.12
SKK 1	0.04	0.05	0.06	0.07	0.08
SKK 0.5	0.01	0.02	0.02	0.03	0.04
SKK 0.2	<i>neg.</i>	0.01	0.02	0.03	0.03
SKK 0.1	<i>neg.</i>	0.01	0.01	0.01	0.02
Commemorative coins	0.08	0.22	0.28	0.32	0.34
Total banknotes and coins issued <sup>1)</sup>	27.70	31.52	40.00	52.47	58.54
Banknotes and coins held by credit institutions	2.57	3.48	5.46	8.96	9.80
Banknotes and coins in circulation outside credit institutions	25.13	28.04	34.54	43.51	48.70

1) The total values of banknotes and coins at end-1993 and end-1994 were corrected in relation to the division of the former Czech and Slovak Federal Republic and CSFR currency.

**Table 5****Institutional framework***(end of 1997)*

Categories	Number of institutions	Number of branches	Number <sup>1)</sup> of accounts (thousands)	Value <sup>1)</sup> of accounts (SKK billions)
Central bank	1	16	n.a.	n.a.
Commercial banks	21	464	n.a.	n.a.
Postbank	1	1,639 <sup>1)</sup>	n.a.	n.a.
Savings banks <sup>2)</sup>	3	645	n.a.	n.a.
<b>TOTAL</b>	<b>26</b>	<b>2,764</b>	<b>n.a.</b>	<b>n.a.</b>
Branches of foreign banks	4	23	n.a.	n.a.
<i>of which EU banks</i>	<i>1</i>	<i>1</i>	<i>n.a.</i>	<i>n.a.</i>
<b>TOTAL including branches of foreign banks</b>	<b>30</b>	<b>2,787</b>	<b>4,540</b>	<b>117.4</b>

1) Including Post Office branches.

2) Including building societies.

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	2	2	2	2	2
Number of machines	268	459	641	782	873
Volume of transactions (thousands)	1,633	6,388	16,690	26,755	39,068
Value of transactions (SKK millions)	1,535	7,161	17,315	26,589	39,883
<b>EFTPOS terminals</b>					
Number of networks	2	2	2	2	2
Number of points of sale	1	30	106	389	1,092
Volume of transactions (thousands)	neg.	1.3	64.7	143.4	438.7
Value of transactions (SKK millions)	neg.	1.9	84.1	185.2	501.2
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (SKK millions)	-	-	-	-	-

**Table 7**  
**Number of payment cards in circulation <sup>1)</sup>**

(end of year)

	1993	1994	1995	1996	1997
Cards with a cash function	106,505	319,395	568,505	772,692	1,002,317
Cards with a debit/credit function	106,505	319,395	568,505	772,692	1,002,317
<i>of which:</i>					
<i>cards with a debit function</i>	106,505	319,395	568,505	772,692	1,002,317
<i>cards with a credit function</i>	-	-	-	-	-
Cards with a cheque guarantee function	230	654	800	1,035	1,058
Retailer cards	51,541	51,094	50,182	52,713	53,027
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is therefore not meaningful to add the figures.

**Table 8**  
**Payment instructions handled by selected interbank funds transfer systems (BZCS, a.s.): volume of transactions**

(millions)

	1993	1994	1995	1996	1997
SIPS <sup>1)</sup>	n.a.	45.106	65.510	88.620	108.965

1) The Slovak interbank payment system does not distinguish for statistical purposes either between credit transfers and direct debits or between large value and retail payments.

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(SKK billions)*

	1993	1994	1995	1996	1997
SIPS <sup>1)</sup>	n.a.	6,111	9,540	18,613	25,454

1) See footnote to Table 8.

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
<b>The Bratislava Stock Exchange</b>			
Banks	18	-	18
Stockbrokers	32	-	-
Securities houses (SCP)	-	1	-
<b>RM System Slovakia BRATISLAVA</b>			
Banks	15	-	-
Stockbrokers	81	-	-
<b>TKCP</b>			
Banks	29	16	25
Stockbrokers	26	15	-
Others	140	1	-

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
The Bratislava Stock Exchange	n.a.	1.20	50.60	139.00	158.20
Delivery versus payment	0.04	0.60	0.84	12.80	5.71
Others	n.a.	0.60	49.76	126.20	152.49
<b>RM System Slovakia BRATISLAVA</b>					
	0.206	1.262	32.599	56.238	42.090
TKCP	0.11	0.13	0.18	0.21	0.35

SK

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions***(SKK millions)*

	1993	1994	1995	1996	1997
The Bratislava Stock Exchange	166.3	6,283.5	40,068.7	114,116.4	164,063.9
Bonds	77.0	855.5	15,338.3	30,986.3	81,392.3
Shares	89.4	5,428.0	24,730.4	83,130.1	82,671.6
RM System Slovakia					
BRATISLAVA	43.3	1,970.3	18,051.7	26,550.7	15,984.4
Bonds	43.3	1,970.3	18,041.7	23,814.2	12,756.0
Shares	-	-	9.9	2,716.0	3,220.1
Others <sup>1)</sup>	-	-	0.1	20.4	8.2
TKCP	109,718	126,209	175,122	212,498	345,302
Government bills	109,718	126,209	49,586	119,958	305,302
NBS bills			125,536	92,540	40,000

1) *Open-end fund units, closed-end fund units and co-operative share certificates.***Table 13****Nominal values registered by securities settlement systems***(end of year; SKK millions)*

	1993	1994	1995	1996	1997
The Bratislava Stock Exchange	134,898	156,851	290,803	334,225	369,980
Shares	126,763	140,731	230,157	259,716	272,924
Bonds	8,136	16,120	60,646	74,510	97,055
RM System Slovakia					
BRATISLAVA	148,634	168,005	242,755	281,712	287,400
TKCP	110,910	128,988	178,616	216,133	353,304
Government bills	110,910	128,988	50,779	122,900	313,304
NBS bills	-	-	127,837	93,233	40,000

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(thousands)*

	1993	1994	1995	1996	1997
Cheques issued <sup>1)</sup>	91.5	112.4	117.0	113.6	97.5
Payments by debit and credit cards	38.5	88.7	168.9	292.4	592.3
Credit transfers and direct debits <sup>2)</sup>	n.a.	45,106.3	65,508.7	88,620.1	108,965.2
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	n.a.	n.a.
<b>TOTAL</b>	<b>130.0*</b>	<b>45,307.4*</b>	<b>65,794.6*</b>	<b>89,026.1*</b>	<b>109,655.0*</b>

1) *Includes cheques used to obtain cash.*2) *See footnote to Table 8.***Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(SKK millions)*

	1993	1994	1995	1996	1997
Cheques issued <sup>1)</sup>	810.6	1,017.6	1,393.7	1,702.8	1,683.9
Payments by debit and credit cards	194.8	440.6	596.5	906.3	1,336.0
Credit transfers and direct debits <sup>2)</sup>	n.a.	6,110,811.0	9,540,434.0	18,612,642.0	25,454,105.0
Electronic money	-	-	-	-	-
<i>of which</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	n.a.	n.a.
<b>TOTAL</b>	<b>1,005.4*</b>	<b>6,112,269.2*</b>	<b>9,592,424.2*</b>	<b>18,615,251.1*</b>	<b>25,457,124.9*</b>

1) *Includes cheques used to obtain cash.*2) *See footnote to Table 8.*

**Table 16**  
**Participation in S.W.I.F.T. by domestic institutions**

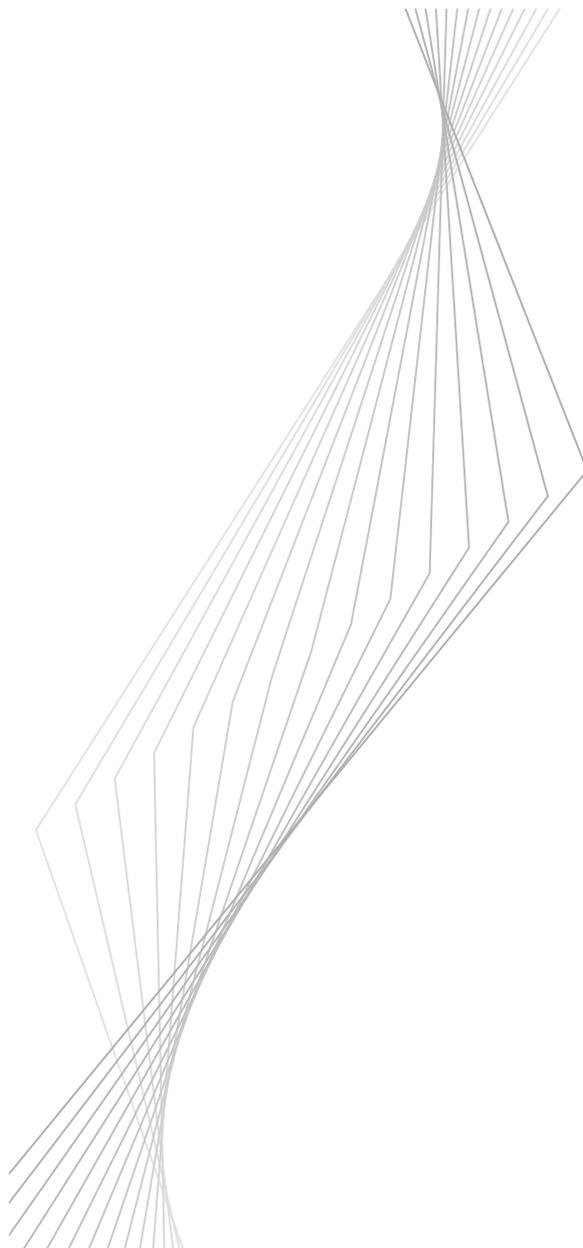
	1993	1994	1995	1996	1997
S.W.I.F.T. users	7	11	17	22	25
<i>of which:</i>					
<i>members</i>	5	6	11	13	14
<i>sub-members</i>	2	5	6	9	9
<i>participants</i>	-	-	-	-	2
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	106,325	427,139	740,531	1,368,074	1,542,961
<i>of which:</i>					
<i>category I</i>	66,369	261,054	447,537	829,041	843,325
<i>category II</i>	24,684	108,440	197,734	339,395	393,984
<i>sent to/received from domestic users</i>			45,049	109,888	161,280
Total messages received	81,238	359,381	604,862	1,094,468	1,241,090
<i>of which:</i>					
<i>category I</i>	40,679	175,382	323,754	570,691	589,508
<i>category II</i>	1,404	6,524	11,014	29,357	55,087
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556



EUROPEAN CENTRAL BANK



**Slovenia**

**August 1999**

Slovenia

SI

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## List of abbreviations

<b>APP BIS</b>	The Banking Information System, i.e. the Agency for Payments' system which processes banks' enquiries on the balance of accounts with the Agency – <i>Bancni informacijski sistem</i>
<b>BIS</b>	The Ljubljana Stock Exchange Trading and Information System – <i>Borzni informacijski sistem</i>
<b>CAS</b>	Central Accounting System – RTGS software
<b>DOPS</b>	Slovenian Payment Company – <i>Druzba za opravljanje placilnih storitev</i>
<b>ISVPS</b>	Integrated Small-Value Payment System
<b>KDD</b>	Slovenian Central Securities Clearing House – <i>Klirinsko depotna druzba</i>
<b>KIS</b>	KDD Information System
<b>LSE</b>	Ljubljana Stock Exchange
<b>MBOT</b>	International Options and Futures Exchange – <i>Mednarodna borza opciskih in terminskih poslov</i>
<b>PBS</b>	Postal Bank of Slovenia
<b>SEC</b>	Slovenian Securities and Exchange Commission
<b>SIBPS</b>	Slovenian Interbank Payment System
<b>SIT</b>	Slovenian tolar

## Introduction

The Slovenian payment and securities settlement systems are characterised by transition. Pursuant to decisions taken by the relevant government bodies in the early 1990s, the reform of the existing payment systems was designed to transfer responsibility from the existing Agency for Payments (the Agency) to the commercial banks (the banks) and the central bank, the Bank of Slovenia (the Bank), and to bring the systems into line with those of developed market economies, fulfilling the requirements for membership of the European Union and Economic and Monetary Union.

The old payment system, which is still in operation, is run by the governmental Agency and originates from the one-tier banking system which held the accounts (including the mandatory reserves) of banks, including the central bank itself. It still holds the giro accounts (the name of accounts with the Agency) of the majority of legal entities

(corporate and governmental customers) and is being replaced by modern payment systems.

On completion of the reform programme, which should occur by 2001, payment systems will be based on a real-time gross settlement (RTGS) system for high-value and urgent payments and on an integrated small-value payment system (ISVPS) for low-value non-urgent payments. (The RTGS system has, in fact, been operational since April 1998.)

The payment systems reform project was initially headed by the Ministry of Finance, but this was taken over by the Bank in 1994 when its Payment Systems Department was established.

All amounts given in Slovenian tolar were converted into ECU using the Bank of Slovenia's middle exchange rate as at 31 December 1997 (ECU 1 = SIT 186.7334).

## I Institutional aspects

### I.1 General legal aspects

Payment operations in Slovenia are regulated by the Law on the Agency for Payments (Official Gazette of the Republic of Slovenia Nos. 48/94 and 58/95), the Civil Code, the Law on the Bank of Slovenia (Official Gazette of the Republic of Slovenia No. 1/91-I), the Law on Banking (Official Gazette of the Republic of Slovenia No. 7/99), the Cheque Act, the Bill of Exchange Act, the Law on the Prevention of Money Laundering (Official Gazette of the Republic of Slovenia Nos. 36/94 and 63/95) and other related laws, regulations, rules and decrees of the Ministry of Finance, the Bank and the Agency.

According to the relevant legislation currently in force (i.e. Article 6 of the Law on the Agency for Payments), only certain entities are entitled to provide payment services in Slovenia. These are:

- the Bank;
- the Agency;
- the banks;
- the savings banks; and
- the Post Office of Slovenia.

In accordance with Article 11 of the Law on the Agency for Payments, banks and savings banks process those payment transactions where at least one party to the transaction is a private individual. In line with the amendments to Article 73 of the Law on the Agency for Payments, the banks also became entitled to provide payment services in general (also for legal entities, along with the transfer of their accounts to the banking sector).

Despite the fact that these amendments to the Law on the Agency for Payments have been adopted, the migration of the accounts of legal entities has not yet begun. This

process is still to be agreed by the Ministry of Finance and the Bank. It is intended to start in January 2000.

As mentioned in the introduction, Slovenia is in the process of changing its payment systems completely, thus requiring completely new legislation, some of which has already been passed. The new Law on Banking was adopted in February 1999; the new Law on Payment Services is yet to be adopted.

As the Bank is an independent, self-governing institution, most of the legislation relating to the various phases of the payment systems reform (see Section 1.3.4) which has already been implemented consists of decrees of the Board of the Bank of Slovenia. These decrees define the operation of the reformed payment systems and the criteria for access to the different systems.

According to Article 2 of the Law on the Bank of Slovenia, the Bank can carry out any of its tasks, as defined by the Law, independently. Decrees of the Board of the Bank of Slovenia are the legally binding instruments for the enforcement of the Bank's policy.

The most important decrees concern the transfer of mandatory reserves and giro accounts of banks, savings banks and savings co-operatives from the Agency to the Bank (Official Gazette of the Republic of Slovenia Nos. 10/97 and 13/98), the establishment of the RTGS system (Official Gazette of the Republic of Slovenia No. 25/98) and the establishment of the Giro Clearing System (Official Gazette of the Republic of Slovenia No. 65/98) (phases 1 and 2 of the reform programme).

Another important participant in the reform programme is the Ministry of Finance, which is responsible for the preparation and adoption of the relevant legislation, especially that which concerns the transfer of accounts of legal entities to the banks and the definition of the

single government account with the Bank. The sequence and method of the transfer of the accounts of legal entities from the Agency to the banking environment should be (according to the third paragraph of Article 73 of the Law on the Agency for Payments) agreed between the Bank and the Minister of Finance. Most of the reform legislation is based on this article. A further division of competencies between the Ministry of Finance and the Bank of Slovenia will be defined in the new Law on Payment Services.

A special working group was established within the Ministry of Finance (with the participation of members of the Bank), the task of which was to design the new law. The Law on Payment Services, in its first draft, comprises general provisions which define the basic structure of the new system and transitional and final provisions which cover the issue of closing or transforming the Agency. It is, inter alia, stated that:

- payment operations may be performed by the Bank of Slovenia, banks, savings banks and savings co-operatives;
- a clearing house will be established by the banks, which will become shareholders, to allow the above-mentioned credit institutions to perform interbank settlements;
- banks are obliged to hold settlement accounts with the Bank of Slovenia to enable them to participate in the Slovenian Interbank Payment System (SIBPS), while savings banks and savings co-operatives may either open settlement accounts with the Bank of Slovenia or authorise another settlement agent to carry out transactions for them;
- every legal entity or private individual may hold a transactional account with one or more banks;
- the Bank will define the general terms and conditions of payment services, while the clearing house will issue more detailed procedures; and

- the Bank supervises the payment system in accordance with the Law on the Bank of Slovenia.

It is expected that the process of adopting the above-mentioned Law in the Slovenian Parliament will start in October 1999.

With regard to the so-called zero-hour rule, there is no such provision in the relevant Law on the Pre-rehabilitation, Rehabilitation, Bankruptcy and Liquidation of Banks and Savings Banks (Official Gazette of the Republic of Slovenia Nos. 1/91-I and 46/93).

## **1.2 Financial intermediaries that provide payment services**

Besides credit institutions (banks, savings banks and savings co-operatives) which traditionally supply payment services to private individuals, there is the governmental Agency for Payments which also operates in Slovenia (with 61 branch offices), maintaining the giro accounts of most of the legal entities (corporate clients and government bodies) and providing them with payment services. Its role and operation are described in more detail in Section 3.3, but the changing role of the Agency is outlined here.

Since 1994 there has been an ongoing reform of Slovenian payment systems. The ultimate goal is to transfer the payment operations from the Agency to the banking community. In the first phase, the mandatory reserve accounts of all credit institutions were transferred to the Bank. This was followed by the transfer of the banks' giro accounts. At the same time the RTGS system was implemented within the Bank.

In the final stage of the reform the banks will take over the giro accounts of all legal entities from the Agency and provide them with the wide range of payment services required in today's business environment. The Agency will no longer be involved in payment system operations and could be divided into several entities, which would act independently or

be integrated into existing governmental offices (e.g. the Statistical Office). In all probability, it will become an information and accounting service for the Government of the Republic of Slovenia.

A significant difference exists, from both a legal and a supervisory perspective, between the various providers of payment services, i.e. banks, savings banks and savings co-operatives. First, the capital requirements for each of the above-mentioned entities differ. Second, only banks and savings banks are supervised by the Bank of Slovenia.

According to the Law on Banking, banks are allowed to perform banking and other financial services. Banking services are defined as the collection of deposits of legal entities and individual customers and the offering of loans on the basis of these deposits. Banks may also perform other services defined as banking services by other laws and other financial services defined by the Law on Banking. These comprise factoring, leasing, taking over and issuing guarantees, acting on foreign exchange markets, acting on derivatives and securities markets, providing payment services, managing pension and investment funds, and playing an intermediary role in selling insurance services. The minimum amount of the initial capital of a bank is SIT 1 billion.

Savings banks, on the other hand, are only allowed to collect deposits from and perform other financial services for private individuals, non-profit-making associations, charitable organisations and individual entrepreneurs, and solely in the national currency. The minimum amount of initial capital of a savings bank is SIT 186 million.

With regard to savings co-operatives, only craft, rural as well as forestry co-operatives and private individuals employed in these sectors may be members. They are allowed to collect deposits, maintain current and giro accounts, provide payment services and offer loans to their members. Savings co-operatives are established on the basis of the Law on

Co-operatives, so that the Bank only oversees their mandatory reserve accounts, which it maintains. Savings co-operatives are not subject to banking supervision.

Both savings banks and savings co-operatives are, however, subject to the same reserve requirement regime as banks.

As at 31 December 1997, there were 28 banks, 6 savings banks and 70 savings co-operatives operating in Slovenia. The banks had 563 branch offices, i.e. one branch for every 3,326 inhabitants. In addition, the Postal Bank of Slovenia had 535 branch offices, which corresponded to the number of branch offices of the Post Office of Slovenia. The major shareholder in the Postal Bank of Slovenia is the Post Office of Slovenia. The Postal Bank of Slovenia is, and – according to the new Law on Banking – will continue to be, subject to the same regulatory requirements as other banks, with the exception that it will provide certain services related to postal activities (e.g. money orders by telegraph and international postal cheques). These services are provided in the name of and for the account of the Postal Bank of Slovenia by the branch offices of the Post Office of Slovenia.

For the purposes of ensuring the functioning of payment systems in Slovenia, the Slovenian Payment Company (DOPS) will be established according to the new Law on Payment Services. It will be owned by the banks and will provide mainly technical facilities for the clearing of payments, while the settlement accounts and facilities will remain with the Bank.

### 1.3 The role of the central bank

The Bank was established as the central bank within the framework of the legislation promulgated on 25 June 1991, when the Law on the Bank of Slovenia was adopted together with the Basic Constitutional Charter on Independence and Sovereignty of the Republic of Slovenia and the Constitutional Law on

the Implementation of the Basic Constitutional Charter. Article 152 of the Constitution of the Republic of Slovenia defines the Bank as the central bank.

### **1.3.1 General responsibilities**

The Constitution stipulates that the Bank shall be independent and directly responsible to Parliament. The Bank reports to Parliament twice a year. Parliament has to confirm the annual financial statements and the financial plan for the year ahead and appoints the Governor and the six external members of the Board of the Bank on the recommendation of the State President. The Deputy Governor and the Vice-Governors are appointed on the recommendation of the Governor.

The Bank is a self-governing body which is independent both in its decision-making and in the implementation of monetary policy, as well as in the implementation of the other tasks set out in the Law on the Bank of Slovenia and related laws.

#### *Statutory responsibilities*

Pursuant to the Law on the Bank of Slovenia, the main responsibility of the Bank is to maintain the stability of the national currency and general liquidity in payment operations within Slovenia and with foreign countries. In order to perform this task, the Bank regulates the money supply, ensures the general liquidity of the banks and the savings banks, ensures general liquidity in payments abroad (requiring banks to have a minimum amount of foreign currency), supervises banks and savings banks, issues banknotes and puts coins and banknotes into circulation, guarantees the bank deposits of natural persons and carries out certain financial services for the Republic of Slovenia.

According to the Law on the Bank of Slovenia, the budget funds account of the Republic of Slovenia is maintained by the Bank. However, government accounts are still held with the

Agency and all domestic payment transactions of the Government are, likewise, executed via the Agency. All budgetary transactions performed in the name of the Republic of Slovenia are presented in a separate balance sheet of the Bank of Slovenia. Costs arising from these transactions are not held to be costs of the Bank, but are paid out of the budget.

The Bank also fulfils the responsibilities set out in the Law on Banking, the Law on Foreign Exchange Transactions, the Law on Credit Transactions with Foreign Countries and the Law on the Pre-rehabilitation, Rehabilitation, Bankruptcy and Liquidation of Banks and Savings Banks. The Bank issues direct regulations (e.g. decrees and rules), performs on-site inspections and imposes sanctions where necessary.

To exercise its task of ensuring the general liquidity of banks and savings banks, the Bank sets fixed time-scales for banks' investments, and stipulates the methodology for the mobilisation of the obligatory reserve funds and the conditions for collateralised credit facilities offered to the banks. Short-term credits are given on the basis of securities pledged (Bank of Slovenia bills, securities issued by the Republic of Slovenia, etc.).

#### *Establishment of common rules*

According to the Law on the Bank of Slovenia, the Bank is entitled to define procedures and operations in the decrees of the Board of the Bank of Slovenia and other legally binding regulations.

The Bank also co-operates closely with the Bankers' Association of Slovenia in order to co-ordinate the organisational and technical procedures for payment transactions.

#### *Supervision and audit*

According to the Law on Banking, the Bank is entrusted with the supervision of banks to

ensure compliance of banks' operations with the Law on Banking and related laws, decrees and other regulations.

The Bank also plays a formal role in overseeing payment systems. This function is currently defined in the Law on the Agency for Payments (Article 10), which states that the Bank shall supervise the legality and regularity of the payment operations in Slovenia. With regard to the future prohibition of payment operations within the Agency and the concomitant law, the above-mentioned role of the Bank will be specified in detail in the new Law on Payment Services.

The annual statements of all banks have to be audited by certified auditors, as required by the Law on Banking.

### **1.3.2 Provision of processing and settlement facilities**

#### *Provision of processing facilities*

Currently the RTGS system, a part of the reformed payment systems, is located within and managed by the Bank (see Section 3.2), as is the Giro Clearing as the pilot version of the ISVPS (discussed in detail in Section 3.4). In the future, after the formation of the Slovenian Payment Company (DOPS), the technical components and clearing facilities of both systems are likely to move to the DOPS, while the settlement facilities and the oversight of the systems will remain with the Bank.

The Bank has adopted rules governing the operation of both systems and defining the access criteria. Direct participants in these systems may be banks and savings banks licensed by the Bank and holding settlement accounts with the Bank. To participate in the Giro Clearing, participants are required, in addition, to sign a risk disclosure statement, which testifies to the banks' awareness of the Bank's limited responsibility as a clearing and settlement agent.

#### *Provision of settlement accounts*

The Bank maintains the settlement accounts of all banks and some savings banks. Settlement accounts are a part of the RTGS system, so that every settlement bank also has to meet all the requirements of the RTGS system.

Settlement accounts also serve as the mandatory reserve accounts. Funds on the settlement accounts at the end of the day bear interest at a rate of 1% (i.e. the interest rate for mandatory reserve funds).

#### *Provision of credit facilities*

The Bank offers a wide range of credit facilities to the banking community:

##### *(i) Liquidity loans*

- overnight loans (which have to be collateralised with Bank of Slovenia bills in foreign currency);
- loans on the basis of Bank of Slovenia bills (if banks have certain bills, they are entitled to such loans for a short, specified period during the maturity period of these bills); and
- loans of the lender of last resort (which have to be collateralised with Bank of Slovenia bills in foreign currency);

##### *(ii) Lombard loans*

- loans on the basis of collateral (Bank of Slovenia foreign exchange bills, Treasury bills and certain government bonds);

##### *(iii) Short-term loans*

- loans on the basis of collateral (Bank of Slovenia foreign exchange bills).

*Pricing policy*

Since the Bank manages both new systems – RTGS for high-value and urgent payments and Giro Clearing for low-value payments – it has defined a pricing policy for both systems. It was agreed that full cost recovery schemes would be implemented at the end of the reform process, because currently only some of the payments are processed within these systems, so that implementing full cost recovery schemes at this moment would burden the payments actually processed within the systems by imposing costs which are considered to be too high.

Owing to the reasons outlined above, the fee for the processing of transactions was estimated in relation to the current fee of the Agency and is described in detail in Sections 3.2.8. and 3.4.2.

**1.3.3 Monetary policy and payment systems**

As the monetary authority, it is important for the Bank to be able to monitor the liquidity of credit institutions on a continuous basis.

In the current system, within which the Agency is still operating, this is not possible because the Agency system operates according to the end-of-day principle, whereby balances on the accounts of legal entities with the Agency are transferred at the end of the day to banks' accounts with the Agency. This means that the banks (and the Bank of Slovenia) do not know the result of their customers' daily business, which affects their liquidity, in advance, but only at the end of the day.

Such a system makes the management of liquidity and credit risk by the banks, and the control of systemic risk and of base money creation by the Bank of Slovenia, difficult and even impossible in some circumstances. However, since the banks have transferred their mandatory reserve accounts to the Bank

and have opened settlement accounts with it, and since the implementation of the system for the monitoring of the balances of the accounts remaining with the Agency, the liquidity management of the banks and the monitoring function of the Bank have improved significantly.

From a liquidity point of view, mandatory reserve funds are very important. Banks, savings banks and savings co-operatives are obliged to hold minimum reserves with the Bank. This instrument is an important element of Slovenia's monetary policy implementation framework. All banks and savings banks may employ their minimum reserve holdings for liquidity purposes in the same way. Half of the mandatory reserves must be held on a daily basis (at the end of the day) in the settlement account (or in a special account for indirect participants in the RTGS system). As a daily average for the whole month, the banks have to fulfil all the mandatory reserve requirements. The balance on the settlement account during the day may be zero without any penalty being incurred, but if it does not amount to one half of the requirement at the end of the day, a predetermined penalty rate is imposed.

**1.3.4 Main projects and policies being implemented**

As already mentioned, there is an ongoing payment systems reform in Slovenia. It was initially headed by the Ministry of Finance, but was taken over by the Bank in 1994. The Bank was entrusted with the reform project and with the design of the new payment systems. The implementation of the new payment systems calls for co-ordinated action between the Bank, the Ministry of Finance, the Agency, the Bankers' Association of Slovenia, the banks and the Statistical Office of the Republic of Slovenia.

The Bank established a project team of experts from the Bank, the Agency, the banks and the Ministry of Finance and included external consultants (some financed with

Phare assistance). In addition, several expert working groups were set up to deal with special issues pertaining to each implementation phase.

The reform programme was drawn up in 1996, after the key business decisions for the project had been taken on the basis of the strategic First Level System Description document prepared in co-operation with the foreign consultants financed by Phare.

The Slovenian payment systems reform programme focuses on the development of:

- a real-time gross settlement (RTGS) system; and
- an Integrated Small-Value Payment System (ISVPS).

The reform programme consists of six implementation phases, which were defined on the basis of the strategic document mentioned above:

*Phase 1:* Transfer of the mandatory reserve accounts of the banks from the Agency to the Bank; this was implemented in March 1997.

*Phase 2:* Implementation of the real-time gross settlement (RTGS) system for pure interbank payments (and in future for all large-value and urgent payments); the transfer of the giro accounts of 28 banks (as at 15 December 1998, 26 banks) and one savings bank to the Bank (since September 1998, three additional savings banks have become direct participants in the system, two in September and one in October 1998); and the transfer of the giro accounts of other savings banks and savings co-operatives to the banks (direct participants in the RTGS system); this was implemented in April 1998.

As a further step in the second phase in October 1998, the Bank implemented Giro Clearing as the pilot version of the future ISVPS, which is the clearing system for non-

urgent low-value payments. The ISVPS will offer the whole spectrum of retail payment services required in a modern society. It will take over the remaining functions of the current Agency and thus complete the transfer of the accounts from the Agency to the banks.

*Phase 3:* The banks gradually take over the accounts of legal entities from the Agency.

*Phase 4:* The banks which have taken over the accounts of all their customers no longer have an account with the Agency.

*Phase 5:* Any branch office of the Agency which no longer has any accounts of legal entities ceases payment operations.

*Phase 6:* All banks perform all payment operations – no accounts of legal entities are to be left with the Agency.

The dates for the implementation of Phases 3 to 6 depend upon the activities to be undertaken for the migration of legal entities' accounts from the Agency to the banking environment, which requires co-ordination with the Ministry of Finance. The migration is expected to start in 2000.

#### **1.4 The role of other private and public sector bodies**

The Agency and its role in Slovenian payment systems is described in Section 3.3.

The Bankers' Association of Slovenia is an association established for the purposes of rationalising banking business, standardising payment procedures and information systems, exchanging information on borrowers, training bank staff and providing a voluntary deposit insurance scheme.

The Bankers' Association co-ordinates the activities of the banks involved in the payment systems reform project.

## 2 Payment media used by non-banks

### 2.1 Cash payments

The Slovenian currency, the tolar (SIT), has been in circulation since autumn 1991, following the formation of the Republic of Slovenia. The exchange rate with the Yugoslav dinar was 1:1, but exchange at this rate was only possible for a few days after monetary independence was gained.

The Bank is responsible for issuing banknotes and putting coins into circulation. Cash comprises banknotes in denominations of SIT 10, 20, 50, 100, 200, 500, 1,000, 5,000 and 10,000, and coins in denominations of SIT 0.10, 0.20, 0.50, 1, 2 and 5. The tolar is divided into 100 units of one stotin each.

Cash payments are carried out mainly by private individuals for low-value payments, while legal entities and banks are still (until they hold accounts with the Agency) obliged to process their cash payments via the Agency. In line with the progress made in the reform, cash operations will also be taken over by the banks. As figures in the statistical tables show, non-cash payments are increasing, especially the use of payment cards.

### 2.2 Non-cash payments

#### 2.2.1 Credit transfers

The most commonly used non-cash payment medium in Slovenia is the credit transfer. The order is given by the customer making the payment in paper or electronic form to the Agency (legal entities), or to the banks (private individuals), savings banks or savings co-operatives.

Generally, it takes two days to credit the account of the payee in the Agency's system.

Most credit transfers are processed through the Agency. In 1997 a total of 87,527,337 transactions with a total value of SIT 6,307.77 million were settled through the Agency.

The standing order is a form of credit transfer created in order to rationalise the system for recurring payments.

#### 2.2.2 Cheques

Cheques are still an important payment medium in volume terms. However, they are becoming less important since cheque guarantee cards are increasingly being used as debit cards and are thus suitable for use at POS terminals. The number of POS terminals is increasing significantly, so that the need to issue cheques is diminishing.

#### 2.2.3 Direct debits

The legal basis for the issuance of direct debits as a non-cash payment instrument has been established, but it has not yet been implemented.

The direct debit subsystem will be one of the components of the ISVPS.

#### 2.2.4 Payment cards

##### *Debit cards*

Debit cards issued by credit institutions can be used at ATMs (the nationwide ATM network included 501 ATMs as at 31 December 1997) and POS terminals. As mentioned above, bank debit cards often also function as cheque guarantee cards.

##### *Credit cards*

Most of the credit cards are of the type where the full amount has to be settled within a specified period. Well-established credit cards (Eurocard, MasterCard, VISA, American Express, Diners Club, etc.) are widely accepted and issued by many credit institutions as contractors to the principal.

*Retail cards*

These are debit cards issued by non-credit institutions (petrol and retail companies) and are generally used for making payments on the premises of the issuer.

*Prepaid cards*

Only single-purpose prepaid cards have been issued so far (such as telephone cards and toll cards). Initiatives to issue multi-purpose prepaid cards have not yet met with success.

*ATM and POS networks*

In December 1997 there were two ATM networks in place, namely BA and Plasis. These have since merged into one, the Bankart network. There are three POS networks (Plasis, Activa and Bankart) in operation. All companies operating ATMs and POS terminals are owned by the banks. The ATM network is already very widespread. The number of ATMs, which are all accessible by using a magnetic strip card and a PIN number, increased by 23% in 1997. The transactions which may be effected via ATMs are cash withdrawals, obtaining account balance information, several forms of bill payment and cash deposits.

The number of POS terminals increased by 77% in 1997. A further increase is expected, since the most important bank changed its cheque guarantee cards at the end of 1997, so that these now also function as debit cards.

**2.2.5 Postal instruments**

The Postal Bank of Slovenia (PBS) is owned by the Post Office of Slovenia and has the most widespread network of branch offices.

The Post Office does not issue any special payment instruments, but enables its customers (mainly private individuals) to cash cheques at PBS counters and to pay bills by

cash payment orders. The latter instrument is also accepted by all banks.

**2.2.6 Other payment instruments**

Other payment instruments include travellers' cheques. Most of the banks issue travellers' cheques in co-operation with foreign companies; the most commonly used are Thomas Cook and American Express.

**2.3 Recent developments****2.3.1 Standardisation of payment instruments**

The Bank co-ordinates the activities for the standardisation of payment instruments. The ultimate goal is to make automated book entries possible, based on electronic payment orders.

Since the S.W.I.F.T. network is used for the communication of payment instructions within the RTGS system, the Bank has decided to base all payment orders (electronic and paper) on S.W.I.F.T. messages and standards. The structure of messages should be the same, regardless of whether the message is processed within the RTGS or the Giro Clearing System (see Section 3). The Bank has adopted minimum standards which enable the automated processing of payment instructions in the banks, but standards may be developed further in line with the banks' internal requirements.

On the basis of the standards mentioned above, a paper-based document has also been designed which enables optical processing.

For the purposes of payment messages, a 16-digit TRN (transaction reference number) was developed with the aim of standardising book-entry inputs in banks. At the same time, a part of the TRN also enables the generation of statistics on payment operations in the country.

In the interest of the standardisation of payment operations, the transaction account number was also standardised. It is represented as a 15-digit figure.

All standards were designed in accordance with UN-EDIFACT standards.

### **2.3.2 Network/software-based products**

The rapid growth in the use of the Internet at home and by traders and financial institutions might lead to a huge increase in the number of payments made via computer networks and could promote the development of electronic money (e-money) schemes.

The major banks are introducing Internet banking, which will, in the near future, also enable customers to process payments via the Internet (i.e. electronic banking). At present the Internet mainly provides

customers with information on services offered and different calculations (e.g. annuities and interest on deposits and loans), while telephone banking is still more commonly used for payment services.

Some steps to protect payments made via the Internet have been taken (such as the identification and authentication of the counterparty in each transaction in order to avoid fraud). The same technology could also be employed for e-money transactions via the Internet. However, no projects relating to e-money are under way at the moment.

### **2.3.3 Policy approach**

The Bank is reviewing e-money projects in more developed countries. No decision has yet been made as to which entities will be allowed to issue e-money, but it is likely that only banks will be allowed to provide this kind of service.

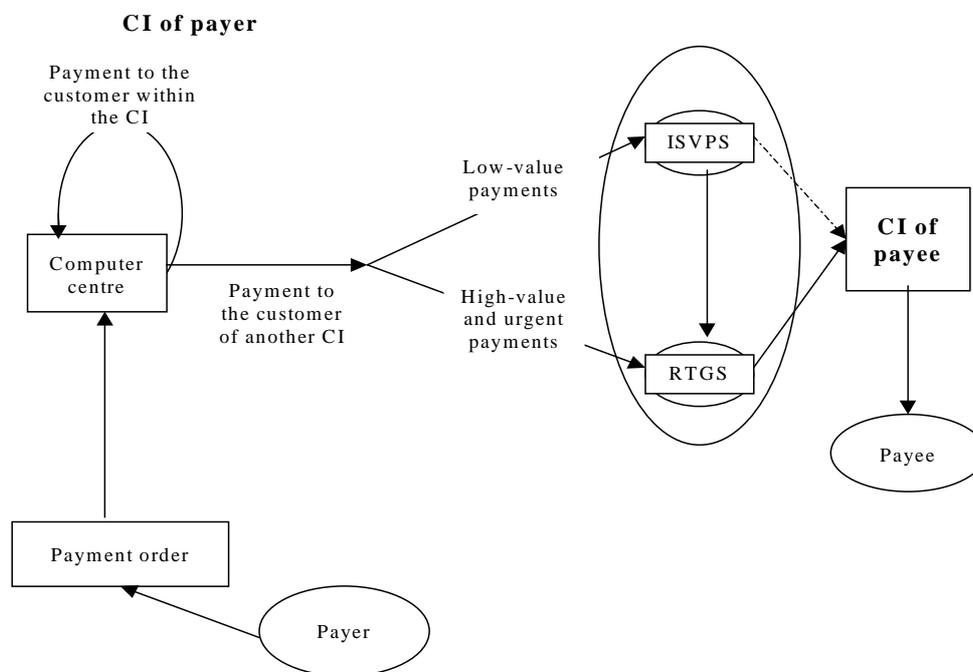
## **3 Interbank exchange and settlement systems**

### **3.1 General overview**

The first phase of the payment systems reform (the transfer of the mandatory reserve accounts of banks, savings banks and savings co-operatives from the Agency to the Bank in March 1997) and the second phase (the transfer of the giro accounts of banks to the Bank of Slovenia and the implementation of the RTGS system) were completed within the specified time frame. The RTGS system has been in place since April 1998. It caters for urgent payments, which are normally of higher value. The CAS is the RTGS software system for interbank payments and settlements within which payments are processed in accordance with S.W.I.F.T. message standards and via the S.W.I.F.T. network, while S.W.I.F.T. Fin Copy network service provides the network capability and standards between the participants.

Figure 1 shows the role of the RTGS system as it will be at the end of the reform process, when the system for processing low-value payments (the ISVPS – at present this is the Giro Clearing System, which is the pilot version of the ISPMV and will most probably remain the basic system for processing all low-value payments), which is described in Section 3.4, will also be in place. The minimum threshold for large-value payments is currently SIT 3 million (ECU 16,065). Cheque, ATM and POS clearings are already being settled through the RTGS system.

Low-value payments from the Giro Clearing System are settled on a net basis through the RTGS system. Chart 1 on the next page shows the flow of payment messages, which are (as information) directly transferred to the credit institution of the payee in whichever system they are submitted. However, payments in the Giro Clearing

**Chart I****The RTGS system as part of the reformed payment systems***(CI = credit institution)*

System are final when net positions are settled through the RTGS system.

When a payment is made to a customer of the same bank (i.e. the payer and payee hold accounts with the same bank), it is not processed in the RTGS or low-value payment system (Giro Clearing), but only internally within that bank.

Payments involving legal entities are still processed within the Agency (this system is described in Section 3.3), but will be taken over by the banks in line with the transfer of accounts of legal entities from the Agency to the banks.

### 3.2 The Slovenian Interbank Payment System (SIBPS)/real-time gross settlement (RTGS) system

In the RTGS system payments between credit institutions – direct participants in the system –

are processed and settled individually in real time, during the working hours of the system. This contrasts with the Agency's system, in which payments are processed throughout the day, but final settlement occurs at the end of the day.

The security of communications in the new system was significantly improved by using the S.W.I.F.T. network, which requires all direct participants in the RTGS system to become S.W.I.F.T. participants.

#### 3.2.1 Functioning rules

The Board of the Bank of Slovenia has adopted the Rules of Operation of the RTGS system, which are legally binding on all participants (i.e. the daily timetable of system operations, the responsibilities of participants, the responsibilities of the Bank, the technical requirements which participants have to meet, the definition of finality and the

irrevocability of payments, etc.). For all direct participants, the message standards and contingency procedures are also legally binding.

### **3.2.2 Participation in the system**

There are 32 direct participants in the RTGS system (26 banks, 4 savings banks, the Bank of Slovenia and the Agency, the “clearing account” of which is serving, in the transitional period, as the connection between the payment operations of the RTGS system and those of the Agency). Other credit institutions are indirect participants, which have so-called transactional accounts with direct participants (settlement banks) acting as their agents.

All direct participants need to have a settlement account with the Bank. According to the Decree on the Establishment of the RTGS system, the participation of banks in the system is not obligatory. However, due to the transformation process of the payment systems and for competitive reasons, all banks are, in practice, direct participants in the RTGS system.

### **3.2.3 Types of transactions handled**

Currently the S.W.I.F.T. messages MT (Message Type) 202 (General Financial Institution Transfer), MT 205 (Financial Institution Transfer Execution) and MT 100 (Customer Transfer) are handled as payment transactions in the RTGS system.

In the first nine months of the operation of the RTGS system 224,270 payments were settled. The most important payments in terms of value were transfers between accounts that the banks have with the Bank of Slovenia (mandatory reserve account and settlement account) and the accounts they have with the Agency. From December 1998 onwards the funds in the mandatory reserve accounts of the direct participants were transferred to their settlement accounts.

Thus a large share of transactions – in terms of value – fell away. Other important payments relate to the interbank money market (e.g. loans and deposits), the settlement of clearings (via ATMs, cheques and payment cards) and transactions between the banks and the Bank (e.g. Bank of Slovenia notes, mandatory reserves, etc.). Commercial interbank payments (for customers) were included later (initially for private individuals).

### **3.2.4 Operation of the transfer system**

The direct participants in the RTGS system submit their payment orders via the S.W.I.F.T. network. Each message is intercepted by the S.W.I.F.T. Y-copy service and is held awaiting settlement in the CAS. For this purpose, the S.W.I.F.T. Y-copy service partially copies the data relevant for the settlement to the Bank. The CBT (computer-based terminal) interface in the Bank receives these data and sends them to the CAS. Provided that there are sufficient funds available in the settlement account of the credit institution, the payment is settled (funds are transferred from the debit to credit account). Afterwards, the CAS informs the S.W.I.F.T. Y-copy service of the settlement of the transaction. The latter then forwards the original payment message to the receiving participant. If there is a shortage of funds in the settlement account, the payment is queued until funds become available or a cancellation is made.

In the event of a direct participant having problems with its connection to the S.W.I.F.T. network, the Bank can, at the request of the participant, make an account transfer between two settlement accounts from the Bank’s user interface.

#### *Timetable*

The CAS opens for business at 7.30 a.m. every working day (Monday to Friday), except on public holidays. The system is temporarily suspended for settlement at 3 p.m. Owing to the evening procedures in the Agency, when

**Table**  
**Schedule of transfer operations**

Time	Activity
7.30 a.m.	Open for business
3 p.m.	System suspended (payments are not rejected, but queued, awaiting the "lift suspension" action)
End of the processing within the Agency (at approximately 6 p.m.)	"Lift suspension" – queued payments are settled
	Interbank money market
	Manual entry of interbank money market transactions
	Close of business

funds in the accounts of the settlement banks with the Agency are included in their settlement accounts with the Bank and the interbank money market starts to operate, the CAS re-opens after notification of the Agency at approximately 6 p.m., only for these transactions, and closes after the money market transactions have been manually entered in the CAS (from the Bank's user interface).

The activities which follow processing within the Agency are not defined in terms of time, because they depend upon the completion of the processing.

#### *Queuing*

Technically, there is only one queue possible per settlement account. In the event of the CAS being very busy or, more usually, if there is a lack of funds in the settlement account, the queue is blocked. All payments received by the CAS after the queue has been blocked are queued according to their priority.

There are 100 different priorities in the CAS system. Priorities 0 to 10 are reserved for the monetary transactions of the Bank, priorities 11 to 20 for the settlement of positions resulting from clearings in other systems, while priorities 21 to 99 may be used freely by the participants (with a default priority of 40, if not specified otherwise).

Participants may influence the settlement of queued payments by cancelling a payment blocking the settlement or by changing the business priority of any payment in the queue.

#### *Order of settlement*

Payments are settled in the order of their arrival and according to a particular priority. The normal order of settlement is therefore first in, first out within each business priority, with the possibility of influencing queued payments (changing priorities ex post or cancelling the messages).

#### *The accounting process*

Each settled payment results in a single debit or credit transaction, which occurs simultaneously in both accounts. When settled, a payment is final, i.e. irrevocable as defined in the Rules of Operation of the RTGS system.

#### *Gridlock*

Gridlock occurs when there is a blocked queue in two or more accounts due to a shortage of funds, although there may be no shortage of funds on aggregate. This situation can be resolved by the injection of liquidity into the system or, in some cases, by the use of a gridlock resolution mechanism.

The CAS can resolve gridlock by using its own algorithm, which identifies all payments that can be settled simultaneously. Gridlock resolution may be configured as an automatic procedure or may be initiated on demand by the Bank of Slovenia system operator.

#### *Enquiries and monitoring*

Participants may submit enquires concerning outgoing queued payments and outgoing or incoming settled payments to the CAS, using S.W.I.F.T. enquiry messages. The CAS responds automatically.

Within the Bank, the CAS operator may also submit enquires about any participant or payment.

### **3.2.5 Transaction processing environment**

The SIBPS consists of two major components: the CAS, which provides the settlement and accounting facility for payment instructions, and the S.W.I.F.T. Y-copy service, which provides the facility for the communication between SIBPS members and the CAS.

### **3.2.6 Settlement procedures**

Payment transactions are immediately debited from the settlement account of the sending participant (provided that there are sufficient funds available) and credited to the account of the receiving participant. Direct participants may have only one settlement account, where no overdraft is allowed. Only the Bank and the Agency's "clearing account" have unlimited overdrafts.

In the future, when the direct participants hold all of their accounts with the Bank, the issue of collateralised overdraft facilities will be considered.

### **3.2.7 Credit and liquidity risk**

With the implementation of the RTGS system (SIBPS), settlement risk was effectively reduced. Since no payment can be processed if there is a shortage of funds on the settlement account being debited and since no overdraft is allowed, there is no credit risk. Account entries are posted simultaneously on the accounts of the sending and receiving participants when funds are available. At this point in time a payment becomes final and irrevocable.

As regards liquidity risk, it should be noted that the banks have four different accounts in the transitional period. Every bank has two accounts with the Bank of Slovenia (a settlement account and a mandatory reserve account; in December 1998 the funds on the latter were transferred to the settlement accounts, but the mandatory reserve accounts remain open) and two accounts, or so-called "positions", with the Agency ("position 620", i.e. a giro account, and "position 500", i.e. a bank's depositors' funds).

In the evening funds with the Agency are transferred to the settlement accounts of the relevant banks. In the morning the balances on both accounts with the Agency are equal to zero. In order to be able to withdraw cash from the Agency – the function of cash distribution will be completely transferred from the Agency to the banks by end-1999 – and to process non-RTGS payment transactions, the banks have to transfer funds to "position 620" by sending a payment message crediting the "clearing account" of the Agency in the CAS.

After 3 p.m., when the CAS is temporarily suspended for business, the banks have the possibility of enquiring about the current balance on their settlement accounts by sending a S.W.I.F.T. enquiry message. At the end of the day the funds in "position 620" and "position 500" are transferred to the settlement accounts. This procedure is automated. Once the end-of-day balances on the settlement accounts are known (and

communicated to the banks by the Agency by telephone), the interbank money market is used. It enables banks which have a liquidity surplus to invest funds in the market and banks which have a liquidity shortage to borrow funds and thus to unblock a queue in the settlement account or to fulfil the mandatory reserve requirements. The Bank may intervene as the lender of last resort in a situation in which one bank cannot acquire sufficient liquidity to operate in the interbank money market.

On account of the three different balances for each bank (settlement account, "position 620" and "position 500") that have to be monitored, some liquidity risk has an impact on the system, especially because the balance on "position 620" is not fully under the control of the banks – the banks only have the ability to manage debits – and because the balance on "position 500" does not depend on the activities of the banks themselves, but on the activities of their corporate clients. Together with the RTGS system, an information system was established which provides the banks with information on the balances of all three accounts. This helps them to manage their liquidity and enables the Bank to monitor the liquidity situation in the whole banking system. The information system is based on the closed private network of the Bank (BSNet), which connects all banks, savings banks and the Agency with the Bank.

### **3.2.8 Pricing**

The whole RTGS system infrastructure has been financed by the Bank. There is no entry fee for participants in the system.

At present, the price of processing payment instructions does not reflect the full cost recovery principle. Full cost recovery schemes were examined, but because the fee for each payment settled depends on the total number of payments and because not all of the payments are settled through the RTGS system at the moment, the full cost recovery

scheme (based on the experience of the system's operation) has not yet been implemented, but is the objective for the time at the end of the payment systems reform.

The participants did not contribute to financing the system infrastructure; they only had to provide adequate hardware and software of their own in order to be able to connect to the S.W.I.F.T. network and thus to communicate with the CAS. All the costs of S.W.I.F.T. services have to be paid by the banks themselves, while the Bank charges SIT 300 (ECU 1.60) for each transaction through the RTGS system. This amount was set provisionally, since it is not based on the full cost recovery scheme for the reasons explained above.

### **3.2.9 Main projects and policies being implemented**

The RTGS system is being consolidated. There are also a few ongoing projects which concern the RTGS system. The most important project being developed is the project of the Single Treasury Account, which will be the transactional account of the Government with the Bank. The project is the Bank's response to the Single Treasury Account project of the Ministry of Finance.

## **3.3 The Agency for Payments**

### **3.3.1 Functioning rules**

In accordance with Article 4 of the Law on the Agency for Payments, the Agency is entitled to provide payment services in Slovenia. The Agency is responsible to the Government of the Republic of Slovenia. At the same time, until banks take over this function in its entirety, the Agency and its network of branch offices also represent a system for providing the economy (including the banking sector) with cash.

### 3.3.2 Participation in the system

All legal entities have to process their payment transactions through the system of the Agency. Since the payment systems reform has not yet been completed, the Agency is the only provider of payment services in national currency to corporate clients.

Payment operations with foreign countries are a traditional function of the banks. The Agency is not involved in these operations.

Private individuals are indirect participants in the system: when they make payments to a legal entity which has an account with the Agency, their account with their bank is debited first, then their bank's account with the Agency is debited, while the account of the final payee's bank with the Agency is credited.

### 3.3.3 Types of transactions handled

Mainly credit transfers are processed within the system of the Agency. Payment orders may be transmitted in paper or electronic form. For private individuals, only the paper-based Agency payment order may be used.

### 3.3.4 Operation of the transfer system

Until such time as their accounts are taken over by the banks, legal entities have accounts with the Agency. The banks hold an account for their own funds ("position 620") and an account for their customers' deposit funds ("position 500") with the Agency.

When a legal entity (a bank's customer) makes a payment, it has to submit a payment order (in paper or electronic form) to the relevant branch office of the Agency. The order is entered in the Agency's system and the customer's account is checked for sufficient funds. If there are sufficient funds in the legal entity's account, the account is debited by the amount specified in the

payment order (if not, it is queued until sufficient funds become available).

The payment instruction is transmitted via a telecommunications network to the branch office of the receiving party, whose account with the Agency is credited.

At the end of the day funds on customers' accounts are integrated into the "position 500" of their banks. Every legal entity has a contract with one or more banks, which specifies the proportion of its funds that should be integrated into the bank's "position 500" with the Agency. Therefore, it is possible, if one customer has such an agreement with more than one bank, that at the end of the day the Agency divides the funds in the customer's account into contracted proportions and integrates them into the "position 500" of each of the relevant banks.

When, as will happen in the future, legal entities are allowed to have accounts with the banks, the legal entities which already have contracts for funds integration with banks will open accounts with these banks. At present they may only hold accounts with the Agency and have contracts for funds integration with the banks. For example, if the legal entity has a balance of SIT 1,000,000 on its account with the Agency at the end of the day and if it has contracts as a depositor with two banks, for, say, 55% with one and 45% with the other, the first bank receives SIT 550,000 and the other SIT 450,000 when funds on the legal entity's account are integrated into banks' "position 500". Once all the payment operations in the Agency have been completed, the funds on "position 500" of each bank are integrated into its settlement account with the Bank.

#### Queuing

In the event of funds on the account of the legal entity not being sufficient, payment orders are queued, if necessary even until the next business day.

*Order of settlement*

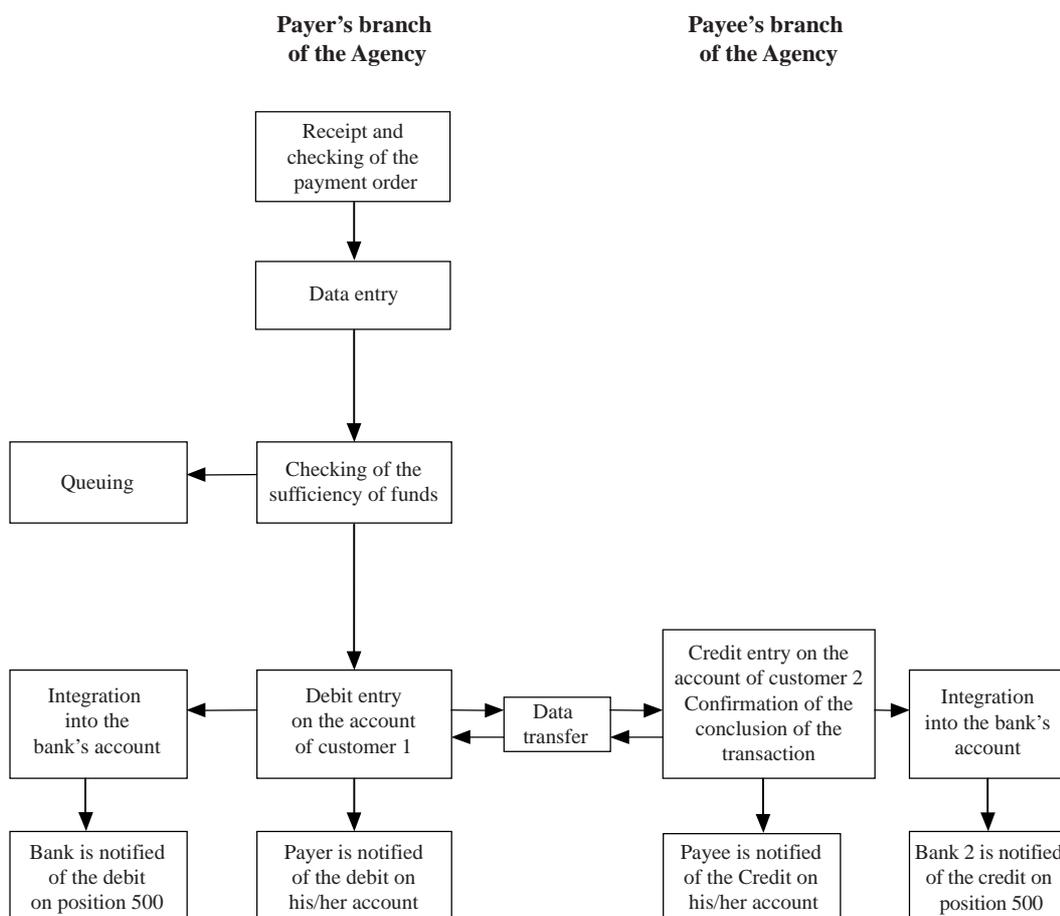
Payment orders are processed as they arrive. One exception to this is an urgent payment order, which is executed prior to all other orders.

*The accounting process*

The accounting process can best be seen from the payments flow chart in Chart 2 below.

Once the sufficiency of funds on the customer's account has been established, the payment order is processed by debiting the appropriate account. Each debit/credit entry also influences the liquidity of the bank, whose customer is the legal entity concerned. The balance on the account of the legal entity is integrated into the "position 500" of the bank in the contracted proportion. At the end of the day funds in "position 500" and "position 620" (bank's own funds) are transferred to the settlement account with the Bank and

**Chart 2**  
**Payment process within the Agency for Payments**



thus reflect the business activity of legal entities in the bank's overall liquidity position.

#### *Enquiries and monitoring*

Banks have the option to enquire about all their customers' payments through the Agency and the balance on "position 500" (the account which contains funds from customers' accounts). This facility is provided by the Banking Information System (APP BIS), which is accessible to all banks. However, being informed of the current balance on "position 500" does not help the banks to any great extent, because the processing of payment orders that influence "position 500" with the Agency usually lasts until 6 p.m., when the SIBPS has already closed for regular daily banking business (i.e. the processing of S.W.I.F.T. payment messages). For this reason, the interbank money market operates after 6 p.m. (i.e. the end of daily operation of the Agency), which enables the banks to acquire the required liquidity or to invest on the money market. At the same time, the SIBPS re-opens for the integration of funds with the Agency into the settlement accounts of banks, and the money market transactions are entered manually in the Bank's user interface.

#### **3.3.5 Transaction processing environment**

The Agency provides payment services for legal entities through its network of 14 main branch offices and 48 additional branch offices, all of which are located in the territory of the Republic of Slovenia.

#### **3.3.6 Settlement procedures**

See Section 3.3.4.

#### **3.3.7 Credit and liquidity risk**

Risks are described in Section 3.2.7. The Agency does not expose itself to credit risk, since it processes payments only if there are sufficient funds available on the account of the sending institution.

#### **3.3.8 Pricing**

The Agency has its own price list for payment services for legal entities. The fee comprises a fixed and a variable part. The latter is defined as a percentage of the value of the payment (0.016%). A detailed price list is given in the table below.

#### **3.3.9 Main projects and policies being implemented**

The final stage of the Slovenian payment systems reform will be reflected in the abolition of payment operations in the Agency. All efforts are being directed towards the transfer of payment systems to the banking community and the redefinition of the role of the Agency.

#### **Table**

#### **Payment service fees**

<b>Value of payment</b>	<b>Fee</b>
SIT 0 – 1,300.00 (ECU 6.96)	0.016% + SIT 42 (ECU 0.22)
SIT 1,300.01 – 13,000.00 (ECU 69.62)	0.016% + SIT 85 (ECU 0.46)
SIT 13,000.01 – 84,162,500.00 (ECU 405,709.41)	0.016% + SIT 111 (ECU 0.59)
SIT 84,162,500.01 and higher	SIT 13,568 (ECU 72.66 )

### 3.4 Further retail payment systems

#### 3.4.1 General overview

In the Agency system there is no distinction between high-value and low-value payments. The reformed payment system clearly distinguishes between high-value payments (with a threshold of SIT 3,000,000), which have to be processed through the RTGS system, and low-value payments, which may be processed in Giro Clearing. Since the retail payment system of the Agency has already been described in Section 3.3, only the Giro Clearing System will be discussed here.

In October 1998 the Bank implemented Giro Clearing as a pilot version of the future ISVPS, a clearing system for non-urgent low-value payments. The ISVPS will incorporate the whole spectrum of payment services required in a modern economy and will, as such, enable the banks both to take over the remaining payment functions of the Agency and to complete the remaining Phases 3 to 6 of the reform process, which necessitate the introduction of such a system.

The time needed for the implementation of the remaining phases of the reform is expected to be between 18 and 24 months. During that time the Bank will have to prepare the common legal background for all the existing clearing arrangements, to define the operational needs of the ISVPS and to implement the system as a whole or in stages.

In autumn 1997 the Bank invited a small number of qualified foreign companies to present their views and to prepare feasibility studies on the ISVPS, comprising all the different services provided in a typical payment system clearing house. The Bank received the feasibility studies in October 1998 and plans to decide on further steps to be taken with regard to the implementation of the ISVPS in early 1999.

The Integrated Small-Value Payment System (ISVPS) project comprises a number of sub-projects, namely:

- the setting-up of a Giro Clearing System (already established in October 1998);
- the integration of existing ATM clearing systems;
- the integration of existing POS clearing systems;
- the integration and modernisation of existing cheque clearing systems;
- the setting-up of a direct debit subsystem;
- automatic clearing systems settlement via RTGS; and
- risk analysis, risk management and liquidity control of the ISVPS.

#### 3.4.2 Giro Clearing

In October 1998 the low-value payment system Giro Clearing was implemented. At the beginning only a portion of the low-value payments was processed within the system (both "pure" interbank payments and those in which the accounts of corporate clients were not involved; others were still processed via the Agency system). It operates on a net basis and at a lower cost than the RTGS system. (The transaction fee in Giro Clearing is equal to SIT 10, i.e. ECU 0.054.)

Credit orders executed through Giro Clearing may not exceed SIT 3,000,000 (ECU 16,065). The clearing and settlement agent for Giro Clearing participants is (initially) the Bank.

The whole system is based on the Bank's network (BSNet) which connects all banks and some savings banks (direct participants in the SIBPS) with the Bank. At the respective banks' locations there are servers which also fulfil Giro Clearing purposes, on which the banks put batches of low-value credit orders in S.W.I.F.T. MT 100 format, which, on an hourly basis, are transmitted to the clearing centre via the Bank's central computer.

The decision to use the S.W.I.F.T. MT 100 standardised format was taken on account of its compatibility with the CAS, i.e. the message is the same; the system in which the payment is processed depends entirely on its value. The S.W.I.F.T. network itself is not used for the purposes of Giro Clearing.

At the end of the business day, i.e. at 1.15 p.m. (it is possible for the banks to obtain the intraday information on net positions prior to this time), all batches are run together and the net credit/debit position is calculated for each participant. Net

positions are communicated to each of the participants concerned. Participants with a net debit position from Giro Clearing have to send a S.W.I.F.T. MT 202 message to the RTGS system, crediting the Bank as the settlement agent. When the latter has received all payments from debtors, it credits the settlement accounts of participants with a net credit position in Giro Clearing.

The legal framework for the system is directly established in the Decree of the Board of the Bank of Slovenia on the Establishment of the Giro Clearing System.

## 4 Securities settlement systems

### 4.1 Institutional aspects

There is only one stock exchange currently in operation in Slovenia, namely the Ljubljana Stock Exchange (LSE) and one futures and options exchange, the International Options and Futures Exchange (MBOT).

The Slovenian Central Securities Clearing Corporation (KDD) is in charge of the securities settlement system and is the central securities depository. Since December 1995 it has been settling the operations conducted on the LSE.

The Slovenian Securities and Exchange Commission (SEC) is the supervisory authority of the KDD, LSE, brokerage houses, investment funds and companies which have securities listed on the LSE.

The Bank is also the supervisory authority for the banks as participants in the securities markets. In addition, the Bank acts as a securities settlement system for its own bills.

#### 4.1.1 General legal aspects

The Securities Market Act of March 1994 provides the legal basis for the functioning of the capital market in Slovenia. It contains provisions on the issuance and trading of

securities and on the roles of the stock exchanges, the SEC as a supervisory authority, the KDD as the local central securities depository and market participants.

Within the framework of the Securities Market Act, the LSE, the KDD and the SEC have defined rules for their procedures and developed their own regulations, which have to be validated by the supervisory authorities before being published.

Securities may be in a physical form or in the form of a book entry (dematerialised). The securities issued with physical certificates are bearer securities, while all the book-entry securities are registered in the name of the legal owner. In 1999 the Dematerialised Securities Act was adopted (Official Gazette of the Republic of Slovenia No. 23/99), which requires all securities publicly offered to become dematerialised.

The above-mentioned issues and the activities of the KDD (as well as the LSE) are governed by the Securities Market Act (Official Gazette of the Republic of Slovenia No. 6/94), the Companies Act (Official Gazette of the Republic of Slovenia No. 30/93), the Decree on Dematerialised Securities, the Law on the Bank of Slovenia, the Law on Management Companies and Investment Funds (Official Gazette of the

Republic of Slovenia No. 6/94) and the Takeover Law.

#### **4.1.2 The role of the central bank**

##### *General responsibilities*

The Bank has responsibilities regarding banking supervision, but is not involved in cash settlement of securities, except in the case of its own bills.

For the purpose of conducting monetary policy, the Bank issues its own bills:

- Bank of Slovenia tolar bills (with different maturities, starting at two days);
- Bank of Slovenia foreign currency bills;
- Bank of Slovenia twin bills – the only bills which are not dematerialised and which are bearer securities; and
- Bank of Slovenia bills with warrants.

Since Bank of Slovenia bills are not registered in the KDD – two exceptions are bills with warrants and twin bills – the Bank also maintains the register of legal owners of its own bills and all changes of ownership of dematerialised securities have to be recorded in the Bank, where the settlement also takes place.

All issues of Bank of Slovenia bills are based on the decrees of the Board of the Bank of Slovenia, which are derived from the Law on the Bank of Slovenia. Only bills which are officially listed on the LSE are also subject to the provisions of the Securities Market Act.

##### *Provision of settlement facilities*

Bank of Slovenia tolar bills may only be held by banks. When a bank buys tolar bills, it has to pay for them through the settlement account of the Bank; the ownership register is maintained by the Bank. There is also a

secondary market for these bills (only for those with longer maturities). All trades are agreed bilaterally between banks, with the bank selling bills having to notify the Bank, which enters the change of ownership in its books. The Bank is not involved in the cash settlement (there is no DVP mechanism). Cash transfers have to be performed bilaterally between the banks involved in the trade on the settlement accounts with the Bank.

Twin bills (physical certificates) and bills with warrants are listed and traded in the free market segment of the LSE. In contrast to tolar bills, they may be owned by banks or by legal and physical persons. The registry of legal owners of bills with warrants is maintained by the KDD, where the clearing is also performed in the same way as for the other securities traded on the LSE. The Bank has the ability to monitor the ownership of these bills online. (It is connected to the KDD system.)

##### *Monetary operations and securities settlement systems*

All the Bank of Slovenia bills described above serve purposes of monetary operations. The settlement process is also outlined above.

##### *Main projects and policies being implemented*

Currently the Bank is in the process of dematerialising its own bills. Bills with warrants have been in a dematerialised form since December 1998, but, according to the Dematerialised Securities Act, it is expected that all bills will be in a dematerialised form in the near future.

It is expected that the KDD will take over the registers of legal owners of the tolar bills, i.e. it will perform this service for the Bank.

#### 4.1.3 The role of other public sector bodies

##### *The Agency for Payments*

The Agency is the entity in charge of settling the cash aspects of settlement via the KDD. All KDD participants, including the KDD itself, hold accounts with it. Cash settlement will be explained in detail in Section 4.3.

##### *Slovenian Securities and Exchange Commission (SEC)*

The SEC's role in the securities market is to supervise market operations and market participants.

#### 4.1.4 The role of other private sector bodies

##### *Slovenian Central Securities Clearing House (KDD) (see Section 4.3)*

Pursuant to the Securities Market Act, the KDD, as a self-regulatory organisation, must be regulated and licensed by the SEC; its rules, by-laws and fees must be approved by the SEC.

##### *Ljubljana Stock Exchange (LSE)*

The LSE is a self-regulatory organisation licensed to operate by the SEC; it provides an organised market for securities (shares, bonds and government securities). The LSE provides the market-place, technology, management, rules and other conditions for the smooth and fair operation of the market.

##### *AURUM*

AURUM operates as the sub-depository of the KDD, to which it is connected online. Securities issued in the form of physical certificates traded on the LSE markets are kept in its vaults. The volume of its operations is decreasing through the process of dematerialisation of securities and as physical certificates (bonds) reach maturity.

#### 4.2 Summary information on securities markets

The securities traded on the LSE are settled through the KDD. This organised market is composed of three lists, A, B and the free market, i.e. the free market quotation.

Since October 1993 trading has been automated through the LSE Trading and Information System (BIS), in which the only direct participants are brokerage houses and banks. The BIS is an electronic system into which bids and offers are input daily.

##### 4.2.1 Main features of different securities markets

As mentioned before, there is only one securities market, with three main market lists.

##### *The official A and B market lists*

The official A and B market lists contain equity (shares) and debt (bonds) instruments. Only those securities which have been publicly offered successfully or whose further public sale has been approved by the SEC and which have been accepted for trading by the LSE can be listed in these two market segments. Listing requirements refer to the operations of the issuer in the past few years, the size of the capital, the audited financial statements, the size of the class of securities, the number of shareholders and securities dispersion among the public. There is a daily maximum price movement of 10%.

##### *The free market quotation*

The official free market quotation lists equity (shares) and debt (bonds) instruments. Bank of Slovenia bills and Treasury bills are also listed in the free market quotation. Currently all shares of certified investment funds (which were established in the process of privatisation) are also listed in the free market quotation.

The free market is a segment of the organised securities market in which those securities are traded which have been offered successfully to the public or whose further public sale has been approved by the SEC without their being listed on the official market. Due to a simple admission procedure and the fact that the trading of shares can start as soon as they are registered at the KDD, most shares from privatisation are currently being traded on this market. There is no limitation on price movements.

Clearing and settlement for all market segments are carried out in exactly the same way.

#### **4.2.2 Basic quantitative aspects (basic statistics)**

The volume and value of the operations of the LSE have increased every year since 1993, although there was a slight decrease in 1995. The turnover (market value of securities traded) increased from SIT 87.23 billion (ECU 659.41 million) in 1993 to SIT 108.30 billion (ECU 600.32 million) in 1997. Expressed in ECU terms, there has been a certain decrease in the value of operations.

The volume of operations has increased from 48,332 trades in 1993 to 140,354 trades (shares 93.63%, bonds 3.26% and short-term securities 3.11%) in 1997. Of these 140,354 trades, 15,353,942 involved securities.

#### **4.2.3 Financial intermediaries operating in the different securities markets**

There were 43 entities entitled to operate on the securities markets as at 31 December 1997. These 43 entities comprised 31 stockbrokers and 12 banks.

#### **4.2.4 Recent developments**

At the end of 1997 the new Rules and Procedures of the LSE were implemented.

The new Rules have resulted in a considerable number of changes in LSE trading. In particular, they define listings of authorised investment funds' shares in the LSE market quotations.

Authorised investment funds were established during the privatisation process to collect "certificates" (i.e. instruments which enabled all citizens to participate in the process of privatisation – either by buying companies' shares or shares in authorised investment funds). With regard to the "certificates" collected by authorised investment funds, funds were permitted to invest in companies which were in the process of privatisation.

#### **4.3 Structure, operation and administration of securities settlement systems**

For the purpose of securities clearing, the KDD was established in January 1995 according to the Securities Market Act and licensed to operate by the SEC, which also determines the statute and rules of operation of the KDD.

Prior to the dematerialisation of securities (before 1995), the securities traded on the LSE were deposited at the depository institution of that time, AURUM, from which they were physically transferred, while the settlement institution was the LSE itself. AURUM still operates as the sub-depository of the KDD, to which it is connected online.

The KDD is a self-regulating corporation and operates on a non-profit basis, with the aim of full cost recovery. Its shareholders may be brokerage houses, banks, companies established in accordance with the Law on Investment Companies, the Government of the Republic of Slovenia, the Bank and other legal entities permitted by the SEC.

The KDD's Board of Directors is composed of representatives of shareholders, the Bank, the Government of the Republic of Slovenia and employees of the KDD. Its role is to

supervise the conduct of the business of the KDD, and it may audit and/or control the procedures of the KDD (i.e. reporting functions, accounts, book entries and any other procedures). Furthermore, the Board of Directors must approve all rules and procedures for the system. These rules and procedures must also be adopted by the SEC.

The KDD offers the following functions to its participants:

- automatic clearing and settlement of transactions made on the Ljubljana Stock Exchange;
- settlement of all off-market transactions (securities transactions);
- a central registry of dematerialised and immobilised securities;
- maintenance of securities accounts for all legal owners;
- a central database for all dematerialised and immobilised securities;
- a central depository;
- provision of technical and operational support to enable its members to offer custody services; and
- provision of corporate action services (change in class of securities, stock split, change in initial capital, etc.).

The KDD operates its own system for all dematerialised securities. For materialised securities (physical certificates) the KDD uses another company's vaults (AURUM).

#### *Calculation, clearing and settlement of liabilities*

The KDD provides its participants, which are also members of the Ljubljana Stock Exchange, with services relating to the calculation, the clearing and settlement of the operations effected on the market, the

recording of securities transfers between the accounts of members with the KDD and the transfer of funds (on accounts with the Agency).

All transactions realised on the LSE are subject to the clearing and settlement of liabilities through the KDD. Data on these transactions are sent to the KDD directly by the LSE through the computer connection between both entities.

#### **4.3.1 Major regulations**

Operation of the KDD is based on the Securities Market Act and the Companies Act.

The rules and procedures governing the rights and obligations of participants and the duties of the KDD are set out in the KDD's Business Rules and its Articles of Association, as well as in several procedures governing separate fields of operation. The KDD's rules and procedures are currently included in the following sets of rules, covering various areas of operation:

- General Business Rules;
- Central Registry Rules;
- Clearing Rules;
- Guarantee Funds Rules;
- Buy-in/Sell-out Rules;
- Depository Rules;
- Takeover Rules.

#### **4.3.2 Participation in the system**

Participants in the system of the KDD are also members of the LSE. The KDD offers five types of membership, which are not mutually exclusive. They are as follows:

- (i) members of the transfer system, which are provided with the following KDD services:
- online transfer of ownership of securities related to legal transactions, for the account of a KDD member or its customers, through appropriate book entries in the securities accounts; and
  - online access to the balances of the members' own account and/or their customers' accounts;
- (ii) members of the transfer and settlement system, to which the KDD offers, in addition to the services listed above:
- the calculation of a KDD member's total gross amounts receivable or payable resulting from trades concluded on the stock market;
  - the calculation of a KDD member's total net amounts receivable or payable after the offsetting of mutual obligations;
  - the settlement of payment obligations and execution of appropriate transfers of ownership of securities; and
  - online access to the KDD member's account balances before and after offsetting has occurred;
- (iii) members of the KDD's loans system for which the KDD:
- maintains balances of securities on the loan accounts; and
  - provides online access to these balances;
- (iv) members of the KDD's pledge system for which the KDD:
- maintains balances of pledged securities; and
  - provides online access to these balances;
- (v) custodian banks for which the KDD:
- maintains the balances of securities on the custodian accounts of non-resident securities holders with their registered office abroad; and
  - provides online access to these balances.
- Pledge and loan memberships are not yet operational, but the implementation of the loan membership facilities is under way.
- KDD members, regardless of the type of membership they have, must be authorised securities market participants (licensed by the SEC), i.e. banks, brokerage firms, investment companies and management companies as well as the Government of the Republic of Slovenia, the Bank and other clearing or depository organisations, other institutional investors, custodian banks, etc.; these, in principle, all have to be domiciled in Slovenia. There is no other limitation on membership of the KDD, provided that the applicant meets all the legal criteria which are set forth in the Securities Market Act, Articles 37 to 44.

#### **4.3.3 Types of transactions handled**

The KDD handles:

- secondary market transactions realised on the LSE;
- off-market transactions;
- transactions of securities between accounts of the same holder and inheritance securities transactions; and
- corporate actions.

The following instruments are eligible for transfer within the KDD (as well as for deposit at the KDD): all book-entry securities

issued on the domestic market as well as securities which have already been issued as physical certificates and are listed on the LSE's official markets or traded off the organised market. The latter have to be immobilised in order to trade through the KDD KIS system.

#### 4.3.4 Operation of the transfer system

The settlement procedure comprises securities and funds transfers.

Brokers, acting on their customers' instructions, enter bids and offers in the LSE BIS system, which automatically matches them. Under LSE rules, matched transactions become binding and thus final 30 minutes after the market closes, i.e. at 1.30 p.m. on day T + 0. Matched "instructions", which become locked-in transactions by 1.30 p.m., are received online by the KDD Information System (KIS), which, in turn, executes them if the instructions correspond to the actual status and availability of securities in the KIS. Subsequently, the KIS settles the operations on a rolling basis on T + 2.

As regards off-market transactions, the matching is carried out before the instructions on the transactions are sent to the KDD.

Securities transfers within the KDD are processed directly as debits and credits to the securities accounts of participants or their customers. It should be noted that customers' accounts (which are not sub-accounts but direct accounts, called "final customer accounts") and assets are both technically and legally completely separate from participants' accounts and assets. The KDD maintains two types of (final customer) accounts: house accounts that belong to its participants and customer accounts that belong to legal owners. All securities are registered in the name of the legal owner. In the case of pledged securities, there is a distinction between the owner of the (pledged) securities, the pledgor, and the entity in whose possession the pledge remains

pending repayment of the debt, the pledgee, although the securities are nonetheless registered in the name of their legal owner.

Securities transfers occur at the end of day T + 2 (1 p.m.) in continuous batches. This applies to trading on the organised market; off-market transactions are conducted continuously and are executed as the posted securities transfers are approved by the KDD.

For LSE transactions, participants are expected to have their securities accounts "cleared" by 11 a.m. on T + 2. If they fail to do so, they receive a reminder and are requested to do so by 12 noon. Final settlement takes place at 1 p.m. on T + 2.

Off-market transactions are approved and thus executed continuously during the KDD's operating hours, i.e. daily from 8 a.m. until 4 p.m.

Any failure of participants to meet their obligations is dealt with in two stages:

- when a participant does not have enough securities on its account by 11 a.m. on T + 2, it receives a notification and has until 12 noon to obtain the necessary securities (i.e. usually by means of borrowing securities);
- if it still does not have enough securities by 12 noon, the KDD starts buy-in procedures. (These procedures apply to transactions on the organised market only.) The KDD intervenes and buys missing securities for the account of the failing participant. In addition, the non-performing participant is charged with all costs arising from this procedure and also incurs a fine. The KDD performs these procedures because substitution by novation is not possible under Slovenian law. Therefore, the KDD takes over all payment obligations and claims arising from participants' trading.

The KDD is obliged and liable to its members, in accordance with the membership agreements, for the clearing and settlement of their positions.

Securities transfers are processed within the KDD Information System (KIS), while cash transfers are processed within the Agency, where the entities involved have their accounts.

#### **4.3.5 Transaction processing environment**

As described above, transactions are concluded through the LSE BIS system and cleared and settled through the KDD KIS. Funds transfers are processed within the Agency, which maintains the cash accounts of all participants in the system and of the KDD itself. There are established communication links between the LSE and the KDD and between the KDD and the Agency.

#### **4.3.6 Settlement procedures**

The KDD operates a rolling T + 2 settlement system for all stock exchange transactions (on all operating days). Off-market transactions are executed and settled continuously as the requests are received.

Funds transfers are made through debits and credits to balances on the special clearing accounts of participants held with the Agency, which also maintains the account of the KDD itself.

#### **4.3.7 DVP arrangements**

The KDD operates a DVP system. This applies only to organised market transactions (LSE) as well as to takeover procedures.

Since the systems of the KDD and the Agency are “linked”, it is possible for the final transfer of securities and the final transfer of net cash positions to occur simultaneously on day T + 2. The KDD notifies the Agency of the

net positions of its members at 1.30 p.m. on T + 0. If, at 10 a.m. on T + 2, the funds on a member’s account with the Agency are insufficient to fulfil the net obligation from T + 0, the Agency notifies the KDD. It requests the member to supply sufficient funds. If it cannot do so by 12.30 p.m., the Guarantee Fund of the KDD is activated.

For off-market transactions, the settlement is not a concern of the KDD; it merely enters a change in legal ownership in its register of legal owners of securities when the transaction is agreed.

The model which the KDD operates is an example of the Model 3 described in the report prepared by the Committee on Payment and Settlement Systems of the central banks of the Group of Ten countries entitled “Delivery Versus Payment in Securities Settlement Systems” (Bank for International Settlements, September 1992). According to this model, transfer instructions for both securities and funds are settled on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle.

#### **4.3.8 Credit and liquidity risk control measures**

All members of the KDD have to pay funds into the Liquidity Reserve Fund and the Guarantee Fund of the KDD, which serve as a guarantee for the fulfilment of liabilities arising from the securities transactions concluded on the LSE.

The KDD calculates the amount of liquidity reserves for each individual member on the basis of its daily operations. If a member’s daily net obligation exceeds 25% of the whole Guarantee Fund, it has to pay the difference into the Liquidity Reserve Fund. If a member or members are not able to meet their obligations to the KDD or other members, the KDD first activates their portion of the Liquidity Reserve Fund, followed by the whole Liquidity Reserve Fund and finally the

Guarantee Fund if the former are not sufficient. If the Guarantee Fund is activated, the KDD also exercises its right to put a lien on all unpaid securities which can be sold to replenish the Guarantee Fund. As for the replenishment of the Guarantee Fund, the KDD member which has caused the activation of the Guarantee Fund is obliged to replenish it by the value of the amount withdrawn by 9 a.m. on T + 3. If it fails to do so, the KDD sends the Agency an acceptance payment order of that member (a special instrument which allows a creditor to obtain payment from the debtor's account), authorising the KDD to cash the order, debiting the member's account and crediting the KDD Guarantee Fund account. If the Fund is still not replenished, the KDD sells pledged securities (i.e. securities subject to this trade which have been bought but not paid for), and if this does not suffice, the KDD immediately requests all KDD members to supply funds for the replenishment of the Guarantee Fund.

The KDD does not offer any credit extensions or advances of funds to its participants, thereby exposing itself to credit risk, nor does it permit debit positions on its members' securities accounts. If such a case arises, the KDD promptly initiates a buy-in procedure which results in "cleared" securities accounts.

While a DVP arrangement is in place, there is no counterparty (credit) risk. Funds are not available to the selling member before the securities transfer is executed. In a sense, the KDD guarantees funds transfers since it acts as a central counterparty and takes over all payment obligations and claims from its members and thus becomes a party to each and every stock exchange transaction. As for securities, the KDD does not guarantee their transfer. However, in the event of non-delivery of securities, the KDD initiates the buy-in procedure.

Therefore all the KDD's risk exposure is concentrated in the payment area, within which the Guarantee Fund and Liquidity

Reserve Fund are established precisely to deal with this risk exposure. The Liquidity Reserve Fund acts as a guarantee that actual funds transactions will take place.

On the securities transfer side, a buy-in procedure is initiated and, on the funds transfer side, the Guarantee Fund is activated.

#### 4.3.9 Pricing

The KDD maintains a detailed price list of the services it offers to its members.

The KDD as a non-profit organisation tries to recover its costs by imposing fees and other charges on members.

The membership fee is SIT 759,888 (ECU 4,069) per year, the rental fee for a workstation that enables members to access the KDD's Information System is SIT 64,043 (ECU 343) per month and the rental fee for a primary communication line is SIT 21,712 (ECU 116) per month.

Opening a securities account for a customer costs SIT 127.90 (ECU 0.68), and the maintenance of a securities account costs SIT 25.40 (ECU 0.14) per month.

The brokerage charges for securities transfer and settlement are as follows: 0.033% of the value of the transaction for long-term securities traded on the LSE; 0.015% of the value of the transaction for short-term securities traded on the LSE; and SIT 638.80 to SIT 6,387.60 (ECU 3.42 to 34.2) for long-term securities transactions executed off the organised market. The depositing of materialised securities in the central depository costs 0.055% of the annual average value of securities deposited.

The fees for maintaining the register of securities holders (payable by issuers) are as follows: for shares, the initial fee is SIT 108,548 (ECU 581) plus 0.012% of the initial capital value plus SIT 38.40 to SIT 54.30 (ECU 0.21 to ECU 0.29) per shareholder; for

bonds, the fee is SIT 108,548 (ECU 581) plus 0.3% for issues of DEM 0 to DEM 9,999,999 and up to 0.05% or SIT 14,111,851 (ECU 75,574) for issues of DEM 100,000,000 to DEM 499,999,999; for short-term securities, the fee is SIT 81,445 (ECU 436) plus 0.03% and up to 0.005% or SIT 1,411,185 (ECU 7,557) for the same value ranges as for bonds.

#### **4.3.10 Main projects and policies being implemented**

In the KDD system, a project for a securities-lending facility to ensure settlement is being implemented (the procedure is in the testing phase). The system is incorporated into the KDD Information System (KIS), according to a securities pooling principle.

There are also ongoing activities towards the implementation of the new system, while the subsystem for lending/borrowing facilities will be implemented within the framework of the present system and is already being tested.

With regard to the relevant legislation, it should be noted that the new Securities Market Act has been submitted to the Slovenian Parliament, while the

Dematerialised Securities Act was adopted in April 1999. The new Securities Market Act is harmonised with the relevant EU Directives and places special emphasis on:

- risk management by securities market participants (capital adequacy in accordance with the Basel standards);
- the level of initial capital for securities market participants; and
- the extent to which the level of initial capital is dependent upon the range of services offered.

While the integration of the securities clearing system is part of the ISVPS project, securities trades will be in line with the recommendations of the European Central Bank (ECB) and will be settled in the RTGS system. This will be done in parallel with the transfer of accounts of legal entities to the banks, which means that cash settlement will no longer take place in the Agency. Along with the implementation of the ISVPS, securities settlement will be integrated into this system and funds settlement will be carried out through the settlement accounts of the banks with the Bank of Slovenia.

## 5 Statistical data

**Table 1**
**Basic statistical data**

	1993	1994	1995	1996	1997
Population <sup>1)</sup> (thousands)	1,994	1,988	1,989	1,991	1,986
Gross domestic product (SIT billions)	1,435.1	1,853.0	2,221.5	2,552.7	2,906.7
Exchange rate vis-à-vis ECU <sup>1)</sup>	132.6040	153.2221	154.9189	171.7948	180.9649

1) Average for the year.

**Table 2**
**Settlement media used by non-banks**

(end of year; SIT billions)

	1993	1994	1995	1996	1997
Banknotes and coins	32.72	47.29	59.97	66.84	78.12
Transferable deposits	85.03	124.22	145.52	169.96	194.33
Narrow money supply (M1)	107.09	159.63	191.42	224.48	265.82
Transferable deposits in foreign currencies	52.13	80.79	113.87	104.15	94.66
Outstanding value on electronic money schemes	-	-	-	-	-
<i>of which:</i>					
<i>on card-based products</i>	-	-	-	-	-
<i>on network-based products</i>	-	-	-	-	-

**Table 3**
**Settlement media used by deposit-taking institutions**

(end of year; SIT billions)

	1993	1994	1995	1996	1997
Required reserves held at the central bank	21.1	31.0	37.0	44.9	54.6
Free reserves held at the central bank	0.5	3.5	1.8	3.4	2.6
Transferable deposits at other institutions	17.2	12.3	13.2	17.1	16.6

**Table 4****Banknotes and coins***(total value, end of year; SIT millions)*

	1993	1994	1995	1996	1997
Total banknotes issued	34,612.52	50,617.84	63,904.04	71,440.57	85,652.53
<i>of which:</i>					
<i>SIT 10,000</i> <sup>1)</sup>	-	-	16,660.51	24,714.37	36,225.71
<i>SIT 5,000</i>	10,648.80	33,580.18	32,268.81	31,246.74	32,877.52
<i>SIT 1,000</i>	13,144.48	13,532.10	11,093.86	11,217.02	11,959.87
<i>SIT 500</i>	685.51	1,126.09	1,202.02	1,323.06	1,429.50
<i>SIT 200</i>	239.99	568.37	696.15	809.35	623.50
<i>SIT 100</i>	468.56	829.40	911.58	967.42	1,276.55
<i>SIT 50</i>	156.46	252.75	298.03	334.15	371.77
<i>SIT 20</i>	64.16	143.40	175.05	207.61	240.76
<i>SIT 10</i>	109.20	160.73	185.72	210.45	240.02
<i>Tolar coupons</i>	9,095.37	424.83	412.32	410.42	407.33
Total coins issued	173.48	258.45	339.01	413.94	488.14
<i>of which:</i>					
<i>SIT 5</i>	98.84	142.76	180.17	227.08	268.81
<i>SIT 2</i>	29.26	52.46	76.47	96.61	114.19
<i>SIT 1</i>	36.21	51.66	68.74	77.14	91.23
<i>SIT 0.5</i>	8.54	10.88	12.76	12.28	12.86
<i>SIT 0.2</i>	0.45	0.49	0.60	0.58	0.73
<i>SIT 0.1</i>	0.18	0.21	0.26	0.25	0.33
Banknotes and coins held by credit institutions	2,065.00	3,592.00	4,278.00	5,016.00	8,019.00
Banknotes and coins in circulation outside credit institutions	32,721.00	47,284.30	59,965.04	66,838.51	78,121.68

1) *The SIT 10,000 banknote has been in circulation since 15 March 1995.*

**Table 5**  
**Institutional framework**

(end of 1997)

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Value of accounts (SIT billions)
Central bank	1	-	0.1	57.2
Credit institutions <sup>1)</sup>	104	n.a.	4,260.78 <sup>1)</sup>	744.7*
<i>of which</i>				
<i>commercial banks</i>	28	563	<i>n.a.</i>	743.7
<i>savings banks</i>	6	9	<i>n.a.</i>	1.0
<i>savings co-operatives</i>	70	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
Agency for Payments <sup>2)</sup>	1	61	66.13	171.04
Post Office <sup>3)</sup>	1	535	-	-
<b>TOTAL</b>	<b>107</b>	<b>n.a.</b>	<b>4,327</b>	<b>973.0*</b>
Branches of foreign banks	-	-	-	-
<i>of which EU banks</i>	-	-	-	-

1) Including saving accounts (2,252,800).

2) Client accounts only – number of transfer accounts not included.

3) Account information (only) is included in the figures provided for credit institutions.

**Table 6**  
**Cash dispensers, ATMs and EFTPOS terminals**

(end of year)

	1993	1994	1995	1996	1997
<b>Cash dispensers and ATMs</b>					
Number of networks	2	2	2	2	2
Number of machines	133	184	283	407	501
Volume of transactions (millions)	4.95	9.17	14.14	16.79	20.85
Value of transactions (SIT billions)	21.16	49.43	98.75	129.50	168.17
<b>EFTPOS terminals</b>					
Number of networks	-	1	2	3	3
Number of points of sale	-	56	814	4,558	8,073
Volume of transactions (millions)	-	n.a.	8.38	12.72	19.06
Value of transactions (SIT billions)	-	n.a.	30.45	52.76	89.72
<b>Electronic money-loading machines</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (SIT millions)	-	-	-	-	-
<b>Electronic money purchase terminals</b>					
Number of machines	-	-	-	-	-
Volume of transactions (thousands)	-	-	-	-	-
Value of transactions (SIT millions)	-	-	-	-	-

**Table 7****Number of payment cards in circulation <sup>1)</sup>***(end of year; thousands)*

	1993	1994	1995	1996	1997
Cards with a cash function	n.a.	n.a.	n.a.	161	216
Cards with a debit/credit function	84	241	319	469	880
<i>of which:</i>					
<i>cards with a debit function</i>	-	-	-	-	287 <sup>2)</sup>
<i>cards with a credit function</i>	84	241	319	469	593
Cards with a cheque guarantee function	n.a.	n.a.	n.a.	941	1,071
Retailer cards	n.a.	n.a.	n.a.	127	173
Electronic money cards	-	-	-	-	-

1) A card with multiple functions may appear in several categories. It is, therefore, not meaningful to add the figures.

2) The number of cheque guarantee cards that can be used at POS terminals since end-1997.

**Table 8****Payment instructions handled by selected interbank funds transfer systems:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997 <sup>1)</sup>
Agency for Payments	125.24	137.20	148.00	157.64	87.53

1) The methodology for counting payment orders changed in March 1997; thus data for 1997 are not comparable with data for 1993-96. Since March 1997 every transaction is counted once; previously they had been counted twice (as debit and as credit).

**Table 9****Payment instructions handled by selected interbank funds transfer systems:  
value of transactions***(SIT billions)*

	1993	1994	1995	1996	1997 <sup>1)</sup>
Agency for Payments	16,814.14	14,076.27	20,785.48	23,560.48	6,307.77

1) See footnote to Table 8 above.

**Table 10****Participants in securities settlement systems***(end of 1997)*

	Settling securities	Holding securities accounts on behalf of customers	Settling cash directly in central bank accounts
Banks	12	12	-
Stockbrokers	31	31	-

**Table 11****Transfer instructions handled by securities settlement systems:  
volume of transactions <sup>1)</sup>**

	1993	1994	1995	1996	1997
LSE total	48,229	101,351	121,773 <sup>2)</sup>	-	-
Equity	24,118	72,780	71,629	-	-
Debt	21,204	19,344	11,165	-	-
Short-term securities	2,907	9,227	38,979	-	-
KDD total	-	-	-	131,252	140,354
Equity	-	-	-	106,590	131,409
Debt	-	-	-	6,858	4,574
Short-term securities	-	-	-	17,804	4,371

1) All figures refer to organised market trades only.

2) In 1995 the KDD was already in place, but it only became operational at the end of the year; its proportion of the volume of instructions settled is negligible and is included in this figure.

**Table 12****Transfer instructions handled by securities settlement systems:  
value of transactions <sup>1)</sup>***(SIT billions)*

	1993	1994	1995	1996	1997
LSE total	87.23	112.83	88.09 <sup>2)</sup>	-	-
Equity	34.80	53.35	45.22	-	-
Debt	36.36	33.01	22.74	-	-
Short-term securities	16.07	26.46	20.14	-	-
KDD total	-	-	-	87.00	108.30
Equity	-	-	-	67.08	87.56
Debt	-	-	-	13.22	11.53
Short-term securities	-	-	-	6.70	9.22

1) All figures refer to organised market trades only.

2) See footnote 2 to Table 11 above.

**Table 13****Nominal values registered by securities settlement systems***(end of year; SIT billions)*

	1993	1994	1995	1996	1997
KDD	-	-	187.91	422.14	734.89
Debt	-	-	144.39	219.03	393.85
Equity	-	-	43.52	202.78	340.33
Other (warrants)	-	-	-	0.33	0.71

**Table 14****Indicators of use of various cashless payment instruments:  
volume of transactions***(millions)*

	1993	1994	1995	1996	1997
Cheques issued	40.9	39.5	33.7	34.2	31.2
Payments by debit and credit cards	2.0	9.0	14.1	24.3	31.0
Credit transfers <sup>1)</sup>	125.2	137.2	148.0	157.6	87.5
Direct debits	-	-	-	-	-
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	n.a.	n.a.
<b>TOTAL</b>	<b>168.1*</b>	<b>185.7*</b>	<b>195.7*</b>	<b>216.1*</b>	<b>149.7*</b>

1) *Figure for the Agency for Payments only.***Table 15****Indicators of use of various cashless payment instruments:  
value of transactions***(SIT billions)*

	1993	1994	1995	1996	1997
Cheques issued	n.a.	204.1	251.3	294.6	290.3
Payments by debit and credit cards	8,91	40,92	69.0	106.1	143.2
Credit transfers <sup>1)</sup>	16,814.1	14,076.3	20,785.5	23,560.5	6,307.8
Direct debits	-	-	-	-	-
Electronic money	-	-	-	-	-
<i>of which:</i>					
<i>payments by card-based products</i>	-	-	-	-	-
<i>payments by network-based products</i>	-	-	-	-	-
Others	n.a.	n.a.	n.a.	n.a.	n.a.
<b>TOTAL</b>	<b>16,823.1*</b>	<b>14,321.2*</b>	<b>21,105.8*</b>	<b>23,961.2*</b>	<b>6,741.2*</b>

1) *Figure for the Agency for Payments only.*

**Table 16**  
**Participation in S.W.I.F.T. by domestic institutions**

	1993	1994	1995	1996	1997
S.W.I.F.T. users	10	18	20	20	30
<i>of which:</i>					
<i>members</i>	10	17	18	18	19
<i>sub-members</i>	-	1	2	2	2
<i>participants</i>	-	-	-	-	9
Memorandum item:					
Total S.W.I.F.T. world-wide	3,986	4,625	5,229	5,632	6,165
<i>of which:</i>					
<i>members</i>	2,091	2,412	2,693	2,874	2,969
<i>sub-members</i>	1,797	2,025	2,259	2,404	2,590
<i>participants</i>	98	188	277	354	606

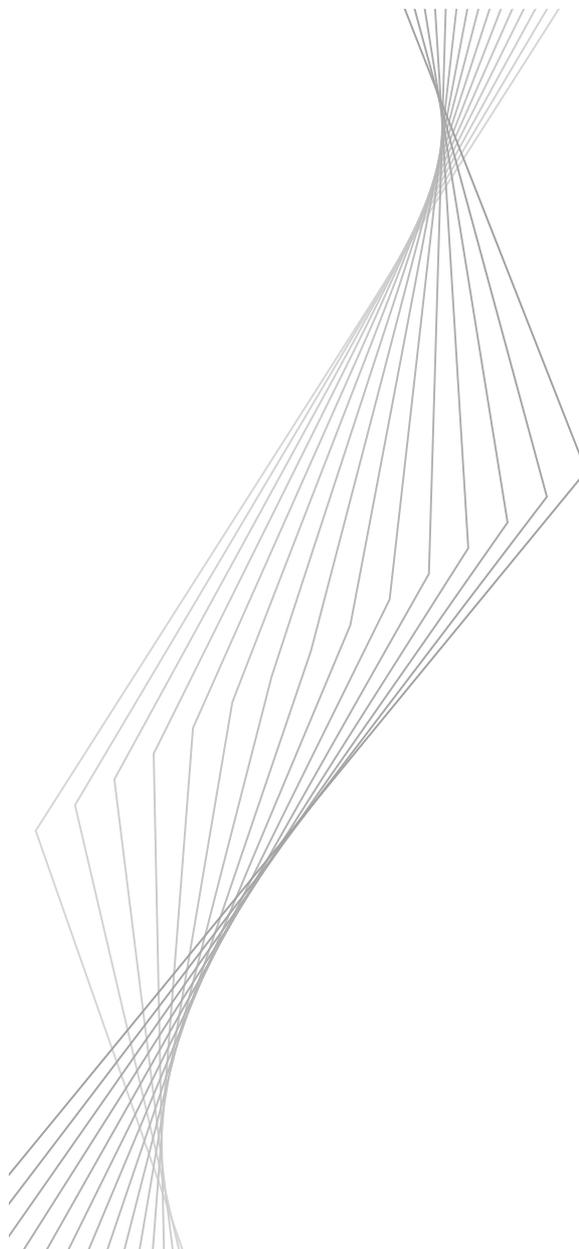
**Table 17**  
**S.W.I.F.T. message flows to/from domestic users**

	1993	1994	1995	1996	1997
Total messages sent	535,839	778,257	1,062,618	1,214,805	1,360,618
<i>of which:</i>					
<i>category I</i>	334,770	481,690	620,193	673,198	729,308
<i>category II</i>	119,749	195,161	286,766	337,841	387,087
<i>sent to/received from domestic users</i>			119,786	168,476	195,521
Total messages received	393,983	603,874	823,084	952,972	1,083,939
<i>of which:</i>					
<i>category I</i>	202,229	329,772	437,016	483,381	542,665
<i>category II</i>	7,640	13,531	21,272	34,350	45,035
Memorandum item:					
Global S.W.I.F.T. traffic	457,218,200	518,097,873	582,192,512	687,785,294	812,117,556





EUROPEAN CENTRAL BANK



**Annex I**  
**Methodology for**  
**the statistical data**

**August 1999**



## Standard methodology for the statistical data in this Blue Book

**Table 1**

### Basic statistical data

<i>Population and GDP:</i>	Source: Eurostat.
<i>Exchange rate:</i>	Source: ECB on the basis of the daily figures in its database received from Eurostat.

**Table 2**

### Settlement media used by non-banks

<i>Banknotes and coins:</i>	In accordance with monetary statistics, banknotes and coins represent the value of cash in circulation in the economy. They exclude the value of banknotes and coins kept in vaults at central banks or at deposit-taking institutions mentioned in Table 5.
<i>Transferable deposits:</i>	These are deposits which can be used to make cashless payments using one of the instruments mentioned in Tables 14 and 15. They include deposits in foreign currencies unless these are included in M1; in the latter case, they are mentioned under a separate item, <i>transferable deposits in foreign currencies</i> .
<i>M1:</i>	Cash in circulation and sight deposits held by non-banks.
<i>Others:</i>	Mentioned in case M1 includes items other than <i>banknotes and coins</i> and <i>transferable deposits</i> .
<i>Outstanding value on electronic money schemes:</i>	The difference between the value loaded on the electronic devices/ chip card or hard disk of a computer and the value redeemed. For these statistics electronic money is broadly defined as an electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transaction but acting as a prepaid bearer instrument. At present, two types of electronic money can be distinguished: (i) electronic money stored on a chip card (card money); and (ii) electronic money used in systems which employ specialised software on a personal computer and which is typically transferred over telecommunications networks (software-based money).

**Table 3****Settlement media used by deposit-taking institutions**

<i>Required reserves held at the central bank:</i>	Deposits held at the central bank to fulfil minimum reserve requirements.
<i>Of which can be used as working balances:</i>	<ul style="list-style-type: none"> <li>• If minimum reserves are required to be held as an average over a period of time, the whole required reserves are considered as working balances.</li> <li>• In some countries only part of the required reserves can be used for payment purposes. This part is mentioned here.</li> </ul>
<i>Free reserves held at the central bank:</i>	Deposits held at the central bank in excess of <i>required reserves held at the central bank</i> .
<i>Transferable deposits at other institutions:</i>	Deposits held at other institutions (not at the domestic central bank) which can be used to make payments.

**Table 4****Banknotes and coins***(end-of-year figures)*

<i>Total banknotes issued:</i>	The value of banknotes which are part of the liabilities of the central bank.
<i>Banknotes and coins held by credit institutions:</i>	Banknotes and coins in vaults of credit institutions and thus not in circulation.
<i>Banknotes and coins in circulation outside credit institutions:</i>	<i>Total banknotes and coins issued less banknotes and coins held by credit institutions (identical to banknotes and coins in Table 2).</i>

**Table 5****Institutional framework***(end-of-year figures)*

<i>Columns 1 and 2:</i>	Number of points of entry into the cashless payment system.
<i>Column 1: Number of institutions:</i>	Any institution which executes cashless payments.
<i>Column 2: Number of branches:</i>	All branches of an institution; as a rule, the head office of the institution is counted as a branch if it offers payment services.
<i>Columns 3 and 4:</i>	Indicates the number of accounts on which cashless payments (see the definition in Tables 14 and 15) can be made.
<i>Column 3: Number of accounts:</i>	The accounts which are mentioned here are those which: <ul style="list-style-type: none"> <li>• are held by deposit-taking institutions for non-deposit-taking institutions;</li> <li>• can be debited directly using one of the instruments mentioned in Tables 14 and 15.</li> </ul>
<i>Column 4: Value of accounts:</i>	Aggregate amount of deposits held on accounts mentioned in Column 3. As a rule, the total of the first five lines of the last column is identical to <i>transferable deposits</i> in Table 2.
<i>Branches of foreign banks:</i>	Branches or agencies of foreign banks. Banks which are foreign-owned, or subsidiaries of foreign banks are not included here.
<i>Of which EU banks:</i>	Sub-item of <i>branches of foreign banks</i> , giving the number of banks incorporated in the EU.

**Table 6****Cash dispensers, ATMs and EFTPOS terminals***(end-of-year figures)*

As a rule, all items include systems operated by banks and by non-banks.

<i>Cash dispensers:</i>	Electro-mechanical devices allowing the authorised user to withdraw banknotes and, in some cases, coins.
<i>ATMs:</i>	Electro-mechanical devices allowing the authorised user to withdraw cash from his account and/or to access a varying range of other services such as balance enquiry, transfer of funds and acceptance of deposits. The ATM may be operated online (with real-time reference to an authorisation database) or offline.
<i>Number of networks:</i>	A network of ATMs is defined as a group of ATMs managed by one or several service providers for a bank or group of banks. The customer of this bank/group of banks can use any ATM within this network without being charged additional fees.
<i>Number of machines:</i>	As a rule, each terminal is counted as one machine.
<i>EFTPOS terminals:</i>	Terminals at a retail location which are designed to capture, and in some cases also transmit, payment information by electronic means.
<i>Number of points of sale:</i>	As a rule, each location (e.g. shop) in which one or several terminals are installed is counted as one point of sale.
<i>Number of machines:</i>	As a rule, each EFTPOS terminal is counted as one machine.
<i>Electronic money-loading machines:</i>	Electro-mechanical devices allowing the authorised user to load and reload electronic money cards.
<i>Electronic money purchase terminals:</i>	Terminals at a retail location or incorporated in a vending machine which allow payments to be made by means of electronic money cards.

**Table 7****Number of payment cards in circulation***(end-of-year figures in thousands)*

A card which has several functions is counted in each relevant line (e.g. a eurocheque card which can be used to withdraw cash, to make payments and to guarantee cheques should be counted in each of the first three main items); therefore, as indicated in the footnote, the figures should not be added.

Travel and entertainment cards are mentioned in the relevant category.

Delayed debit cards are mentioned in the debit category.

*Cards with a cash function:* All cards enabling the holder to withdraw cash from a cash dispenser.

*Cards with a debit/credit function:*

*Of which*

*Debit cards:* Cards enabling the holder to have his/her purchases directly charged to funds on his/her account at a deposit-taking institution (may sometimes be combined with another function, e.g. that of a cash card or cheque guarantee card).

*Delayed debit cards:* Cards issued by banks indicating that the holder may charge his/her account up to an authorised limit. They enable him/her to make purchases but do not offer extended credit, the full amount of the debt incurred having to be settled at the end of a specified period. The holder is usually charged an annual fee.

*Credit cards:* Cards indicating that the holder has been granted a line of credit. They enable him/her to make purchases and/or draw cash up to a pre-arranged ceiling; the credit granted can be settled in full by the end of a specific period, or can be settled in part, with the balance taken as extended credit. Interest is charged on the amount of any extended credit and the holder is sometimes charged an annual fee.

*Cards with a cheque guarantee function:* Transactions with these cards are, in connection with the use of a PIN, guaranteed by the issuing bank up to a specific amount.

*Retailer cards:* Cards issued by non-banking institutions, to be used at specified retail outlets. The holder of the card is usually granted a line of credit.

*Electronic money cards:* Chip cards that allow electronic money payments to be carried out.

As a rule, only the number of valid cards in circulation is provided, not the number of cards issued, since this figure would not be very informative if empty or invalid cards were included.

### Tables 8 and 9

#### Payment instructions handled by selected IFTS

<i>IFTs:</i>	Interbank Funds Transfer Systems, in which most (or all) direct participants are credit institutions and which are used primarily to process cashless payments.  As a rule, all IFTS are mentioned here – not only those managed by the central bank, but also those managed by private operators.
<i>Funds Transfer Systems (FTS):</i>	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.

### Table 10

#### Participants in securities settlement systems

*(end-of-year figures)*

Securities settlement systems (SSSs) are transfer systems which settle transfer instructions for both securities and funds.

As a rule, all SSSs are mentioned here – not only those managed by the central bank, but also those managed by private operators.

Figures are provided system by system with categories of various participants (such as banks, stockbrokers, etc.) as sub-items.

<i>Column 2:</i>	In some systems certain participants are allowed to maintain both their own securities accounts and customers' securities accounts, while other participants are not allowed to maintain customers' accounts. In this column, the number of participants allowed to maintain customers' accounts is specified.
<i>Column 3:</i>	In most systems all participants hold securities settlement accounts but only some of them hold cash settlement accounts with the central bank to settle their cash positions, while others settle funds indirectly through another participant. In this column, the number of participants allowed to hold cash settlement accounts is indicated.

### Tables 11 and 12

#### Transfer instructions handled by securities settlement systems

*(volume and value of transactions)*

Figures are provided system by system, with categories of various securities (such as government securities, bonds, shares, CDs, futures, options, etc.) as sub-items. Should some of the sub-items not be available, the row is marked “n.a.”; if the sub-system does not exist in the country, it is marked “-”.

Transfer instructions comprise all transfer instructions entered in the system (including free deliveries). As regards options, all the contracts settled in the system are included.

As far as CDs are concerned, all CDs settled in the system are considered regardless of their issuers (banks, central bank, mortgage institutions).

With regard to the volume and value of transactions, each transaction is counted once (not twice for sale and purchase orders).

### Table 13

#### Nominal values registered by securities settlement systems

Figures are provided system by system, with categories of various securities. They refer to the nominal value at the end of the year.

### Tables 14 and 15

#### Indicators of use of various cashless payment instruments

The objective of these tables is to estimate the volume and value of payment instruments used in the country. As a rule, figures concerning only a sample of banks or customers are projected to figures covering the whole volume and value of payment instruments used in the country.

“Payment” is defined as the “satisfaction and discharge of an obligation by the debtor’s irrevocable provision of an unconditional claim on a third party acceptable to the creditor”. This definition excludes any funds transfer in which the originator and the beneficiary are the same institution or individual. Therefore, any instrument which is used by banks’ customers to obtain cash should not be counted (e.g. cheques used to obtain cash, or ATM withdrawals – although these operations might be included in Tables 8 and 9, whose focus is different). To the extent possible, transfers to and from accounts held under the same name – either with the same institution (e.g. from a cheque account to a savings account), or between two institutions – are excluded.

Strictly speaking, “cashless” means without the involvement of cash. Such a narrow definition would exclude those money (postal) orders, which involve cash at one or both ends of the transaction, as well as the majority of travellers’ cheques, which are often paid in cash. It is not realistic to use such a narrow definition because it is very doubtful whether available

statistics would permit a breakdown of the number of money orders or travellers' cheques according to the way they are paid for or settled. Therefore, all payment instruments which involve cashless interbank settlement are included in the statistics.

The distinction between paper-based and paperless credit transfers is based on the interbank exchange; credit transfer orders which are exchanged on a paperless basis between banks are deemed to be paperless even if the originator and/or the beneficiary submitted or received a piece of paper.

Cross-border cashless payments are counted in the country of the originator.

In accordance with the above principle, the following guidelines are respected:

- no distinction is made between payments in foreign and domestic currencies;
- no distinction is made between interbank items (bank A to bank B), interbranch items (bank A branch to another bank A branch), or intrabranh items (bank A customer to another bank A customer at the same branch); all are included in the statistics;
- transfers to and from the account-holding institution and its customers (e.g. interest or fee payments) are excluded but, where available, they are mentioned in a footnote;
- commercial bills are included if funds transfers can be made on the basis of these, without using another medium;
- funds transfers used to settle payment card balances are included (payment between the issuer and the user);
- travellers' cheques, eurocheques and bankers' drafts are included under cheques;
- money orders are included under credit transfers (if the volume is significant they could constitute a sub-item).

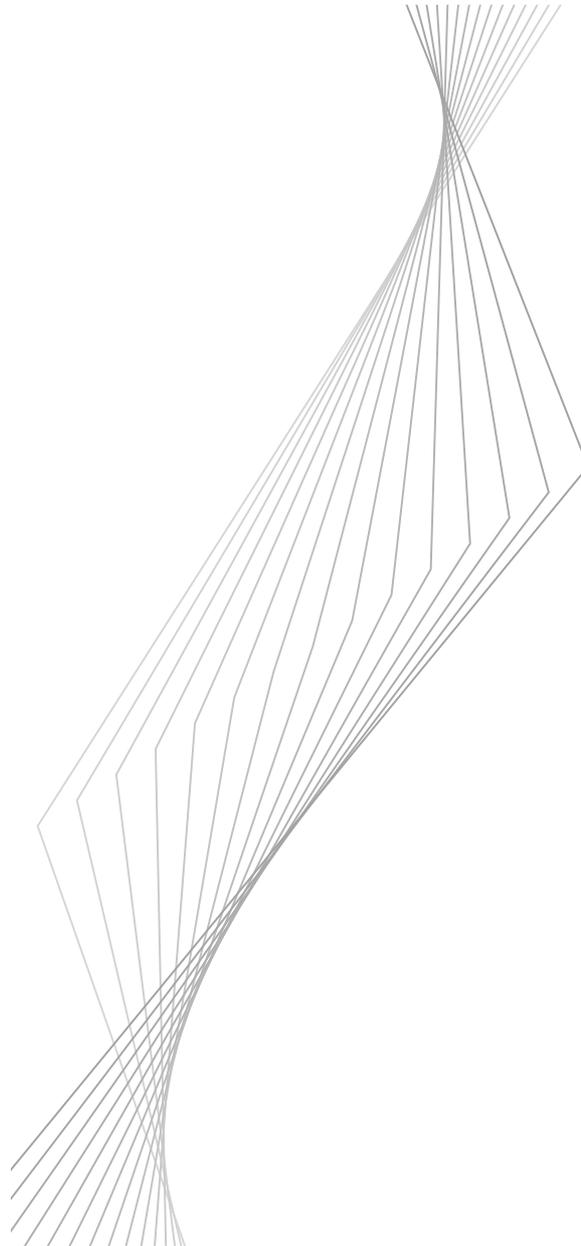
#### **Tables 16 and 17**

#### **S.W.I.F.T. tables**

These figures are provided by S.W.I.F.T.



EUROPEAN CENTRAL BANK



## **Annex 2**

# **Comparative tables**

**August 1999**



**Table I**  
**Banknotes and coins in circulation outside credit institutions**

(end of year)

	Total (ECU millions) <sup>1)</sup>		Value per inhabitant (ECU)		As a percentage of GDP (%)		As a percentage of narrow money (%)	
	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	567	691	68	83	7.23	7.68	53.5	57.4
Cyprus	449	474	688	724	6.41	6.32	40.7	39.2
Czech Republic	3,450	3,322	334	322	7.76	7.23	25.0	26.8
Estonia	279	291	190	200	8.14	7.01	34.5	29.9
Hungary	2,570	2,648	253	261	7.22	6.69	40.2	36.9
Latvia	377	504	151	204	9.33	10.36	45.3	43.5
Lithuania	374	559	101	151	6.01	6.64	52.6	49.6
Poland	6,883	7,329	178	190	6.49	6.12	39.2	37.8
Romania	1,373	1,128	61	50	4.97	3.68	48.2	49.1
Slovakia	1,118	1,278	208	237	7.56	7.45	25.0	29.3
Slovenia	389	432	195	217	2.62	2.69	29.8	29.4

1) Calculated using average yearly rates.

**Table 2****Points of entry into the payment system***(end of year)*

	Number of institutions offering payment services <sup>1)</sup>		Number of central bank branches <sup>1)</sup>		Number of bank branches <sup>1)</sup>		Number of Post Office branches <sup>1)2)</sup>		Others <sup>1)</sup>		Total number of branches offering payment services <sup>1)</sup>		Number of accounts on which payments can be made (per capita)	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	6	6	0.7	0.7	82	108	370	371	-	-	452	481	n.a.	n.a.
Cyprus	572	592	1.5	1.5	817	814	-	-	704	701	1,523	1,516	n.a.	n.a.
Czech Republic	6	5	1.7	1.7	332	242	339	340	-	-	673	584 <sup>3)</sup>	0.56	0.57
Estonia	10	11	-	-	n.a.	276	n.a.	n.a.	n.a.	n.a.	n.a.	276	n.a.	n.a.
Hungary	29	28	0.9	0.9	273	298	317	318	-	-	592	617	0.26	0.33
Latvia	16	16	2.4	2.4	340	310	404	402	2	2	748	717	0.51	0.56
Lithuania	4	4	0.5	0.5	66	55	-	-	-	-	67	56	n.a.	n.a.
Poland	42	40	1.3	1.3	298	298	200	199	-	-	500	498	0.45	0.47
Romania	2	2	1.8	1.8	142	169	313	314	-	-	457	485	1.19	1.42
Slovakia	6	6	3.0	3.0	211	210	304	304	-	-	528	517	n.a.	0.84
Slovenia	54	54	-	-	287	288	263	269	31	31	581	588	n.a.	2.18

1) *Per 1,000,000 inhabitants.*2) *If the Post Office branches offer payment services.*3) *Including the Czech Post Office, which offers limited payment services.*

**Table 3**  
**Cash dispensers and ATMs**  
*(end of year)*

	Number of machines per 1,000,000 inhabitants (end of year)		Number of transactions per capita		Average value per transaction (ECU)		Increase in the number of machines (%)		Increase in the number of transactions (%)		Increase in the value of transactions (%)	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	8	14	neg.	0.2	18	17	119	69	2,569	345	5,635	3,388
Cyprus	224	243	0.6	0.7	114	119	21	9	n.a.	32	n.a.	36
Czech Republic	113	128	3.7	4.8	37	38	10	13	54	28	78	38
Estonia	157	296	7.8	14.6	20	27	64	88	n.a.	84	n.a.	160
Hungary	107	153	2.2	3.9	54	49	64	43	143	76	879	77
Latvia	10	40	neg.	0.3	79	47	243	313	1,450	1,313	3,000	694
Lithuania	3	15	neg.	0.1	78	70	-	470	-	313	-	228
Poland	14	37	0.2	0.7	35	47	144	175	647	219	990	368
Romania	2	4	neg.	neg.	24	15	300	164	n.a.	1,025	n.a.	1,359
Slovakia	146	162	5.0	7.3	26	27	22	12	60	46	54	50
Slovenia	204	252	8.4	10.5	45	45	44	23	19	24	31	30

**Table 4****EFTPOS***(end of year)*

	Number of POS per 1,000,000 inhabitants (end of year)		Number of transactions per capita		Average value per transaction (ECU)		Increase in the number of POS (%)		Increase in the number of transactions (%)		Increase in the value of transactions (%)	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	37	62	neg.	neg.	4	17	208	66	433	397	1,400	17,254
Cyprus	3,834	5,802	2.8	4.4	86	81	neg.	52	43	58	36	46
Czech Republic	107	290	0.1	0.1	76	78	65	171	188	51	39	61
Estonia	817	1,497	0.2	1.0	22	17	380	82	n.a.	400	n.a.	300
Hungary	638	1,427	0.2	0.5	70	96	72	123	828	138	1,522	260
Latvia	650	1,158	0.1	0.4	69	61	67	77	24	216	82	165
Lithuania	61	230	0.1	0.1	101	101	1,235	276	14,180	118	18,250	94
Poland <sup>1)</sup>	722	1,001	0.1	0.1	87	72	44	39	68	101	70	80
Romania	127	185	neg.	0.5	5	neg.	129	45	n.a.	20,567	n.a.	328
Slovakia	72	203	neg.	0.1	33	30	267	181	122	206	120	171
Slovenia	2,289	4,065	6.4	9.6	24	26	460	77	52	50	73	70

1) Figures include manually processed transactions (via imprinters).

**Table 4a****Electronic money-loading machines and purchase terminals and cards***(end of year)*

	Electronic money cards (thousands)		Number of money-loading machines		Average value per (re)loading (ECU)		Number of purchase terminals		Average value per purchase (ECU)	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	-	-	-	-	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-	-	-	-	-
Czech Republic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Estonia	-	-	-	-	-	-	-	-	-	-
Hungary	-	-	-	-	-	-	-	-	-	-
Latvia	-	-	-	-	-	-	-	-	-	-
Lithuania	7.4	24.2	12	70	53.7	68.3	79	168	4.2	5.5
Poland	-	-	-	-	-	-	-	-	-	-
Romania	-	-	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-	-	-
Slovenia	-	-	-	-	-	-	-	-	-	-

**Table 5****Use of debit/credit cards***(end of year)*

	Number of cards per 1,000 inhabitants								Average number of			
	Cards with a cash function		Cards with a debit or a credit function		Cards with a cheque guarantee function		Retailer cards		cash withdrawals per card with a cash function		payments per card with a credit/debit function	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	2.5	7.9	2.5	7.9	-	-	-	-	14.3	19.8	14.5	20.1
Cyprus	n.a.	n.a.	509	620	-	-	n.a.	n.a.	n.a.	n.a.	7.5	9.9
Czech Republic	55.3	39.7	124.9	143.6	1.3	2.0	23.4	25.7	67.8	120.8	29.3	33.9
Estonia	295.4	423.9	295.4	423.9	-	-	n.a.	n.a.	26.6	34.5	6.8	13.9
Hungary	163.3	237.2	132.6	202.1	0.7	0.3	8.4	14.9	13.5	16.4	1.9	2.4
Latvia	15.3	76.9	15.3	74.6	-	neg.	1.0	10.0	1.5	4.2	14.3	14.2
Lithuania	3.1	14.8	3.1	14.8	-	-	n.a.	n.a.	4.6	4.0	29.0	11.2
Poland	18.5	43.2	11.0	27.6	4.0	9.8	-	-	11.2	15.3	5.9	4.8
Romania	0.2	1.8	0.2	1.8	-	-	-	-	19.5	22.0	14.6	302.5
Slovakia	143.8	186.1	143.8	186.1	0.2	0.2	9.8	9.8	34.6	39.0	0.4	0.6
Slovenia	80.9	108.8	235.6	443.0	472.6	539.3	63.8	87.1	104.3	96.5	51.7	35.0 <sup>1)</sup>

1) Towards the end of 1997 a debit function was added to a large number of cheque cards. Without this change, the average number of payments per card would have been 52.

**Table 6.1**  
**Major interbank funds transfer systems in Central and Eastern European countries**  
*(end-1997)*

Large-value systems									System name	Number of transactions (thousands)		Value of transactions (ECU billions)		Average value of transactions (ECU thousands)	
Country	Owner/manager	Processing method	Netting/settlement	Member-ship	Access	Fees	Closing time			1996	1997	1996	1997	1996	1997
1	2	3	4	5	6	7	8								
HU	CB	M	GS	O	C	V	14.00	NBH's banking system	58	81	97	141	1,670	1,742	
LV	CB	RTT	RTGS	O	C	V	15.30	EFTS	6	19	2	6	338	342	
LV	CB	M	GS	O	C	N	16.00	IGSS	54	40	6	6	107	151	
PL	CB	RTT	RTGS	O	C	V	19.30	SORBNET	370	454	563	811	1,522	1,786	
RO	CB	M	GS	O	C	F	17.00	DECONT-BNR	19	58	62	72	3,267	1,247	

**Key**

1 HU = Hungary; LV = Latvia; PL = Poland; RO = Romania.

2 B = banks; CB = central bank.

3 M = manual; ACH = Automated Clearing House (offline); RTT = real-time transmission.

4 N = multilateral netting; BN = bilateral netting; RTGS = real-time gross settlement; GS = other gross settlement.

5 O = open membership (any bank can apply); RM = restricted membership (subject to criteria).

6 Geographical access to the system: C = centralised (one processing centre only) or D = decentralised.

7 Prices charged to participants: F = full costs (including investments); V = variable costs; S = symbolic (below variable cost); N = no costs.

8 Closing time for same-day transactions.

Table 6.2

Systems which process large-value and retail transactions									Number of transactions (thousands)		Value of transactions (ECU billions)		Average value of transactions (ECU thousands)	
Country	Owner/manager	Processing method	Netting/settlement	Member-ship	Access	Fees	Closing time	System name	1996	1997	1996	1997	1996	1997
1	2	3	4	5	6	7	8							
BG	B,CB	RTT	GS	O	D	F	22.00	BISERA	10,324	10,176	14	14	1	1
CY	CB	M	GS	O	C	N	14.30	Credit Transfer System	22	27	29	28	1,311	1,044
CZ	CB	ACH	RTGS	O	C	F	15.00	Clearing and Settlement System	156,300	171,7	957	1,362	6	8
EE	CB	ACH	GS	O	C	S	14.00	Settlements System of Eesti Pank	8,763	10,901	14	21	2	2
HU	B,CB	ACH	GS	O	C	F	<sup>1)</sup>	Interbank Giro System (IGS)	40,660	49,697	94	121	2	2
LT	CB	ACH	GS/N	O	C	V	15.00	TARPBANK	7,493	9,018	16	24	2	3
RO	CB	M	N	O	C	F	13.30	DECONT-BNR	9,935	11,604	39	36	4	3
SK	B	ACH	N	O	C	V	13.00	SIPS	88,620	108,965	478	668	5	6
SI <sup>2)</sup>	APP	M	GS	O	D	V	13.00	Agency for payments (APP)	157,643	87,527	137	35	1	0.4

**Key**

1) BG = Bulgaria; CY = Cyprus; CZ = Czech Republic; EE = Estonia; HU = Hungary; LT = Lithuania; RO = Romania; SK = Slovakia; SI = Slovenia.

2) B = banks; CB = central bank.

3) M = manual; ACH = Automated Clearing House (offline); RTT = real-time transmission.

4) N = multilateral netting; BN = bilateral netting; RTGS = real-time gross settlement; GS = other gross settlement.

5) O = open membership (any bank can apply); RM = restricted membership (subject to criteria).

6) Geographical access to the system: C = centralised (one processing centre only) or D = decentralised.

7) Prices charged to participants: F = full costs (including investments); V = variable costs; S = symbolic (below variable cost); N = no costs.

8) Closing time for same-day transactions.

1) IGS is an overnight system.

2) The methodology for the counting of payment orders changed in March 1997 and thus data for 1997 are not comparable with data for 1993-96. As from March 1997 each non-cash transaction has been counted only once, whereas previously each transaction was counted twice (once as a debit and once as a credit). Cash transactions (e.g. payment orders paid in cash) were only ever counted once.

**Table 6.3**

Retail systems									Number of transactions (thousands)		Value of transactions (ECU billions)		Average value of transactions (ECU thousands)	
Country	Owner/ manager	Processing method	Netting/ settlement	Member- ship	Access	Fees	Closing time	System name	1996	1997	1996	1997	1996	1997
1	2	3	4	5	6	7	8							
CY	CB	ACH	N	O	C	N	10.00	Cyprus Clearing House	16,876	16,962	14	14	1	1
CY	B	ACH	N	O	C	F	<sup>1)</sup>	JCC Multipack	3,397	4,963	0.3	0.4	0.1	0.1
LV	CB	M	N	O	C	N	10.30	Clearing System	3,433	4,272	4	6	1	1
PL	B+CB <sup>2)</sup>	M	N	O	D	F	<sup>3)</sup>	SYBIR	172,330	203,396	243	260	1	1
PL	B+CB <sup>2)</sup>	ACH	N	O	C/D	F	18.00	ELIXIR	6,821	13,734	36	111	5	8

**Key**

1) CY = Cyprus; LV = Latvia; PL = Poland.

2) B = banks; CB = central bank.

3) M = manual; ACH = Automated Clearing House (offline); RTT = real-time transmission.

4) N = multilateral netting; BN = bilateral netting; RTGS = real-time gross settlement; GS = other gross settlement.

5) O = open membership (any bank can apply); RM = restricted membership (subject to criteria).

6) Geographical access to the system: C = centralised (one processing centre only) or D = decentralised.

7) Prices charged to participants: F = full costs (including investments); V = variable costs; S = symbolic (below variable cost); N = no costs.

8) Closing time for same-day transactions.

1) The clearing cycle for local transactions varies from two to five days depending on the type of transaction.

2) The central bank is one of the shareholders in the clearing house.

3) In the SYBIR system all transactions are settled the next day.

**Table 7****Use of cashless payment instruments***(total number of transactions, in millions)*

	Cheques		Payments by credit/debit/retailer cards		Credit transfers		Direct debits		Others <sup>1)</sup>		TOTAL	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	neg.	neg.	neg.	1.3	9.1 <sup>2)</sup>	8.8 <sup>2)</sup>	1.2	1.1	neg.	neg.	11.0	11.0
Cyprus	15.8	15.8	2.5	4.0	neg.	neg.	n.a.	n.a.	1.1	1.1	19.4	20.9
Czech Republic	14.4	13.9	37.8	50.1	308.4	382.2	17.3	17.6	n.a.	n.a.	377.9	463.9
Estonia	neg.	neg.	2.9	8.6	15.2	23.7	neg.	neg.	0.1	0.1	18.2	32.5
Hungary	1.2	1	3.59	7.0	38.1	49.5	31.3	33.9	190	198.3	264.1	289.8
Latvia	neg.	0.1	0.5	2.6	30.2	27.0	0.2	0.3	39.4	45.4	70.4	75.4
Lithuania	0.2	0.1	0.3	0.6	8.4	11.7	-	-	0.9	1.6	9.8	14.1
Poland	7.6	7.1	2.5	5.1	172.7	211.3	-	-	137.2	130.5	320.0	354.0
Romania	4.1	5.4	0.1	12.4	21.7	19.7	n.a.	n.a.	n.a.	n.a.	25.9	37.5
Slovakia <sup>3)</sup>	0.1	0.1	0.3	0.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	89.0	109.7
Slovenia	34.2	31.2	24.3	31.0	157.6 <sup>4)</sup>	87.5 <sup>4)</sup>	-	-	n.a.	n.a.	216.0	150.0

1) Includes the items "electronic money payments" and "others" from Table 14.

2) Interbank paperless credit transfers.

3) No separate statistical data for credit transfers and direct debits are available. Altogether there were 88.6 million such transactions in 1996 and 108.9 million in 1997.

4) The Agency's system only.

**Table 8****Use of cashless payment instruments***(number of instruments per inhabitant)*

	Cheques		Payments by credit/debit/retailer cards		Credit transfers		Direct debits		Others <sup>1)</sup>		TOTAL	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	neg.	neg.	neg.	neg.	1.1 <sup>2)</sup>	1.1 <sup>2)</sup>	neg.	neg.	neg.	neg.	1.3	1.3
Cyprus	24.2	24.1	3.8	6.1	neg.	neg.	n.a.	n.a.	neg.	neg.	29.8	38.0
Czech Republic	1.4	1.4	3.7	4.9	29.9	37.1	1.7	1.7	n.a.	n.a.	36.6	45.0
Estonia	neg.	neg.	2.0	5.9	10.3	16.3	neg.	neg.	neg.	0.1	12.4	22.3
Hungary	0.1	0.1	0.4	0.7	3.7	4.9	3.1	3.3	18.7	19.5	26.0	28.5
Latvia	neg.	neg.	0.2	1.1	12.1	11.0	0.1	0.1	15.8	18.4	28.3	30.6
Lithuania	neg.	neg.	0.1	0.2	2.3	3.2	-	-	0.2	0.4	2.7	3.8
Poland	0.2	0.2	0.1	0.1	4.5	5.5	-	-	3.6	3.4	8.3	9.2
Romania	0.2	0.2	neg.	0.5	1.0	0.9	n.a.	n.a.	n.a.	n.a.	1.1	1.7
Slovakia <sup>3)</sup>	neg.	neg.	0.1	0.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16.6	20.4
Slovenia	17.2	15.7	12.2	15.6	79.2	44.1	-	-	n.a.	n.a.	109.0	75.0

1) Includes the items "electronic money payments" and "others" from Table 14.

2) Interbank paperless credit transfers.

3) No separate statistical data for credit transfers and direct debits are available. Altogether there were 16.49 million such transactions per inhabitant in 1996 and 20.23 million in 1997.

**Table 9****Use of cashless payment instruments***(as a percentage of the total number of transactions)*

	Cheques		Payments by credit/debit/retailer cards		Credit transfers		Direct debits		Others <sup>1)</sup>	
	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
Bulgaria	neg.	neg.	2.8	11.8	86.1 <sup>2)</sup>	78.4 <sup>2)</sup>	11.1	9.8	neg.	neg.
Cyprus	81.4	75.6	12.9	19.1	0.1	0.1	n.a.	n.a.	5.7	5.3
Czech Republic	3.8	3.0	10.0	10.8	81.6	82.4	4.6	3.8	n.a.	n.a.
Estonia	0.1	0.1	16.1	26.4	83.4	73.1	0.1	0.1	0.3	0.3
Hungary	0.5	0.3	1.4	2.4	14.4	17.1	11.9	11.7	71.9	68.4
Latvia	0.1	0.1	0.8	3.5	42.9	35.8	0.3	0.4	55.9	60.2
Lithuania	1.7	1.0	3.4	4.4	85.6	83.6	-	-	9.3	11.0
Poland	2.4	2.0	0.8	1.4	54.0	59.7	-	-	42.9	36.9
Romania	15.8	14.5	0.2	33.0	83.9	52.5	n.a.	n.a.	n.a.	n.a.
Slovakia <sup>3)</sup>	0.1	0.1	0.3	0.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	15.8	20.8	11.2	20.7	72.9	58.5	-	-	n.a.	n.a.

1) Includes the items "electronic money payments" and "others" from Table 14.

2) Interbank paperless credit transfers.

3) No separate statistical data for credit transfers and direct debits are available. Altogether such transactions accounted for 99.57% of the total in 1996 and 99.06% in 1997.

**Table 10****Features of selected securities settlement systems**

Country	Bulgaria		Cyprus	Czech Republic			Estonia
Name of the system	GSD	CDAD	CSE	TKD	RM-system	UNIVYC, a.s.	ECSD
Type of securities <sup>1)</sup>	G, B	S	B,G,S	B, G, O	B,G,S,O	B,G,S	B,G,S
Owner/manager <sup>2)</sup>	CB - manager	B, CB, SE, O	SE	CB	O	SE	B,CB,O
Number of participants	28	47	19	238	225	79	24
of which direct participants	28	47	19	32	132	79	10
Settlement of cash leg <sup>3)</sup>	RTGS	GS	N	RTGS	N	N	N
Securities settlement (delivery)	RTGS	GS	GS	Y	RTGS	GS	GS
Delivery lag	T, T+2, T+4 <sup>7)</sup>	T+3	T+9	T (15 min)	T	T <sup>8)</sup>	T+3
DVP mechanism <sup>4)</sup>	DVP 1	DVP 1	DVP2	DVP1	DVP1	DVP2	DVP2
Intraday finality <sup>5)</sup>	Y	N	Y	Y	Y	Y	N
Central securities depository	GSD	CDAD	-	TKD	SCP	SCP	ECSD
Cash settlement agent <sup>6)</sup>	CB	B	B	B	B	CB	CB
Number of transactions (thousands)	8	49	43	19	373,600	1,113	4,404,554
Value of transactions (ECU millions)	6,306	16	293	215,394.8	4,419	2,424,720	1,944
Ratio of value of transactions to GDP (at annual rate)	0.7	0.002	0.04	4.69	0.10	0.54	0.47

For the footnotes, see page 441.

**Table 10 (cont'd)**

Country	Hungary	Latvia		Lithuania	Poland		
Name of the system	KELER	LCD	VNS	LCVPD	SKARBNET	SEBOP	KDPW
Type of securities <sup>1)</sup>	B,G,S,O	B, C, G, S, O	G	B,G,S	G	O <sup>9)</sup>	B,S,O
Owner/manager <sup>2)</sup>	CB, SE, O	B, O, SE	CB	CB	CB	CB	SE,O
Number of participants	151	28	32	127	76	34	76
of which direct participants	142	28	32	61	68	34	72
Settlement of cash leg <sup>3)</sup>	GS	N, RTGS	RTGS	GS,N	RTGS	RTGS	N
Securities settlement (delivery)	GS	N, RTGS	RTGS	GS,N	RTGS	RTGS	GS
Delivery lag	T+5, T+2, T+0	T to T+360	T	From T+1 to T+30	T	T	T+3
DVP mechanism <sup>4)</sup>	DVP 1, DVP 3	DVP1, DVP3	DVP 1	DVP3	DVP1	DVP1	DVP2
Intraday finality <sup>5)</sup>	Y	Y	Y	Y	Y	Y	N
Central securities depository	KELER	LCD	CB	LCVPD	CRBS	RBP	KDPW
Cash settlement agent <sup>6)</sup>	CB, O	CB	CB	CB	CB	CB	B
Number of transactions (thousands)	8,891.40	66.082	4.711	82	78.29	5.92	4,817.87
Value of transactions (ECU millions)	136,931	1,611	2,356	323	102,362	32,832	29,285
Ratio of value of transactions to GDP (at annual rate)	3.46	0.33	0.48	0.04	0.86	0.27	0.24

*For the footnotes, see page 441.*

Table 10 (cont'd)

Country	Romania		Slovakia			Slovenia
Name of the system	BVB	SNCDD	BSSE	RM-S	TKCP	KDD
Type of securities <sup>1)</sup>	S	S	B,S	B,S,O	G,O	B,G,S,O
Owner/manager <sup>2)</sup>	SE	O	SE,B,O	SE	CB	B,O
Number of participants	151	145	50	96	195	43
of which direct participants	151	145	50	96	48	43
Settlement of cash leg <sup>3)</sup>	N	N	GS	GS	GS	N
Securities settlement (delivery)	GS	N	GS	GS	GS	N
Delivery lag	T+3	T+3	T+3	T+0	T+0	N
DVP mechanism <sup>4)</sup>	DVP2	DVP3	DVP2	DVP1	DVP1	3
Intraday finality <sup>5)</sup>	Y	Y	N	Y	N	N
Central securities depository	BVB	SNCDD	SC	SC	CB	Y
Cash settlement agent <sup>6)</sup>	CB	CB	O	B	O	O
Number of transactions (thousands)	607	255	158,200.00	42,090.00	350	140.4
Value of transactions (ECU millions)	232	159	4,304	419	9,058	599
Ratio of value of transactions to GDP (at annual rate)	0.01	0.01	0.25	0.02	0.53	0.06

**Footnotes to Table 10**

1) B = bonds; C = CDs; G = government securities; S = shares; O = others.

2) B = banks; CB = central banks; SE = stock exchange; O = others.

3) GS = gross settlement, N = net; RTGS = real-time gross settlement.

4) DVP schemes as defined by the G10:

DVP 1: In model 1, transfer instructions for both securities and funds are settled on a trade-by-trade basis, with final transfer of the securities from the seller to the buyer (delivery) occurring at the same time as final transfer of the funds from the buyer to the seller (payment).

DVP 2: In model 2, securities transfer instructions are settled on a gross basis with final transfer of securities from the seller to the buyer (delivery) occurring throughout the processing cycle, but funds transfer instructions are settled on a net basis, with final transfer of funds from the buyer to the seller (payment) occurring at the end of the processing cycle.

DVP 3: In model 3, transfer instructions for both securities and funds are settled on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle.

5) Y = Yes; N = No.

6) B = banks; CB = central bank; SE = stock exchange; O = others.

7) T – secondary market, T+2 – primary market bills and notes, T+4 – primary market bonds.

8) Securities settlement takes place first, followed by cash settlement. The cash time-lag can be up to 12 hours.

9) Only NBP bills.

**Table I I.1****Direct participants in RTGS systems**

	<b>Czech Republic</b>	<b>Hungary</b>	<b>Latvia</b>	<b>Poland</b>	<b>Slovenia</b>
	Clearing and Settlement Centre	VIBER	EFTS	SORBNET	SIPS <sup>1)</sup>
<b>Direct participants</b>	51	41	24	72	30
Credit institutions	50	38	23	72	28
Branches of foreign banks	24	-	1	2	-
of which EU banks	22	-	1	2	-
Remote participants	-	-	-	-	-
Central bank	1	1	1	1	1
Non-banks	-	2	-	-	1
Public authorities	-	1	-	-	1
Postal administration	-	-	-	-	-
Supervised financial institutions	-	1	-	-	-

1) End of 1998.

**Table I.2****Direct participants in large-value/mixed net settlement systems**

	<b>Bulgaria</b>	<b>Estonia</b>	<b>Hungary</b>	<b>Lithuania <sup>3)</sup></b>	<b>Romania</b>	<b>Slovakia</b>
	BISERA <sup>1)</sup>	Eesti Pank Settlement System	IGS	TARPBANK	DECONT-BNR	SIPS
<b>Direct participants</b>	53	13	44	167	49	30
Credit institutions	50	12	41	166 <sup>4)</sup>	43	29
Branches of foreign banks	8	1	-	1	10	4
of which EU banks	8	1	-	-	7	1
Remote participants	-	-	-	-	-	-
Central bank	1	1	1	1	1	1
Non-banks	2	-	2	-	5	-
Public authorities	-	-	1	-	1	-
Postal administration	-	-	-	-	-	-
Supervised financial institutions	2 <sup>2)</sup>	-	1	-	4 <sup>5)</sup>	-

1) Designated time gross settlement system.

2) CDAD and BORICA acting as third parties to the system.

3) Situation as at 31 December 1997.

4) Of which 154 are branches of banks.

5) VISA, Europay, BVB and SNCDD are included in this line.

**Table 11.3****Direct participants in retail IFTSs**

	Cyprus		Latvia	Poland		Slovenia
	CCH	JCC Multipack	Clearing System	SYBIR	ELIXIR	Giro Clearing <sup>1)</sup>
<b>Direct participants</b>	10	8	33	72	53	28
Credit institutions	9	8	32	72	53	28
Credit institutions	1	-	1	2	2	-
Branches of non-EU banks	1	1	-	-	-	-
Remote participants	-	-	-	-	-	-
Central bank	1	-	1	1	1	-
Non-banks	-	-	-	-	-	-
Public authorities	-	-	-	-	-	-
Postal administration	-	-	-	-	-	-
Supervised financial institutions	-	-	-	-	-	-

1) End of 1998.

**Table 12.1**  
**Access criteria for RTGS systems**

Access criteria	Czech Republic	Hungary	Latvia	Poland	Slovenia
	Clearing and Settlement Centre	VIBER	EFTS	SORBNET	SIPS
Written rules	+ <sup>1)</sup>	+	+	+	+
Credit institutions	-	-	-	-	+
Minimum number of transactions	-	-	-	-	-
Payment of an entry fee	-	-	-	+	-
Approval from the owner/manager or the direct participants	-	+ <sup>2)</sup>	+ <sup>2)</sup>	+	+
Approval from the local central bank	-	+	+	+	+
Technical requirements	+ <sup>1)</sup>	+	+ <sup>3)</sup>	+	+
Removal rules		+	+	+	+

**Key**

+ = Yes, - = No.

- 1) All banks licensed in the Czech Republic have to be direct participants. Participants have to enter into an agreement with the central bank, which also contains rules and technical requirements.  
 2) The owner/manager is the central bank.  
 3) Access to the S.W.I.F.T. network.

**Table 12.2****Access criteria for large-value net settlement systems**

Access criteria	Hungary	Lithuania	Romania	Slovakia	Slovenia
	IGS	TARPBANK	DECONT-BNR	SIPS	Agency for payments
Written rules	+	+	+	+	+
Minimum level of data or ratios representative of the financial strength	-	-	-	-	+
Credit institutions	-	-	-	-	-
Payment of an entry fee	+	-	-	+	-
Approval from the owner/manager or the direct participants	-	+ <sup>1)</sup>	+ <sup>1)</sup>	+	+
Approval from the local central bank	+	+	+	+	+
Technical requirements	+	+	-	+	+
Removal rules	+	+	-	+	+

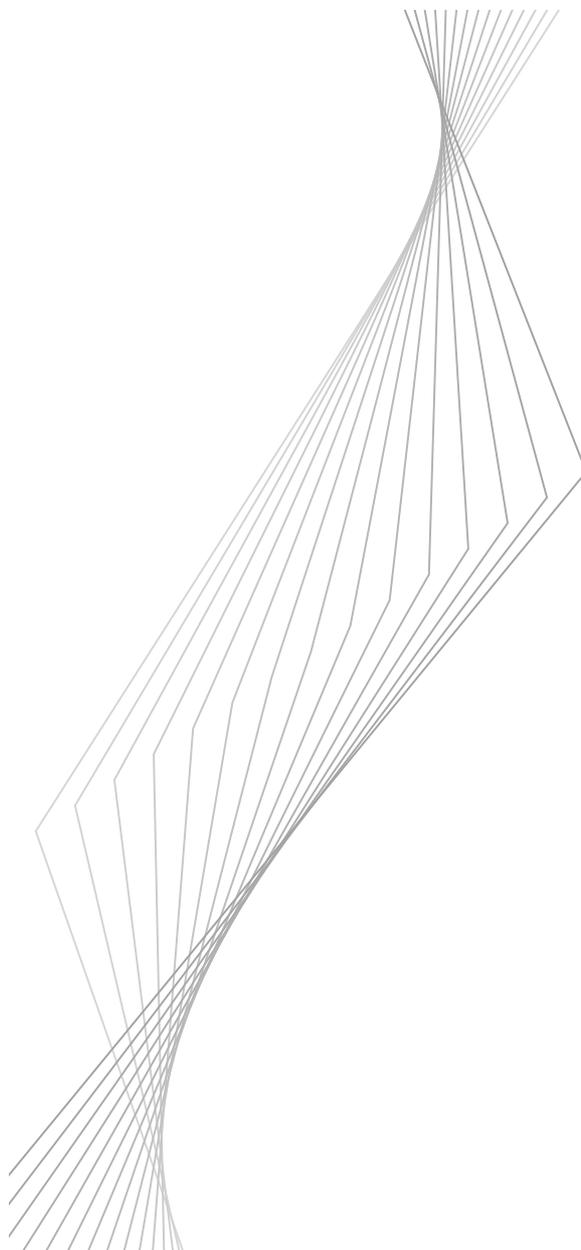
**Key**

+ = Yes; - = No.

1) The owner/manager is the central bank.



EUROPEAN CENTRAL BANK



# **Annex 3 Glossary**

**August 1999**



**Advisory netting:** see *position netting*.

**Assured payment system (APS):** an arrangement in an exchange-for-value system under which completion of timely settlement of a payment instruction is supported by an irrevocable and unconditional commitment from a third party (typically a bank, syndicate of banks or clearing house). See *exchange-for-value settlement system*.

**Automated clearing house (ACH):** an electronic clearing system in which payment orders are exchanged among financial institutions, primarily via magnetic media or telecommunication networks, and handled by a data-processing centre. See also *clearing/clearance*.

**Automated teller machine (ATM):** an electro-mechanical device that permits authorised users, typically using machine-readable plastic cards, to withdraw cash from their accounts and/or access other services, such as balance enquiries, transfer of funds or acceptance of deposits. ATMs may be operated either online with real-time access to an authorisation database or offline.

**Back-to-back transaction:** a chain of securities transactions among three or more counterparties involving the purchase and sale of a single security, for settlement on a single date. The most simple back-to-back trade is a pair of transactions in which one party agrees to purchase securities from a second party and then agrees to sell them to a third party.

**Bank draft:** a draft drawn by a bank on itself. The draft is purchased by the payer and sent to the payee, who presents it to its bank for payment. That bank presents it to the payer's bank for reimbursement.

**Batch:** the transmission or processing of a group of payment orders and/or securities transfer instructions as a set at discrete intervals of time.

**Beneficial ownership/interest:** the entitlement to receive some or all of the benefits of ownership of a security or other financial instrument (e.g. income, voting rights, power to transfer). A distinction is usually made between "beneficial ownership" and "legal ownership" of a security or financial instrument. See *legal ownership*.

**Bilateral net settlement system:** a settlement system in which participants' bilateral net settlement positions are settled between every bilateral combination of participants. See also *net credit or net debit position*.

**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 *netting, multilateral netting, net settlement*.

**Bill of exchange:** a written order from one party (the drawer) to another (the drawee) to pay a specified sum on demand or on a specified date to the drawer or to a third party specified by the drawer. Widely used to finance trade and, when discounted with a financial institution, to obtain credit. See also *draft*.

**Book-entry system:** an accounting system that permits the transfer of claims (e.g. securities) without the physical movement of paper documents or certificates. See also *dematerialisation, immobilisation*.

**Bulk funds transfer system:** see *retail funds transfer system*.

**Call money:** a loan contract which is automatically renewed every day unless the lender or the borrower indicates that it wishes the funds to be returned within a short period of time.

**Capital risk:** see *principal risk*.

**Caps:** a risk management arrangement whereby limits are placed on the positions that participants in an interbank funds transfer system can incur during the business day; they may be set by each individual participant or by the body governing the transfer system; they can be set in multilateral net, bilateral net or (less commonly) gross terms and can be either a credit cap or a debit cap; for example, bilateral net credit caps, set by an individual participant, will constitute a limit on the credit exposure that that participant will accept vis-à-vis each other participant; in contrast, sender net debit caps, which may for example be set by the governing body of the clearing system based on a particular formula, limit the aggregate value of transfers that an individual participant may send to all other participants over and above its incoming transfers. Sender net debit limits may be either collateralised or uncollateralised.

**Card:** see *cash card, cheque guarantee card, chip card, credit card, debit card, delayed debit card, prepaid card, retailer card, travel and entertainment card*.

**Cash card:** a card for use only in ATMs or cash dispensers (often, other cards also have a cash function that permits the holder to withdraw cash).

**Cash dispenser:** an electro-mechanical device that permits the withdrawal, typically using machine-readable plastic cards, of banknotes (currency) and, in some cases, coins. See also *automated teller machine (ATM)*.

**Cashier's cheque:** see *bank draft*.

**Central bank liquidity facility:** a standing credit facility that can be used by certain designated account holders (e.g. banks) at the central bank. In some cases, the facility can be used automatically at the initiative of the account holder, while in other cases the central bank may retain some degree of discretion. The loans typically take the form of advances or overdrafts on an account holder's current account which may be secured by a pledge of securities (also known as lombard loans in some European countries), of traditional rediscounting of bills or of repurchase agreements.

**Central securities depository (CSD):** a facility for holding securities which enables securities transactions to be processed by book entry. Physical securities may be immobilised by the depository or securities may be dematerialised (i.e. so that they exist only as electronic records). In addition to safekeeping, a central securities depository may incorporate comparison, clearing and settlement functions.

**Chaining:** a method used in certain transfer systems (mostly for securities) for processing instructions. It involves the manipulation of the sequence in which transfer instructions are processed to increase the number or value of transfers that may be settled with available funds and/or securities balances (or available credit or securities lending lines).

**Cheque:** a written order from one party (the drawer) to another (the drawee, normally a bank) requiring the drawee to pay a specified sum on demand to the drawer or to a third party specified by the drawer. Cheques are widely used for settling debts and withdrawing money from banks. See also *bill of exchange*.

**Cheque guarantee card:** a card issued as part of a cheque guarantee system. This function may be combined with other functions in the same card, e.g. those of a cash card or debit card. See also *cheque guarantee system*.

**Cheque guarantee system:** a system to guarantee cheques, typically up to a specified amount, that have been validated by the merchant either on the basis of a card issued to the cheque writer or through a central database accessible to merchants. Validated cheques are guaranteed by the issuer of the guarantee card, the drawee bank or the system operator.

**Chip card:** also known as an IC (integrated circuit) card or smart card. A card containing one or more computer chips or integrated circuits for identification, data storage or special-purpose processing used to validate personal identification numbers (PINs), authorise purchases, verify account balances and store personal records. In some cases, the memory in the card is updated every time the card is used, e.g. an account balance is updated.

**Clearing/Clearance:** the process of transmitting, reconciling and, in some cases, confirming payment orders or security transfer instructions prior to settlement, possibly including netting of instructions and the establishment of final positions for settlement. In the context of securities markets this process is often referred to as clearance. Sometimes the terms are 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 (e.g. 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 *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. 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*.

**Close-out netting:** a special form of netting which occurs following some predefined event such as default. Close-out netting is intended to reduce exposures on open contracts if one party meets certain conditions specified by the contract (e.g. becomes subject to insolvency procedures) before the settlement date (also referred to as default netting, open contract netting or replacement contract netting).

**Confirmation:** A particular connotation of this widely used term is the process whereby a market participant notifies its counterparties or customers of the details of a trade and, typically, allows them time to affirm or question the trade.

**Correspondent banking:** an arrangement under which one bank provides payment and other services to another bank. Payments through correspondents are often executed through reciprocal accounts (so-called nostro and loro accounts), to which standing credit lines may be attached. Correspondent banking services are primarily provided across international boundaries but are also known as agency relationships in some domestic contexts. A loro account is the term used by a correspondent to describe an account held on behalf of a foreign bank; the foreign bank would in turn regard this account as its nostro account.

**Counterparty:** the opposite party to a financial transaction, such as a securities trade or swap agreement.

**Credit caps:** see *caps*.

**Credit card:** a card indicating that the holder has been granted a line of credit. It enables the holder to make purchases and/or withdraw cash up to a prearranged ceiling; the credit granted can be settled in full by the end of a specified period or can be settled in part, with the balance taken as extended credit. Interest is charged on the amount of any extended credit and the holder is sometimes charged an annual fee.

**Credit card company:** a company which owns the trademark of a particular credit card, and may also provide a number of marketing, processing or other services to its members using the card services.

**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 settlement systems, the risk is generally defined to include replacement cost risk and principal risk.

**Credit transfer:** a payment order or possibly a sequence of payment orders made for the purpose of placing funds at the disposal of the beneficiary. Both the payment instructions and the funds described therein move from the bank of the payer/originator to the bank of the beneficiary, possibly via several other banks as intermediaries and/or more than one credit transfer system.

**Credit transfer system (or giro system):** a funds transfer system through which credit transfer (or giro) orders and the related information and funds may be transmitted for the purpose of executing credit transfers (or bank/postal giros).

**CSD:** see *central securities depository*.

**Custody:** the safekeeping and administration of securities and financial instruments on behalf of others.

**Daylight credit (or daylight overdraft, daylight exposure, intraday credit):** credit extended for a period of less than one business day. Daylight credit may be extended by central banks to even out mismatches in the settlement of payments. 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.

**Debit caps:** see *caps*.

**Debit card:** a card enabling the holder to have purchases directly charged to funds on an account at a deposit-taking institution (this may sometimes be combined with another function, e.g. that of a cash card or cheque guarantee card).

**Debit transfer system (or debit collection 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.

**Debt book-entry system:** a computerised system for the issue and registration of debt securities in book-entry form. See also *book-entry system*, *share book-entry system*.

**Default:** the failure to complete a funds or securities transfer according to its terms for reasons that are not technical or temporary, usually as a result of bankruptcy. A distinction is usually made between “default” and a “failed transaction”.

**Delayed debit card:** a card issued by banks indicating that the holder may charge an account up to an authorised limit. It enables purchases to be made but does not offer extended credit, the full amount of the debt incurred having to be settled at the end of a specified period. The holder is usually charged an annual fee.

**Deletion:** a mechanism whereby some or all transfers to/from a defaulting participant are excluded from the settlement process. In a netting scheme, other participants’ bilateral and/or multilateral net positions are recalculated. See *unwinding*.

**Delivery:** the final transfer of a security or financial instrument.

**Delivery versus payment (DVP) schemes as defined by the G10 group:** In model 1, transfer instructions for both securities and funds are settled on a trade-by-trade basis, with final transfer of the securities from the seller to the buyer (delivery) occurring at the same time as final transfer of the funds from the buyer to the seller (payment). In model 2, securities transfer instructions are settled on a gross basis with final transfer of securities from the seller to the buyer (delivery) occurring throughout the processing cycle, but funds transfer instructions are settled on a net basis, with final transfer of funds from the buyer to the seller (payment) occurring at the end of the processing cycle. In model 3, transfer instructions for both securities and funds are settled on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle.

**Delivery versus payment (DVP or delivery against payment) system:** a mechanism in an exchange-for-value settlement system that ensures that the final transfer of one asset occurs if and only if the final transfer of (an)other asset(s) occur(s). Assets could include monetary assets (such as foreign exchange), securities or other financial instruments. See *exchange-for-value settlement system*, *final transfer*.

**Dematerialisation:** the elimination of physical certificates or documents of title which represent ownership of securities so that securities exist only as accounting records.

**Depository:** an agent with the primary role of recording securities either physically or electronically and keeping records of the ownership of these securities.

**Direct debit:** a pre-authorised debit on the payer’s bank account initiated by the payee.

**Direct participant in an IFTS:** a participant in an interbank funds transfer system (IFTS) which 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.

**Discharge:** the release from a legal obligation imposed by contract or law.

**Draft:** a written order from one party (the drawer) to another (the drawee) to pay a party identified on the order (payee) or the bearer a specified sum, either on demand (sight draft) or on a specified date (time draft). See *bank draft, bill of exchange, cheque*.

**EFTPOS:** see *point of sale (POS)*.

**Electronic data interchange (EDI):** the electronic exchange between commercial entities (in some cases also public administrations), in a standard format, of data relating to a number of message categories, such as orders, invoices, customs documents, remittance advices and payments. EDI messages are sent through public data transmission networks or banking system channels. Any movement of funds initiated by EDI is reflected in payment instructions flowing through the banking system. EDIFACT, a United Nations body, has established standards for electronic data interchange.

**Electronic purse:** a reloadable multi-purpose prepaid card which may be used for small retail or other payments instead of coins. See *multi-purpose prepaid card*.

**End-of-day gross settlement systems:** funds transfer systems in which payment orders are received one by one by the settlement agent during the business day, but in which the final settlement takes place at the end of the day on a one-by-one or aggregate gross basis. This definition also applies to gross settlement systems in which payments are settled in real time but remain revocable until the end of the day.

**Exchange-for-value settlement system:** a system which involves the exchange of assets, such as money, foreign exchange, securities or other financial instruments, in order to discharge settlement obligations. These systems may use one or more funds transfer systems in order to satisfy the payment obligations that are generated. The links between the exchange of assets and the payment system(s) may be manual or electronic. See *delivery versus payment system*.

**Face-to-face payment:** a payment carried out by the exchange of instruments between the payer and the payee in the same physical location.

**Failed transaction:** a transaction (e.g. a funds or securities transfer) that does not settle on time, usually for technical or temporary reasons.

**Final (finality):** irrevocable and unconditional.

**Final settlement:** a settlement which is irrevocable and unconditional.

**Final transfer:** an irrevocable and unconditional transfer which effects a discharge of the obligation to make the transfer. The terms “delivery” and “payment” are each defined to include a final transfer.

**Foreign exchange settlement risk:** the risk that one party to a foreign exchange transaction will pay the currency it sold but not receive the currency it bought. This is also called cross-currency settlement risk or principal risk; it is also referred to as Herstatt risk, although this is an inappropriate term given the differing circumstances in which this risk has materialised.

**Funds transfer system (FTS):** 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 *interbank funds transfer system (IFTS)*.

**Fungibility:** a concept that characterises the method of holding securities by a CSD or other financial intermediary in which each of a number of issues of physical or dematerialised securities are held in separate fungible pools. No owner has the right to any particular physical or dematerialised security in a particular pool, but has a right to such an amount of physical or dematerialised securities as shown on its account with a CSD or another financial intermediary.

**Giro system:** see *credit transfer system*.

**Gridlock:** a situation that can arise in a funds or securities transfer system in which the failure of some transfer instructions to be executed (because the necessary funds or securities balances are unavailable) prevents a substantial number of other instructions from other participants from being executed. See also *failed transaction, queuing, systemic risk*.

**Gross settlement system:** a transfer system in which the settlement of funds or securities transfers occurs individually on an order-by-order basis according to the rules and procedures of the system, i.e. without netting debits against credits. See *net settlement system, real-time gross settlement (RTGS) system*.

**Haircut:** the difference between the market value of a security and its collateral value. Haircuts are taken by a lender of funds in order to protect the lender, should the need arise to liquidate the collateral, against losses arising from declines in the market value of the security. See *margin*.

**Home banking:** banking services which a retail customer of a financial institution can access using a telephone, television set, terminal or personal computer as a telecommunications link to the institution's computer centre.

**IC card:** see *chip card*.

**Immobilisation:** the placement of certificated securities and financial instruments in a central securities depository to facilitate book-entry transfers.

**Imprinter:** a mechanical device used to reproduce the name and account number of a cardholder on a paper sales slip. See also *imprinter voucher*.

**Imprinter voucher:** in card transactions, a sales slip to be signed by the customer on which the name and card number of the customer are imprinted. See also *imprinter*.

**Indirect participant in an IFTS:** a participant in an IFTS which does not, for whatever reason, settle its own payments on a gross or net payment basis and, therefore, settles them through a direct participant. See *direct participant in an IFTS*.

**Interbank funds transfer system (IFTS):** a funds transfer system in which most (or all) direct participants are credit institutions. See *funds transfer system (FTS)*.

**Interlinking:** Within the TARGET system, the Interlinking mechanism provides common procedures and the infrastructure which allow payment orders to move from one domestic RTGS system to another domestic RTGS system. See *TARGET system*.

**International central securities depository (ICSD):** a central securities depository which clears and settles international securities or cross-border transactions in domestic securities. At the moment there are two ICSDs located in EU countries, Cedel and Euroclear.

**Intraday credit:** see *daylight credit*.

**Irrevocable and unconditional transfer:** a transfer which cannot be revoked by the transferor and is unconditional.

**Issuer:** the entity which is obligated on a security or another financial instrument, e.g. a corporation or government having the authority to issue and sell a security or a bank that approves a letter of credit. Issuer is sometimes used to refer to a financial institution that issues credit or debit cards.

**Large-value funds transfer system:** a funds transfer system through which large-value and high-priority funds transfers are made between participants in the system for their own account or on behalf of their customers. Although, as a rule, no minimum value is set for the payments they carry, the average size of payments passed through such systems is usually relatively large. Large-value funds transfer systems are sometimes known as wholesale funds transfer systems.

**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 ownership:** the recognition in law of the owner of a security or other financial instrument.

**Letter of credit (L/C):** a promise by a bank or another issuer to a third party to make a payment on behalf of a customer in accordance with specified conditions. Letters of credit are frequently used in international trade to make funds available in a foreign location.

**Limited-purpose prepaid card:** a prepaid card which can be used for a limited number of well-defined purposes. Its use is often restricted to a number of well-identified points of sale within a well-identified location (e.g. a building, corporation or university). In the case of single-purpose prepaid cards, the card issuer and the service provider may be identical (e.g. cards used in public telephones). See *prepaid card*.

**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.

**Loss-sharing rule (or loss-sharing agreement):** an agreement between participants in a transfer system or clearing house arrangement regarding the allocation of any loss arising when one or more participants fail to fulfil their obligation. The arrangement stipulates how the loss will be shared among the parties concerned in the event that the agreement is activated.

**Magnetic ink character recognition (MICR):** a technique, using special MICR machine-readable characters which enable documents (i.e. cheques, credit transfers, direct debits) to be read by machines for electronic processing. See *optical character recognition (OCR)*.

**Margin:** The term margin has at least two meanings. In the futures/commodity markets, a margin is a good faith deposit (of money, securities or other financial instruments) required by the futures clearing system to ensure performance. In the equities markets, a margin is a sum of money deposited by a customer when borrowing money from a broker to purchase shares. The money deposited with the broker is the difference between the purchase value of the shares and the collateral value of the shares. See *haircut*.

**Marking to market:** the practice of revaluing securities and financial instruments using current market prices. In some cases unsettled contracts to purchase and sell securities are marked to market and the counterparty with an as yet unrealised loss on the contract is required to transfer funds or securities equal to the value of the loss to the other counterparty.

**Matching (or comparison checking):** the process used by market participants before settlement of a transaction to ensure that they agree with respect to the terms of the transaction.

**Minimum standards of the Lamfalussy report (Lamfalussy standards):** the six minimum standards for the design and operation of cross-border and multi-currency netting schemes or systems.

- I Netting systems should have a well-founded legal basis under all relevant jurisdictions.
- II Netting scheme participants should have a clear understanding of the impact of the particular scheme on each of the financial risks affected by the netting process.
- III Multilateral netting systems should have clearly defined procedures for the management of credit risks and liquidity risks which specify the respective responsibilities of the netting provider and the participants. These procedures should also 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.
- IV Multilateral netting systems 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 net debit position.
- V Multilateral netting systems should have objective and publicly disclosed criteria for admission which permit fair and open access.
- VI All netting schemes should ensure the operational reliability of technical systems and the availability of backup facilities capable of completing daily processing requirements.

**Money order:** an instrument used to remit money to the named payee, often used by persons who do not have a cheque account relationship with a financial institution, to pay bills or transfer money to another person or to a company. There are three parties to a money order: the remitter (payer), the payee and the drawee. Drawees are usually financial institutions or post offices. Payees can either cash their money orders or present them to their bank for collection.

**Multilateral net settlement position:** the sum of the value of all the transfers received by a participant in a net settlement system 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 *direct participant in an IFTS, multilateral net settlement position, multilateral netting*.

**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 *bilateral netting, multilateral net settlement position, multilateral net settlement system*.

**Multi-purpose prepaid card:** a prepaid card which can be used at the outlets of several service providers for a wide range of purposes, and which has the potential to be used on a national or international scale but may sometimes be restricted to a certain area. See *electronic purse, prepaid card*.

**Net credit or net 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 the 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 debit cap:** see *caps, net credit or net debit position*.

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

**Net settlement system:** a funds transfer system in which settlement operations are completed on a bilateral or multilateral net basis.

**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, novation, position netting, substitution*.

**Netting by novation:** Netting by novation agreements provide for individual forward-value contractual commitments (e.g. foreign exchange contracts) to be discharged at the time of their confirmation and replaced by new obligations forming part of a single agreement. Amounts due under a discharged contract will be added to running balances due between the parties in each currency at each future value date.

**Nominee:** a person or entity named by another to act on its behalf.

**Novation:** the satisfaction and discharge of existing contractual obligations by means of their replacement by new obligations (the effect of which, for example, is to replace gross with net payment obligations). The parties to the new obligations may be the same as those to the existing obligations or, in the context of some clearing house arrangements, there may additionally be substitution of parties. See *substitution*.

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

**Offline:** In the context of payment and settlement systems, this term may refer to the transmission of transfer instructions by users, through such means as voice, written or telefaxed instructions, that must subsequently be input into a transfer processing system. The term may also refer to the storage of data by a transfer processing system on media such as a magnetic tape or disk so that the user may not have direct and immediate access to the data. See *online*.

**Online:** In the context of payment and settlement systems, this term may refer to the transmission of transfer instructions by users, through such electronic means as computer-to-computer interfaces or electronic terminals, that are entered into a transfer processing system by automated means. The term may also refer to the storage of data by a transfer processing system on a computer database so that the user has direct access to the data (frequently in real time) through input/output devices such as terminals. See *offline*.

**Open offer netting:** "Netting by open offer" describes a contractual means by which a third party, such as a clearing house, becomes party to a transaction agreed by two separate entities. The third party extends an "open offer" to those entities, with the effect that if they agree the terms of a transaction which satisfies certain pre-agreed conditions, the third party automatically and immediately becomes interposed in that transaction. Two separate, equal and opposite contractual obligations are created, between the clearing house and one party, and between the clearing house and the other entity. If all pre-agreed conditions are met, at no stage does a direct contractual obligation exist between the two entities.

**Operational safe custody accounts:** securities accounts run by the central bank in which credit institutions can place securities deemed suitable for the backing of central bank operations. The securities held on these accounts are finally deposited with the central securities depository (CSD) under the name of the central bank, so that the transfer into a safe custody account results in a transfer between the bank's and the central bank's account with the CSD. The securities deposited with the central bank are generally pledged to the central bank as collateral for (interest-bearing) overnight and (interest-free) intraday lombard loans. They can also be used for open market transactions (repos) based on a general authorisation given to the central bank to acquire securities.

**Optical character recognition (OCR):** a technique, using special OCR machine-readable characters, by which documents (e.g. cheques, credit transfers, direct debits) are read by machines for electronic processing. See *magnetic ink character recognition (MICR)*.

**Overnight money (or day-to-day money):** a loan with a maturity of one business day.

**Oversight of payment systems:** a central bank task, principally intended to promote the smooth functioning 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 focuses on a given system (e.g. a funds transfer system) rather than on individual participants.

**Paperless credit transfers:** credit transfers that do not involve the exchange of paper documents between banks. Other credit transfers are referred to as being paper-based.

**Participant in/Member of an FTS:** a party which participates in a transfer system. This generic term refers to an institution which is identified by a transfer system (e.g. by a bank identification number) and is allowed to send payment orders directly to the system or which is directly bound by the rules governing that transfer system. See *direct participant in an IFTS*, *indirect participant in an IFTS*.

**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 lag:** the time-lag between the initiation of a payment order and its final settlement.

**Payment order (or payment instruction):** 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.

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

**Payment versus payment (PVP):** a mechanism in a foreign exchange settlement system which ensures that a final transfer of one currency occurs if and only if a final transfer of the other currency or currencies takes place.

**PIN (personal identification number):** a numeric code which the cardholder may need to quote for verification of identity. In electronic transactions, it is seen as the equivalent of a signature.

**Point of sale (POS):** This term refers to the use of payment cards at a retail location (point of sale). The payment information is captured either by paper vouchers or by electronic terminals, which, in some cases, are also designed to transmit the information. Where this is so, the arrangement may be referred to as “electronic funds transfer at the point of sale” (EFTPOS).

**Position netting (or advisory netting):** the netting of instructions in respect of obligations between two or more parties which neither satisfies nor discharges those original individual obligations. This is also referred to as payment netting in the case of payment instructions.

**Prepaid card:** a card which contains real purchasing power, for which the customer has paid the issuer of the card in advance. See *limited-purpose prepaid card* and *multi-purpose prepaid card*.

**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 (i.e. the absence of delivery versus payment). Principal risk that arises from the settlement of foreign exchange transactions is sometimes called cross-currency settlement risk. See *credit risk/exposure*.

**Provisional transfer:** a conditional transfer in which one or more parties retain the right by law or agreement to revoke the transfer.

**Queuing:** a risk management arrangement whereby transfer orders are held pending by the originator/deliverer or by the system until sufficient cover is available on the originator's/deliverer's clearing account or under the limits set against the payer; in some cases, cover may include unused credit lines or available collateral. See also *caps*.

**Real-time gross settlement (RTGS) system:** a gross settlement system in which processing and settlement take place in real time (continuously).

**Real-time transmission, processing or settlement:** the transmission, processing or settlement of a funds or securities transfer instruction on an individual basis immediately after the time at which it is initiated.

**Receiver finality:** an analytical rather than operational or legal term used to describe the point at which an unconditional obligation arises on the part of the receiving participant in a transfer system to make final funds available to its beneficiary customer on the value date. See *final settlement*.

**Registration:** the listing of ownership of securities in the records of the issuer or its transfer agent/registrar.

**Remote access to a central securities depository (CSD):** the facility in a securities settlement system (SSS) in one country ("home country") to become a direct participant in a CSD established in another country ("host country") and, for that purpose, to have a securities account in its own name with the CSD in the host country. See *securities settlement system (SSS)*.

**Remote access to an IFTS:** the facility for a credit institution established in one country ("home country") to become a direct participant in an interbank funds transfer system (IFTS) established in another country ("host country") and, for that purpose, to have a settlement account in its own name with the central bank in the host country, without necessarily having established a branch in the host country. See *interbank funds transfer system (IFTS)*.

**Remote participant:** an institution established in one country ("home country") which participates in a transfer system of another country ("host country") without necessarily having established a branch in the host country. In the event that the remote participant has established a branch in the host country, it does not participate in the transfer system of the host country via this branch.

**Remote payment:** a payment carried out through the sending of payment orders or payment instruments (e.g. by mail). Contrast with *face-to-face payment*.

**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. See also *credit risk/exposure*.

**Repurchase agreement (repo):** a sale and repurchase agreement. An arrangement by which a person with a long position in securities sells securities to a counterparty while simultaneously obtaining the right and obligation to repurchase them at a specific price on a future date or on demand. Such an agreement is used by persons with a long position in securities, but short on cash with which to obtain financing – similar to secured borrowing, except that ownership of securities is not retained.

**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 covered by the definition of large-value payments. Retail payments are mainly consumer payments of relatively low value and low urgency.

**Retailer card:** a card issued by non-banking institutions, to be used in specified stores. The holder of the card has usually been granted a line of credit.

**Reverse repo:** a purchase and resale agreement. An arrangement by which a person with a short position in securities purchases securities from a counterparty while simultaneously obtaining the right and obligation to resell them at a specific price on a future date or on demand. Such an agreement is used by persons with a short position in securities, but a long position on cash with which to obtain securities – similar to secured lending, except that ownership of securities is transferred.

**Same-day funds:** money balances that the recipient has a right to transfer or withdraw from an account on the day of receipt.

**Securities depository (book-entry system):** see *central securities depository*.

**Securities settlement system (SSS):** a system which permits the transfer of securities: either free of payment (*free delivery*), for example in the case of pledge, or against payment. Settlement of securities occurs on securities deposit accounts held with the central securities depository (CSD) (private CSDs or a central bank acting as a CSD) or with the central bank (safe custody operational accounts). In the latter case, the central bank acts as the intermediate custodian of the securities. The final custodian is normally a CSD. Settlement of cash occurs in an interbank funds transfer system (IFTS), through a settlement agent.

**Sender finality:** an analytical rather than operational or legal term used to describe the point at which an unconditional obligation arises on the part of the initiating participant in a funds transfer system to make final payment to the receiving participant on the value date. See *final settlement*.

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

**Settlement agent:** an institution that manages the settlement process (e.g. the determination of settlement positions, the monitoring of the exchange of payments) for transfer systems or other arrangements that require settlement. See *final settlement, settlement, settlement institution(s), multilateral net settlement system*.

**Settlement finality:** see *final settlement*.

**Settlement institution(s):** the institution(s) across whose books transfers between participants take place in order to achieve settlement within a settlement system. See *settlement agent, multilateral net settlement system, bilateral net settlement system*.

**Settlement lag:** in an exchange-for-value process, the time-lag between entering into a trade/bargain and its discharge by the final exchange of a financial asset for payment. See *payment lag*.

**Settlement risk:** a general term used to designate the risk that settlement in a transfer system will not take place as expected. This risk may comprise both credit and liquidity risk.

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

**Share book-entry system:** a computerised system for the issue and registration of equity securities in book-entry form. See also *book-entry system, debt book-entry system*.

**Standing order:** an instruction from a customer to a bank to make a regular payment of a fixed amount to a named creditor.

**Substitution:** the substitution of one party for another in respect of an obligation. In a netting and settlement context the term typically refers to the process of amending a contract between two parties so that a third party is interposed as counterparty to each of the two parties and the original contract between the two parties is satisfied and discharged. See *novation*.

**S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunication):** a co-operative organisation created and owned by banks that operates a network which facilitates the exchange of payment and other financial messages between financial institutions (including broker-dealers and securities companies) throughout the world. A S.W.I.F.T. payment message is an instruction to transfer funds; the exchange of funds (settlement) subsequently takes place over a payment system or through correspondent banking relationships.

**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) system:** the TARGET system is defined as a payment system composed of one real-time gross settlement (RTGS) system in each of the 15 countries of the European Union (EU) and the European Central Bank (ECB) payment mechanism. The domestic RTGS systems and the ECB payment mechanism are interconnected according to common procedures ("Interlinking") to allow cross-border transfers throughout the EU to move from one system to another. See *Interlinking*.

**Telematics:** the combined use of data-processing and data-transmission techniques.

**Teller's cheque:** see *bank draft*.

**Tiering arrangement:** an arrangement which may exist in a funds or securities transfer system whereby participants in one category require the services of participants in another category to exchange and/or settle their transactions. See *direct participant in an IFTS* and *indirect participant in an IFTS*.

**Trade date:** the date on which a trade/bargain is struck.

**Trade-for-trade (gross) settlement:** the settlement of individual transactions between counterparties. See *gross settlement system*.

**Trade netting:** a consolidation and offsetting of individual trades into net amounts of securities and money due between trading partners or among members of a clearing system. A netting of trades which is not legally enforceable is a position netting.

**Transfer:** operationally, the sending (or movement) of funds or securities or of a right relating to funds or securities from one party to another by: (1) the conveyance of physical instruments/money; (2) accounting entries on the books of a financial intermediary; or (3) accounting entries processed through a funds and/or securities transfer system. The act of transfer affects the legal rights of the transferor, transferee and possibly third parties in relation to the money balance, security or other financial instrument being transferred.

**Transfer system:** a generic term covering funds transfer systems and exchange-for-value systems.

**Travel and entertainment card:** a card issued by non-banks indicating that the holder has been granted a line of credit. It enables the holder to make purchases but does not offer extended credit, the full amount of the debt incurred having to be settled at the end of a specified period. The holder is usually charged an annual fee.

**Truncation:** a procedure in which the physical movement of paper payment instruments (e.g. paid cheques or credit transfers) within a bank, between banks or between a bank and its customer is curtailed or eliminated, being replaced, in whole or in part, by electronic records of their content for further processing and transmission.

**Ultimate settlement:** This term is sometimes used to denote final settlement in central bank money.

**Unwinding (or settlement unwind):** a procedure followed in certain clearing and settlement systems in which transfers of securities or funds are settled on a net basis, at the end of the processing cycle, with all transfers provisional until all participants have discharged their settlement obligations. If a participant fails to settle, some or all of the provisional transfers involving that participant are deleted from the system and the settlement obligations from the remaining transfers are then recalculated. Such a procedure has the effect of transferring liquidity pressures and possibly losses from the failure to settle to other participants, and may, in an extreme case, result in significant and unpredictable systemic risks.

**Variation margin (or marked-to-market payments):** the amount which is paid by a counterparty to reduce replacement cost exposures resulting from changes in market prices, following the revaluation of securities or financial instruments that are the subject of unsettled trades.

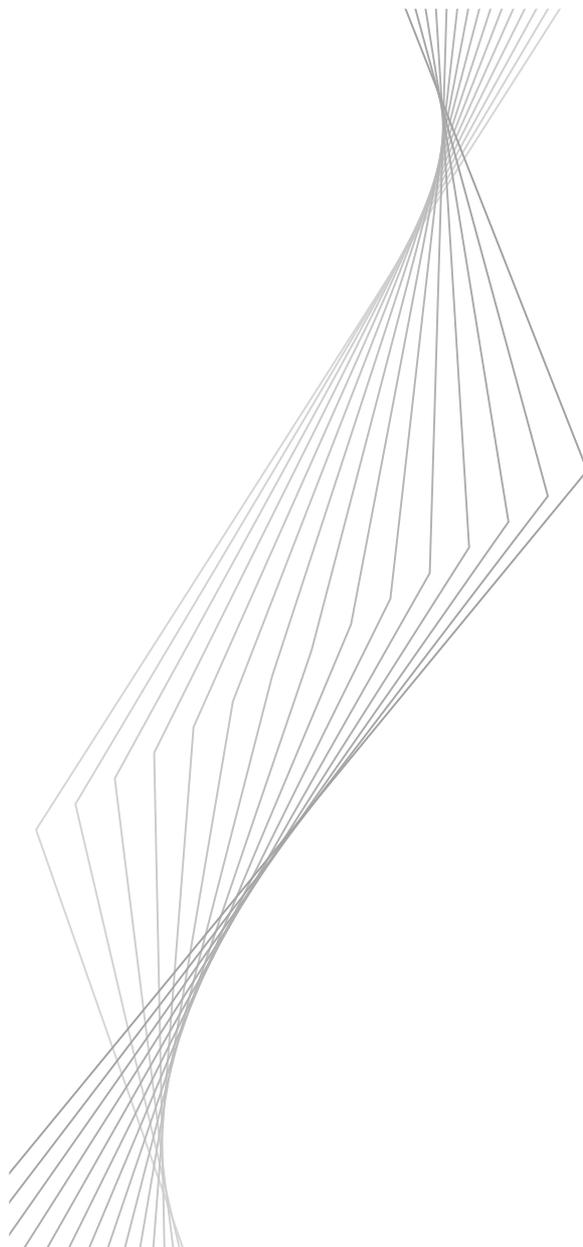
**Wholesale funds transfer system:** see *large-value funds transfer system*.

**Zero-hour clause:** a provision in the bankruptcy laws of some countries which may retroactively render transactions of a closed institution ineffective after 0.00 a.m. on the date on which the institution is ordered to be closed.





EUROPEAN CENTRAL BANK



**Annex 4**  
**Co-ordination Group**  
**members**

**August 1999**

**Members of the Co-ordination Group responsible for the preparatory work on “Payment systems in countries that have applied for membership of the European Union”**

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Central Bank of Cyprus	Mr. S. Georgakis
Czech National Bank	Mr. T. Hládek
Bank of Estonia	Mr. S. Meimer
National Bank of Hungary	Mr. I. Prágay
Bank of Latvia	Mr. E. Gailitis
Bank of Lithuania	Mr. R. Mazeika
National Bank of Poland	Mr. K. Senderowicz
National Bank of Romania	Ms M. Diaconescu
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