



EUROPEAN CENTRAL BANK

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August 2002

Payment and securities settlement systems in accession countries

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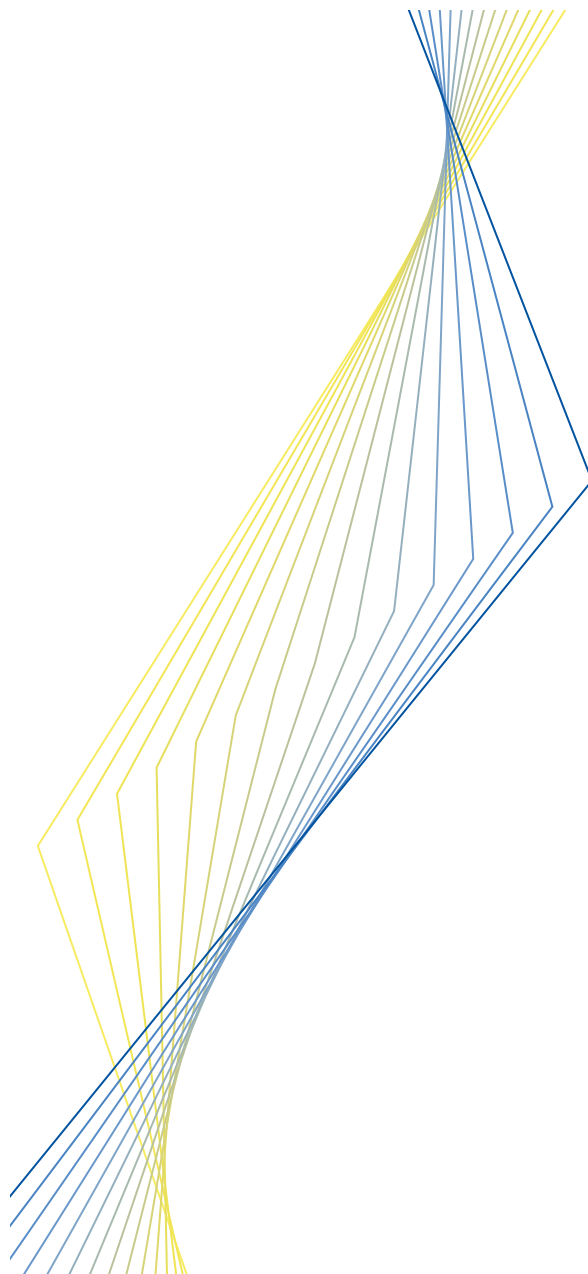
BLUE BOOK

**Payment and securities
settlement systems
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In general, the accession country Blue Book describes systems as at November 2001, although more recent information has been used for some systems. Data used in this publication are as at end-2001 unless otherwise indicated.

Conventions used in the statistical tables:

nav data not available
nap not applicable
neg negligible
0 exactly zero or none

Country tables (1996-2001):

Figures are presented in the respective national currency.

Comparative tables (1996-2001, unless otherwise indicated):

Figures have been converted into euro for all countries using the exchange rate shown in Table 1 of the respective country table.

Foreword

There are currently 12 countries conducting accession negotiations for membership of the European Union (EU). These accession countries are Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia. Turkey is also an official candidate country for EU membership, but accession negotiations have not yet started.

This report, entitled “Payment and securities settlement systems in accession countries”, is the second edition of what has come to be known as the “accession country Blue Book”. It comprises a description of payment and settlement systems in the 12 accession countries, including the related statistical data. The first report of this kind, which was entitled “Payment and securities settlement systems in countries that have applied for membership of the European Union”, was published in August 1999. For EU countries, such information is contained in the report entitled “Payment and securities settlement systems in the European Union”, also known as the “EU Blue Book”. The EU Blue Book is a descriptive guide to the payment and settlement systems in EU Member States. The third edition was published by the European Central Bank in June 2001.

The importance of payment and securities settlement systems in modern economies has been growing considerably over the past decades. Central banks not only face the task of steering the monetary conditions in the economy, but also have a direct interest in the prudent design and operation of the payment and settlement systems processing their currency. Payment systems play a pivotal role in a modern economy, as most economic activity relies on them. As the settlement infrastructure for securities markets is also crucial to the functioning of financial markets, payment and securities clearing and settlement systems need to be safe and efficient.

It is essential that central banks have comprehensive information available to them to support them in their endeavours to promote the soundness and efficiency of payment and securities clearing and settlement systems.

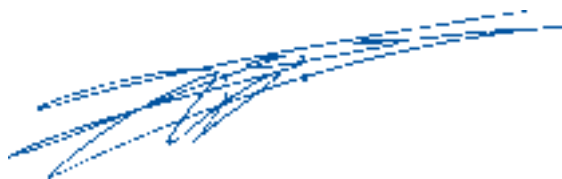
The variety and structure of payment and securities clearing and settlement systems differ from country to country, both for historical reasons and on account of differences in the legal, regulatory and institutional environment. Furthermore, payment and settlement systems are not static in nature. They are dynamic systems which have evolved over time and which will continue to do so. In view of EU accession, a large number of reforms are taking place in the countries concerned. It is one of the priorities of accession countries to develop modern, robust and efficient market infrastructures which serve the needs of their economies, facilitate the development of safe and efficient financial markets and allow a smooth integration into the Single Market. As payment and securities clearing and settlement systems are part of the market infrastructure, many projects in accession countries are related to them. For example, real-time gross settlement (RTGS) systems are being introduced, and progress has been made towards implementing systems and procedures allowing the introduction of delivery versus payment (DVP) mechanisms and the effective management of collateral. The aim is twofold: first, to ensure that accession countries’ payment and securities clearing and settlement systems infrastructure is sufficiently robust to avoid systemic risks and possible contagion effects across the EU in the event of problems. Second, to ensure that accession countries’ domestic infrastructures are efficient enough to allow local market participants to compete with other EU market participants. Most infrastructures and procedures – including the underlying regulatory framework – have been

or are being brought into line with EU requirements, a process which often involves substantial investment.

The information in this accession country Blue Book shows the extensive restructuring work that has been undertaken in payment and settlement systems in accession countries in recent years. It also provides information useful in assessing whether further preparatory work needs to be undertaken in these countries in order to ensure their smooth entry to the EU and the smooth functioning of their payment and settlement systems in an EU environment.

This publication has been produced in collaboration with the central banks of the accession countries and the national central banks of the EU. I should like to thank all of the central banks involved, in particular those of the accession countries, for their efforts. Their assistance in the preparation of this publication has been invaluable.

Frankfurt am Main, 27 August 2002



Willem F. Duisenberg
President

Introduction

The aim of the accession country Blue Book is to provide a comprehensive description of the main payment and securities settlement systems operating in the 12 countries conducting negotiations for membership of the European Union (EU).¹ It now includes Malta, which was not covered in the first edition of the accession country Blue Book published by the European Central Bank in August 1999, as the preparations for its publication were already well advanced by the time accession negotiations with Malta began. The range of country-specific schemes covered is not necessarily exhaustive and the selection is not intended to indicate their relative importance.

For historical reasons and on account of differences in the legal, regulatory and institutional framework, the variety and structure of payment and securities settlement systems differs from country to country. Thus, each chapter deals with individual domestic features and includes a list of country-specific abbreviations. However, in order to allow direct comparison of the various payment and securities settlement systems (SSSs) and make it possible to compare these systems with those existing in EU countries – most recently described in the third edition of the EU Blue Book published by the European Central Bank in June 2001 – all 12 country chapters follow a commonly agreed outline.

Country chapters are divided into four sections which, compared with the first edition of the accession country Blue Book, have expanded on particular issues. The first section provides an overview of the institutional aspects which have an impact on payment and securities settlement systems and briefly

describes the major parties involved. It now also contains a brief description of the role of the respective accession country central bank in the field of oversight, reflecting the growing importance that central banks attach to the safety and efficiency of payment and securities settlement systems. The second section deals with the payment media used by non-banks and with recent developments in the area of retail payments, such as card payments and the use of e-money. The third section focuses on interbank exchange and settlement systems, including RTGS systems, e-money arrangements and card-based schemes. The aim is to reflect the impact of business and technological developments on payment systems. The fourth section describes the various securities trading, clearing and settlement systems in accession countries. It follows a security from when it is traded to its final settlement.

The first annex contains comparative tables, while the second provides a set of statistical data for each country. Statistical data are presented as time series in order to facilitate the analysis of recent developments. Their presentation is identical to that used in the EU Blue Book. The third annex describes the methodology used for the statistical data. Annex four contains a glossary defining the most relevant concepts used in the area of payment and securities settlement systems. Finally, the fifth annex provides a list of the members of the Co-ordination Group responsible for the preparatory work on the accession country Blue Book.

¹ The twelve accession countries are: Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia. Turkey is also an official candidate for EU membership, but negotiations for its accession have not yet started. Thus, it is not covered in this publication.

General terms and acronyms

Countries

BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
EE	Estonia
HU	Hungary
LV	Latvia
LT	Lithuania
MT	Malta
PL	Poland
RO	Romania
SK	Slovakia
SI	Slovenia

Currencies

BGN	Bulgarian lev
CYP	Cyprus pound
CZK	Czech koruna
EEK	Estonian kroon
HUF	Hungarian forint
LVL	Latvian lats
LTL	Lithuanian litas
MTL	Maltese lira
PLN	Polish zloty
ROL	Romanian leu
SKK	Slovak koruna
SIT	Slovenian tolar
€ or EUR	euro
GBP	pound sterling
JPY	Japanese yen
USD	US dollar

Others

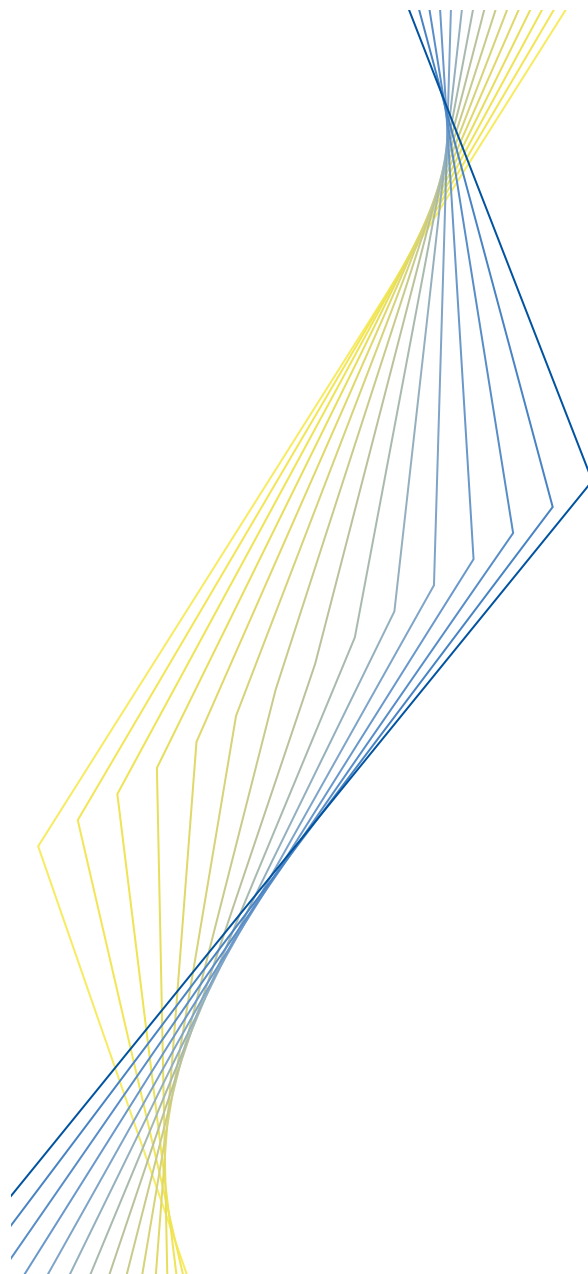
ACH	automated clearing house
ATM	automated teller machine
BIS	Bank for International Settlements
CAD	Capital Adequacy Directive
CBF	Clearstream Banking Frankfurt
CBL	Clearstream Banking Luxembourg
C.E.T.	Central European Time
CCBM	correspondent central banking model

CCP	central counterparty
CD	certificate of deposit
CEPS	common electronic purse specifications
CLFI	Consolidated Law on Financial Intermediation
CLS	continuous linked settlement
CP	commercial paper
CPSS	Committee on Payment and Settlement Systems
CRD	cash ratio deposit
CSD	central securities depository
DNS	designated-time net settlement
DVD	delivery versus delivery
DVP	delivery versus payment
EACH	European Association of Central Counterparty Clearing Houses
EBA	Euro Banking Association
EBP	electronic bill presentment
EBPP	electronic bill presentment and payment
ECB	European Central Bank
ECBS	European Committee for Banking Standards
ECN	electronic communications network
ECSDA	European Central Securities Depository Association
edc	European debit card
EDI	electronic data interchange
EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport
EDP	electronic data processing
EEA	European Economic Area
EFTPOS	electronic funds transfer at point of sale
ELMI	electronic money institution
EMI	European Monetary Institute
EMU	Economic and Monetary Union
EMV	standard for integrated circuit cards established by Europay, MasterCard and Visa
EPM	ECB payment mechanism
EPSS	European Payment Systems Services SA
ESCB	European System of Central Banks

EU	European Union	IST	Information Society Technologies programme
Eurex	European Exchange (common futures market of the German and Swiss stock exchanges)	MoU	Memorandum of Understanding
Euro 1	EU-wide payment system of the EBA	MT100, MT102, MT103	SWIFT message formats for transferring payments
Euro-giro	European network for postal giro systems	NBRLs	net bilateral receiver limits
EuroMTS	electronic bond trading platform for European benchmark bonds	NCB	national central bank
Euronext	stock exchange created by the merger between the Amsterdam, Brussels, Paris and Lisbon stock exchanges	NOREX	common Nordic securities market
FAFO	first available first out	NSLs	net sender limits
FESCO	Forum of European Securities Commissions	OTC	over the counter
FESE	Federation of European Securities Exchanges	PACE	Purse Application for Cross-border Use in euro
FIFO	first in first out	PIN	personal identification number
FIN	store and forward messaging service for financial institutions on the SWIFT network	PKI	public key infrastructure
FIN Copy	function of the SWIFT network whereby instructions may be copied and optionally authorised by a third party before being released to the beneficiary	POS	point of sale
FOP	free of payment	repo	repurchase agreement
FRA	forward rate agreement	RTGS	real-time gross settlement
GNP	gross national product	SWIFT	Society for Worldwide Interbank Financial Telecommunications
GUI	graphical user interface	SWIFT-Net FIN	store and forward messaging service for financial institutions on the new SWIFTNet platform
IASC	International Accounting Standards Committee	SET	secure electronic transaction
IBAN	International Bank Account Number	SFD	Settlement Finality Directive
ICSD	international central securities depository	SMEs	small and medium-sized enterprises
IFTS	Interbank Funds Transfer System	SMS	Short Message Standard
IGFs	Investment Guarantee Funds	SOS	Single Obligation Structure
IOSCO	International Organization of Securities Commissions	SSS	securities settlement system
IPO	initial public offering	STP	straight-through processing
ISD	Investment Services Directive	TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
ISFs	Investment Services Firms	TfT	Trade-for-Trade
ISIN	International Securities Identification Number	WAP	Wireless Application Protocol
ISMA	International Securities Markets Association		



EUROPEAN CENTRAL BANK



Bulgaria

August 2002

Bulgaria

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List of abbreviations

ACB	Association of Commercial Banks
BISERA	Banking Integrated System for Electronic tRANSfers, the designated-time gross settlement system
BORICA	Bank Organisation for Payments Initiated by Cards
BNSC	Bulgarian National Securities Commission
BSE-Sofia	Bulgarian Stock Exchange – Sofia
BUS	Banking Unified Standard
CDAD	Central Depository AD
CMP	Centre for Mass Privatisation
DIF	Deposit Insurance Fund
GSD	Government Securities Depository
LPOS	Law on the public offering of securities

Introduction

According to the Law on the Bulgarian National Bank (1997, last amended 2001), the Bulgarian National Bank is responsible for the organisation, maintenance and development of the payment systems in the country.

A number of significant steps have been made towards improving the Bulgarian payment system in recent years. The Banking Integrated System for Electronic tRAnsfers, BISERA (the national settlement system of Bulgaria), was introduced in 1992. The national card operator, namely the Bank Organisation for Payments Initiated by Cards (BORICA), was established in 1995 to service card payments on the territory of the Republic of Bulgaria. Two SSSs were established: the Government Securities Depository (GSD) in 1992 and the Central Depository AD (CDAD) in 1996. It is expected that the RTGS System will be launched in September 2002. It will provide final settlement of all payments in the country. The payments netted beforehand in other systems will be settled in the RGTS system at

designated times during the operating day. A project for the improvement of the BISERA system is under way and will be completed in the second half of 2002.

With the adoption of the new Law on the Bulgarian National Bank (1997), a currency board arrangement was introduced on 1 July 1997. In accordance with the rules of this system, the aggregate amount of the Bulgarian National Bank's monetary liabilities (including all banknotes and coins in circulation) may not exceed the equivalent in Bulgarian levs of the gross foreign exchange reserves. The Bulgarian lev is pegged to the euro (BGN 1.95583 equals €1).

Cash payments are still widely used in the country. However, the share of non-cash payments is constantly increasing. The credit transfer is the predominant non-cash payment instrument both in terms of value and volume. The volume of card payments has been growing considerably.

I Institutional aspects

I.1 The general institutional framework

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

Under the Law on the Bulgarian National Bank (1997), the Bank is to assist in the establishment and running of efficient payment mechanisms. The Law also provides that the Bulgarian National Bank may organise and operate payment systems and clearing offices to facilitate non-cash payments. In accordance with this Law, the Bulgarian National Bank issued Regulation No. 3 on payments (see Section 1.3.1) and Regulation No. 16 on payments initiated by bank cards (see Section 2.2.4).

The commercial banks' operations are defined and regulated by the Law on banks (1997). In accordance with 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. The Law also provides that banks may handle non-cash payments and clear cheques from other persons. In addition, it provides for the establishment of new banks and the penalisation of banks. The same Law regulates the operation of foreign credit institutions. However, the latter are not obliged to comply with all the requirements of Regulation No. 8 on the capital adequacy of banks. Bulgarian banks apply the Uniform Rules established by the International Chamber of Commerce in Paris to cross-border credit transfers, and

internationally acknowledged practices to issues which are not covered by Bulgarian legislation.

The Law on bank deposit guarantees (1998) provides for the protection of bank customers. The Law protects the deposits of all customers except those of financial institutions, the Government, Government agencies, and municipalities. Deposits associated with money laundering are also excluded from the guarantee (see Section 1.4.2).

Bankruptcy procedures are in general laid down in the Law on commerce (last amended in 2000). However, some specific provisions are included in the Law on banks (last amended in 2001), in the chapter entitled "Bank Insolvency". According to the Law on banks, the Bulgarian National Bank is the only institution which may request a court to initiate bankruptcy proceedings. In the event of a bank becoming insolvent, the Bulgarian National Bank will revoke the bank's licence and request the court to initiate bankruptcy proceedings. If the Bank's request meets the legal requirements, the court is obliged to take a final decision within ten days. On the date of insolvency, all unsecured credits granted by the bank become payable. No zero-hour clause is applied to payments. In principle, the Bulgarian National Bank decides whether the insolvent bank is to be excluded from the settlement system and, if so, when. (In practice banks are immediately excluded from the system once their banking licence is revoked.)

The principal regulation governing the securities markets is the Law on the public offering of securities (LPOS), adopted by the Bulgarian Parliament on 15 December 1999 and published in the State Gazette on 30 December 1999. The main objective of the Law is to regulate the public offering of and trading in securities, the operation of regulated securities markets, the CDAD, investment intermediaries, investment companies, management companies, and the

conditions for carrying out such activities. The Law is aimed at ensuring the protection of investors and creating prerequisites for the development of a transparent and efficient capital market in the country. The Law on the public offering of securities defines concepts such as securities, the Bulgarian National Securities Commission (BNSC), regulated markets, transactions in securities, investment intermediaries, the IPO of shares, the CDAD, investment companies and management companies. The government securities market operates under Regulation No. 5 of the Ministry of Finance and the Bulgarian National Bank in accordance with the Terms and Conditions for Issuance, Acquisition and Redemption of Book-entry Government Securities.

1.2 The role of the Bulgarian National Bank

The Bulgarian National Bank, 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 policies, and to contribute to the establishment and functioning of efficient payment mechanisms. The central bank reports on its activities to the Bulgarian parliament, and, with regard to the formulation of the general outlines of its monetary and credit policy, the Bulgarian National Bank and the government inform each other of their intentions and actions. With the new Law on the Bulgarian National Bank, a currency board arrangement was implemented on 1 July 1997. In accordance with the rules of this system, the aggregate amount of monetary liabilities of the Bulgarian National Bank (including all banknotes and coins in circulation) may not exceed the equivalent in Bulgarian levs of the gross foreign exchange reserves (BGN 7,352.7 million (€3,759.4 million) as at March 2002). On demand, the Bulgarian National Bank is obliged to sell and purchase any amount of euro against levs within Bulgaria.

1.2.1 Payment systems oversight

Statutory responsibilities

In the field of payment systems, the Law on the Bulgarian National Bank provides that the Bulgarian National Bank may organise and operate payment systems and clearing offices to facilitate non-cash payments, as well as issue regulations regarding the establishment and operation of such systems and offices. To this end, the Bulgarian National Bank is directly involved in the operation of BISERA, the interbank settlement system of Bulgaria. The Bank is the major shareholder in Bankservice (the operator of BISERA) and the sole owner of BORICA, the national 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 Bulgarian National Bank has the exclusive right to issue banknotes and coins in the country.

Establishment of common rules

The Bulgarian National Bank has the right to issue payments 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 payments initiated by bank cards. In close co-operation with Bankservice and representatives of the commercial banks, the Bulgarian National Bank also defines what are known as the Banking 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 Bulgarian National Bank 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 Bank grants banking licences, conducts on-site inspections and collects data from banks. Non-bank financial institutions, such as financial brokerage houses and bureaux de change, are also subject to licensing and supervision by the Bulgarian National Bank.

1.2.2 Activities in the field of securities clearing and settlement systems

Statutory responsibilities

In the field of securities markets, the Law on the Bulgarian National Bank entrusts the Bulgarian National Bank with the function of manager of the GSD. In this capacity, the Bank 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 Bulgarian National Bank. The Bulgarian National Bank also provides the market with daily information on the value and volume of transactions handled by the GSD. For further details, see Section 4.3.1.

Establishment of common rules

The Bulgarian National Bank and the Ministry of Finance have issued Regulation No. 5. This Regulation establishes the rules to be followed by the participants in the primary and secondary government securities markets. Regulation No. 19 of the Ministry of Finance and the Bulgarian National Bank contains the basic rules for the operation of the CDAD (see Section 4.3.2).

Supervision and audit

The Bulgarian National Bank also supervises the activities of commercial banks in the fields of trading and settlement of securities. The Bulgarian National Bank administers the GSD and monitors the activities of the CDAD. However, the Bank has no supervisory authority over the Bulgarian Stock Exchange. That function is performed by the BNSC (see Section 1.3.3).

1.2.3 The operational role of the Bulgarian National Bank

The implementation of monetary policy

Until June 1997 the Bulgarian National Bank implemented 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 introduction of the currency board arrangement on 1 July 1997, the number of monetary policy instruments used by the Bulgarian National Bank was reduced. Now, only the minimum reserve requirement is applicable. At present, the non-interest-bearing reserve requirement amounts to 8% of the banks' deposit base (interbank deposits and credits are excluded). Banks may use the funds in their current accounts on any particular day without limitation, since the minimum reserve requirement has to be fulfilled on an average monthly basis. However, overdrafts on the current accounts are not allowed. The Bulgarian National Bank also has the function of lender of last resort (see below).

Provision of credit facilities

Under the currency board arrangement, the ability of the Bulgarian National Bank to refinance banks is strictly limited to exceptional circumstances only. No overdraft and securities lending facilities are provided.

In accordance with the Bulgarian National Bank's Regulation No. 6 on extending collateralised lev loans to banks, the Bank may only extend credits denominated in redenominated Bulgarian leva (BGN) with a maturity of up to three months to a solvent bank in the event of a liquidity risk that may affect the stability of the banking system. These credits have to be fully collateralised by government securities, gold, foreign currency or similar highly liquid assets. The interest rates applied to these credits are higher than the market rates. In normal circumstances, however, banks borrow funds on the interbank money market.

The provision of settlement accounts

All banks are obliged to maintain current accounts with the Bulgarian National Bank. These accounts are linked to both BISERA and the GSD. They are used for the transfer of funds associated with interbank payments, government securities transactions, the holding of minimum reserves, foreign exchange transactions, etc. The Bulgarian National Bank also offers current and deposit accounts to fiscal and other government authorities, and to other public sector bodies. At present all current accounts are non-interest-bearing.

Under the Law on the Bulgarian National Bank, the central bank may open accounts for investment intermediaries for the purpose of effecting transactions in securities. Each primary dealer holds a custody account with the GSD. The account is divided into sub-accounts to distinguish between the different issues of government securities. For more details concerning primary dealers, see Section 4.3.1.

There are no other specific responsibilities of the central bank with regard to SSSs.

Pricing policies

The Bulgarian National Bank does not charge banks for opening and maintaining current accounts, nor for the provision of payment

services. Regarding SSSs, see Sections 4.3.1.8 and 4.3.2.9.

1.2.4 Co-operation with other private and public sector bodies

The National Committee on Payment systems

The Committee was established in 1999 by a decision of the Managing Board of the Bulgarian National Bank, but is separate from the Bank. The members of the Committee are top managers of commercial banks and other bodies directly participating in the payment process – system operators, depositories, intermediaries, etc. The Committee's main functions are to formulate the development strategy of the national payment system, to co-ordinate the activities of the different bodies connected with the payment system, to propose amendments to the legal basis, to create unified standards for system operators and depositories and to guarantee the integration of the national payment system with international payment systems.

1.3 The role of other private and public sector bodies

1.3.1 The Association of Commercial Banks

The Association of Commercial Banks (ACB) is an independent representative organisation established in 1992 by the State Savings Bank and the commercial banks operating in Bulgaria. The ACB currently has 27 regular members and four associate members. The ACB assists its members in their banking activities and protects their rights. To this end it:

- co-ordinates the positions of banks in their activities;
- represents and protects the rights of banks in their relations with government authorities, public organisations, foreign

and international organisations and other legal entities and physical persons;

- promotes fair competition between banks;
- represents banks in the implementation of new or the amendment of existing banking legislation;
- provides training to improve the skills and expertise of bank employees; and
- contributes to improving banking technologies.

1.3.2 The Deposit Insurance Fund

The Deposit Insurance Fund (DIF) is a legal entity established under the Law on bank deposit guarantees. It covers deposits up to a certain specified amount in the event of a bank becoming insolvent. The Fund determines and collects an entry fee and annual premiums from the banks. The entry fee is equal to 1% of the registered capital of the bank (but is no less than BGN 100,000 or €51,129). The annual premium is fixed as 0.5% of the total daily average amount of the previous year's deposit base. The Fund's resources are invested in government securities, short-term deposits with commercial banks which are primary dealers of government securities, and deposits with the Bulgarian National Bank.

The DIF guarantees the full repayment of funds deposited with a bank, regardless of the number of accounts, up to a total of BGN 10,000 (€5,113).

Participation in the deposit insurance scheme is mandatory. Branches of foreign banks located in Bulgaria also participate in the scheme, provided that either the home country of the head office of such a bank has no deposit guarantee scheme or the scheme provides for a smaller guaranteed amount, or else is inapplicable to the bank's branches abroad. The guarantee does not apply to

deposits of financial institutions, the Government and its agencies, 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.). Deposits associated with money laundering transactions or actions are also excluded from the guarantee.

1.3.3 The Bulgarian National Securities Commission

The BNSC is a government institution which ensures the protection of investors and encourages the development of the securities market. It regulates and controls the issue and trading of securities (excluding government securities), the regulated securities markets, i.e. the official market operated exclusively by the stock exchange and the unofficial market,¹ investment intermediaries, management companies and investment companies. The BNSC grants licences to and revokes licences from the above-mentioned institutions (see Section 4.2.3). The Commission also maintains registers of stock exchanges, investment intermediaries and issuers (including public companies) as well as of investment companies offering securities for public sale, in addition to supervising the CDAD's activity.

1.3.4 Centre for Mass Privatisation

The Centre for Mass Privatisation (CMP) is a government institution, established in order to oversee the process of privatisation through investment vouchers. The CMP issues vouchers and controls their transfer and the process of using them to make payments. It also organises centralised public auctions for 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. Participants can pay with both investment and other types of voucher, as well as in cash. Privatisation funds were transformed into investment companies.

1.3.5 The Central Depository AD

The CDAD was established as a joint stock company in 1996. The CDAD's shareholders are the Ministry of Finance, the Bulgarian National Bank, commercial banks, the BSE-Sofia, Bankservice and stockbrokers. Under current legislation the role of the CDAD is to:

- 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;
- immobilise share certificates which are subject to public trading; and
- maintain the register of pledged securities.

1.3.6 Bulgarian Stock Exchange – Sofia

The BSE-Sofia is the only stock exchange and regulated securities market operating in Bulgaria. Its shareholders are the Government, commercial banks and other financial intermediaries. For more details regarding the operation of the BSE-Sofia, see Section 4.1.

¹ At the end of 2001 the Bulgarian Stock Exchange – Sofia (BSE-SOFIA) was granted a licence to operate this market as well.

1.3.7 Financial intermediaries that provide payment services

Banks

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. The State Savings Bank had the status of a savings bank until April 1998 but was transformed into a commercial bank as a result of amendments to the legislation. Any bank has the right to offer all types of banking service, including different types of payment service, deposits, credits, foreign exchange and securities transactions, etc. Each bank determines the fees and commissions for its customers according to its own policy, without any legal constraints. There are also no restrictions with regard to the number and location of branches of

a bank. Currently, the number of banks operating in Bulgaria is 36.

The postal system

The Bulgarian Post Office branches do not have the status of a credit institution, but they participate 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 via the Post Office branches. Second, the postal system is involved in the payment of pensions. Third, domestic cash payments are made within the postal system. Every ten days a netting of cash payments takes place between the Post Office branches, and the funds due are transferred through current accounts with the commercial banks or through BISERA.

2 Payment media used by non-banks

2.1 Cash payments

The monetary unit of the Republic of Bulgaria is the lev. After the redenomination effected on 5 July 1999 (when 1 new lev (BGN) replaced 1,000 old levs (BGL)), the traditional subdivision was reinstated: 1 new lev is divided into 100 stotinkas. The banknotes used to be produced abroad, but in 1998 the Bulgarian National Bank started operating its own printing works. The coins are minted by the Bulgarian Mint, a company wholly owned by the Bank. The Bulgarian National Bank distributes and collects banknotes and coins through its head office and its branches across the country.

At the end of 2001 the banknotes in circulation in Bulgaria had the following denominations: BGN 1, BGN 2, BGN 5, BGN 10, BGN 20 and BGN 50. The following stotinka coins were in circulation: 1 (BGN 0.01), 2 (BGN 0.02), 5 (BGN 0.05), 10 (BGN 0.10), 20 (BGN 0.20) and 50 (BGN 0.50). Commemorative coins are also minted. In terms of value, the BGN 50

banknotes account for 44% of total banknotes in circulation. In terms of volume, the BGN 10 banknotes have the largest share, i.e. 21.49%. In terms of value, banknotes account for 99.27% of money issued.

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 November 2001, banknotes and coins in circulation accounted for 67.87% of the M1 monetary aggregate and 9.87% of the GDP projected for 2001. Most salaries are still paid in cash despite the fact that the number of employers paying salaries to their employees through accounts connected with a debit card has increased in recent years. Traditionally, and because of the relative scarcity of POS terminals, almost all retail transactions have been – and continue to be – made in cash. For these reasons, debit cards are generally used to withdraw cash at ATMs rather than to make payments.

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. Any person may hold accounts in national or foreign currency without limitation. Most banks offer accounts in Bulgarian leva, US dollars, euro and Swiss francs.

2.2.1 Credit transfers

This is the most widely used form of payment between entities in the corporate and public sectors. It is also used for the payment of salaries, taxes, duties, subscription fees, etc. In 2000, credit transfers accounted for over 97% of the value and over 93% of the volume of all payments processed through BISERA. The average value of a credit transfer was BGN 2,816 (€1,439.56). According to Regulation No. 3, a credit transfer has to be effected within 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 only two working days.

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 SWIFT. These transactions normally take up to three working days, but for smaller banks with a limited number of bank correspondents abroad it may take longer.

2.2.2 Cheques

Cheques have never been an extensively used payment instrument in Bulgaria. They account for a negligible percentage of all payments, the

main reason being the risk associated with them. They are used only between reliable counterparties.

2.2.3 Direct debits

This payment instrument is used by customers 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 become more widespread in recent years. Direct debits are also used in the field of securities settlement (see Section 4.3).

2.2.4 Payment cards

Debit cards

The use of this instrument is increasing from year to year. Most widely used are (debit) cards issued by domestic banks. By the end of 1997 eight banks were issuing bankcards. By the end of 2001 the number of issuers reached 24. All are members of the national card payment system BORICA. Cardholders' 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 and MasterCard and Europay International. In addition to acquiring transactions from merchants, some banks have started to issue international debit cards: Visa Business, Visa Electron and Maestro.

Credit cards and travel, retail and entertainment cards

Credit cards are not very widely used in Bulgaria. Several Bulgarian banks issue credit cards under agreements with the international card organisations Visa International and Europay International. The international credit cards

currently issued by Bulgarian banks are: Visa Classic, Visa Business, Visa Gold and Eurocard/MasterCard (ordinary, business and gold). Several banks have an agreement with American Express for the distribution of Amex cards (classic, business and gold card). Diners Club credit cards are issued by the Diners Bulgaria Company. Travel, retailer and entertainment cards have recently started to be issued in the country.

Prepaid cards

Telecommunications companies and chains of petrol stations issue prepaid cards. The use of these cards has increased very rapidly. The existing public coin telephone network has to a large extent been replaced 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.

The ATM and POS networks

At the end of 2001 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 reached 118 and by the second quarter of 1999 there were 180 installed ATMs. By the end of 2001 the number increased to 642 and is still growing. The number of electronic POS terminals, which was 100 in 1997, increased to over 510 in the second quarter of 1999 and reached 1,980 by the end of 2001. Most ATMs are located on the premises of banks, but some are located at petrol stations, supermarkets and other shops, metropolitan stations and airports, etc. POS terminals are installed in bank branches for cash withdrawals and in hotels, restaurants, shops, car rental companies, petrol stations, etc. for payment for services and goods.

2.2.5 Postal instruments

The postal network is the largest branch network in Bulgaria. Postal money transfers are used in small villages in which there are no bank branches, or in cases where the payer or the payee does not have a bank account. Postal instruments are normally used for the payment of pensions, subscriptions, taxes, or transfers to persons who do not hold current accounts with a bank. The total value of payments through postal orders is negligible by comparison with the payments made through BISERA.

2.3 Recent developments

There is a significant interest in Bulgaria in making payments via the internet. A system called ePay.bg was developed in 1999. It allows each cardholder to pay for services or goods via the internet after registering his card. The technology for making payments via the internet is based on a trusted third-party payment server connected to the host of the BORICA card system. This makes it possible to authorise each transaction via the internet in real time. Most cardholders use this system for transferring money from their card accounts to other accounts at the same or at another bank. By the end of 2001 there were 56 electronic shops and companies offering goods and services connected to ePay.bg, and 24,754 transactions with a value of BGN 1,110,873.38 (€567,980.54) were made through this system in 2001. Since there is only a limited number of credit card holders in Bulgaria, for the time being the volume of internet transactions by means of credit card is still low.

Furthermore, a number of banks are co-operating with Western Union for the execution of fast money transfers, mostly abroad.

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 Bulgarian National Bank, on the basis of payment orders submitted on paper at the Bank's desks, or via SWIFT. This express service is organised for all payments addressed to or initiated by the Bulgarian National Bank, direct bank-to-bank payments related to interbank money market operations, payments on the primary and secondary government securities market and 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 by September 2002.

BISERA was designed, programmed and implemented by the Bankservice joint stock company on behalf of the Bulgarian National Bank. Bankservice is responsible for the development, maintenance and operation of the system. It also offers other telecommunications and banking automation services to banks. The Bulgarian National Bank is the major shareholder in the company (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 The real-time gross settlement system

There is no RTGS system currently operating in Bulgaria, although it is anticipated that such a system will be launched in September 2002.

3.3 The designated-time gross settlement system: BISERA

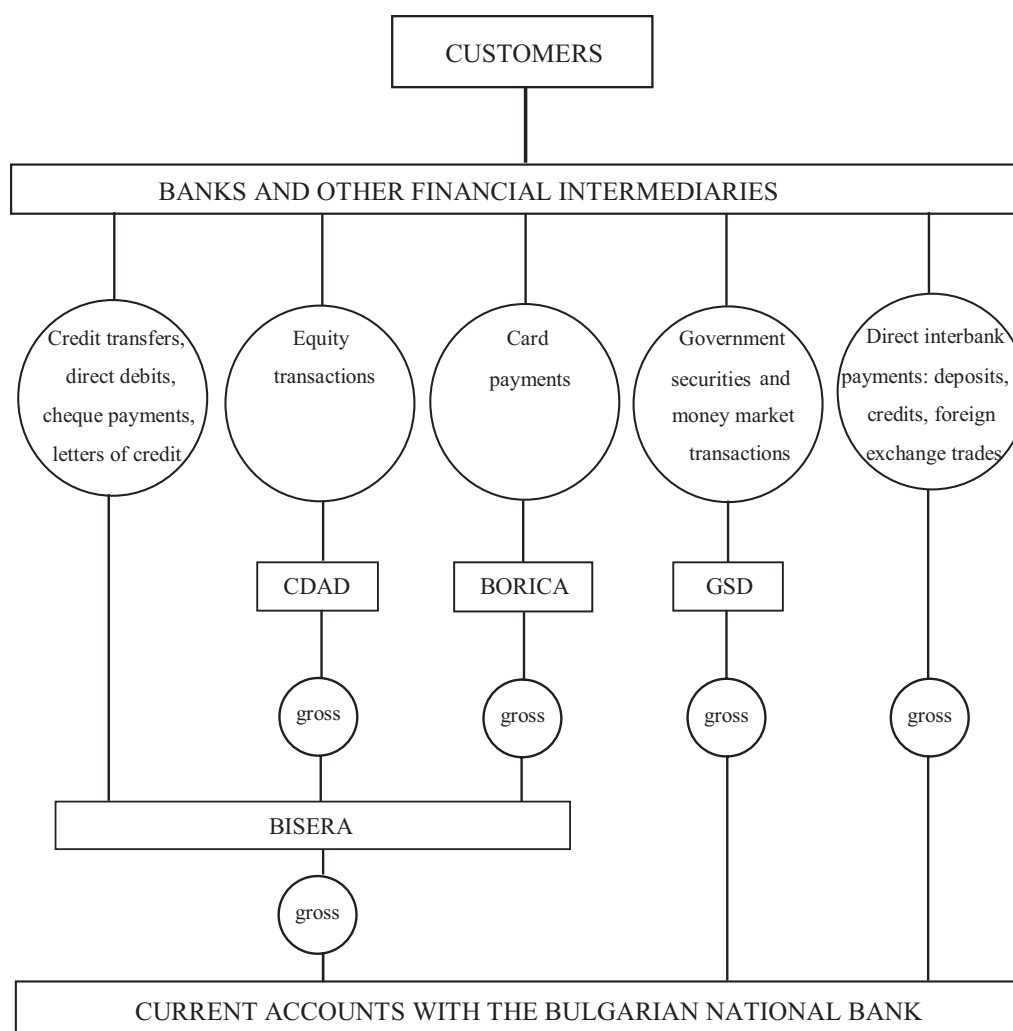
The Banking Integrated System for Electronic tRAnsfers (BISERA) is an electronic system with two basic functions: the clearing of electronic messages comprising banks' payment instructions, and the settlement of payments.

3.3.1 Operating rules

The Bulgarian National Bank issues BUSs which contain rules on the execution of payment transactions via BISERA. One of the most important standards is BUS 7092, on settlement in the Bulgarian National Bank. It regulates the organisation of the settlement system, including settlement procedures, accounting records, registration of the transfer instructions, information transfer, message formats and control procedures, etc. Work on amending the BUSs is under way. The BUSs will define the main characteristics of and provide the platform for the work of the future Bulgarian RTGS system. Other standards regulate payments using different payment instruments (credit transfers, direct debits, cards, cheques and letters of credit). BUS 12097 on interbank and intrabank payments on equity transactions with DVP is applicable in the field of securities trading payments. For more details see Section 3.3.2.

3.3.2 Participation in the system

According to current banking regulations, any licensed bank in Bulgaria is obliged to make all interbank payments through BISERA (or directly through its account with the Bulgarian National Bank in the case of certain specified types of payment; see Section 3.1). Banks whose licences have been revoked are immediately excluded from the system. The bank branches also have direct access to BISERA (provided that the banks do not have

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

an internal payment system). There are two non-bank financial institutions which also have direct access to BISERA: the CDAD and BORICA. They act as settlement agents, the CDAD 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. As of 19 February 2001 the SEBRA system for electronic budget payments, which services the payments of budget entities, is included in BISERA. The state Treasury is a participant in BISERA.

3.3.3 Types of transaction 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 Bulgarian National Bank and other banks. The system distinguishes between the following payment instruments: credit transfers, direct debits, cheques,² letters of credit, debit cards and office cash collections.

² 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).

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”.

3.3.4 Operation of the 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 Table I below.

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 Bulgarian National Bank, with summary information about the interbank payments (the gross sum of payments received by each bank from any other bank). The Bulgarian National Bank 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 Bulgarian National Bank to the account of the receiving bank (i.e. at the time of booking at the Bulgarian National Bank at 8.30 a.m. on T+1). Each transfer is executed individually. Payment instructions sent by banks are irrevocable. In the event a payment cannot be settled due to insufficient funds on the account of the sending bank, the Bulgarian National Bank 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 will owe the receiving bank a penalty. For details of “waiting payments” see Section 3.3.6.

Overdrafts on current accounts and partial payments are not allowed.

3.3.5 Transaction processing environment

BISERA is a fully computerised system. Paper-based documents are neither accepted nor processed. The 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:

Table I		
Schedule of transfer operations		
Day	Local time	Procedure
Date T	8.30 a.m. to 5 p.m.	Accounting day of the commercial banks and the Bulgarian National Bank.
	8 a.m. to 10 p.m.	Commercial banks generate file transfers for bank-to-bank and customer payments and send them to BISERA.
	9 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 Bulgarian National Bank receive the results of the settlement process.
	8.30 a.m.	Start of the accounting day in the commercial banks and the Bulgarian National Bank.

- 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 SWIFT 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.

3.3.6 Settlement procedures

Incoming payments, including waiting payments from previous days, are queued according to their priority, which is automatically determined by the system, in accordance with the 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 in accordance with the sequence in the incoming queue. Prior to the execution of payments from the incoming queue, the computer system servicing the settlement at the Bulgarian National Bank 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 there is already a payment queue for the account to be debited or if funds are insufficient, the payment is not processed but rather placed in the payment queue for that account. When funds are received on the payment account, the queue of waiting payments is checked and they are processed in chronological order to the extent that the received amounts provide sufficient cover.

If sufficient funds are not available to settle the first payment in the queue, all queued payments remain 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 queue associated with the account has been emptied, the payment queues for each separate account are scanned again. This cycle is repeated until all payments have been processed, or until the scanning of all queues finishes without the execution of a new payment.

The legislation strictly defines the cases where the Bulgarian National Bank 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 ten working days of being entered into the settlement system, the payment is rejected by the settlement system and deleted from the waiting queue. In the event of the rejection of a payment by the settlement system, the settlement system informs the Bulgarian National Bank in order to allow the Bank to take specific supervisory action in conformity with the Law on banks.

3.3.7 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. Credit risk for the Bulgarian National Bank 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.

3.3.8 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 BGN 130 (€66.67) for every branch of a shareholder and BGN 202 (€103.59) for every branch of a non-shareholder. There is also a minimum monthly fee of BGN 50 (€25.64) for every branch of a shareholder and BGN 74 (€37.95) for every branch of a non-shareholder. For payments between customers of different banks the transfer fee is BGN 0.25 (€0.13) for shareholders, and BGN 0.37 (€0.19) for non-shareholders.

3.3.9 Statistical data

For 2001 the average number of transactions per day was 90,095, and the average value settled per day BGN 243,428,030 (€124,462,775.40). The growth in relation to 2000 was 22.64% in terms of number of transactions and 15.81% in terms of value. The peak number of transactions settled in one day was 326,308.

3.4 The retail payment system

3.4.1 The national card payments system, BORICA

Card payments are governed by Regulation No. 16 on payments initiated by bank cards. However, this Regulation 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 Bulgarian National Bank. BORICA Ltd. is the national operator of the ATM and POS network in Bulgaria and acts as a processing company for the cards of Visa International's member banks and as a third-party service provider company for Europay International member banks within the country.

BORICA Ltd. administers ATM and POS transactions and is responsible for the supervision and maintenance of the terminals, performs online authorisation of card payments and personalisation of bank cards, and is authorised by its members to act as a settlement agent for payments performed with domestic cards. According to Regulation No. 16, the settlement of payments initiated with bank cards is to be effected through BISERA, the interbank payment system. Therefore, BORICA has direct access to BISERA. BORICA executes interbank payments generated by card transactions with a value date T+1.

The Bulgarian Post Bank operates its own electronic POS terminal network for Visa cards only. It links approximately 60 electronic POS terminals and is not connected to the network of BORICA Ltd.

3.5 Future developments

In November 2001 the Managing Board of the Bulgarian National Bank approved a document named "Terms of Reference for the RTGS System at the Bulgarian National Bank". The document was prepared by an ad hoc group and describes in detail the Bank's system, functional and user requirements for the future RTGS system, which is expected to be implemented by September 2002.

On the basis of the Terms of Reference document, on 5 February 2001 the Bulgarian National Bank announced an open international tender for the selection of a main RTGS system contractor to provide a complete and integrated solution for an RTGS system, including specifications, hardware, system and application software, integration tests, implementation, acceptance tests and user training, warranty period and post-warranty support and development.

The Bulgarian National Bank admitted only such bidders to the tender which had previous experience as developers of RTGS system applications, were operative in at least one central bank and also had experience as prime contractors of RTGS system implementation.

Some of the most experienced RTGS application software providers bid in the international tender. The tender procedure passed through several stages and, on 31 July 2001, the Bulgarian National Bank signed a "turnkey" agreement and a software maintenance agreement with Montran Corporation in the United States.

The RTGS system project comprises the following four stages:

- Stage 1 – Specification
- Stage 2 – Customisation
- Stage 3 – Implementation
- Stage 4 – Live operation

Further to the completion of the first stage, the Bulgarian National Bank has been provided with three documents (Stage 1 deliverables) which describe the design of the RTGS system to be implemented in the subsequent stages – the Project Service Specification, the Functional System Specification and the Project Plan.

According to the Project Plan, the latest date for the launch of the RTGS system is 16 September 2002.

The Bulgarian National Bank will be the owner of the RTGS system and will be responsible for the system's administration, regulation and management. The participants in the RTGS system will be as follows:

- the Bulgarian National Bank;
- settlement participants – licensed banking institutions (banks) within the meaning of the Law on banks who maintain current accounts with the Bulgarian National Bank;
- the Bulgarian National Bank's Fiscal Services Department – for payments among banks arising from transactions with government securities;
- system operators – institutions authorised by the Managing Board of the Bulgarian National Bank to perform services relating to intermediation in interbank transfers and the settlement of funds transfers, including:
 - Bankservice AD – the organisation servicing the interbank retail funds transfer system BISERA;
 - BORICA AD – the national operator of the bank cards payment system, BORICA; and

- the CDAD – for payments among banks arising from transactions with commercial securities.

The RTGS system will provide the final settlement of systemically important payments within the country. The following constitute systemically important payments:

- payments between settlement participants (interbank payments) and payments to and from the Bulgarian National Bank;
- payments on government securities transactions, using the DVP mechanism;
- net transfers of funds requiring designated-time settlement; and
- large-value customer payments exceeding an amount of BGN 100,000 (€51,129.19).

The RTGS system will ensure a more effective risk management by the Bulgarian National Bank. Participating banks will be able to monitor and effectively manage their liquidity and the payment process. The interactive monitoring will be realised via a proprietary network.

4 Securities settlement systems

4.1 Trading

4.1.1 Main features of the 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 dematerialised and transferred by bookentry. Bulgarian legislation allows the existence of equities in paper form, but only dematerialised equities may be offered publicly. There are some debt instruments of large

The project also aims at the future integration of the Bulgarian payment system into TARGET following Bulgaria's accession to the EU and EMU.

The system will provide the possibility for execution of customer payments.

The RTGS system will use the SWIFT network and the SWIFT FIN Y-Copy service for the interbank payment messages flow.

The design of the RTGS system complies with:

- The Core Principles for Systemically Important Payment Systems of the Bank for International Settlements, Basel;
- The Standards of the European Central Bank;
- The ANSI standards of the International Organization for Standardization (ISO) and the SWIFT standards for the exchange of payment messages and financial information, confidentiality of the exchanged information, authentication of the sender and the received information and non-repudiation of the sender of the information, and management of the cryptographic keys.

Bulgarian companies (for example the National Electric Company) which are dematerialised, but are not 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 Bulgarian National Bank regulate both the primary and secondary markets for government securities, and the GSD settles the transactions. For further details of primary

market procedures see Section 4.3.1. The secondary market is an OTC one, with transactions confirmed by Reuters Mail on the basis of offers exchanged via Reuters or with transactions confirmed by the BSE-Sofia trading system. Pursuant to Article 101 (1) of the LPOS, trading in securities (except government securities) is allowed only on the regulated securities markets.

Following the latest changes in Bulgarian legal regulations (the adoption of the LPOS) securities markets in Bulgaria are divided into regulated and unregulated markets. In practice, these two types of security equate to the organised and non-organised markets. Securities markets are also primary and secondary depending on whether the securities are traded initially or secondarily.

At present only the BSE-Sofia has powers to organise (maintain) the regulated securities markets, i.e. the official and unofficial markets (defined in the LPOS).

The BSE-Sofia has the following markets and market segments:

- 1) Official market:
 - a) Official equities market:
 - Segment “A”
 - Segment “B”
 - Segment “C”
 - b) Official bonds market
 - “Government securities” segment
 - “Municipal bonds” segment
 - “Corporate bonds” segment
- 2) Unofficial market:
 - a) Unofficial equities market
 - b) Unofficial bonds market
 - c) Unofficial market for other securities
- 3) Primary market³
- 4) Privatisation market³
- 5) Tender-offering market³

The BSE-Sofia 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 requirements for admission of securities to the unofficial market are that the issue be registered in the BNSC’s register of primary or secondary trading. Stock exchange and OTC transactions are made through investment intermediaries only. Stock exchange trades are done through an electronic system using direct access from brokers’ terminals based on the BSE-Sofia floor or through remote brokers’ terminals from the BSE-Sofia members’ offices (for more details, see Section 4.3.2.4). Settlement in both the regulated and unregulated markets is executed by the CDAD through BISERA.

4.1.2 Basic quantitative aspects

The government securities and money market are the most important securities markets in terms of volume and value. However, it can be seen from Tables 2 and 3 that the volume of transactions in equities and corporate bonds increased significantly from 1998 to 2001.

4.1.3 Financial intermediaries operating on the different securities markets

Securities may only be traded by investment intermediaries authorised by the BNSC. In practice, these intermediaries are stockbrokers and banks, including branches and subsidiaries of foreign banks. To be licensed by the BNSC, an investment intermediary must meet certain requirements concerning, inter alia, the amount of its capital and the structure of its balance sheet, as specified under the LPOS. Given that global banks’ licences cover all kinds of transaction with securities, these banks do not need additional authorisation by the BNSC, but

³ This is not a separate market but rather a special auction for special kinds of trade.

only to be registered as investment intermediaries.

Trade on the BSE-Sofia can only be executed through investment intermediaries which are members of the Stock Exchange. There are a number of specific admission criteria for membership of the BSE-Sofia, as specified in the Rules of Procedure of the BSE-Sofia, which have been adopted by its Board of Directors and approved by the BNSC.

Members of the 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 held 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

Table 2
The BSE-Sofia's statistics for the turnover of equity trades and the market capitalisation of equities issues (USD)

Market	1998		1999	
	Market capitalisation (USD)	Total turnover	Market capitalisation (USD)	Total turnover
Official A		364,944	7,131,721.19	271,299
Official B	145,305,464.54	110	38,810,281.70	840,149
Official C		2,189,904	67,009,971.45	5,773,478
Free market	840,370,378.94	22,167,912	594,952,879.58	13,813,199

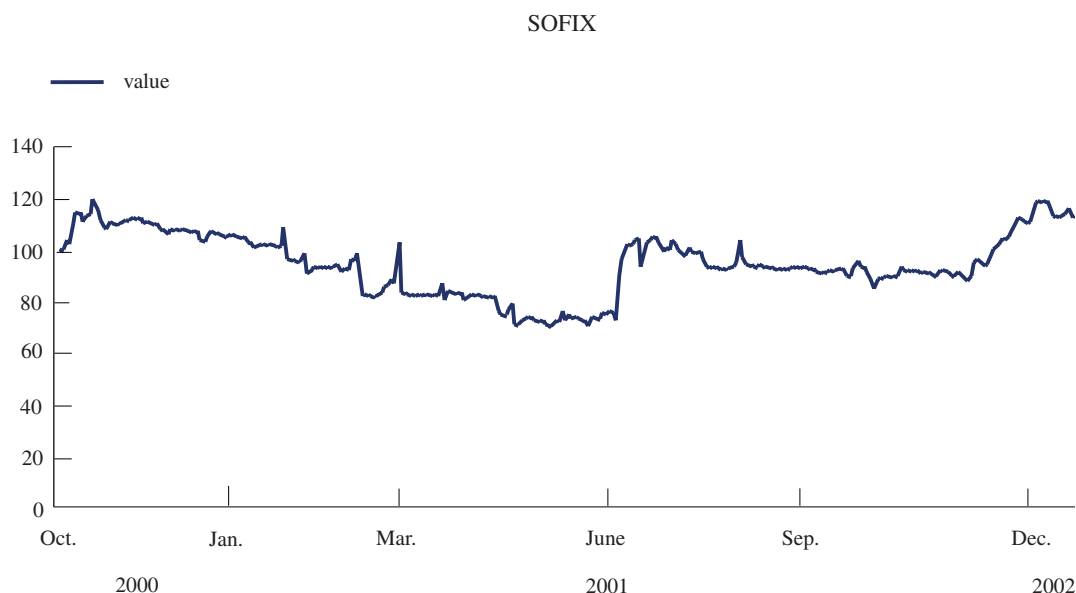
Market	2000		2001	
	Market capitalisation (USD)	Total turnover	Market capitalisation (USD)	Total turnover
Official A	26,341,839.76	582,366	7,951,759.87	28,860.36
Official B	37,835,806.74	480,050	19,141,054.02	6,657,759.76
Official C	70,809,663.90	7,360,399	60,006,074.79	3,090,468.90
Free market	477,429,093.14	32,833,738	390,136,744.89	59,983,920.31

Table 3
The BSE-Sofia's statistics for bond trade turnover (USD)

Market	1998	1999	2000	2001
	Total turnover	Total turnover	Total turnover	Total turnover
Official				
Corporate	0	1,884	26,152	386,096.49
Government	0	0	2,123	350,668.76
Free market	0	0	0	124,335.59

Chart 2

The BSE-Sofia's statistics for the SOFIX index:



primary dealers have access to the GSD. For further details of primary dealers see Section 4.3.1.2.

4.1.4 Recent developments

After the BSE-Sofia received its licence from the BNSC, the first trading session was held on 21 October 1997. At first trading was concentrated mainly on the free market (now the unofficial market), in which companies from the first wave of mass (voucher) privatisation placed their privatised stakes. The first company listed on the official market was Elcable in January 1998. In 1999 the number of companies listed on the official market reached 32. The same year the total number of companies traded amounted to 859, while in 2001 the total number of companies decreased to 430. The main reason was the fact that many of them, mainly the small and illiquid ones, were deleted from the public register of the BNSC.

From the dynamic development of the capital market in the period from 1996 to 1999 it

became evident that more elaborate legal regulations were necessary. In December 1999 the Bulgarian Parliament adopted the new LPOS, which came into effect in February 2000. The Law is aimed at providing protection of investors and creating prerequisites for the development of a transparent and efficient capital market in the country. The new Law guarantees improved protection of investors, creates the conditions for the stability of the stock market, and assures equal access and treatment for all participants, and the transparency and settlement of transactions.

The last few years can be characterised as a period of stabilisation of the infrastructure of the capital market. The structure and the institutions of the Bulgarian capital market are now fully in compliance with global standards and requirements in this area.

In compliance with the new legal requirements and in response to changed market conditions, the BSE-Sofia has adopted its new rules and regulations. In October 2000 the RTS Plaza trading system, based on the Nasdaq quotation

system, was launched on the BSE-Sofia with the assistance of US and Russian experts. It is an order and/or dealer-driven trading system with multiple market-makers. On 21 October 2000 the BSE-Sofia launched its official index – SOFIX. SOFIX is a market capitalisation-weighted price index with a base value of 100 points. The SOFIX portfolio consists of the top ten domestic stocks (currently reduced to nine).

Although the structure of the capital market has been successfully established, the market's problems – a lack of attractive securities and low liquidity – remains. In order to overcome these negative tendencies, the BSE-Sofia has launched new trading instruments – government bonds, corporate bonds and Bulgarian depository receipts.

By way of a BNSC Resolution of 6 December 2001 the BSE-Sofia was granted a licence to organise the unofficial securities market. By way of the same resolution, the BNSC approved the amendments to the rules and regulations of the BSE-Sofia. In compliance with § 6a of the “Transitional and Final Provisions” of the rules and regulations, the amendments entered into force on 2 January 2002.

BSE is planning to develop two new segments, namely IPOs and privatisation.

4.2 Clearing

There is no independent clearing house. With regard to the settlement of securities, please see Section 4.3.

4.3 Settlement

4.3.1 Securities settlement through the Government Securities Depository

4.3.1.1 Operating rules

Under the Law on the Bulgarian National Bank, the central bank is the official depository of the state. Pursuant to the contract between the Bulgarian National Bank and the Ministry of Finance, the Bulgarian National Bank organises trade in government securities and maintains registers of such securities. Regulation No. 5 of the Ministry of Finance and the Bulgarian National Bank establishes the rules and procedures for all kinds of transaction with government securities.

4.3.1.2 Participation in the system

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

4.3.1.3 Types of transaction handled

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

4.3.1.4 Operation of the system

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

On the primary market, securities are acquired through auctions organised by the Bulgarian National Bank. Primary dealers may participate with irrevocable competitive or non-competitive bids through Reuters Mail. On the issue date (the second working day

after the auction) the Bulgarian National Bank debits ex officio the current accounts of the primary dealers by 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 the securities acquired by each bidder in the registers. Only primary dealers are listed in the registers.

On the secondary market the registration of transactions is effected on the basis of irrevocable written applications sent by Reuters Mail from both the acquirer and the transferor. The Bulgarian National Bank 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.

The Bulgarian National Bank maintains registers both for primary dealers and commercial banks – non-primary dealers pursuant to § 6 of the “Additional Provisions” of Regulation No. 5 of the Ministry of Finance and the Bulgarian National Bank.

4.3.1.5 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, notes and bonds 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. The transactions are settled on the day of the trade (T+0) or on the forward settlement date, if this is specified in the applications. The settlement is executed four times a day. The forward and reverse repo transactions are settled at 9 a.m. The outright transactions, negotiated between 9 a.m. and 11 a.m., are settled at 11 a.m. The transfer instructions for both securities and funds are settled on a gross basis with final transfer of both securities and funds occurring at the end of the processing cycle (11 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 cycles between 11 a.m. and 1 p.m. and between 1 p.m. and 3 p.m. The four 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.

4.3.1.6 DVP arrangements

Every primary dealer has its own current account as well as a government securities account with the Bulgarian National Bank. This means that the Bulgarian National Bank manages both securities and cash accounts, which makes the settlement risk-free. 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.

4.3.1.7 Credit and liquidity risk

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.

4.3.1.8 Pricing

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

The entry fee for membership is currently BGN 1,000 (€511), paid after each new approval of the primary dealers list. The register-keeping fee for each member is BGN 500 (€256) per month. For approved primary auction bids the participant pays a commitment fee of 0.04% of the nominal value. Depending on the amount, the transfer charges vary between BGN 1 (€0.51) and BGN 10 (€5.11). On the date of maturity there is a charge of 0.02% of the nominal value of the securities.

4.3.1.9 Main projects and policies being implemented

The GSD is planning 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.

4.3.2 Securities settlement through the Central Depository AD

4.3.2.1 Operating rules

The LPOS 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 Bulgarian National Bank. The CDAD is obliged to present information regularly and on request to the

Ministry of Finance and the Bulgarian National Bank. 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.

The CDAD organises its operations in four major directions. First, it has created a national register of the joint stock companies privatised in 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 has created an SSS for trades between the members of the CDAD. Third, it has created a system for organising payments for securities traded on a DVP basis, which is connected to BISERA. Fourth, it has 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.)

4.3.2.2 Participation in the system

The participants in the system are the BSE-Sofia and investment intermediaries, both being 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-Sofia, except transactions between individuals (natural persons) and a number of other special kinds of trade (including tender-offering, repo trades, grants, inheritances). Those transactions which are not traded at the BSE-Sofia must be registered in the BSE-Sofia trading system as reported trades as they could otherwise not be settled in the CDAD).

4.3.2.3 Types of transaction handled

In practice, the CDAD handles all types of book-entry equity transaction. Stock lending is available in emergencies. The CDAD also

provides its members with the possibility of offering custodial services to their customers.

4.3.2.4 Operation of the system

The system settles the instructions for the 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. only securities delivery without involvement of the payment system.

During the first wave of the mass privatisation process in 1997 the 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 voucher.

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-Sofia.

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, namely 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 sequence 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-Sofia.

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.

After 11 a.m. on T+2, the relevant securities accounts are checked for securities availability in the case of 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.

At 8.15 a.m. on T+3, the results of the settlement process are received. If the payment is executed (i.e. the requisite 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.

4.3.2.5 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-Sofia, 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 electronically exchanged information must also be provided on hard copy. According to the new draft regulations, electronic documents will replace the paper-based ones.

4.3.2.6 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-Sofia. The place of each OTC transaction depends on the time it is reported to the CDAD. There is also a queue for transactions which cannot be settled due to insufficient securities or cash. 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.

4.3.2.7 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 during the night after T+2. If funds (or securities) are not available, the securities or funds will remain blocked until T+9.

4.3.2.8 Credit and liquidity risk

The BSE-Sofia manages a Guarantee Fund (Fund) in order to guarantee payments for transactions executed on the Exchange. BSE-Sofia members created the Fund in instalments. Each member must deposit an initial instalment amounting to BGN 200 (€102). By the 10th day of each calendar month each member must currently deposit in the Fund an amount equal to 0.1% of the average value of all transactions executed by it during the previous calendar month. The cross (one-side) and block transactions are excluded from these calculations. The average value of executed transactions is the value of all transactions for the last calendar month divided by the number of trading sessions during that period. Within three working days of the end of each calendar month the Exchange informs each member, in writing or by electronic message, of the amount of its current instalment in the Fund. When the amount of the Fund is equal to or more than 1% of the value of the realised turnover of the Exchange for the previous year, the members shall stop paying their current instalments. If the amount of the Fund reaches levels less than 1% of the value of the realised turnover of the Exchange for the previous year, the members shall resume payment of their current instalments. Members' instalments to the Guarantee Fund are only payable in cash (BGN).

The Fund's resources are kept and managed in a separate account in a commercial bank determined by the Board of the BSE-Sofia. The Board appoints a person to manage the Fund. The main principle for maintaining and managing the Fund is to recognise and avoid risk. The Guarantee Fund's resources may be invested only in bank deposits and government securities. These resources are to be used to cover liabilities among members arising from transactions executed on the Exchange after the expiration of the terms for settlement of transactions. If a liability incurred in a transaction exceeds the total amount of the Fund, all members must make additional equal

instalments to cover the liability. Partial settlement of a liability arising from a transaction shall not be allowed.

The Fund's resources shall be used only in the event that the delay in payment of a transaction executed on the Exchange exceeds ten days, and following a decision of the Board. In the event that liabilities for more than one transaction arise, they shall be repaid according to the order of their execution. The repayment of a member's liabilities by the Fund shall constitute a good cause for the definitive termination of membership of the Exchange. The Fund does not guarantee block transactions and must not be used to cover liabilities arising from such transactions. If the amount remaining in the Fund after the repayment of a liability is under 1% of the value of the realised turnover on the Exchange for the previous year, the Exchange shall notify its members that payment of instalments is to be resumed.

4.3.2.9 Pricing policies

The CDAD applies full cost pricing to the services offered. Currently the affiliation fee is BGN 1,000 (€511) for banks and BGN 500 (€256) for non-banks. The membership fee is BGN 500 (€256) per year. The transfer charge is BGN 0.35 (€0.18). The register fees depend on the type of joint stock company and the number of its shareholders.

4.3.2.10 Main projects and policies being implemented

The CDAD plans to offer the joint stock companies different kinds of service, such as the organisation of shareholders' meetings, distribution of dividends, etc.

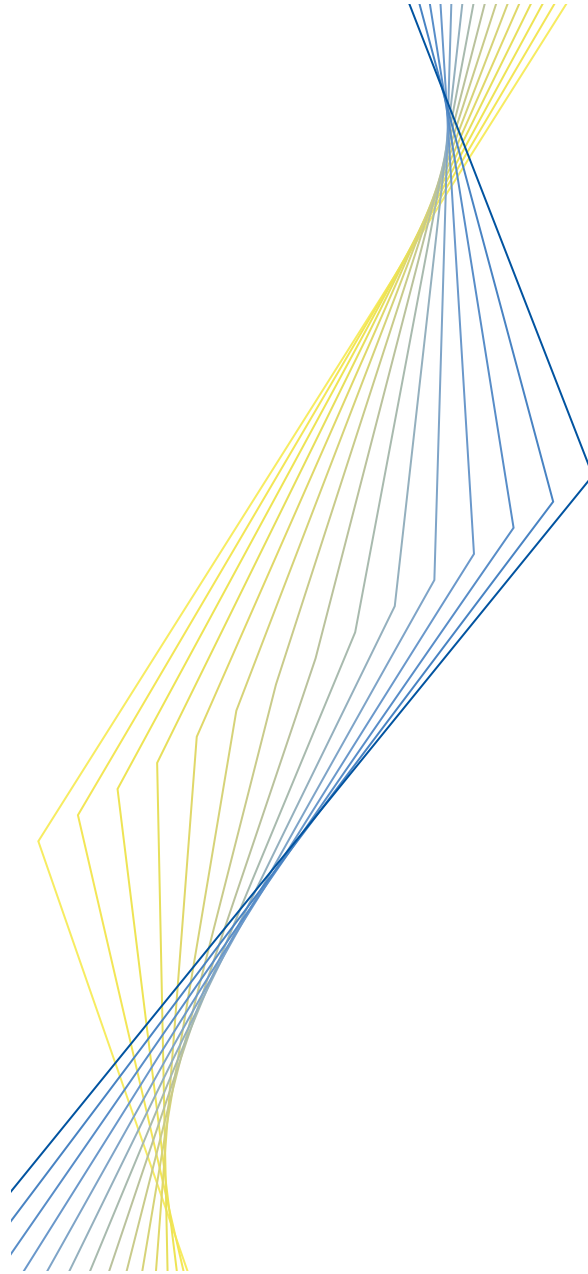
4.4 The use of the securities infrastructure by the Bulgarian National Bank

Since the introduction of the currency board arrangement in July 1997 the Bulgarian National Bank has conducted no monetary policy operations based on outright sales and purchases of securities or on repo operations.

Bulgaria



EUROPEAN CENTRAL BANK



Cyprus

August 2002

Cyprus

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List of abbreviations

ACCB	Association of Cyprus Commercial Banks
CAP	Chapter of the Laws of the Republic of Cyprus
CCH	Cyprus Clearing House
CCI	Co-operative Credit Institution
CIR/DC	Central Information Registry for Dishonoured Cheques
CSE	Cyprus Stock Exchange
CYP	Cyprus pound
JCC	JCC Payment Systems Ltd.
MRA	Minimum Reserve Account

Introduction

The Government and the Central Bank of Cyprus are taking steps to liberalise the financial system and achieve harmonisation with the *acquis communautaire*. In view of this process, the Bank has completed the drafting of and legal vetting process for the new Central Bank of Cyprus legislation and the pertinent constitutional provisions. This will ensure the statutory independence of the Central Bank of Cyprus, prohibit direct public sector financing by the Bank, and achieve compatibility, in all material respects, with the relevant provisions of the Treaty on European Union and the Statute of the European System of Central Banks and of the European Central Bank. This draft Central Bank of Cyprus legislation also incorporates, among other objectives of the Bank, appropriate provisions for the smooth operation of payment and settlement systems and contains explicit provisions for the oversight of such systems. It is envisaged that the draft legislation will be enacted by the end of June 2002. Furthermore the Central Bank of Cyprus has prepared draft legislation for transposing into national legislation Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems. This legislation is currently undergoing legal vetting.

Harmonisation measures include not only the enactment of legislation transposing EC Directives, but also setting up the institutional framework necessary for the implementation of the *acquis* and the smooth functioning of the financial system under the liberalised regime. One such change will be in the organisational structure of the Central Bank of Cyprus to facilitate its policy formulation and oversight functions regarding payment and settlement systems.

With regard to means of payment, cash and cheques continue to be the two main instruments used in the settlement of transactions in Cyprus. However, the use of

credit cards and, to a lesser extent, debit cards has increased substantially in recent years due to promotional effort on the part of the banks and wider acceptance on the part of the public. The banks are actively marketing electronic means of banking services, including payments, which are offered through ATMs, the internet and mobile phone technology. Currently, five payment and settlement systems are in operation in Cyprus, dealing with credit transfers (two systems, one for large-value transfers and one for retail), cheques, payment cards and securities. The large-value credit transfer system and the cheque clearing house are operated by the Central Bank of Cyprus and both settle in central bank money. A joint venture company established by the commercial banks operates the cards payment system, and the securities system is operated by the Cyprus Stock Exchange (CSE), which is a semi-government organisation. The latter two systems settle across accounts held with commercial banks. The retail credit transfer system came into operation on 9 November 2001. The purpose of this new system is to replace the previous transfer processes with a more automated and efficient method and, in the medium term, to absorb a sizeable part of the payments currently effected by cheque. This system is also operated by the above-mentioned joint venture company, but settles across accounts held at the Central Bank of Cyprus.

Current developments in payment systems include the introduction of a Central Information Registry for Dishonoured Cheques (CIR/DC) to combat this practice, and the enhancement of the large-value credit transfer system in order to comply with the standards and policies applied by the Eurosystem. The Central Bank of Cyprus is actively involved in both projects, as it chairs the Committee responsible for the setting up and administration of the CIR/DC and owns and operates the large-value credit transfer system. In the area of SSSs, the CSE has introduced a CSD and is

in the process of dematerialising all quoted securities by gradually transferring them onto the new system. Processes in all of these

projects are well advanced and are scheduled for completion by end-2002.

I Institutional aspects

I.1 The general institutional framework

Institutional framework

The key players in the area of payment systems are primarily the institutions that comprise the banking system. At the apex of the banking system is the Central Bank of Cyprus which promotes legislation (currently through the Ministry of Finance), issues regulations, supervises banking institutions, operates payment systems and, with the proposed new Central Bank of Cyprus legislation, will oversee payment and settlement systems. The Bank's role is described in more detail in Section 1.2. The banking institutions may also be involved in the formulation of policy in the payment systems they participate in, either on an individual basis or collectively through the Association of Cyprus Commercial Banks (ACCB) or the Co-operative Central Bank (a bank authorised by the Central Bank of Cyprus which acts as a settlement and clearing agent for the Co-operative Credit Institutions – CCIs). The operator of two of the retail payment systems in Cyprus, those for payment cards and retail credit transfers, namely JCC Payment Systems Ltd. (JCC), is described in Section 3.4.2.

The institutions involved in the SSSs are the CSE, which operates the system, and the Securities and Exchange Commission, which supervises it. Their respective roles are explained in Section 4.

Legal framework

Cyprus is currently enhancing existing legislation (Bills of Exchange Law, Contract Law,

etc.) through the drafting of specific legislation and regulations appropriate to payment systems.

In this respect, the Central Bank of Cyprus has transposed the provisions of Directive 97/5/EC of the European Parliament and of the Council of 27 January 1997 on cross-border credit transfers by issuing mandatory instructions to banks under the provisions of the Banking Law of 1997 in November 2000 with effect from 1 April 2001. It should be noted that the provisions regarding compensation in case of delay or non-execution of a transfer will become effective upon Cyprus' accession to the EU. Legislation relating to the provisions of Directive 98/26/EC is currently being drafted by the Central Bank of Cyprus and is expected to be adopted before accession to the EU. With regard to consumer protection and certain banking services, the revised Consumer Credit Law, prepared by the Ministry of Commerce, Industry and Tourism, was enacted in March 2001. The amended Law took account of the provisions of all the relevant EU legislation (Council Directive 87/102/EEC of 22 December 1986, Council Directive 90/88/EEC of 22 February 1990, Directive 98/27/EC of the European Parliament and of the Council of 19 May 1998, and Directive 98/7/EC of the European Parliament and of the Council of 16 February 1998) and came into effect on 1 June 2002. The legal framework relating to securities is described in Section 4.1.1. and the legal framework regarding the role of the Central Bank of Cyprus is set out in Section 1.2.1.

1.2 The role of the Central Bank of Cyprus

1.2.1 Payment systems oversight

Statutory responsibilities

The Central Bank of Cyprus has completed the drafting of and legal vetting process for a new Central Bank of Cyprus Law and the pertinent constitutional provisions. This will ensure the statutory independence of the Central Bank of Cyprus, prohibit direct public sector financing by the Bank, and achieve compatibility in all material respects with the relevant provisions of the Treaty on European Union and the Statute of the ESCB. The draft Central Bank of Cyprus Law also makes the smooth operation of payment and settlement systems one of the Bank's objectives, and contains provisions for the oversight of payment systems. More specifically, the Central Bank of Cyprus shall have the power to promote, regulate and oversee the smooth operation of payment and settlement systems. The Central Bank of Cyprus may, by notice in the Official Gazette (the official journal of the Republic of Cyprus), place under its oversight payment and settlement systems operating in Cyprus. The Central Bank of Cyprus shall issue directives regulating the functions and operating procedures of systems under its oversight – either of a general nature relating to all systems under its oversight or of a specific nature relating to a particular system or group of systems. The Central Bank of Cyprus will be empowered to suspend the operation of a system or terminate the participation of any member of a system under its oversight. The Central Bank of Cyprus may also impose administrative penalties on any member or operator of a system under its oversight in the case of non-compliance with any of the terms relating to the functioning of the said system, in accordance with pertinent directives that will be published by the Central Bank of Cyprus in the Official Gazette of the Republic.

As regards Directive 97/5/EC, a committee has been established under the auspices of the Central Bank of Cyprus, with the responsibility of investigating disputes between banks and their customers and taking appropriate action for the settlement of the disputes. The committee is chaired by the representative of the Central Bank of Cyprus. Other participants include the representatives of the ACCB, the Consumers' Association and the Law Office of the Republic of Cyprus. As already mentioned, the provisions regarding compensation in case of delay or non-execution of a transfer will become effective when Cyprus joins the EU.

The establishment of common rules

The Central Bank of Cyprus is most influential with regard to the two major payment systems operating in Cyprus, namely: (i) the large-value credit transfer system, which operates under terms determined by the Central Bank of Cyprus, and (ii) the retail cheque clearing system (the Cyprus Clearing House – CCH), which operates under the auspices of the Central Bank of Cyprus and is governed by the Cyprus Clearing House Committee (a committee chaired by the Central Bank of Cyprus).

Banking supervision and audit

The Central Bank of Cyprus, in its capacity as the competent authority for banking supervision, aims to ensure the soundness of the banking institutions and of the banking system. Following the enactment of the Banking Law of 1997, as last amended in 2000, all material provisions of the relevant EC Directives on prudential supervision were transposed into national legislation. Mention should be made of the fact that no instances have ever occurred in Cyprus 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 and settlement systems. This is due, to a large extent, to the close and effective

supervision of banks by the Central Bank of Cyprus and to the prudent operations of the banks themselves.

The Central Bank of Cyprus is audited by the Auditor General of the Republic. Thus transactions relating to the large-value credit transfer system and the CCH are subject to the normal auditing procedures of the Central Bank of Cyprus' auditors, in addition to those of the Bank's Internal Audit Department.

1.2.2 Activities in the area of securities clearing and settlement systems

The Central Bank of Cyprus acts as the government's agent in issuing and managing the domestic public debt. It is responsible for the issue, either by subscription or by auction, redemption and repayment of government borrowing instruments (Treasury bills and development stocks), and for the maintenance of the holders' registers, in accordance with the Treasury Bills Law of 1989, as last amended in 1999 and the Loan (Development) Law of 1968, as last amended in 2001.

Since April 1997, the securities issued through auction have been listed and traded on the CSE. Thus the Central Bank of Cyprus is a participant in the CSE system, which is described in detail in Section 4, and through its representative on the CSE floor may intervene directly in the secondary market regarding quoted government securities when deemed necessary. As a participant in the CSE, it is obliged to hold an account with the private organisation that operates the cash settlement side of securities transactions.

The Central Bank of Cyprus will be involved in the dematerialisation and transfer of the registers of quoted government securities to the CSE system.

1.2.3 The operational role of the Central Bank of Cyprus

The Central Bank of Cyprus owns and manages the two most important payment systems in Cyprus, namely the large-value credit transfer system and the CCH (these systems are described in detail in Sections 3.3 and 3.4.3.2 respectively). The Central Bank of Cyprus also participates in these two systems. The Central Bank of Cyprus is the settlement agent for the Retail Credit Transfer System described in Section 3.4.3.1, in which it plans to become a participant in the near future.

The provision of settlement accounts

Banks which are authorised to do banking business in Cyprus are required to maintain balances of no less than 6.5% of their fortnightly average deposit liabilities on accounts with the Central Bank of Cyprus 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, it is in the banks' interest to ensure that they have adequate funds in the MRAs. The MRAs are the only operational accounts of the banks and are used for the settlement of the large-value credit transfer system, the Retail Credit Transfer System and the CCH transactions (see Sections 3.3, 3.4.3.1 and 3.4.3.2), and for monetary policy transactions.

Several government departments and agencies maintain current accounts with the Central Bank of Cyprus which are used to effect credit transfers and for the settlement of cheques drawn on these accounts, and which are cleared through the CCH.

The provision of credit facilities

The Central Bank of Cyprus provides the commercial banks with an overnight facility (Lombard type) which is fully collateralised with government securities. There is no limit to the size of this facility, provided it is collateralised as required, but the Central Bank of Cyprus reserves the right to constrain the facility in the event that excessive use may jeopardise its monetary policy objectives. This

facility, when utilised, is credited to banks' MRAs.

1.3 The role of other private and public sector bodies

There are no other public or private sector bodies that play an important role for payments and securities clearing and settlement systems in Cyprus.

2 Payment media used by non-banks

2.1 Cash payments

The legal tender of Cyprus is the Cyprus pound (CYP) which is divided into 100 cents. The Central Bank of Cyprus has the sole right to issue banknotes and coins under the Central Bank of Cyprus Law. Currently there are four denominations of banknotes in circulation – CYP 1, CYP 5, CYP 10 and CYP 20 – and six denominations of coins – 1 cent, 2 cents, 5 cents, 10 cents, 20 cents and 50 cents. The most commonly used banknote denomination is the CYP 10 banknote. The Central Bank of Cyprus is responsible for withdrawing from circulation and replacing demonetised and defective banknotes and coins. Surplus banknotes and coins are removed from circulation by commercial banks, which return them to the Central Bank of Cyprus or hold them to the order of the Central Bank of Cyprus at appointed cash centres.

Cash is the main means of settling retail transactions, although cashless means of payment are increasingly gaining in market share. The share of cash in MI has gradually declined, from 42.9% at 31 December 1994 to 32.8% at 31 December 2001.

2.2 Non-cash payments

2.2.1 Credit transfers

Credit transfers are effected between accounts held at the same bank (interbranch) through instructions received in writing, via ATMs, personal computers (through direct links or over the internet), mobile telephones through "call centres".

Interbank credit transfers were until recently executed in their totality via an instrument called an agent's claim voucher (see Section 3.4.3.2). However, on 9 November 2001, five commercial banks introduced an electronic system for retail credit transfers (see Section 3.4.3.1). In the two months of operation to 31 December 2001 the system processed 12,000 transactions amounting to CYP 5.4 million (€9.3 million).

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 remain unpaid seven days after presentation have a number of adverse effects on the smooth functioning of transactions in the economy but, overall, do not seriously threaten the payment system, given that a substantial proportion of these are honoured in subsequent presentations. In 2001 the total value of cheques returned unpaid owing to insufficient funds was 2% of the total cheques issued by customers of commercial banks. The Criminal Code provides for penalties of a fine of up to CYP 1,500 (€2,586) and/or two years imprisonment for issuing cheques that remain unpaid seven days after presentation for payment. In an effort to tackle the problem, the Banking Law of 1997 and the Co-operative Societies Law of 1985 were amended to enable the Governor of the Central Bank of Cyprus and the Commissioner of Co-operative Development respectively to issue instructions regarding the setting-up of a CIR/DC. The relevant instructions have been prepared and are expected to be put into effect once the technical solution has been implemented. The administration and maintenance of this register has been assigned to a special committee consisting of representatives of the Central Bank of Cyprus, the ACCB, the Department of Co-operative Development and the Law Office of the Republic of Cyprus. Offenders will be subject to administrative sanctions imposed by the special committee and enforced by the banking institutions.

The clearing of cheques takes place at the CCH (see Section 3.4.3.2). Cheques processed through the CCH are denominated in Cyprus pounds only. Payments in foreign currency can be settled through bank transfers or by banker's draft. In 2001 the number of cheques presented through the CCH was 16.5 million (in 2000: 16.7 million) and had a total value of CYP 11.9 billion (€20.5 billion) (in 2000: CYP 17.5 billion, or €30.7 billion).

Another form of bill of exchange is the postal draft, which is used by the Government in order to pay various state benefits. This payment instrument is drawn on the Central Bank of

Cyprus 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 cashed in at post offices, whereas nowadays the bulk of them are cashed in at banks. Postal drafts are delivered daily by the commercial banks to the Central Bank of Cyprus for credit to the MRAs, in good faith, and the drafts are then dispatched to the Social Insurance Department. In 2001 the number of postal drafts settled reached 1.25 million (in 2000: 1.18 million) amounting to CYP 290.0 million (€500.0 million); (in 2000: CYP 273.7 million, or €480.2 million).

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 was tremendous growth in the use of payment cards in the 1990s as these instruments gained wide acceptance among merchants and users alike. Further growth is expected with the increased use of debit cards and EFTPOS. The banks issue cards in co-operation with the two major international card operators, namely Visa and MasterCard. The POS network is owned and managed entirely by JCC, which services all participating banks and merchants. The total number of cards in circulation in Cyprus in 2001 was 703,000 (an increase of 13% from end-2000).

Debit cards

Separate debit card products were first introduced in 1984 but have only been promoted on a larger scale since 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.

In 2001, there were 3.4 million debit card transactions, amounting to CYP 174.0 million (€300.0 million) compared with 2.4 million transactions in 2000, amounting to CYP 121.1 million (€212.5 million).

Credit cards

Credit cards usually have a credit facility with a pre-set limit and a credit period. If the balance is settled in full within this period, the cardholder is not charged interest. Credit cards were first introduced in Cyprus in 1983. A flat annual fee is charged for some cards depending on the benefits offered (e.g. free travel insurance and purchased goods insurance).

In 2001 7.8 million payments were effected by credit card, amounting to CYP 369.7 million (€637.4 million), compared with 6.4 million transactions in 2000, amounting to CYP 304.6 million (€534.4 million).

Travel and entertainment cards

Travel and entertainment cards issued by local banks do not differ from the above description for credit cards 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.

Delayed debit cards or charge cards

Diners Club and American Express are both represented locally by commercial banks, 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

There are two types of retailer card: affiliated cards and loyalty cards. Affiliated cards are credit cards, which are 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 bank level, they are excluded from the statistical information on credit cards. Loyalty cards are usually issued by a retailer to attract repeat business through a points scheme or by offering discounts or gifts and, as such, are not payment cards.

Prepaid cards

There is only one type of single-purpose stored-value card in Cyprus, the phonecard. The Cyprus Telecommunications Authority introduced the first single-purpose prepaid cards with microchip technology in early 1999 and had completely replaced the old technology by the third quarter of 1999.

Virtual cards

Two banks have introduced virtual cards (essentially a separate account) for exclusive use in transactions carried out over the internet. One of these cards can only be used if the account has sufficient funds available – no credit limit is attached – whereas the other card is a credit card with a credit limit of up to CYP 500 (€862).

Automated teller machines

At the end of 2001, each bank effectively owned and operated its own ATM network (a total of 307 ATMs). ATMs were initially designed to dispense cash, but they now offer a variety of services in addition to cash withdrawals, including cash deposits, balance enquiries, ordering of chequebooks and statements of account and the preparation of mini-statements. Currently, ATM switching takes place between most banks, and cash withdrawals at another bank's ATM are

charged a standard fee of CYP 0.50 (€0.86). The settlement of these transactions, as with cash withdrawals by holders of foreign-issued cards, is carried out through JCC. Other services can only be accessed through the ATMs of the card issuing bank.

Electronic funds transfer at point of sale

The network for POS (manual) and EFTPOS transactions is owned and managed by JCC, which services all participating banks and merchants and also administers the authorisation centre for transactions. At the end of 2001 there were 13,600 card accepting devices in operation in Cyprus, 9,700 of which were electronic.

2.3 Recent developments

An initiative is under way to link the individual ATM networks together to create a national network. This would make it possible to use cards issued by any local bank for cash withdrawals and balance enquiries at any ATM in the country. Furthermore, some banks are looking to further develop home banking by offering more internet and telephone banking services. With the implementation of the retail credit transfer system, interbank credit transfers are now being offered through a variety of channels.

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 also Sections 2.2.1, 2.2.2 and 2.2.4). Systems are not interdependent, although three of these four systems settle in central bank money. There is no domestic system for the settlement of transactions in currencies other than the Cyprus pound. Cross-border transactions are settled through an extensive network of foreign correspondents of the Central Bank of Cyprus and of the commercial banks.

The payment instructions, submitted either by SWIFT or manually, are booked to the participants' accounts held by the Central Bank of Cyprus on an individual basis.

3.3.1 Operating rules

The operating rules are set by the Central Bank of Cyprus as the owner of the system and having regard to its objectives (see Section 1.2.1) and policies. For example, the prohibition of back-value transactions for banks was introduced as part of the monetary policy reform of 1996.

3.2 The real-time gross settlement system

There is no RTGS system in Cyprus.

3.3.2 Participation in the system

3.3 The large-value payment system

The large-value credit transfer system is an electronic bilateral gross settlement system.

Participation in the system is open to all the holders of accounts denominated in Cyprus pounds which are held with the Central Bank of Cyprus. Therefore participation is restricted to institutions entitled to hold accounts with the Central Bank of Cyprus. As a result, all the commercial banks are direct participants in the system. Furthermore, government departments

and government agencies that maintain accounts with the Central Bank of Cyprus may also execute payments through this system. Currently there are 40 participants in the system.

3.3.3 Types of transaction handled

Transactions may be interbank, intra-governmental or between the participating institutions. The system also handles funds transfers in respect of monetary policy transactions as well as overnight facilities and deposits by banks.

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 Central Bank of Cyprus. Some transfers are between accounts of government agencies and semi-governmental organisations with the Central Bank of Cyprus and accounts which they maintain with one or more commercial banks, as conventional bank customers performing Treasury management.

3.3.4 Operation of the system

The system is in operation during the banks' 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 Central Bank of Cyprus by the participants, via SWIFT, by mail or in person, in the prescribed format. These payment instructions are batched and processed: one processing cycle for manual instructions (at 1.30 p.m.; 12.30 p.m. C.E.T.) and three for SWIFT instructions (at 8.30 a.m., 12.30 p.m. and 2.15 p.m.; 7.30 a.m., 11.30 a.m. and 1.15 p.m. C.E.T. respectively), with the last one being effected prior to closedown of the system. On the following working day, SWIFT advices and SWIFT statements 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; such a restriction does not however apply to the accounts of the other participants. In practice, instructions can be withdrawn by the paying bank prior to processing, from the time of transmission to the Central Bank of Cyprus until the next processing cycle on the execution date of the payment instruction. Instructions are deemed to be final and irrevocable once they have been processed by the Central Bank of Cyprus. Corrections can only then be initiated by relevant instructions from the receiving institution. The arrangement is based on a gentleman's agreement and no instances have occurred of legal measures being required to resolve a dispute. The system accepts forward-dated transactions without time limitation. These instructions are processed first on the relevant value date.

3.3.5 Transaction processing environment

Users may submit payment instructions via SWIFT, by mail or in person. The Central Bank of Cyprus has SWIFT Alliance Access in place which runs on an IBM RS/6000 with the AIX operating system (with disk mirroring). The system was developed in-house and runs under Oracle applications on Sun Solaris.

3.3.6 Settlement procedures

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. Both legs of each transaction are settled simultaneously on the same value date.

3.3.7 Credit and liquidity risk

The processing cycle of the system includes a check for adequacy of funds. If the balance of the payer's account is insufficient, the transfer is not processed and an exception is reported to the supervisor of the system. The transactions are posted every hour to the Central Bank of Cyprus' accounting system. Other transactions processed through the online accounting system may however reduce the payer's balance prior to the posting of the large-value credit transfer system's transactions to the MRAs. However, the balances maintained at present in the banks' MRAs substantially cover all their transactions, and credit and liquidity risks are considered very limited.

3.3.8 Pricing

No fees are charged by the Central Bank of Cyprus in connection with the large-value credit transfer system.

3.3.9 Statistical data

In 2001, the large-value credit transfer system processed 55,000 transactions amounting to CYP 42.8 billion (€73.8 billion). Of these 88.3% by volume and 66.2% by value were transmitted through SWIFT. The 2001 transactions showed an 11.6% increase in volume and a 47.1% decrease in value compared to the corresponding 2000 figures. The substantial decrease in value is a reversal of the previous substantial incremental trend whereby value increased by 392.8% in the two-year period from 1999 to 2000 due to frenzied activity on the CSE which has now subsided.

3.4 Retail payment systems

3.4.1 E-money schemes

At the end of 2001 there were no e-money schemes operating in Cyprus.

3.4.2 Card-based schemes

There is a single service provider for card-based schemes in Cyprus called JCC, which was formed in 1990 by six local commercial 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,¹ this section will cover the payment cards system, which has been its core business thus far. JCC authorises, clears and settles all the transactions for cards issued under the banners of Visa International, MasterCard International, American Express and Diners Club International.

Operating rules

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

Participation in the system

There are nine participants in the system – the six shareholders in JCC and three other local banks that have also signed a Letter of Agreement with the company, where the participants adopt the system's rules. The participation of a new applicant is subject to majority approval by 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.

Types of transaction handled

JCC handles the clearing and settlement of debit and credit card transactions, including

¹ JCC undertook the technical evaluation of the hardware and specifications of the software used for cheque clearing for the commercial banks. It also developed the retail credit transfer system (see Section 3.4.3.1).

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.

Operation of the 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 – depending on the country of issue. The transactions for foreign cards are sent abroad electronically by JCC for clearing and settlement to each international payment scheme. Each day, JCC produces an interchange file 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 between one working day for EFTPOS transactions and five working days for paper vouchers.

Transaction processing environment

The JCC computer systems are linked to all the banks in Cyprus via dedicated leased lines with backup facilities in place. JCC is also linked to Visa and MasterCard via leased lines. Merchants with EFTPOS terminals send their transactions via the public telephone network to JCC for processing. The exchange of data files with the banks is at present carried out by file transfer via leased lines.

Settlement procedures

For settlement with international payment schemes, JCC maintains accounts at foreign banks. For the settlement with local banks, JCC maintains current accounts at local, participating banks. These current accounts are used as settlement accounts with JCC acting as a kind of central counterparty. 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.

Credit and liquidity risk

The settlement of obligations on a net basis reduces the liquidity risk to the participants in the system. The credit risk is reduced by way of settlement through accounts held by JCC at each participating bank, thus acting as a central counterparty, which is itself owned by the participants. Furthermore, the risks are not deemed to be significant, given the fact that the total average daily net exposure of transactions for cards issued by local banks for 2001 was CYP 1.1 million (€2.0 million).

Pricing

JCC is funded primarily by the merchant service charge. This charge varies, the maximum rate being 4.5% of the transaction value, although it is usually 2-3%. Charges are negotiated individually with merchants and depend on the turnover, average transaction amount and category of the merchant.

Statistical data

In 2001, the JCC payment cards system handled 14.3 million transactions (an increase of 22.6% compared to 2000) amounting to CYP 702.0 million (€1,210.3 million) (an increase of 25.1% compared to 2000). Of these transactions, 10.5% by volume were cash advances through ATMs. Foreign issued cards accounted for 28.3% by volume and 42.3% by value of the transactions processed by the system, due to the tourist industry.

3.4.3 Retail credit, debit and cheque transfer schemes

3.4.3.1 Retail Credit Transfer System: JCCTransfer

Operating rules

The Retail Credit Transfer System is an electronic multilateral net settlement system, which was designed and implemented by JCC (see Section 3.4.1). The system, known as JCCTransfer, came into operation on 9 November 2001. The functioning rules of the JCCTransfer system are included in the Operating Regulations, which were prepared by JCC in co-operation with the banks and must be adopted by each applicant prior to participation (see below).

Participation in the system

Participation is open to any bank that is licensed to undertake banking operations in Cyprus and has accepted the Operating Regulations of the system by means of an Application for Participation/Authorisation Letter. There are currently seven participating commercial banks in the system. The second part of the above-mentioned letter is an irrevocable authorisation to the Central Bank of Cyprus to debit or credit the participant's MRA with the result of the daily clearing process, which is carried out by JCC. The application for participation is approved by the Board of Directors of JCC.

A participant may withdraw from the system by giving two months' written notice, or participation is automatically terminated in cases of bankruptcy, insolvency or revocation of banking licence.

Types of transaction handled

The JCCTransfer system handles customer transfers denominated in Cyprus pounds of up to CYP 10,000 (€17,240) between two participating banks. These may be one-off credit transfers of funds or they may be

repetitive (e.g. standing orders or payroll payments). The system also handles returned transactions (transfers of funds that could not be applied to the beneficiary's account due to erroneous or incomplete information) and rejected transactions (where processing of transactions could not be completed by JCC).

Operation of the system

The participating banks collect payment instructions from paying customers through various channels (branch, ATM, internet) and prepare transaction files which are forwarded to JCC by 12 p.m. (11 a.m. C.E.T.). Although participants may include payment orders received up to 11 a.m. (10 a.m. C.E.T.) of the same day, in practice they are batched per working day. This means that customer transactions are processed one day after the order was received. Then JCC has two hours in which to validate and process all the files. By 2 p.m. (1 p.m. C.E.T.) JCC sends the receiving banks' transaction files and the rejected transaction files to the paying banks. At the same time the net settlement positions are prepared and forwarded to the Central Bank of Cyprus for final settlement.

Transaction processing environment

The JCC computer systems are linked to all commercial banks in Cyprus via dedicated leased lines, with backup facilities in place, which are used for the exchange of data files.

Settlement procedure

The results of the daily clearing operation are forwarded to the Central Bank of Cyprus by courier for settlement on the participants' MRAs with the Bank at 1.30 p.m. (12.30 p.m. C.E.T.).

Credit and liquidity risk

No specific risk management measures are applied. However, as the paying bank receives the funds prior to onward transmission there

is no credit risk involved. Transactions are deemed irrevocable when the paying bank's transaction file is forwarded to JCC for processing. The settlement of transactions is carried out in central bank money as the participants' net positions are settled across the banks' MRAs. Subsequently, the participants credit the beneficiaries' accounts on the same day as settlement at the Central Bank of Cyprus.

Pricing

JCC recovers its costs by charging a fixed fee per transaction. The fees charged to customers by the commercial banks vary depending on the transaction medium used, the type of transaction and each bank's pricing policy.

Statistical data

During the last two months of 2001, the system processed 12,000 transactions amounting to CYP 5.4 million (€9.3 million).

3.4.3.2 Cyprus Clearing House

The CCH was established in June 1964 in order to facilitate the exchange and clearance of cheques, postal drafts and similar instruments drawn by one bank on another.

Operating rules

The CCH operates from the Central Bank of Cyprus' premises and a representative of the Bank is appointed 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 Central Bank of Cyprus representative. These regulations determine the payment instruments to be cleared by the CCH, the daily timetable, the time limits for returned cheques, the method of resolution of differences, the technical specifications and

standards of the electronic data exchanged, as well as the method of settlement.

Participation in the system

The CCH has 10 direct members (including the Central Bank of Cyprus), and functions under the auspices of the Bank. There is one indirect member, which is a bank, and is represented at clearing exchanges by the Central Bank of Cyprus. Participation in the system is open to any institution authorised by the Central Bank of Cyprus to operate as a bank in Cyprus and whose application for participation has been accepted by the majority of the existing members of the CCH.

Types of transaction handled

The payment instruments cleared through the CCH are cheques, claims arising from direct deliveries or special presentations of cheques, agents' claim vouchers and claims for unpaid cheques. Special presentations are conducted for large-value cheques² at the discretion of each bank. These are presented on the day of deposit to the drawer's bank 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.

Operation of the system

Cheques in Cyprus have a uniform format, which was agreed by the members of the CCH, to enable the use of OCR technology in capturing and processing information. Every

² The Central Bank of Cyprus processes as special presentations the cheques that exceed CYP 50,000 (€86,200). Each commercial bank sets its own limit internally.

day at 9.15 a.m. (8.15 a.m. C.E.T.) when the CCH session begins, 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 and value written on the envelope. These amounts are used to calculate each bank's net position. The exchange of instruments between members is at the same time accompanied by the exchange of electronic media (computer diskettes) containing specific information about the presented items (which comprises data captured³ from the OCR code line in the cheques exchanged).

The results of the daily session, i.e. the participants' deliveries, are input into the CCH system and the net positions are calculated and settled on the banks' MRAs on a multilateral netting basis.

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 CCH system was developed in-house and runs under Oracle applications on Sun Solaris.

Settlement procedures

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 after their departure at 11 a.m. (10 a.m. C.E.T.). Settlement takes place in central bank money through the banks' MRAs on a deferred net settlement basis.

Credit and liquidity risk

No specific risk management measures are applied. However, as settlement of the CCH net positions takes place across the banks' MRAs, which at present maintain substantial balances, credit and liquidity risks are considered to be very limited.

Pricing

No fees are charged by either the CCH or the Central Bank of Cyprus in connection with the cheque clearing system.

Statistical data

The number of cheques presented through the CCH in 2001 was 17.7 million, amounting to CYP 12.2 billion (€21.0 billion). The corresponding figures for 2000 were 17.9 million cheques, amounting to CYP 17.8 billion (€31.2 billion) respectively.

3.5 Future developments

With regard to the large-value credit transfer system, a project is under way to enhance the existing system in order to satisfy the standards and policies established by the Eurosystem. In addition, it is planned to offer Central Bank of Cyprus account holders electronic access to comprehensive information about account movements and balances through web-enabled technology.

One of the objectives of JCC in the area of payment cards is to develop 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, electronic commerce (e-commerce) and electronic money (e-money) are being followed closely with JCC acting as national co-ordinator. Smart cards will be deployed before 2005, with smart-card enabled POS machines already being evaluated. Secured e-commerce is also under consideration, and it is planned to implement the international standards 3D-Secure and SPA by the end of 2002.

³ The information captured is: transaction code, cheque number, bank code, account number and amount.

The short-term objectives of the retail credit transfer system, JCCTransfer, are to increase the number of participants and the volumes of transactions, so that the system gains wider acceptance as a secure and efficient means of

payment. Public sector use of the system is also under consideration. In the medium term, it is expected that the system will be enhanced to accept direct debit payment instructions.

4 Securities settlement systems

4.1 Trading

4.1.1 Institutional aspects

The CSE started its operations on 29 March 1996 as a legal entity in the form of a public corporation body, by virtue of the Cyprus Stock Exchange Laws and Regulations, which were passed by the House of Representatives in 1993 and 1995 respectively. The CSE is a regulated exchange body where all transactions concerning corporate and public securities are carried out.

The Council of the CSE, appointed by the Council of Ministers, is responsible for the management of CSE and for the implementation of its policy. More specifically, the Council supervises the operation of the CSE and has exclusive authority over the management and administration of its assets, in accordance with the provisions of the following Laws and Regulations:

- the Cyprus Securities and Stock Exchange Laws of 1993, as last amended in 2000
- the Cyprus Securities and Stock Exchange Regulations of 1995 and 1997
- the Cyprus Securities and Stock Exchange (Public Offer for Acquisition of Securities and Merger of Companies Listed on the Stock Exchange) Regulations of 1997
- the Trading Rules (Electronic system)
- the Clearing and Settlement Rules

- the Cyprus Securities and Stock Exchange (Central Depository and Central Registry) Law of 1996 and 2001
- the Central Depository and Central Registry Regulations of 2001.

The Cyprus Securities and Exchange Commission (Establishment and Responsibilities) Law of 2001 assigns the responsibility of overseeing the capital market to the Securities and Exchange Commission which is independent. The Securities and Exchange Commission's tasks are to supervise the capital market, secure its smooth operation and development, and monitor transactions in transferable securities which take place both through the CSE and outside it. The only transactions that can occur outside the CSE (but are announced to the CSE) are gratuitous transfers of securities (usually between members of the same family), transfers following a court order (due to death or otherwise) and transactions exceeding CYP 100,000 (€172,414).

4.1.2 Operational aspects

Trading takes place through a fully automated, computerised system, via terminals installed at the stock brokerage firms' booths on the trading floor, offering the following:

- monitoring of market transactions
- participation in the trades by a simple method of order entry
- automatic update of trading information.

Table**Trading floor daily timetable:**

Pre-opening:	10.10 – 10.25 a.m. (9.10 – 9.25 a.m. C.E.T.)
Prices defined:	10.25 – 10.30 a.m. (9.25 – 9.30 a.m. C.E.T.)
Trading:	10.30 – 12.00 p.m. (9.30 – 11.00 a.m. C.E.T.)

Orders for trades are placed by the members of the CSE (brokerage firms), which forward their customers' orders. An order amongst other information includes the identification of the client; this may be an individual investor or any other legal entity. The trading floor timetable is shown in the table above.

At the end of 2001, 277 securities were listed on the CSE consisting of fully paid shares, bonds (corporate and government), treasury bills, convertible bonds, warrants and rights. The main participants in the market are the 41 members of the CSE and the listed issuers and investors.

The performance of the CSE is measured using two main indices:

- CSE All-Share Index
- FTSE/CySE 20

The CSE All-Share Index comprises all companies listed on the Exchange. The base date is 29 March 1996 and the base value is 100. The FTSE/CySE 20 is the index comprising the twenty highest performance companies listed on the CSE. The FTSE/CySE 20 has been established by FTSE and the CSE to ensure that the management and ongoing operation of the FTSE/CySE 20 index is independent and transparent. The base date is 30 November 2000 and the base value is 1000. The selection of the companies is based upon the ground rules for the management of the FTSE/CySE 20 index. The CSE is responsible for the daily operation of the FTSE/CySE 20, also for monitoring all corporate actions and price changes and implementing all constituent and weighting changes to the index.

In addition to the CSE All-Share index, there are twelve sectoral indices: Banks; Approved investment companies; Insurance companies; Manufacturing companies; Tourism companies; Trading companies; Building materials and Construction companies; Information technology companies; Financial services companies; Fish culture companies; Hotels; and Other companies. These indices are prepared daily by the CSE on the basis of all fully paid shares listed on the CSE.

At present, no OTC trading or cross-border transactions take place at the CSE. Foreign investors may invest in listed securities through the members of the CSE.

4.2 Clearing

There is no independent clearing house for securities in Cyprus. Clearing and settlement procedures are performed by the CSE (see Section 4.3).

4.3 Settlement

As part of continual efforts to develop, upgrade and bring up to date its systems, the CSE has introduced a fully automated computerised system, consisting of the Central Depository Registry and the Clearing and Settlement system. The aim is to computerise all clearing and settlement procedures, reducing the settlement cycle to three days. All securities being traded under the new system are dematerialised, and the transfers of securities, as well as any corporate actions (such as stock splits, bonus issues and rights issues), run through a central electronic book entry system at the CSE. The new system was introduced

on 23 July 2001 with the aim of gradually transferring all listed companies to the new system⁴.

The Central Depository Registry contains personal information for each investor, details of the securities owned by each investor and any changes in their holdings. In order to be able to trade on securities deposited in the Central Depository Registry, investors must have a depository account and trading account, appointing a controlling broker firm on this account. The trading account is used on the trading system and is linked to the investor's depository account. For investors to be able to sell securities from their depository account, they must grant a brokerage firm access to these securities (by completing the appropriate forms), since only brokerage firms are allowed to place orders on the trading floor. Access (the ownership remaining with the investor) is given for a specific amount of securities and to a specific brokerage firm (no other brokerage firm can have access to the same securities). A brokerage firm only places an order (buy or sell) with the authorisation of the investor. An investor can open many trading accounts with different brokers for "buy only" or "buy and sell" purposes. Investors who are existing shareholders at the time of loading the registries of new companies to the Central Depository Registry system do not need to open depository accounts, as their accounts are created automatically; they only need to open trading accounts. Investors who are not shareholders at the time of the official loading of a new registry need to open depository and trading accounts to be able to trade.

The only participants in the settlement procedure are brokerage firms, the CSE and the Holding bank (a commercial bank).

The clearing and settlement services provided are as follows:

- Running the settlement cycle.

- Monitoring payments by brokerage firms and ensuring that trades settle correctly and in a timely manner (DVP).
- Handling failure to pay and failure to deliver.

4.3.1 The settlement environment

The Central Depository Registry system processes trades due for settlement, deals with the securities side of settlement at the individual investor level and cash settlement at the brokerage firm level. The brokerage firms (market participants) are responsible for the delivery of the funds – not the individual investors for whom the transactions were carried out. The transfer of securities takes place within the investors' depository accounts. Securities are delivered electronically on the settlement date by the Central Depository Registry through a book-entry system and at the same time funds are transferred electronically by the Holding bank.

The system supports DVP settlement based on two settlement methods:

- Contractual netting settlement: All buy and sell transactions of each brokerage firm in a trading session that are below a certain limit (CYP 30,000; €51,724) are netted, with each brokerage firm being a net buyer or a net seller.
- Tft settlement: Each trade is settled individually with no netting.

Trades that exceed the limit mentioned above are designated for Tft settlement.

⁴ At present the old system (as described in the August 1999 edition of the Blue Book) runs in parallel with the new system being described in Section 4.

4.3.2 Settlement cycle

The settlement process results in securities being delivered in exchange for cash payment. Thus the process involves communication over several stages, between the Central Depository Registry (for securities movements) and the Holding bank (for funds movements), as follows:

The settlement cycle for both Contractual and TtT transactions is defined as the Trading Day (T) plus three working days (T+3). The money required for these transactions, on day T, must be deposited in the members' settlement accounts with the Holding bank by 12:30 p.m. (11:30 a.m. C.E.T.) of T plus two working days (T+2).

At trading day plus two working days (T+2) in the evening, the CSE forwards payment instructions to the Holding bank to escrow the payers' funds (members representing the buyers), that is, the payers' funds are moved from their settlement accounts to the CSE bank account with the Holding bank.

By 6.30 a.m. (5.30 a.m. C.E.T.) of the trading day plus three working days (T+3), the Holding bank sends to the CSE the Preliminary Bank Response to the Preliminary Files, containing the reconciliation of the balances in the Preliminary Files to the balances in the payers' escrow accounts.

When the CSE has confirmed that the members representing the buyers have sufficient funds, the cycle proceeds with instructions sent to the Holding bank to allocate funds from the CSE escrow account to the receivers' settlement accounts (members representing the sellers). Simultaneously, within the Central Depository Registry depository accounts, the securities that have been sold are delivered, with depository accounts of seller and buyer investors being updated.

4.3.3 Settlement batch jobs

4.3.3.1 Pass I – at T+2 (T: Trading date)

The preconditions for the DVP settlement are that sufficient funds are available in the payers' settlement accounts and sufficient securities are available in the sellers' depository accounts. The settlement cycle starts with Pass I. Pass I runs at the end of the day before settlement date (T+2), to ensure that sufficient funds are held by the members to be transferred the following morning. When the broker places an order for an investor in the trading system, the system validates the order against the investor's holdings that are available. This is carried out under the control of the specific brokerage firm.

Pass I processes the following:

- TtT trades
- Contractual netting trades
- Payment banking instructions (for payers)

4.3.3.2 Pass II

Pass II is the final process in the settlement cycle in which securities are transferred electronically from the sellers' depository accounts to the buyers' depository accounts; this is only the case, however, when the buyers' funds have been successfully transferred.

In the case of TtT trades, if a buyer fails to pay, the settlement of the trade is carried forward to the next day. In the case of contractual netting, before security transfers can take place, the system has to verify that all funds have been paid.

After securities have been transferred from the selling investors' depository account to the buyers' depository accounts, the final banking instructions file is sent to the Holding bank to transfer the funds from the CSE escrow account to the receivers' bank accounts.

4.3.4 Settlement Failures

Where a member is not in a position to fulfil its payment obligations, available funds from the Guarantee Fund and the Joint Compensation Fund may be used at the CSE's discretion to cover failures during the settlement cycle. The Guarantee Fund is created from contributions by each CSE member based on its everyday transactions, while the Joint Compensation Fund consists of a pre-defined amount of money which each member is obliged to provide.

Furthermore, the CSE director has the authority to intervene within the following framework:

- To buy in or sell out, as applicable, at the director's discretion, in order to complete the transaction. The member responsible owes the CSE the amount required for the completion of the transaction.
- To not allow the member responsible for the failure to trade until the member has fulfilled its responsibilities.

- To impose a fine, on the member responsible, for each day it fails to fulfil its responsibilities.

At present the possibility of failing to deliver securities is very small since holdings are pre-validated at the stage the member places the order.

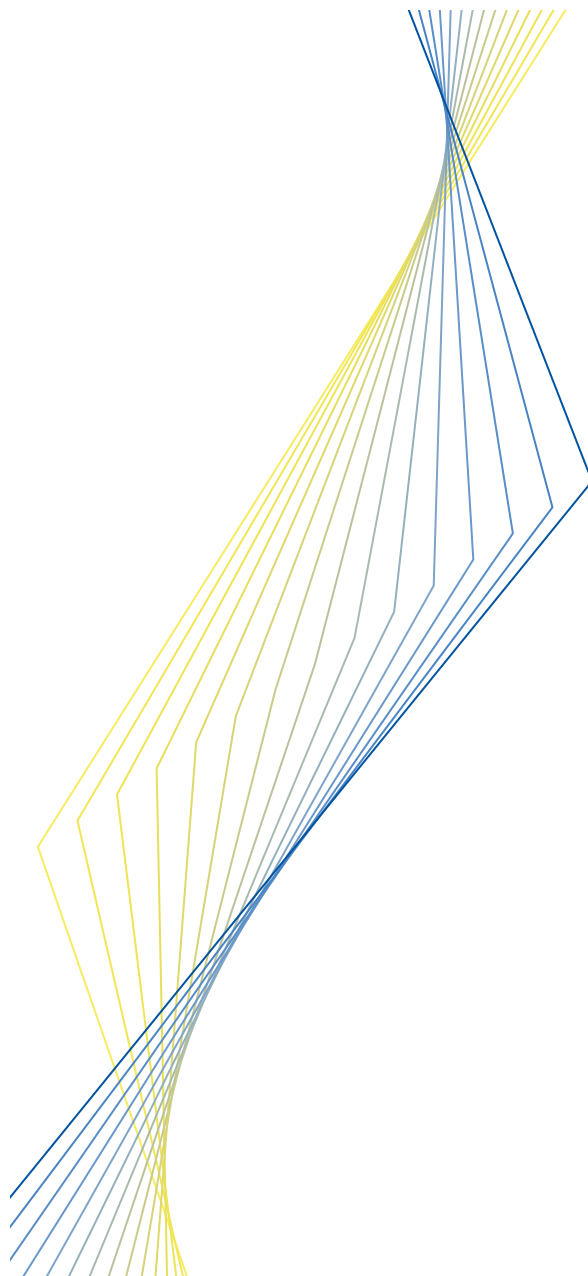
4.4 The use of the securities infrastructure by the Central Bank of Cyprus

The Central Bank of Cyprus maintains the registers of holders of domestic public debt and therefore updates the registers daily (at T+3) on the basis of the relevant transactions of the CSE. These securities can be used in monetary policy operations as mentioned in Section 1.2.3. As these securities have not yet been dematerialised, when they are used as collateral the appropriate operations department of the Central Bank of Cyprus marks them as such manually in the relevant register to prohibit their disposal. The role of the Central Bank of Cyprus as a participant in the CSE system is described in Section 1.2.2.

Cyprus



EUROPEAN CENTRAL BANK



Czech Republic

August 2002

Czech Republic

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List of abbreviations

BCA	Bank Card Association
CBA	Czech Banking Association
CERTIS	Czech Express Real-Time Interbank Gross Settlement
CERTIS-IS	CERTIS Information System
CERTIS-DSS	CERTIS Data Security System
CERTIS-MTS	CERTIS Message Transfer System
CSOB	Czechoslovak Commercial Bank – <i>Československá obchodní banka</i>
PSE	Prague Stock Exchange
SBCS	State Bank of Czechoslovakia – <i>Státní banka československá</i>
SCP	Securities Centre – <i>Středisko cenných papírů</i>
SKD	Short-term securities settlement system – <i>Systém krátkodobých dluhopisů</i> (TKD from May 1995 to June 2002, SKD since the second half of 2002)
SPAD	System for support of trades with shares and bonds – <i>Systém na podporu obchodování akcií a dluhopisů</i>
UNIVYC	Universal Settlement Centre (for securities) – <i>Univerzální vypořádací centrum</i>

Introduction

The Czech payment system is based in general on the nationwide payment system which was introduced in the mid-1970s by the State Bank of Czechoslovakia (SBCS). This system had introduced many new features including the unified numbering of accounts, the abolition of the physical circulation of payment documents and standardised numerical codes, instead of text description, to define the type and nature of payments.

As a result of the political changes in the former Czechoslovakia at the beginning of the 1990s, the banking market developed very rapidly. This made it necessary to introduce a modern, secure, reliable and effective interbank payment system. Therefore, in 1992, the SBCS set up a Clearing and Settlement Centre to handle all domestic currency payments between banks.

Nowadays, the payment systems infrastructure in the Czech Republic is provided by the Czech National Bank, commercial banks and the Czech Post Office. Payments between customers of the same bank are carried out by the bank itself using its own branches and internal information systems. The interbank payment system in the Czech Republic is predominantly managed and co-ordinated by the Czech National Bank, which was formed from the Czech part of the federal SBCS after

the division of Czechoslovakia at the beginning of 1993. The Czech National Bank owns and operates the Czech Express Real-Time Interbank Gross Settlement (CERTIS) system, which is currently the only interbank payment system in the Czech Republic. CERTIS is recognised as an operational payment system in both the Act on banks which is already in force, and the new Act on payments and payment systems, which will enter into force on 1 January 2003. The Act on payments and payment systems includes provisions which give the possibility of creating other payment systems in the Czech Republic. Such systems would have to obtain a licence from the Czech National Bank. Cross-border interbank payments are mainly carried out by means of correspondent banks and the SWIFT network.

The Czech Post Office, which is a state institution, also provides payment services, but does not perform the functions of a bank. It uses the services of banks to transfer funds.

There are three independent SSSs in the Czech Republic: *Systém krátkodobých dluhopisů* (SKD), *Univerzální vypořádací centrum* (UNIVYC) and *RM-SYSTÉM*. These systems are connected to CERTIS. In addition, there is the Securities Centre (SCP) which is the central register for all dematerialised securities except for Treasury Bills and Czech National Bank bills.

I Institutional aspects

I.1 The general institutional framework

I.1.1 The legal framework

Legal aspects relating to payments

Payments between private individuals and legal entities in the Czech Republic are considered to be a civil law relationship and are regulated by the 1964 Civil Code and the 1992

Commercial Code. These Codes also contain the basic principles on which banking contracts are based. To implement the interbank payment system, the SBCS issued the 1992 Interbank Payment System and Accounting of Banks Regulation, which is still in force and binding on all banks operating in the Czech Republic. Also in 1992, the SBCS issued the General Terms and Conditions (amended by the Czech National Bank in 1994, 1997 and 1998). The General Terms and

Conditions 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 to their customers.

Payment by cheque is regulated by the 1950 Bills and Cheques Act, based on the Geneva Convention, and by interbank agreements. The use of travellers' cheques is regulated by the Commercial Code.

In 1991, the Act on bankruptcy entered into force. The zero-hour rule was abolished by the 1998 amendment. The declaration of bankruptcy is effective from the moment it is announced by the respective court on its official notice board.

A legal framework for the development of electronic banking was created in 2000 through the adoption of the Act on electronic signatures. According to this Act, electronic signatures, which are subject to certification procedures by special authorities, are considered equivalent in legal terms to handwritten signatures.

On 1 May 2002, the harmonisation amendment to the 1992 Act on banks entered into force, which makes this Act fully compliant with the provisions of EU legislation in this field. Contrary to the provisions in place before the amendment, banks in the Czech Republic are no longer obliged to perform interbank payments exclusively by means of the CERTIS system.

The new Act on payments and payment systems will enter into force on 1 January 2003. This Act will transpose into Czech law Directive 97/5/EC of the European Parliament and of the Council of 27 January 1997 on cross-border credit transfers, Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems and Directive 2000/46/EC of the European Parliament and of the Council of 18 September

2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions. Amendments to the Civil Code, the Commercial Code, the Act on bankruptcy and the Act on international civil law and civil procedure, which relate to the Act on payments and payment systems, will also enter into force on 1 January 2003.

Article 10 of Directive 97/5/EC, which provides for the out-of-court settlement of consumer disputes, will be transposed into Czech law by an Act on financial arbiter, which will enter into force on 1 January 2003.

Legal aspects relating to securities

The functioning of the securities markets in the Czech Republic is governed by a range of laws defining the structure of the securities markets, their operating rules and the role of bodies involved. The relevant laws and their main objectives are as follows:

- The 1992 Commercial Code applies in general to the functioning of all types of company.
- The 1992 Act on securities (as last amended in 2001) governs major issues relating to securities issuance, the rights and obligations of securities market participants, and the tasks of the governmental bodies. The Act also regulates the functioning of the securities clearing and settlement institutions. Under this Act, the securities clearing and settlement institutions are subject to licensing by the Securities Commission and have to meet mandatory administrative, technical and staff requirements. It also covers derivative activities.
- The 1990 Act on bonds (as last amended in 2001) contains rules on bond definition, types of bond, issuance conditions, the rights and obligations of the issuers and possibilities of yield determination and bond redemption.

- The 1992 Act on the stock exchange (as last amended in 2000) governs the establishment and the activities of the Prague Stock Exchange (PSE). The Act lays down the rights and obligations of the bodies of the PSE and the rights and duties of their members. It also regulates stock exchange trades including the conditions for permission to conduct these trades. The Act contains provisions on 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 Act on investment companies and investment funds (as last amended in 2000) regulates the activities of financial institutions supervised by the Securities Commission. Investment companies collect funds by selling investment certificates and setting up open-ended funds. 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 and investment funds both played an important role in the first and second waves of the voucher privatisation (i.e. the privatisation of state-owned organisations between 1992 and 1995).
- The 1998 Act on the securities commission (as last amended in 2000) 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 Czech Ministry of Finance.

1.2 The role of the Czech National Bank

The Czech National Bank is the central bank of the Czech Republic and was constituted on the basis of the 1993 Constitution of the Czech Republic. It is independent from the Government. The basic rules and the Bank's activities are explained in the 1993 Act on the Czech National Bank, as last amended in 2002. This Act forbids the Czech National Bank to grant credit to the Government. It has its headquarters in Prague and seven branches located in major Czech regions. The branches provide services for local customers (predominantly the state budget institutions).

Under Article 98 of the Constitution of the Czech Republic, the primary objective of the Czech National Bank is to maintain price stability. The obligation to regulate the payment system and to establish the framework of rules for non-cash payments derives from the Act on the Czech National Bank. Article 2 (2) of the above-mentioned Act provides for the Czech National Bank to “manage the circulation of currency, administer payments and clearing between banks, promote smooth and efficient operation thereof, and contribute to ensuring sound and efficient payment systems and to their development”. For this purpose, the Czech National 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 Act on the Czech National Bank, the Bank is the sole issuer of banknotes and coins. It arranges the printing of banknotes and the minting of coins. According to the 1994 Czech National Bank decree, which lays down the procedure for accepting and handling money and providing compensation for incomplete and damaged banknotes and coins, the Czech National Bank, banks and other legal and natural entities are obliged to accept banknotes without restriction, while the

maximum number of coins to be accepted is restricted.

1.2.1 The oversight of payment systems and securities settlement systems

The Czech National Bank controls the CERTIS system, which is the only interbank payment system in the Czech Republic, and has, together with the Securities Commission, a shared oversight competence with regard to the SKD, which is one of the three Czech SSSs. However, the oversight of the Securities Commission does not apply to the Czech National Bank's activities concerning securities issuance and settlement. The new Act on payments and payment systems foresees that the Czech National Bank will oversee possible new payment systems, which would have to be licensed by the Bank.

The oversight of the other two SSSs (the UNIVYC and the RM-SYSTEM) is regulated by the Act on securities. Under this Act, the Securities Commission carries out oversight of these systems.

1.2.2 The operational role of the Czech National Bank

The Czech National Bank is “the bank of the banks” and “the bank of the Government”. It owns and operates the CERTIS system, which is currently the only interbank payment system in the Czech Republic. The system processes interbank payments in Czech koruna (CZK) regardless of whether they are of high or low values and of whether they are initiated directly by a customer's order or indirectly as a result of cheque, payment card or stock exchange transactions. The CERTIS system also provides for the cash settlement of all interbank payments arising from securities trades processed on the PSE (see Section 4.1.1) and in the RM-SYSTEM (see Section 4.1.2). The UNIVYC, which is a securities clearing and settlement institution responsible for the clearing

and settlement of all trades completed on the PSE, and the RM-SYSTEM are connected to CERTIS as third parties (see Section 3.2.2). Transactions in foreign currencies are not processed in CERTIS. For the purposes of the interbank payment system in the Czech Republic, the Czech National Bank maintains an account for each bank.

The Czech National 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 and by means of its seven regional branches.

Operation of the SKD (formerly the TKD)

The Czech National Bank is legally responsible for the operation of the SKD (see Section 4.3.1.1), which is used for the issuance, registration, clearing and settlement of all book-entry short-term fixed income securities with a maturity of up to one year (Treasury bills and the Czech National Bank bills). The SKD is a modernised version of the TKD, which was developed by the Czech National Bank as an in-house system and was in use under this name between May 1995 and June 2002.

1.2.3 Co-operation with other institutions

The Czech National Bank co-operates regularly with banks in collecting statistical data on cash and non-cash payments in the Czech Republic. It also holds consultations on developments in payment systems and securities clearing and settlement systems, e.g. with the Bank Card Association (BCA), the PSE and the Czech Banking Association (CBA).

1.3 The role of other private and public sector bodies

Banks

Banks operate on the basis of the 1992 Act on banks (as last amended in 2002), which lays down both the conditions to be met for setting up banks, as well as the rights and obligations of banks when performing banking activities. The Act on banks also stipulates that only banks may receive deposits from the public. Consequently, maintaining accounts and providing non-cash payment services are exclusively banking activities.

Banks are authorised to perform their activities on the basis of a licence issued by the Czech National Bank in agreement with the Czech Ministry of Finance. Most banks hold a universal licence, which permits them to carry out all principal banking activities. Banks are subject to banking supervision by the Czech National Bank to ensure the security of deposits and the sound functioning of the banking system.

At the beginning of 2002, there were 38 banks (including branches and subsidiaries of foreign banks) holding a banking licence for operation within the territory of the Czech Republic. All banks provide domestic payment services for their customers, but some banks (e.g. specialised or local banks) are not authorised to transfer payments abroad or to issue cheques and/or payment cards. Some banks have specialised in certain activities, for example, building societies accept deposits and provide mortgage loans to their depositors. The Czech State encourages saving at these banks by providing private account holders with a contribution related to the amount saved per year.

Savings and credit co-operatives

In 1995, a special law was passed laying down the regulatory framework for savings and credit

co-operatives, and in 1996 the first co-operatives started operating. These co-operatives are specialised non-bank institutions, which receive deposits, grant credits and provide payment services. As they are not authorised under the Act on banks, they are only entitled to provide services for their members, and they do not participate directly in the interbank payment system. The activities of the co-operatives are supervised by the Office of Supervision of Saving and Credit Co-operatives, which is a regulatory agency set up under the above-mentioned 1995 law.

This sub-sector was restored by the political willingness to resuscitate an old co-operative presence in the financial sector. Due to the absence of proper regulations and supervision, and to poor management, this sub-sector rapidly diversified its activities, but soon ran into major difficulties. The majority of licensed savings and credit co-operatives in the Czech Republic are now either under forced administration or in liquidation.

The Czech Post Office

The Czech Post Office operates on the basis of the 2000 Postal Act. It provides a primarily cash-based money transfer service which is used by most of the population, including the acceptance of cash to be transferred into accounts at banks and the paying-out of cash transferred from bank accounts. 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. It uses the services of banks for the transfers of funds to and from banks.

The Prague Stock Exchange

The PSE was established in 1992 as a joint stock company. Its activities are regulated by the Act on the stock exchange and it is guided

and supervised by the Securities Commission. Securities are traded on the PSE in the secondary market. The PSE works on a membership principle, the members being banks (approximately 50%) and securities brokers. According to the rules of the PSE, all members have to contribute to the Stock Exchange Guarantee Fund. All assets of the fund are held in cash.

Under the Act on the stock exchange, the PSE is not allowed to provide clearing and settlement services.

Universal Settlement Centre (for securities) (UNIVYC)

The UNIVYC is a subsidiary of the PSE. It is responsible for the clearing and settlement of all trades completed on the PSE. The UNIVYC is connected to the CERTIS system as a so-called third party (see Section 3.2.2), where the cash settlement of all payments relating to processed trade transactions is carried out.

The RM-SYSTEM

The RM-SYSTEM was established as a joint stock company, pursuant to the Act on securities, during the voucher privatisation period. The RM-SYSTEM is 100% owned by *Podnik výpočetní techniky*, the leading IT firm in the Czech Republic that carried out the voucher privatisation. The RM-SYSTEM is regulated and supervised by the Securities Commission in accordance with the Act on securities. The RM-SYSTEM also has its own internal rules and regulations known as the Trading Rules, which are authorised by the Securities Commission.

The RM-SYSTEM is an electronic OTC market. By contrast with the PSE, participation is not based on membership, and the RM-SYSTEM is directly accessible to any market participant (retail investors, brokers, institutional investors, etc.).

The Securities Centre

The SCP is used for the registration of book-entered equities and securities (debt instruments with a maturity of more than one year and shares). The SCP is a state-owned CSD, founded by the Czech Ministry of Finance on the basis of the Act on securities. The SCP is responsible only for the registration of securities on individual securities accounts. It is not allowed to take part in securities trading or to provide a market place for securities trading. Both the UNIVYC and the RM-SYSTEM are connected to the SCP, so that they can give orders to the SCP to change the ownership of securities on the basis of trades carried out.

The Securities Commission

The Securities Commission, which was established on 1 April 1998 in accordance with the Act on the securities commission, is responsible for the regulation and supervision of the securities markets in the Czech Republic. It issues licences 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.

The Securities Commission regulates and supervises the activities of the PSE and the RM-SYSTEM. It also performs oversight of all SSSs in the Czech Republic (the SKD (competence shared between the Czech National Bank and the Securities Commission), the UNIVYC, and the RM-SYSTEM). Its oversight does not extend to the Czech National Bank's activities concerning securities issuance and settlement.

The Czech Banking Association (CBA)

The CBA is a voluntary association of the legal persons undertaking business in the banking sector. It represents all banks domiciled in the Czech Republic. Its activities are focused on promoting and advocating the legal interests of the banking community. A permanent component of the activity is the expert consultancy, the evaluation of the implications of new provisions for the banking sector and the co-ordination of the bank attitudes in areas of shared concern.

The objectives of the CBA are:

- to represent and promote common interests of members in dealing with the Parliament, Government and other authorities, and with the Czech National Bank and other legal entities;
- to represent and promote common interests of members in international relations;
- to collect and disseminate information on members;
- to co-ordinate professional education and training of bank staff;
- to provide informational and analytical services in banking;

- to represent and promote the role of banking in public;
- to undertake activities aimed at standardising banking practices and procedures.

Payment card associations

The banks in the Czech Republic co-operate within the framework of the BCA, which was founded in 1991 with a view to increasing the use of payment cards in general. It co-ordinates all commercial activities related to payment cards, especially the expansion of non-cash shopping and the location and networking of ATMs and POS terminals. It also addresses security and standardisation issues. The Czech National Bank's role in the BCA is that of an observer.

Banking services related to payment cards, including maintaining ATMs and carrying out the functions of an authorisation centre, are provided by a specialised joint stock company called MUZO (see Section 3.4.2). The banks own the majority of the shares in the company.

In 1995, the Association for Smart Cards was set up, with both banks and non-bank institutions as members. This Association's task is to develop a unified technology for smart cards and to promote their use in the Czech Republic. The Czech National Bank is not involved.

2 Payment media used by non-banks

2.1 Cash payments

The most common means of payment, used in particular by individuals, are banknotes and coins. At the end of 2001, banknotes and coins in circulation amounted to CZK 180.4 billion (€5.3 billion). Banknotes and coins are accepted and distributed by banks and post offices, and distributed via ATMs throughout the Czech Republic.

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

2.2 Non-cash payments

2.2.1 Credit transfers

Credit transfers are the main form of non-cash payment made in the Czech Republic. They are used in particular by legal entities and investors to settle their contractual financial obligations. However, credit transfers can be used for all kinds of payment. Banks also effect recurring payments for their customers (e.g. for the payment of rent and water or gas bills) on the basis of customers' standing orders. Standardised numerical codes have been introduced to define the type and nature of the payment.

Customers can present their payment orders electronically or in paper form. 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.

When the electronic form is used, the payment orders are sent to the bank on diskette or by remote data transfer. Many 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 electronically has grown markedly, especially after the adoption of the Act on electronic signature.

If the credit transfer takes place between accounts held at the same bank, the payee's account should be credited on the same day as the payer's account is debited. Where a credit transfer initiated by the bank's customer has to be processed through the interbank payment system, the payee's account should be credited on the next or, at the latest, on the second working day after the payer's account has been debited. Therefore, the total time to transfer credit from one customer to another (end-to-end) should not exceed three working days.

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. If the payment order is presented in the morning, the payer's account is usually debited on the same day.

In 2001, the total volume of credit transfers in the Czech Republic was 691.2 million, representing a total value of CZK 81,918.8 billion (€2,404.4 billion).

2.2.2 Direct debits

Direct debits are commonly used in the Czech Republic for certain types of payment, such as energy and telecommunication charges, for collecting the counter-value of cheques and payment card transactions, or for payments arising from some commercial contracts. Unlike credit transfers, the payees present direct debits to their banks for collection. Again, the payment order can be given to the bank in electronic or paper form, but in both cases the bank will send the direct debit request electronically through the interbank payment system to the payer's bank. If previously authorised by the payer, the payer's bank will settle the payment by means of a credit transfer. If prior authorisation is not given, the bank will not carry out the payment and will return the direct debit request to the payee's bank. The payer's authorisation can either be general or the payer can specify the exact account number(s) of the payee(s) and/or the maximum amount to be collected. The payer's bank does not examine the agreement – if such an agreement exists – concerning the authorisation between the payer and the payee. As with credit transfers, standardised numerical 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 identify 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.

If the direct debit takes place between accounts held at the same bank, the payee's account should be credited on the same day as the payer's account is debited. If the direct debit request has to be processed through one or several intermediary banks, the payer's account should be debited on the second or, at the latest, the third working day after the payee has presented a direct debit to his bank for collection. The payee's account should then be credited on the next or, at the latest, on the second working day after the payer's account has been debited. Therefore, the total time to process a direct debit should not exceed five working days.

In 2001, the total volume of direct debits in the Czech Republic was 200.3 million, representing a total value of CZK 2,476 billion (€72.7 billion).

2.2.3 Cheques

The use of cheques in the Czech Republic has traditionally been low. At the end of 2001, there were about 1.975 million cheques in circulation (domestic guaranteed cheques, private (non-guaranteed) cheques, bank cheques and travellers' cheques). Cheques are archived by the banks (for ten years under Czech law) either as originals or on microfilm. Some cheques are personalised using optical character recognition printing.

For further details on the settlement of cheques, see Section 3.4.3.

Domestic guaranteed cheques

Domestic guaranteed cheques are personal cheques presented with a guarantee card which can be used to make face-to-face payments or cash withdrawals. Payments with these cheques are guaranteed up to CZK 6,500 (€190) per cheque. A customer may present up to ten cheques at a time. The cheques and guarantee cards have a uniform appearance and incorporate modern security

features against counterfeiting. Banks accepting this instrument are members of the Association of the Guaranteed Cheque System (for further details concerning recent developments, see Section 2.3). Domestic guaranteed cheques are truncated (i.e. they are not physically returned to the payer's bank but remain in the bank where they were presented).

Private cheques

Private (non-guaranteed) cheques are used for payments of larger amounts or to withdraw cash from bank accounts. Private cheques are not truncated and are physically returned for approval to the payer's bank.

Bank cheques

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. Bank cheques are truncated.

Travellers' cheques

Banks sell travellers' cheques issued by some of the large international companies (e.g. Citicorp and Thomas Cook).

2.2.4 Payment cards

Payment cards have been used in the Czech Republic since 1990. Banks mostly issue debit cards under licence from Eurocard/MasterCard and Visa. American Express and Diners Club International also issue payment cards in the Czech Republic. Some non-banks issue various types of card (e.g. prepaid, credit and loyalty). (For further details on the settlement of payment card transactions, see Section 3.4.2.)

Debit cards

Most banks in the Czech Republic issue Eurocard/MasterCard and Visa debit cards. These cards can be used for both cash withdrawals and payments through a nationwide network of ATMs and POS terminals.

On-line ATMs are connected through four different networks, which accept payment cards from Eurocard/MasterCard and Visa. Some ATMs also accept American Express cards. In 2001, there were 1,923 ATMs accepting domestic and foreign payment cards.

Retail outlets accept cards using either paper-based procedures or EFTPOS terminals that are connected to the network with online authorisation. In 2001, there were 17,931 EFTPOS terminals.

There are currently some 4.5 million debit cards in circulation, which can be used at almost 39,000 retail outlets. Customer fees and terms and conditions for merchants differ across banks.

Credit cards

Credit cards have been issued in the Czech Republic since 1997. There are around 53,000 credit cards issued by banks. Some non-banks issue their own credit cards with limited consumer credit.

Single-purpose prepaid cards

Some non-banks (e.g. the telephone company, petrol companies, travel agencies, department stores, restaurants, etc.) issue various types of single-purpose prepaid card that can be used to purchase their goods and services.

2.3 Recent developments

Although cash payments are still the most widely used form of payment in the Czech Republic, non-cash payments have increased in recent years. Some banks have also turned to remote banking, as this gives the customer more options for submitting payment orders, and the banks more ways to provide information to the account holder (via phones on the fixed line network, mobile phones or the Internet). One specialised bank called eBanka only communicates with its account holders by electronic means.

The number of cheque payments has declined, and so the use of domestic guaranteed cheques is now in recession. Therefore, those banks which are members of the Association of the Guaranteed Cheque System have decided to stop issuing domestic guaranteed cheques and they only accept them. The Guaranteed Cheque System is expected to cease operation by the end of 2003, when the validity of guaranteed cards with the most recent issuance date will expire.

3 Interbank exchange and settlement systems

3.1 General overview

The live operation of the Clearing and Settlement Centre at the SBCS in the former Czechoslovakia started on 8 March 1992. After the division of Czechoslovakia at the beginning of 1993, a new clearing centre was founded in Slovakia, while the former federal Clearing and Settlement Centre remained

within the Czech National Bank. The Bank owns and operates the CERTIS system, which is the only interbank payment system in the Czech Republic and which handles interbank payments in Czech korunas.

Each individual bank in the Czech Republic is identified by a unique bank identifier code, 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. There is no need, therefore, for documents to be circulated physically between the payer's bank and the payee's bank.

The rights and obligations of banks and the Czech National Bank concerning the operation of the CERTIS system are set out in the 1992 Interbank Payment System and Accounting of Banks Regulation issued by the SBCS. The accounts used to settle interbank transactions are held at the Czech National Bank on the basis of the account agreements signed with the banks in accordance with the Commercial Code. These agreements lay down uniform standards for all banks, as well as legal and technical conditions for keeping accounts and for the exchange and processing of interbank payment systems data.

3.2 The Czech Express Real-Time Interbank Gross Settlement (CERTIS) system

3.2.1 Basic principles

The CERTIS system is based on the following principles:

- RTGS;
- settlement of interbank payments in Czech korunas irrespective of their values and of whether they are initiated directly by a customer's order or indirectly as a result of cheque, payment card or stock exchange transactions;
- settlement in central bank money on accounts held at the Czech National Bank (which also serve as the accounts on which minimum reserves are held);
- direct participation by all licensed banks;
- direct bilateral connections between the head offices of banks and CERTIS;

- the irrevocability of all transactions accepted by the system;
- the processing of different types of transactions (see Section 3.2.3);
- uncovered transactions are neither settled nor rejected but held in a queue (with two priority levels);
- no overdrafts are permitted;
- fully collateralised intraday credit, which bears no interest, is provided by the Czech National Bank to the banks on the basis of collateralised securities to provide sufficient liquidity (at the end of the accounting day the banks have to estimate the value of presumed financial operations to be executed on the next accounting day in order to be able to obtain the respective intraday credit); and
- fully collateralised overnight credit is provided by the Czech National Bank to the banks (if intraday credit is not repaid by the banks until the end of the accounting day, securities serving as collateral for intraday credit are transferred to the Bank's account then serving as collateral for overnight credit).

3.2.2 Participation in the system

Direct participants

Only licensed banks can be direct participants in the interbank payment system. The CERTIS system, located at the Czech National Bank's head office, communicates only with the head offices of the banks. Each bank has only one interbank payment account with the Czech National Bank. This means that banks must first process all data from their own branches internally. Payments between customers of the same bank are processed in the internal system of this bank without any involvement of CERTIS. Those transactions directed to

other banks will be extracted and transmitted to CERTIS.

Third parties

Under bilateral agreements with the Czech National Bank, certain financial institutions are allowed to participate in the system with a special status. These so-called third parties are non-bank financial institutions, for example card payment clearing houses and the securities clearing and settlement institutions, which play an important role in the market. They have no interbank payment account with the Czech National Bank but, with the permission of the direct participants concerned, can submit payment orders to CERTIS to transfer funds between direct participants (e.g. to settle the net positions arising from the card payment clearing or payments relating to stock exchange transactions).

At the beginning of 2002, there were the following third parties:

- card payment clearing house for Eurocard/MasterCard (see Section 3.4.2);
- card payment clearing house for Visa (see Section 3.4.2);
- the SKD (see Section 4.3.1.1);
- the UNIVYC (see Section 4.3.1.2); and
- the RM-SYSTEM (see Section 4.3.1.3).

3.2.3 Types of transaction handled

The following types of transaction are handled in the CERTIS system:

- accounting transactions (i.e. credit transfers, direct debits, credit transfer cancellations and direct debit cancellations);
- non-accounting transactions (i.e. direct debit requests and credit transfer cancellation requests); and

- information and technical transactions.

Banks can attach one of two priority levels to the accounting transactions, namely “priority” transactions or “standard” transactions.

3.2.4 Operation of the system

For the operation of the interbank payment system, the Czech National Bank maintains an interest-bearing account (interbank payment account) in Czech korunas for every bank licensed in the Czech Republic. Banks use these accounts to settle their interbank payments. The Czech National Bank executes fund transfers from interbank payment accounts on the basis of instructions from the account-holding bank.

Payments which are either initiated by the bank or sent by the bank on behalf of its customers are processed and settled through the interbank payment accounts. Approved third-party organisations that have no account with the Czech National Bank can also originate payments from interbank payment accounts but only if the account-holding bank has given its prior permission in writing.

Balances on interbank payment accounts are also used to fulfil the reserve requirements. The maintenance of minimum reserves is mandatory in the Czech Republic. Minimum reserves are set at explicit percentage points of deposits (2.0% as at 31 December 2001) and can be used by banks for interbank payments.

3.2.5 Transaction processing environment

The CERTIS system has various means of safeguarding its availability and the correct execution of interbank payments. In October 1996, final acceptance tests for the new project to provide a real-time backup facility based on the technology of disk mirroring were successfully completed.

At the beginning of 1999, live operation of the new web-based sub-system of CERTIS, called CERTIS Information System (CERTIS-IS), started. This sub-system provides the participants with information about all the important parameters of the processing, including current balances, individual transactions, queued payments and other operational aspects. The design is based on extranet technology using strong encryption features and authentication tokens.

Since 2001, two further subsystems of CERTIS, called CERTIS Data Security System (CERTIS-DSS) and CERTIS Message Transfer System (CERTIS-MTS) respectively, have been in live operation. CERTIS-DSS is based on PKI with the certification authority operated by the Czech National Bank. CERTIS-MTS enables data to be submitted and processed automatically without the operators' intervention.

3.2.6 Settlement procedures

A normal operating (accounting) day begins on the previous working day (D-1) at 4 p.m. and ends at 4 p.m. on D. The time between 3.30 and 4 p.m. on day D is used for the fine-tuning of balances on the banks' interbank payment accounts. The banks can obtain funds for this purpose on the interbank money market.

During the accounting day, banks send data to CERTIS in electronic form in accordance with fixed rules and procedures established by the Czech National Bank. Participants can deliver data either by using the telecommunications network or by physically presenting cartridge tapes, CDs or diskettes. When the control programs validate that all data are of the required quality, a payment order is accepted by the CERTIS system and the settlement process can begin. During that process the account of the sending bank is checked to see if 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 sending bank's account

and crediting the receiving bank's account with value date D. The throughput of the system is more than 300,000 transactions per hour. The data of processed transactions is transmitted to the respective receiving bank in electronic form either physically or via the telecommunications network, as requested by the bank.

3.2.7 Credit and liquidity risk

CERTIS executes payments only if the sending bank's account has sufficient cover (no overdrafts are allowed on the accounts). If funds are insufficient to cover a transaction, the transaction is placed in the so-called hold queue. Information about queued payments is accessible for the respective bank through CERTIS-IS (see Section 3.2.5). Sufficient cover for the execution of queued payments may be obtained:

- through incoming funds transfers;
- through borrowing in the money market;
- from the Czech National Bank in the form of a fully collateralised intraday credit (see Section 3.2.1);
- from the Czech National Bank by means of a fully collateralised overnight credit line (see Section 3.2.1).

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 hold queue will be rejected by the system and returned to the sending bank.

3.2.8 Pricing

The pricing policy is determined by the Czech National Bank to ensure cost recovery for CERTIS. At the same time, the pricing structure is designed to encourage banks to spread the delivery of the data to CERTIS optimally across the accounting day. The time

Table		
Charges for the originating banks		
Time	Price per item (CZK)	Price per item
5 a.m. – 9.30 p.m. on D -1	0.40 (0.30)*	0.012 (0.009)*
7 a.m. – 8.30 a.m. on D	0.80 (0.70)*	0.023 (0.021)*
8.30 a.m. – 12.30 p.m. on D	1.50 (1.40)*	0.044 (0.041)*
12.30 p.m. – 1.30 p.m. on D	5.00	0.147
1.30 p.m. – 2.30 p.m. on D	20.00	0.587
2.30 p.m. – 3.30 p.m. on D	200.00	5.870

* Data submitted in digitally signed and encrypted form using CERTIS-DSS (see Section 3.2.5)
CERTIS does not receive data from 4 p.m. to 5 p.m. on day D -1 and from 3.30 p.m. to 4 p.m. on day D. From 9.30 p.m. on day D -1 to 7 a.m. on day D participants can only deliver data for the lowest fee using the telecommunications network.

schedule of the accounting day and the related charges have been amended several times during the system's relatively short existence. The aim has been not only to extend the operating hours, but also to support the Czech National Bank's efforts to finish the end-of-day procedure on time.

The Czech National Bank encourages the delivery of payment instructions as early as possible on the accounting day in order not to overload the system with a high transaction volume at the end of the accounting day. The current fee for sending banks is therefore set at a very low level at the beginning of the accounting day whereas, at the end of the accounting day, when only high-value bank-to-bank transactions are expected, the transaction fee is considerably higher (see the table above).

3.2.9 Statistical data

In 2001, the total volume of transactions processed by CERTIS was 259.6 million, representing a total value of CZK 103,349 billion (€3,033.4 billion). The average daily volume of transactions was over 1 million, representing an average daily value of CZK 411.7 billion (€12.1 billion). Transactions up to CZK 1 million (approximately €30,000)

accounted for 99.7% of all transactions. On the other hand, about 600 transactions over CZK 100 million (approximately €3 million) accounted for 90% of daily turnover. The peak amount was 3.1 million transactions per day. The three largest banks in the Czech Republic accounted for 80% of all transactions processed in 2001, both in terms of volume and value.

3.3 The large-value payment system

There is no special large-value payment system in the Czech Republic. The CERTIS system processes all transactions in Czech korunas irrespective of their values.

3.4 The retail payment system

There is no special retail payment system in the Czech Republic. Payments between customers of the same bank are executed by the bank itself using its own branches and internal information systems. Interbank payments are performed by CERTIS (see Section 3.3).

3.4.1 E-money schemes

There is one Czech bank operating an e-purse system based on chip card technology. The scheme can only be used in a limited number of shops. The chip contains a few applications (e.g. access to the account and customer's identification). E-purse is therefore used in very few of transactions. One non-bank offers the purchase of electronic units in the system "I LIKE Q" (100 Q = 1 CZK) for use in internet shopping.

3.4.2 Card-based schemes

A specialised service company called MUZO provides ATM and EFTPOS terminal services for most banks in the Czech Republic. It also carries out the functions of an authorisation centre and of the card payment clearing house for Eurocard/MasterCard. Domestic Eurocard/MasterCard transactions are cleared by this service company and settled by the CERTIS system using third-party instructions (see Section 3.2.2).

Visa cards are cleared in the card payment clearing house for Visa. Domestic Visa card transactions are settled either by the CERTIS system using third-party instructions or on a bilateral basis between some banks.

Two Czech banks provide their own ATM network, one of which includes EFTPOS terminals and an authorisation centre. Bank cards can also be used in the ATM network provided by one non-bank company, Euronet.

3.4.3 Retail credit, debit and cheque transfer systems

Credit transfers (see Section 2.2.1) and direct debits (see Section 2.2.2) are settled either by the bank itself (payments between customers of the same bank) or by CERTIS (interbank payments).

There is no separate cheque clearing in the Czech Republic. If the payee and payer are customers of the same bank, cheques (see Section 2.2.3) are processed within a bank's internal network. A standard credit transfer is used for interbank payments.

Guaranteed cheques are settled in a different way to non-guaranteed cheques. Since 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. The payee's bank will then collect the amount of the cheque from the payer's bank by direct debit through CERTIS. Non-guaranteed cheques are sent physically for collection, and the funds are then sent from the payer's to the payee's bank by credit transfer, or they may be settled on the basis of a direct debit instruction from the payee's bank. Either way, however, the payee's account is only credited after the funds have been received from the payer's bank.

3.5 Future developments

Financial institutions in the Czech Republic have followed recent trends by increasing their efforts to move towards electronic banking. A further increase in the use of these modern ways of communication between banks and their customers can be expected in the years to come.

The following developments concerning CERTIS are expected in the future:

- online connection to the SKD (see Section 4.3.1.1);
- quicker processing of high priority data; and
- use of SWIFT formats in domestic currency interbank payments.

CERTIS is recognised as an operational payment system in the new Act on payments and payment systems. This Act also includes provisions giving the possibility of creating other payment systems in the Czech Republic. Such systems would have to obtain a licence

from the Czech National Bank. Given the smooth and efficient operation of CERTIS, and the cost of building a new payment system, it is unlikely that new payment systems will be created in the Czech Republic in the near future.

4 Securities settlement systems

4.1 Trading

The Czech securities market is currently relatively small and still influenced by the mass voucher privatisation scheme (the privatisation of state-owned organisations from 1992 to 1995). This voucher privatisation process resulted in the introduction of many publicly traded companies in the capital market. The securities trading of these companies is conducted through two public market organisers, the PSE and the RM-SYSTEM.

4.1.1 Organised trading at the Prague Stock Exchange

4.1.1.1 Prompt market

The following three types of trade can be concluded in the prompt market of the PSE:

- trades with participation of market-makers (SPAD);
- automatic trades (auction and continual); and
- block trades.

In the PSE system, it is also possible to enter UNIVYC transfers (off-the-exchange direct transactions which can be contracted by PSE members or UNIVYC members – OTC transactions).

Trades with participation of market-makers

SPAD is based on exploitation of the function performed by market-makers. A market-maker is a PSE member who has entered into an official contract with the PSE to act as a market-maker for selected issues. There is no limitation on either the number of market-makers per issue or the number of issues per market-maker. SPAD is divided into two phases: open and closed.

During the open phase, all market-makers are obliged to publish their quotations (i.e. the buying and selling prices) for issues for which they act as market-makers. The market-makers are authorised to change their quotation anytime but cannot cancel it without giving a valid reason. On the basis of these quotations, the best quotation (i.e. the highest buying and the lowest selling price) is set for each issue. It is only possible to contract trades within the allowable spread, presently defined as the best quotation by +/- 0.5%.

In the course of the closed phase, market-makers are not obliged to quote. Trades can be contracted within the allowable spread defined by the best quotation at the end of the open phase, expanded by +/- 5%.

Automatic trades

The auction regime is based on price priority, which means priority is given to an order with the “better” price (higher buying price, lower selling price). If the input is an order stating no

price, this means that the broker is ready to buy or sell the security for market price.

Trades are contracted on the basis of continual input of orders for purchase and sale of securities. Price and, subsequently, time priority principles are applied to order matching, which means that if more orders with equal price are input, priority is given to the orders which are input earliest. Orders that are to be executed for more than one exchange day can be input into the system.

Block trades

A block trade means a trade contracted between members of the PSE and registered in the PSE system. The subject of the trade is one issue of securities and the trade has an agreed price per piece or total value, number of pieces, settlement type and settlement date. The price for a contracted trade is neither limited nor tied to the official price of the security. A block trade has to meet the minimum value requirements, currently set at:

- CZK 1 (€0.029) for shares and units; and
- CZK 10,000 (€290) for bonds.

4.1.1.2 Derivatives market

The turning point in derivatives trading on the PSE came at the end of 2000 when the presidium of the Securities Commission decided to prepare for and subsequently implement a series of steps leading to the creation of an organised derivatives market in the Czech Republic. Several basic principles were taken into account in assessing the competence of subjects to take part in the trading of derivatives:

- the market organiser and the settlement company must meet the same predetermined requirements concerning legislation and the monitoring and reporting of transactions as on the advanced capital markets;

- licences to trade in derivatives will be granted by the Securities Commission to traders who demonstrate that they are sufficiently well organised and technically equipped and meet the capital adequacy requirements;
- standard accounting procedures will be created; and
- trading will only be opened if assets are sufficiently liquid.

Further to the Securities Commission's decision, the PSE has drawn up a schedule of work related to the opening of derivatives trading. In the first half of 2002, a pilot operation will be staged in preparation for the opening of trading. The derivatives trading system of the PSE is a fully automated trading system functioning on standard principles used in international markets. The system consists of several modules (trading, settlement, surveillance and dealer) and has been integrated as a complete system into the existing trading and settlement environment of the PSE, which means that all data-flows are processed in real time.

The system makes it possible to trade both futures and options contracts. Trading is based on the membership principle, with market-makers assuring sufficient liquidity in the market, and is carried out on the principle of anonymous publication of offers and bids. Moreover, all the market participants have the entire depth of the market at their disposal and this is distributed via online terminals and terminals of information agencies. Standard orders, common for these types of trade, can be inputted into the system. Order matching and subsequent contract-making follow two criteria: price and order-input time.

4.1.2 Organised trading in the RM-SYSTEM

The RM-SYSTEM is a regulated securities market, which organises the supply of and

demand for shares and securities with a maturity of more than one year. Some of the securities listed and traded in the RM-SYSTEM are also traded in the PSE.

Czech shares and bonds listed on the RM-SYSTEM's market can be traded – besides the primary market – continuously in auction in non-anonymous trades between two parties (direct trades). The RM-SYSTEM also enables its participants to perform securities borrowings and to do share buy-outs.

Any market participant can have direct access to the system. Communication between the participants and the RM-SYSTEM is based on a real-time online network.

The pricing policy is determined to ensure cost recovery for the RM-SYSTEM. The type and value of fees are set by the Director of the RM-SYSTEM. Fees are charged mainly for using online stations, for trading in auctions and for providing information.

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 on the Wiener Börse AG. The new method of order entry – online internet application – was implemented in April 1999. In May 2001, the order entry system was started through the RM-SYSTEM's website.

4.2 Clearing

There is no independent clearing house in the Czech Republic. Post-trade and pre-settlement clearing services that are performed in connection with the settlement procedures (and not in a separate clearing entity) are described in Section 4.3.

4.3 Settlement

All securities in the Czech Republic are settled through three independent SSSs, one system 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 SKD (see Section 4.3.1.1) settles short-term fixed income securities with a maturity of up to one year;
- UNIVYC (see Section 4.3.1.2) settles securities listed on the PSE selected according to the rules of this institution; and
- the RM-SYSTEM (see Section 4.3.1.3) settles all trades with securities listed on RM-SYSTEM's market.

4.3.1 Securities Settlement Systems

4.3.1.1 The SKD

The SKD is a modernised version of the TKD, which was developed by the Czech National Bank as an in-house system and was in use under this name between May 1995 and June 2002. It is operated by the Czech National Bank on the DVP principle and is used for the issuance, registration and settlement of all short-term Treasury bills and the Czech National Bank bills.

There are more than 30 agents (direct participants) in the SKD (mostly banks and licensed securities brokers), which handle trades for around 240 clients (banks and large companies, including non-residents). Communication between the direct participants and the SKD is based on a real-time online network.

The Czech National Bank has issued specific rules on the functioning of and participation in the SKD. These rules regulate the record-keeping method for securities and other activities of the system, with a view to

ensuring the smooth and efficient operation of the SKD system.

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

The SKD does not provide cross-border settlement and has no international links.

4.3.1.2 UNIVYC

The UNIVYC is fully owned by the PSE. Its activities are regulated by the Act on securities and by its internal rules and regulations, which are mandatory for its members.

The UNIVYC handles all the issues of bonds, shares and units listed on the PSE and other issues accepted by the UNIVYC for settlement of OTC transactions. Around 99% of listed securities are in book-entered form. Only about 1% of securities are in materialised form. This number has been decreasing with the maturity of bonds issued in materialised form. New issues of securities are in book-entered form only.

The UNIVYC operates on a membership principle. Any legal person entitled to pursue trade with securities and who has paid back the basic property amounting to a minimum of CZK 10 million (€300,000) may become a UNIVYC member. Therefore, legal persons who are not PSE members may also be UNIVYC members. PSE members (i.e. the shareholders thereof, non-shareholders who were granted their membership by the Exchange Chamber, and subjects that are members by law – the Czech National Bank and the National Property Fund) become UNIVYC members automatically. Members are entitled to use all the services provided by the UNIVYC as direct participants.

Communication between the direct participants and the UNIVYC is based on a real-time online network.

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

The UNIVYC does not handle cross-border transactions. Although it is a participant in CBL and has an account there, the UNIVYC does not enable cross-border settlement with foreign securities deposited there for its members. These securities are listed on the PSE, traded by PSE members and settled by UNIVYC on PSE member accounts. UNIVYC has also recently been negotiating a direct connection with Hungarian KELER (Central Clearing House and Depository).

4.3.1.3 The RM-SYSTEM

The RM-SYSTEM provides the settlement of all trades with securities listed on the RM-SYSTEM's market. The cash settlement is carried out through a relevant bank (CSOB) and is fully assured by the RM-SYSTEM. The RM-SYSTEM can also guarantee settlement through the CERTIS system.

The settlement of trades on the Wiener Börse AG (see Section 4.1.2) is carried out through the general clearing member of the Wiener Börse AG.

4.3.2 Operational aspects

4.3.2.1 Settlement procedures in the SKD

The SKD operates on a DVP basis. It continuously settles securities in gross, and enables settlement on the trade date (T). Finality is reached at the moment of transfer of the securities to the asset accounts.

The system runs in real time with all direct participants connected online. When the instructions received are matched, the SKD blocks the securities and sends a third-party instruction (see Section 3.2.2) to the CERTIS system. If the funds transfer is not confirmed (e.g. if it is held in a hold queue), the securities remain blocked on the seller's account. After the funds transfer has taken place, the SKD is notified electronically and the securities are then transferred. If the transaction is not settled in CERTIS by the end of the accounting day, the transaction is rejected, the SKD suspends the trade and blocked securities are released.

The SKD also enables FOP transfers (i.e. transfers of securities during which the SKD neither ensures nor monitors payments related to the change of a participant). These transfers are enabled under specific rules of the SKD (see Section 4.3.1.1).

The Czech National Bank is modernising the SKD in the light of experience acquired. It is intended to implement new technology with a higher level of security and better performance in the course of 2002. The modernised SKD will enable an intraday collateralised credit facility for banks which have their interbank accounts at CERTIS on an operative base (at present, a fully collateralised intraday credit is provided by the Czech National Bank to the banks to provide sufficient liquidity).

4.3.2.2 Settlement procedures in the UNIVYC

The settlement of securities trades normally consists of two operations, namely delivery of securities and transfer of money. The time, method and guarantees of settlement depend on the kinds of trade. The settlement of securities and cash are carried out on a gross basis.

4.3.2.2.1 Securities settlement

The manner of the securities settlement depends on their form. The SCP (see Section

1.1.2), which is the CSD, maintains the registration of final owners of book-entered securities. The UNIVYC keeps the registration of the securities accounts of its own members separate from the securities of UNIVYC members. The UNIVYC sends orders to the SCP to change ownership.

The materialised securities are deposited in the contractual depository of the UNIVYC. The UNIVYC keeps a register of these securities on members' accounts (own and clients' accounts). The UNIVYC members in turn keep a register of final owners (clients). The UNIVYC carries out securities transfer between particular accounts of brokerage companies until the day on which trades are settled.

4.3.2.2.2 Cash settlement

Cash settlement is carried out through the CERTIS system, to which the UNIVYC is connected using third-party instructions (see Section 3.2.2). UNIVYC bank members have interbank payment accounts at CERTIS and the trades completed by them are cash settlement made by means of these accounts. The UNIVYC non-bank members use interbank payment accounts of a bank to settle their trades. Their relationship is subsequently modified by a contract.

4.3.2.2.3 Settlement of particular kinds of trade

Settlement is performed in daily batches. Securities and cash are not netted. Settlement is final when CERTIS confirms cash transfers that refer to delivered securities.

Settlement of trades with participation of market-makers (SPAD) is irrevocable and is guaranteed by the Guarantee Fund for SPAD. It is carried out on day $S=T+5$. However, if participants agree, it is possible to settle a trade from $S=T+1$ to $T+15$. In the event that a party does not fulfil its obligation, it has a further three days for a subsequent market settlement. If, after this time, the trade is not

settled, the UNIVYC will cancel its settlement and will organise a substitute trade. The UNIVYC will ask all market-makers to stand in for the party that caused the cancellation of the settlement. If buy-in and sell-out procedures are completed, the possible price difference between the original and this trade is paid from the Guarantee Fund for SPAD.

Automatic trades are settled on the third accounting day after the conclusion of a trade ($S=T+3$). The settlement is guaranteed. If the selling party does not deliver the securities or if the buyer does not pay for the purchase, the UNIVYC will organise a buy-in or sell-out procedure where the price difference between the original and this trade is paid out of the Guarantee Fund for Automatic Trades.

Block trades are settled on the day "S", chosen by the participating members, which should be between 1 and 15 accounting days after the trading day. The settlement is not guaranteed by the UNIVYC. If members are not able to fulfil their obligations, the settlement is suspended. It may be settled within an alternative term, namely by the day $S+6$ inclusive, after which the block trade is cancelled.

OTC transactions may be settled as DVP or as delivery free of payment. The settlement is not guaranteed and is handled in a similar way to the settlement of block trades. The settlement day is chosen by the opposite parties to the transaction between $S=T+1$ and $T+99$.

Since the start of 2002, the UNIVYC has also settled block trades and OTC transactions on $S=T+0$.

4.3.2.2.4 DVP arrangements

The UNIVYC does not provide real DVP settlement.

4.3.2.2.5 Credit and liquidity risk control measures

Credit risk is limited by using a guarantee in the form of the Stock Exchange Guarantee Fund. This fund is used in cases where a member is unable to find an alternative method of fulfilling its obligations.

The Stock Exchange Guarantee Fund consists of two funds: the Guarantee Fund for SPAD and the Guarantee Fund for Automatic Trades. The financial means are registered separately in the two funds and their use is governed by the Rules of the Guarantee Fund. The UNIVYC was put in charge of the administration and management of the participants' deposits under the Rules of the Guarantee Fund.

The Stock Exchange Guarantee Fund is created by financial contributions from the participants, which are based on the volume and frequency of trading completed by a specific member on the central market. The Exchange Chamber sets a minimum amount of the deposit for individual members.

4.3.2.2.6 Recent developments

During 2000 and 2001, the following projects were implemented:

- multicycling settlement of trades;
- settlement in euro;
- settlement of foreign issues listed in the CBL (see Section 4.3.1.2);
- settlement of primary issues (i.e. the first delivery of securities on accounts of the first (prime) acquirers);
- settlement of trades on $S=T+0$ since 2002; and
- a registration of owners' shares on collective bonds and settlement of trades with these bond shares.

In December 2001, the UNIVYC obtained a licence granted by the Securities Commission for the clearing and settlement of exchange trades with derivatives. The UNIVYC acts as a technical central counterparty in all derivative trades, maintains records on open positions of individual participants, carries out individual settlement operations (transfer of cash and underlying assets in particular), manages risks and administers the system of guarantees. Risk management applies standard tools supported within the trading system itself and supporting software applications.

4.3.2.3 Settlement procedures in the RM-SYSTEM

4.3.2.3.1 Securities settlement

Settlement of securities is carried out in real time. The pre-trade validation, which fully eliminates the credit risk, means that before the trade for the sell order the securities accounts in the SCP (see Section 1.1.2) are validated and 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 within seconds after orders have been matched.

4.3.2.3.2 Cash settlement

Cash settlement is carried out through a relevant bank (CSOB) and commissioned by the RM-SYSTEM. The buyer has to deposit sufficient funds in advance in the CSOB to cover the purchase. Before the order is executed, 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.

The cash settlement of non-anonymous trades (direct trades) could, if the trade participants so choose, also be settled through the CERTIS system, to which the RM-SYSTEM is connected using third-party instructions (see Section 3.2.2).

4.3.2.3.3 DVP arrangements

Settlement in the RM-SYSTEM is based on DVP arrangements.

4.3.2.3.4 Credit and liquidity risk control measures

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

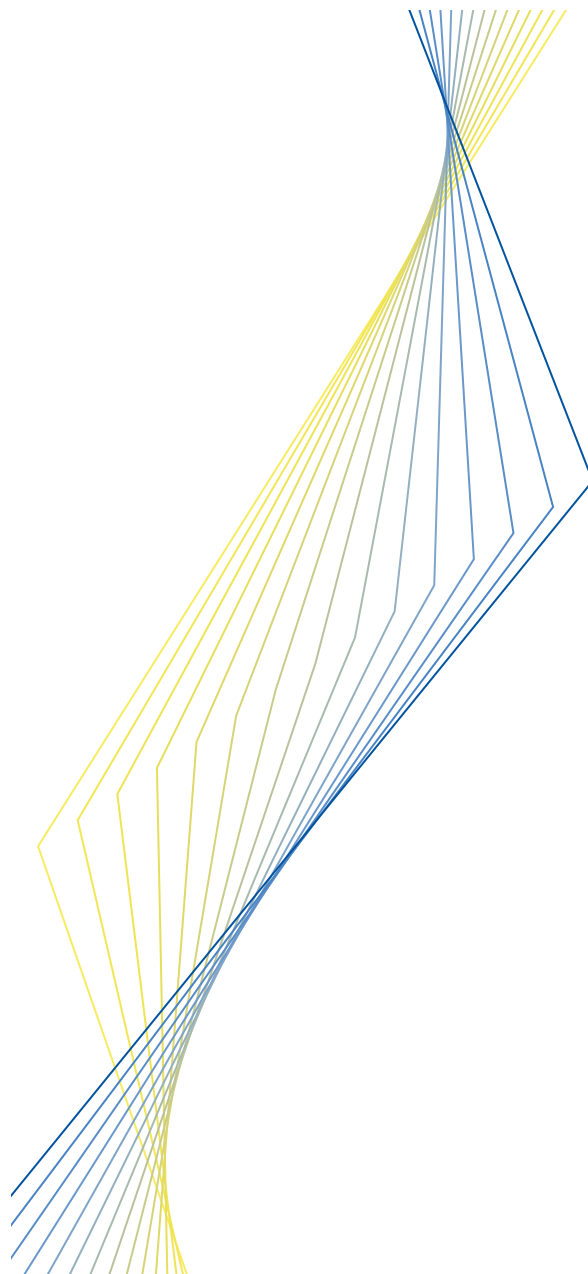
4.4 The use of the securities infrastructure by the Czech National Bank

The Czech National Bank is an agent for special clients, e.g. the Czech Ministry of Finance and the Bank itself. The Czech National Bank is also final lender for banks, i.e. it provides a fully collateralised intraday credit to the banks to provide sufficient liquidity.

The CERTIS system provides cash settlement of all interbank payments arising from securities trades. All SSSs (the SKD, the UNIVYC and the RM-SYSTEM) are connected to the CERTIS system using third-party instructions (see Section 3.2.2).



EUROPEAN CENTRAL BANK



Estonia

August 2002

Estonia

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List of abbreviations

CCB	Card Centre of Banks
CPSE	Council of Payment System Experts
CRS	Central Register of Securities
EBA	Estonian Banking Association
ECSD	Estonian Central Securities Depository - AS Eesti Väärtpaperikeskus
EFSA	Estonian Financial Supervisory Authority
EPNAS	Former interbank payment system
HETI	Trading system of the Helsinki Exchanges
HEX	Helsinki Exchange
TSE	Tallinn Stock Exchange

Introduction

Estonia is a small country in which banks are the prevalent financial intermediaries, with total assets accounting for over 70% of GDP. The role of other financial intermediaries is quite minimal. Six local banks and one foreign bank subsidiary are operating in Estonia. The four largest banks have more than a 95% share in Estonian banks' assets, with the two largest accounting for over 80%. Major stakeholders in the four largest banks are Nordic financial conglomerates, which are also active in other Baltic countries.

As a result of consolidation in the banking sector, most payments are settled as intrabank payments and only one-fifth of payments are settled as interbank payments. It is thus crucial to have a safe and efficient interbank payment system, because this provides equal opportunities for all participants in the Estonian financial market.

To make the interbank system more efficient, to minimise the risks arising in settlement systems and to comply with the international standards and core principles, the Bank of Estonia (the central bank) launched a new interbank payment system on 21 January 2002. The new Estonian interbank payment system is owned and managed by the Bank of Estonia and is based on two sub-systems: an RTGS and a DNS system.

Although not used extensively, the capital market constitutes an alternative to financing by banks for small and medium-sized local enterprises. The Tallinn Stock Exchange (TSE) also owns the SSS, the Estonian Central Securities Depository (*AS Eesti Väärtpaberikeskus*, ECSD). In April 2000, the Finnish HEX Group (Helsinki Exchanges Group plc) acquired majority ownership of the TSE, which started trading with Estonian securities in the HEX trading system on 25 February 2002. The HEX Group ownership and co-operation arrangements between the HEX and the TSE should have a positive impact on liquidity in the Estonian securities market and facilitate the integration of the Estonian securities market into the European markets.

As the Bank of Estonia has two different roles in the payment system (an operational role and an oversight role), the tasks and responsibilities associated with these roles have been assigned to two different departments. The Clearing and Settlement Department performs the operational role and the Financial Stability Department is responsible for the oversight of the system.

I Institutional aspects

I.1 The general institutional framework

Estonia implemented the currency board principle at the time of the introduction of the national currency, the Estonian kroon (EEK), in June 1992, and that principle constitutes the basis for the whole Estonian monetary system. 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, following the introduction of the euro, the exchange rate of the Estonian kroon has been unchanged vis-à-vis the euro (€1 = EEK 15.6466) in line with the fixed exchange rate of the Deutsche Mark vis-à-vis the euro.

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 Credit Institutions Act (9 February 1999) and relevant decrees of the Governor of the Bank of Estonia.

Pursuant to Article 3 of the Law of the Central Bank of the Republic of Estonia, the Bank of Estonia 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. The Bank of Estonia 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 the Bank of Estonia. The Law of the Central Bank of the Republic of Estonia states that the Bank of Estonia manages currency circulation in Estonia.

The Credit Institutions Act states that a credit institution is allowed to operate as a public limited company or association. In addition, the Law sets the minimum level of own funds at EEK 75 million (€5 million). The credit institutions must settle payments according to regulations established by the Bank of Estonia.

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 the Estonian Financial Supervisory Authority (EFSA), an independent institution which is administratively affiliated with the Bank of Estonia.

The Estonian Bankruptcy Act of March 1997 contains 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 from the first minute of the date of the court order. A new version of the Credit Institutions Act from 9 February 1999 makes the zero-hour clause inapplicable to payment systems.

Previously, there was no special legislation governing different payment instruments. At the end of 2001, the Act on contractual and extra-contractual liabilities was passed by Parliament and will regulate credit transfers, contracts of settlement, money transfers, electronic means of payment, settlement of letters of credit and encashment. The Act on contractual and extra-contractual liabilities will be enforced with a separate law, probably in 2003. Payment practices are determined by agreements between banks, service providers and customers.

The Securities Market Act (adopted by Parliament on 17 October 2001) and the Estonian Central Register of Securities Act (14 June 2000) govern the Estonian securities market. The details of certain activities governed by these acts are regulated by decrees of the Minister of Finance.

The Securities Market Act regulates the activities of professional participants, issuers and investors in securities markets which operate with publicly circulated securities in the primary and secondary markets. The Securities Market Act also governs the general principles of SSSs.

The Estonian Central Register of Securities Act regulates the provision of registry services. The Procedure for the Maintenance of the Estonian Central Register of Securities (28 December 2000) is regulated by a decree of the Minister of Finance.

The legislation governing payment and settlement systems generally complies with Directive 98/26/EC regarding settlement finality in payments and securities settlement systems and Directive 97/5/EC regarding cross-border credit transfers. The Act on

contractual and extra-contractual liabilities represented a major breakthrough in this area. Harmonisation with Directive 98/26/EC has been achieved with the adoption of the Securities Market Act (in force as from 1 January 2002). There remain some minor shortcomings which will be eliminated in the process of further amending the legislation.

1.2 The role of the Bank of Estonia

1.2.1 Payment systems oversight

The objectives and tasks of the Bank of Estonia 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 the Bank of Estonia is to ensure the stability of the Estonian kroon and its ability to fulfil all functions as a means of payment. In addition, the Bank of Estonia has to contribute to the stability of the banking sector as well as the financial system as a whole, to maintain the integrity and efficiency of the payment systems, and to promote the development of financial markets.

Pursuant to Article 87 of the Credit Institutions Act, the Bank of Estonia has the right to establish a legal framework for the settlement of payments. Several decrees issued by the Bank of Estonia establish the time-frame for the settlement of customer payments and common account statements for bank customers. The Bank of Estonia is participating in an Estonian Banking Association working group which seeks to create and implement common standards in the banking industry. Common standards for account numbers, reference numbers and payment order templates were designed and implemented in 1996 and 1997.

At the Bank of Estonia, the Financial Stability Department is responsible for the development of the legal framework for payment and settlement systems, the development and implementation of the

payment and settlement systems policy and the oversight of payment systems. As the department has only been operational since 1 January 2002, an oversight policy has not yet been developed.

1.2.2 Activities in the area of securities clearing and settlement systems

The Bank of Estonia has no statutory responsibilities with regard to SSSs and is not legally empowered to issue any binding regulations in this field. Nevertheless, the Bank of Estonia is a shareholder in the TSE and is represented on its Board and, as such, participates in the establishment of common rules for securities trading. In addition, the Bank of Estonia plays the role of a settlement bank of the netted cash position of the participants in the SSSs.

1.2.3 The operational role of the Bank of Estonia

The Law on the Central Bank of the Republic of Estonia sets out the role and responsibilities for providing domestic interbank payment facilities and managing the interbank payment system. The current interbank clearing and settlement system has been in operation since 21 January 2002. The system is operated and owned by the Bank of Estonia. The system has a central clearing and settlement body, namely the Clearing Department of the Bank of Estonia. The Estonian interbank payment system is based on two sub-systems: an RTGS system and a DNS system.

Participation in and the operations of the interbank payment and settlement system are subject to rules set by the Bank of Estonia. The Bank of Estonia is also responsible for maintaining and developing the system's hardware, software and organisation.

The Bank of Estonia does not participate actively in the interbank money market and

does not initiate daily open market operations. There are no regular central bank refinancing facilities. Consequently, the most important channels for stabilising the liquidity in the economy are the standing facility provided by the Bank of Estonia in the foreign exchange market and the reserve requirement, which has to be met on a monthly average basis.

The Bank of Estonia 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, the Bank of Estonia is obliged to exchange unlimited amounts of US dollars, Japanese yen, Swedish kronor, pounds sterling and euro for Estonian krooni and vice versa. The predominant currency sold to the Bank of Estonia is the euro because there is no spread between the buying and selling rates of the Estonian kroon against the euro.

The Bank of Estonia's reserve requirement is the most important instrument for providing immediate domestic liquidity and settlement buffers. Banks are required to meet the requirement on a monthly average basis. The reserve requirement currently amounts to 13% 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 of the kroon reserve, which amounts to a minimum of 6.5% of the overall reserve base. If the balance falls below 40% of the kroon reserve requirement, or the bank does not meet the monthly average requirement, it will be subject to a penalty interest rate. The amounts held by credit institutions on the settlement account at the Bank of Estonia are remunerated.

1.2.4 Co-operation with other institutions

The EFSA is responsible for the financial supervision of credit institutions, insurance companies and investment and pension funds. The EFSA is an independent institution administratively affiliated with the Bank of Estonia. The Bank of Estonia collects on behalf of the EFSA prudential reports from credit institutions on a regular basis, which are made available to the EFSA for supervision purposes. The EFSA monitors and analyses the level of compliance with requirements for financial soundness and own funds, and with other obligations prescribed by law and regulations, and makes on-site inspections. Based on these findings, the EFSA has the right to issue recommendations and rulings. The range of sanctions includes 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 The role of other private and public sector bodies

The Estonian Banking Association (EBA) was established in 1992 by the commercial banks. The objectives of the EBA 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.

After the launch of the new interbank payments system, the National Payment Council was restructured to become the Council of Payment System Experts (CPSE), a working party consisting of payment system experts with the right to present recommendations for improving the work of payment systems. The CPSE members include three representatives from the Bank of Estonia and one representative from each participant in the interbank payment systems (eight members of the CPSE were from

outside the Bank of Estonia at the end of April 2002).

In addition, within the framework of the CPSE, an independent body, the Court of Arbitration of the CPSE, has been set up to settle out-of-

court disputes between the managers of a payment system and its participants. From 2003, the same independent body will also settle out-of-court disputes between credit institutions and their customers.

2 Payment media used by non-banks

2.1 Cash payments

As the central bank, the Bank of Estonia 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 issuance of EEK 1 banknotes ceased in 1998, and 5 sent coins have not been minted since the end of 1996. By the end of 2001 the EEK 500 (€32) banknotes represented the largest proportion

of banknotes and coins in circulation (82% in terms of value).

Cash still predominates as a form of payment in Estonia. However, the increase in cash in circulation has slowed down because of the rapid development of non-cash payment instruments, and the structure of cash circulation has stabilised. Although data on the value or volume of cash payments are not available, the share of cash in M1 and GDP has been declining for a number of years in

Chart 1

The ratio of cash to GDP and narrow money supply (M1) at the end of 1993, 1997 and 2001

(in %)

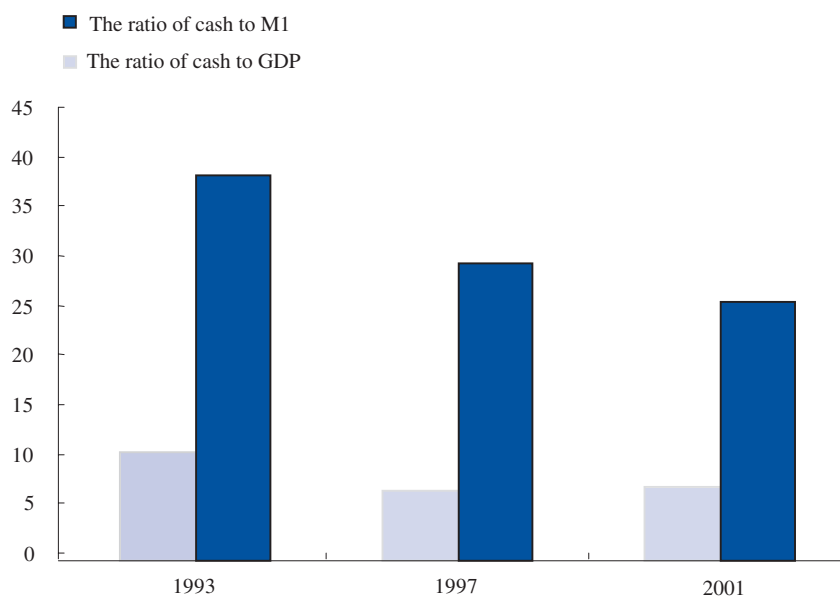
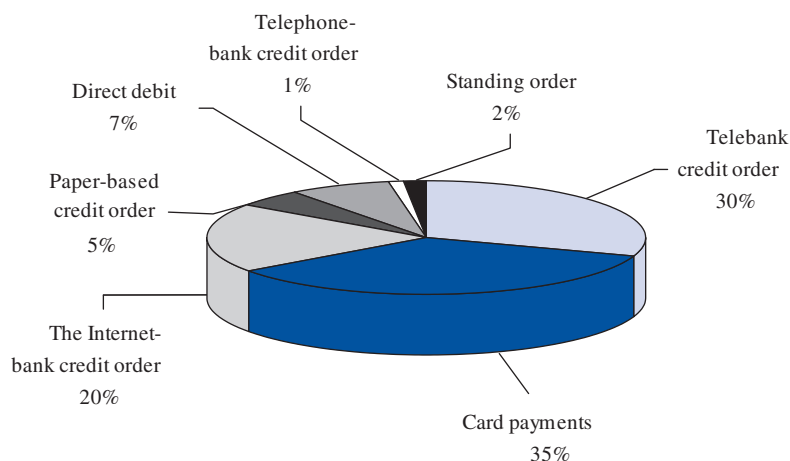


Chart 2**The relative shares of non-cash payment instruments (volume in 2001)**

Estonia (Chart 1). The decline in the share of cash in MI was particularly noticeable between 1993 and 2001.

2.2 Non-cash payments

The use of non-cash payment instruments increased considerably between 1995 and 2001 by comparison with cash payments. Non-cash payment methods include credit transfers, direct debits, cheques and payment cards (see Chart 2). The development of non-cash payment instruments has been supported by the rapid increase in the use of payment cards and the expansion of internet banking since 1997.

2.2.1 Credit transfers

The credit transfer is the predominant non-cash payment instrument in Estonia. In 2001 credit transfers accounted for approximately 58% of the total volume of non-cash payments and 97% in terms of value. The total value of credit transfers was EEK 1,925 billion (€123 billion) in 2001. For companies, the most popular forms of credit transfer were telebank¹ and internet bank credit orders (64%

and 29% respectively of the volume of payments). The forms of credit transfer most frequently used by private individuals were internet bank and paper-based credit orders (66% and 18% respectively of the volume of payments). In recent years there has been a considerable breakthrough in the use of electronic banking products. In 2001, 88% of credit transfers were made electronically. Electronic banking credit transfer facilities include telebanking, ATMs, telephone banking and internet banking. The main reason for the popularity of electronic banking is its convenience and the relatively low cost compared with the traditional services offered by banks.

In the long run, the overall increase in non-cash payments is expected to result in a decrease in the share of credit transfers owing to the growing popularity of other payment instruments, in particular payment cards.

2.2.2 Cheques

Cheques have never played an important role as a payment instrument in Estonia. They have

¹ Telebank includes special telebanking software.

only ever been used for withdrawing cash from banks. The total turnover of cheques was EEK 247.2 million (€15.8 million) in 2001. Cheques accounted for 0.04% of non-cash payments in terms of volume.

2.2.3 Direct debits

The direct debit was introduced in Estonia in 1996. Both parties have to agree on the use and limitations of the direct debit beforehand. At present the use of direct debits is restricted by the fact that both parties must have their accounts at the same credit institution. The use of direct debit increased slowly between 1996 and 1998, but during the period 1998-2001 there was a sharp rise in the use of direct debit (see Chart 3). The largest increase took place in 2000, when the number of direct debits more than tripled. In 2001, direct debits were used to settle more than 4.9 million payments and accounted for 7.4% of the total number of payments. For private individuals, direct debits are a convenient instrument for paying for public

utilities (telephone and electricity) and certain other bills on a regular basis. Direct debits accounted for a total value of EEK 1.3 billion (€0.1 billion) in 2001.

2.2.4 Payment cards

Payment cards were introduced in Estonia in 1993, when, at the initiative of the commercial banks, the Card Centre of Banks (CCB) was established.

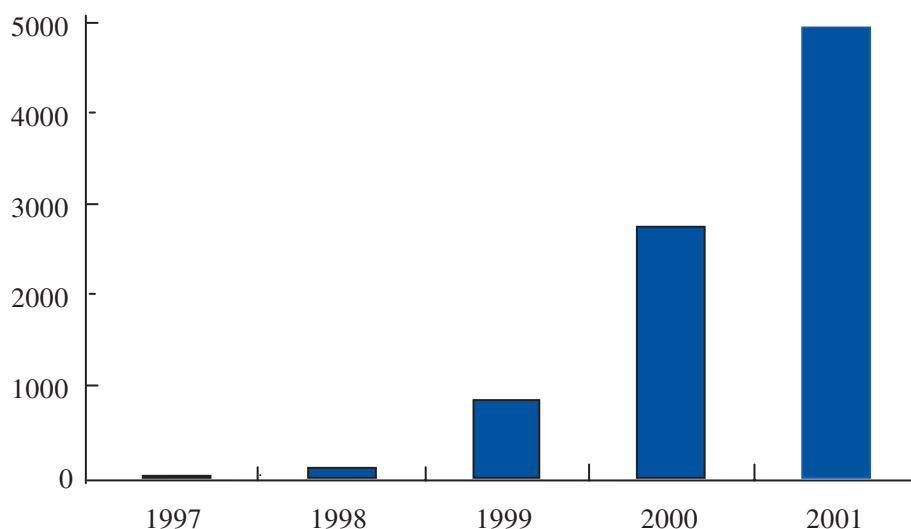
In recent years payment cards have become widespread payment instruments. By the end of 2001, credit institutions had issued 987,150 bank customer cards, 89% of which were debit cards. Payments made by payment card reached a total value EEK 8.8 billion (€563.6 million) in 2001. By the end of 2001 16% of bankcards were "passive", i.e. not used for payments.

Debit cards

When payment cards were first introduced in Estonia, credit institutions issued cash cards

Chart 3

The volume of direct debits between 1997 and 2001



only. Debit cards were introduced in 1994 and two different strategies were followed. One group of banks began to issue its own debit cards, but changed its strategy in 1997, and has issued only Cirrus/Maestro debit cards since. Another group of banks started to issue Visa Electron as a debit card from the outset. Most debit cards now carry either the Visa Electron or the Cirrus/Maestro trademark. By the end of 2001 credit institutions had issued more than 877,000 debit cards, of which 15% were passive and 1% were for local use only.

Credit cards and travel and entertainment cards

With regard to the major international credit cards, Visa and MasterCard are both in use in Estonia. Prior to the second half of 2000, credit cards were not widely used in Estonia because of their high annual fee. In the second half of 2000 the number of credit cards more than doubled, mainly on account of the development of new banking products, such as revolving credit cards and instalment cards. By the end of 2001, banks had issued over 110,100 credit cards, of which 27% were passive.

Retailer cards

In Estonia there is no institution collecting information about retailer cards. Petrol companies and larger supermarket chains issue prepaid retailer cards and co-branding bank customer 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 can also earn bonus points (e.g. Stockmann credit card).

Prepaid cards

At present no credit institution or other operator in Estonia provides multi-purpose prepaid cards. However, there is growing interest in this type of payment instrument. Estonian credit institutions are monitoring

Visa and MasterCard projects in this field, with a view to issuing multi-purpose prepaid Visa or MasterCard cards in the future.

ATM and EFTPOS networks

As a result of the consolidation of the banking sector that started in 1998, the general trend in recent years has been to close down smaller and less effective bank branches, while simultaneously increasing the number of ATMs. In 1994 the first five ATMs were installed and 20 POS were established. More devices have since been installed, with the result that 680 ATMs and 5,260 POS were available by the end of 2001.

The ATMs are owned and managed by the credit institutions. International bank customer cards with widespread international trademarks issued anywhere in the world can be used in about 88% of ATMs.

The credit institutions have two main ATM strategies. The large banks are extending their own ATM networks, while the smaller ones offer their customers the possibility of using the ATM networks of large banks free of charge.

Retailers are increasingly equipped with EFTPOS terminals, and in 2001 the number of POS accepting payment cards grew by a quarter over the 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 regulations and the company Eesti Post is not subject to supervision by any other authority. The value of payments made via Post Office branches is unknown, and the Eesti Post payment service is mainly used for paying monthly social benefits and pensions to

private individuals who do not have a bank account. For private individuals, postal payments are convenient for paying for public utilities (telephone and electricity).

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 trading partners that are not known to one another.

2.3 Recent developments

Over the past decade, the Estonian payment system has evolved from the cash-oriented system it once was. Following a phase of active use of paper-based payment instruments,

Estonia is now moving towards a more automated electronic payment system. Conventional paper-based payment orders are increasingly giving way to internet banking and card payments.

In 2000 the major banks developed two new electronic product groups: an e-money-like payment instrument called "Mobile Account", and the internet-based WAP banking. However, these new payment instruments are not yet widely used.

In order to offer companies more flexible payment services, the commercial banks have started to introduce internet-based telebanking products. The advantage of this kind of product is that companies do not need special telebanking software to make their payments. The first internet-based telebanking product was adopted at the end of 2001.

3 Interbank exchange and settlement systems

3.1 General overview

In Estonia more than 90% of all interbank payments are made by two major banks, which means that the banking sector in Estonia is very consolidated. About 20% of all payments are made through the Bank of Estonia's interbank payment system.

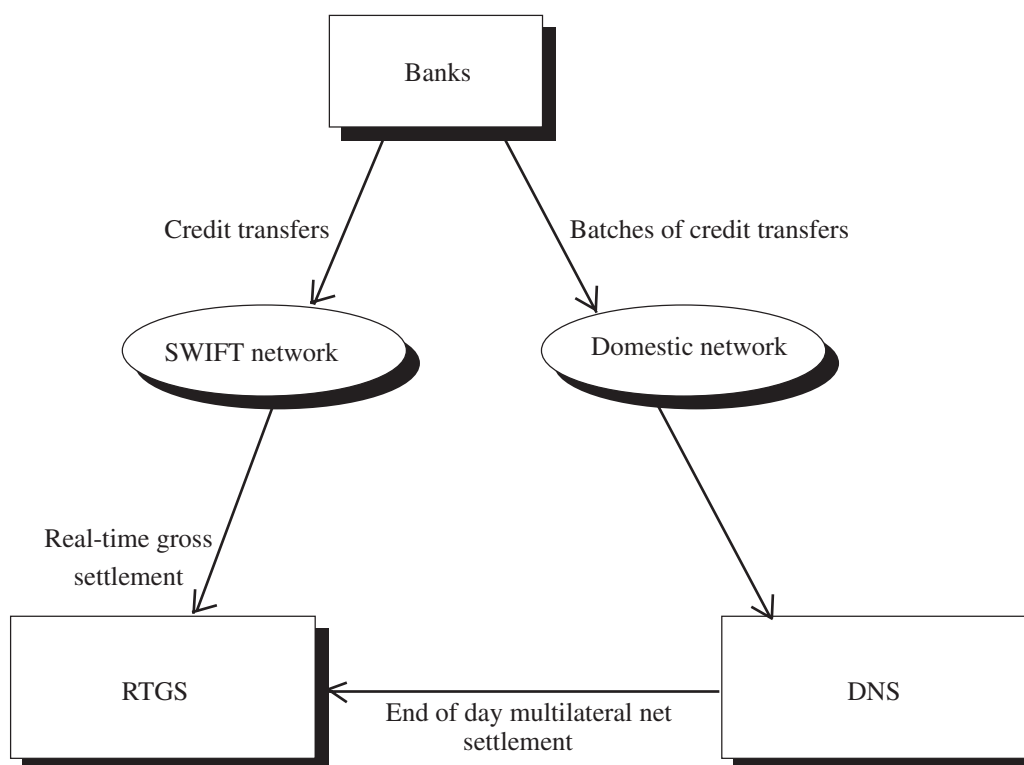
The first interbank payment system, in Estonia, EPNAS, was operational from 1992 until 2002. EPNAS was owned and managed by the Bank of Estonia, being the only interbank payment system in Estonia. It was used for settlement of both high-value and retail payments.

The current Estonian interbank payment system has been operational since 21 January 2002. It is based on two sub-systems: an RTGS system and a DNS system. Both the RTGS system and the DNS system are multi-currency systems owned and managed by the Bank of Estonia. The operating rules and functional principles of the system are

established in the form of general terms and conditions. The technical and technological requirements for participating in the system are stipulated in the technical conditions of the system. The Bank of Estonia determines both the general and technical conditions.

3.2 The real-time gross settlement system: Estonian RTGS system

The RTGS system is used for processing high-value (all transactions above €1 million must be settled in the RTGS system) and urgent interbank payments on a gross basis on the participants' settlement accounts held at the Bank of Estonia. The RTGS system accepts and processes only credit orders issued by participants and net balances sent by the managers of the net settlement systems for final settlement.

Chart 4**The structure of the Estonian interbank payment system****3.2.1 Operating rules**

The Bank of Estonia determines the operating rules of the system pursuant to the Law on the Central Bank of the Republic of Estonia and the Credit Institutions Act.

In order to participate in the RTGS system, a contract with the Bank of Estonia must be signed. The contract lays down the rights and responsibilities of the participant and the Bank of Estonia. The contract also obligates the participant to abide by the general terms and conditions and technical conditions of the RTGS system.

3.2.2 Participation in the system

There are two different types of participant in the RTGS system: fully qualified participants

and participants with restricted rights. Fully qualified participants are divided into two separate sub-groups: ordinary participants and net settlement systems managers.

An ordinary participant must have a settlement account in the RTGS system and a contract with the system manager (the Bank of Estonia) to settle payments through the RTGS system. At the end of March 2002 all resident credit institutions (6), branches of foreign banks (1), the Bank of Estonia, the ECSD and the TSE were fully qualified participants of the RTGS system.

Each net settlement system manager holds a collateral account in the RTGS system. The funds transferred to the collateral account are put to use if a participant in the net settlement system does not have enough funds on its

settlement account to cover its net obligation. At the end of March 2002, there were three net settlement systems² managers (DNS, TSE and OTC) in the RTGS system.

Participants with restricted rights hold a standard account in the RTGS system. They do not have a contract with the system manager (the Bank of Estonia) to settle their payments through the RTGS system. These are institutions which have an account at the Bank of Estonia but which no longer use their account actively (for example, former Soviet Union Central Banks, the Ministry of Finance, the Nordic Investment Bank, etc.). Eesti Pank initiates and receives payments on behalf of members with restricted rights. At the end of March 2002 there were 16 participants with restricted rights in the RTGS system.

- general credit transfers from financial institutions;
- central bank operations (the EEK leg of foreign exchange market transfers, the EEK leg of securities market transfers and cash delivery to and from banks);
- net balances sent from net systems (the DNS system, ECSD).

The RTGS system allows payments to be sent to the system two days before settlement. There is no minimum amount for the funds to be transferred in the system. It is currently only possible to execute interbank transfers (MT 202) in the RTGS system. From July of 2002, it will also be possible to effect customer transfers (MT 103).

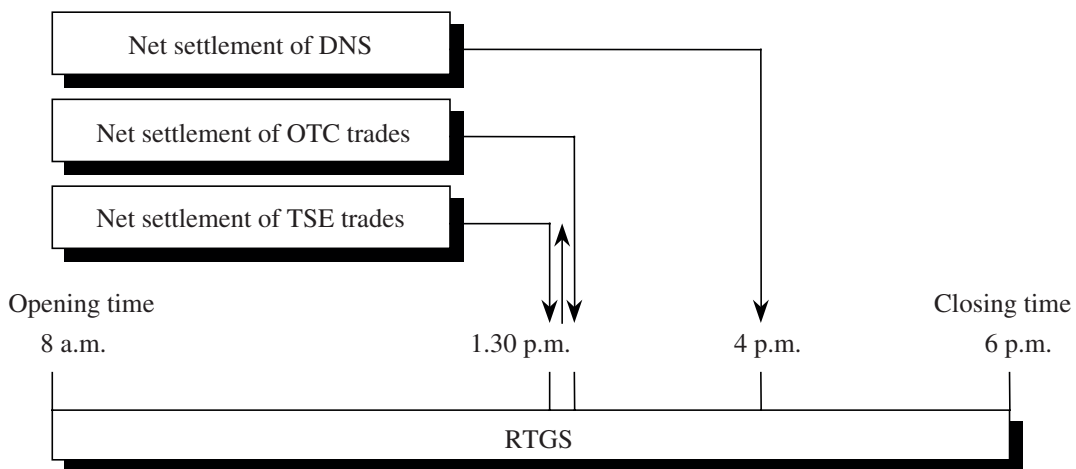
3.2.3 Types of transaction handled

The RTGS system handles three different types of operation:

² Net settlement system for retail payments, net settlement system for settlement of stock exchange trades and net settlement system for settlement of OTC trades.

Chart 5

A settlement day of the RTGS system



3.2.4 Operation of the system

The RTGS system opens at 8 a.m. on each banking day, and entries can be made until the system closes at 6 p.m. All payment orders from credit institutions and central banks must be sent to the RTGS system via the SWIFT network.

The settlement of TSE transactions sent by the ECSD takes place at 1.30 p.m. The OTC transactions sent by the ECSD are settled following the TSE net settlement. The DNS system net settlement takes place in the RTGS system at 4 p.m. The net balances of the net settlement systems must be sent to the RTGS system via the domestic network.

The RTGS system processes payments one by one in real time and tries to settle payments immediately. Payments are processed in accordance with their priority and the time of receipt.

RTGS system participants may assign one of several predefined priorities to payment orders. There are five such categories, with 1 being the most urgent and 5 the least urgent. Payment orders for settlement of the net balances of the net system carry priority 1, central bank payment orders carry priority 2, and general financial institutions' payment orders may carry a priority between 3 and 5.

3.2.5 Transaction processing environment

All RTGS system transactions must be sent via the SWIFT interface. The RTGS system is based on the V-shape topology using the basic SWIFT FIN service. All payment orders sent to the RTGS system are processed and settled individually throughout the day.

3.2.6 Settlement procedures

After the RTGS system has received a message with the participant's payment order, the system executes a technical validation

(checking the format, fields, etc.). If the payment order is technically incorrect, meaning that some of the essential information is missing or incorrectly presented, etc., the RTGS system will reject it and notify the participant.

If the message containing a payment order is technically correct, it will be accepted for settlement by the RTGS system and will then be irrevocable.

After technical validation, the RTGS system compares the payment order with other payment orders in the queue with the same or a higher level of priority. If there are no payment orders in the queue with the same or a higher level of priority and the participant has enough funds to settle the payment, the system settles that payment immediately (book entries on participants' settlement accounts are posted) and the participants (payer and payee) of the system are notified. After settlement the payment becomes final. If there are other payment orders with the same or a higher level of priority in the queue or the participant does not have enough funds to settle the payment, the system puts the payment into the queue. Queued payments are settled according to the FIFO principle.

The RTGS system automatically rejects the queued payment orders if there are still not enough funds for settlement by the end of the settlement day (6 p.m.).

The settlement of net balances sent by net settlement system managers is described in Sections 3.3.6 and 4.4.

3.2.7 Credit and liquidity risk

The RTGS system does not involve any credit risk for the participants, because the funds transfers in the payment system are only executed if there is sufficient cover for each payment on the payer's settlement account. The payee is notified only if the payment is settled.

All funds on the payer's settlement account can be used to settle a payment. Interbank payments in kroon are settled using the funds of credit institutions held at the Bank of Estonia in line with the minimum reserve requirement (13% of requirement base). Commercial banks are required to hold at least 50% of the minimum reserve requirement on the account with the Bank of Estonia. The second half of the reserve requirement can be met with eligible (at least double A-rated euro-denominated debt securities) foreign assets.

Against this background, it is very rare that liquidity problems arise in the settlement of daily transactions. If a commercial bank needs additional liquidity, it may borrow funds from the interbank money market for liquidity maintaining purposes or sell unlimited foreign currency or eligible foreign fixed income securities to the Bank of Estonia in real time.

The Bank of Estonia does not act as the lender of last resort because of the currency board arrangement. The Bank of Estonia can provide emergency liquidity for commercial banks only under special agreement and in exceptional circumstances.

3.2.8 Pricing

As the RTGS system and the DNS system were developed at the same time, and as they use the same hardware and are operated by the same people, the fees are calculated according to the principle that the sum of all fees of both systems must cover the operational costs of both systems. The fees imposed on the participants by the system manager (the Bank of Estonia) include an entrance fee and a fixed fee per payment. There is no annual fee for the participants of the RTGS system.

The participants in the Bank of Estonia's previous settlement system are automatically members of the RTGS system and do not need to pay a special entrance fee for the RTGS

system. If a bank joins the RTGS system and was not a member of the previous system, it has to pay an entrance fee of EEK 100,000 (€6,390). The fixed fee per payment is EEK 10 (€0.64).

3.2.9 Statistical data

Between the launch of the RTGS system on 21 January 2002 and 12 April 2002, the average daily number of transactions was 53, while the average daily value was EEK 2 billion (€128 million). The peak in volume was 63 payments and the highest daily value was EEK 3.1 billion (€198 million).

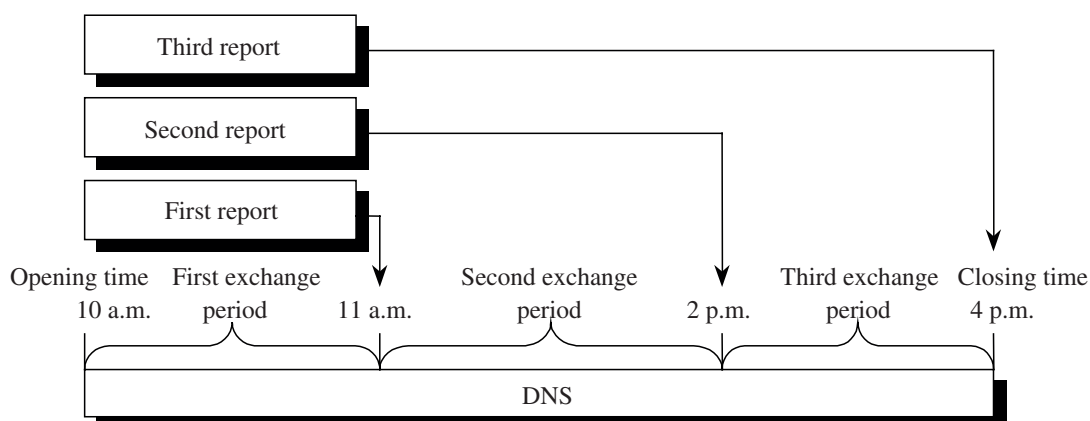
3.3 The large-value payment system: Estonian DNS system

The DNS system is used for processing payments of less than €1 million. The system is based on multilateral netting procedures and the final settlement of net claims and obligations is executed through the RTGS system.

3.3.1 Operating rules

The Bank of Estonia determines the operating rules of the system pursuant to the Law on the Central Bank of the Republic of Estonia and the Credit Institutions Act.

In order to participate in the DNS system, a contract with the Bank of Estonia must be signed. The contract lays down the rights and responsibilities of the participant and the Bank of Estonia. The contract also obligates the participant to abide by the general terms and conditions and technical conditions of the DNS system.

Chart 6**An operating day of the DNS system****3.3.2 Participation in the system**

All credit institutions and the ECSD are participants in the DNS system. Participation in the DNS system is voluntary.

3.3.3 Types of transaction handled

The DNS system processes only credit transfers.³ In the near future the system will also be able to handle direct debits.

3.3.4 Operation of the system

The DNS system opens at 10 a.m. on each banking day, and participants can send payment orders to the DNS system until it closes at 4 p.m. Payment orders are sent to the DNS system in batches via the domestic network.

The DNS system sends a report of incoming payments to the system participants three times a day: at 11 a.m., 2 p.m. and 4 p.m. The first report covers credit orders received from the beginning of the operating day up to 11 a.m., the second report covers credit orders received between 11 a.m. and 2 p.m. and the

third report covers credit orders received between 2 p.m. and 4 p.m.

After the DNS system has closed (at 4 p.m.), the net balances of each participant are fixed. These net balances correspond to the payment claims and obligations between the participants. The DNS system manager transmits all relevant payment orders to the RTGS system for final settlement.

3.3.5 Transaction processing environment

The system is based on batch processing, i.e. participants send credit orders to the DNS system in a “batch” mode. Each “batch” may contain several payment orders payable to several beneficiaries in a single currency. The batches are sent electronically via a virtual private network built on a domestic frame relay network.

³ This includes the rejection of the original credit transfer if sent by the receiving bank to the system not later than three days after the original transfer.

3.3.6 Settlement procedures

During the operating day each DNS system participant may send several batches of credit orders to the DNS system. The DNS system first carries out a technical check of the incoming payment orders (checks the format, etc.). This is called technical validation, and the batch can be either validated, partially validated or rejected. The batch is validated if all the payment orders in the batch have been entered correctly. If the number of incorrect payment orders in the batch is below the predefined threshold, the batch is partially validated by the DNS system, i.e. correct payment orders are accepted for further processing, but incorrect payment orders are rejected. The DNS system rejects the whole batch if it contains more incorrect payment orders than the predefined threshold.

After technical validation, the DNS system carries out a financial validation of the payment orders. It checks whether, following the acceptance of technically validated payment orders, a participant's net obligation remains within the predefined debit cap of the participant. The system basically checks whether the participant has enough funds for the settlement of its obligations. If the participant has sufficient funds (i.e. its net obligation is less than or equal to its debit cap) to cover its obligation following the acceptance of technically validated payment orders, the DNS system accepts the payment orders. If not, all payment orders are rejected, which means that the whole batch is sent back to the participant.

After technical and financial validation of the payment orders, the DNS system manager updates each participant's net position (claim or obligation) and issues an electronic notification to the participant which sent the batch. The notification specifies the status of each payment order in the batch, i.e. whether it has been accepted or rejected by the DNS system. Upon issuance of this notification, all accepted payment orders contained in the batch become final. Participants cannot cancel

or withdraw any payment orders already accepted by the DNS system.

The DNS system establishes the net balances (net claims and obligations) of each participant at closing time and sends the net balances to the RTGS system for final settlement.

After receiving the net balances from the DNS system, the RTGS system conducts a technical check. If a payment order sent from the DNS system contains a technical mistake, it will be sent back to the DNS system manager. The DNS system manager must then correct the mistake and send the corrected payment order to the RTGS system.

The RTGS system does not perform the same kind of financial validation as the DNS system. The net balances are settled immediately if there are enough funds on the participant's settlement account. If there are not enough funds on the participant's settlement account, the missing amount will be covered by the participant's cash collateral, withdrawn from the DNS system's collateral account. The DNS system manager is notified of the outcome of the settlement in the RTGS system.

3.3.7 Credit and liquidity risk

The DNS system does not involve any credit risk because the system is a fully protected net settlement system, which means that all net obligations of participants in the system are 100% protected by cash collateral. A debit cap is set to ensure that a participant's net obligations do not exceed its cash collateral. The combination of debit cap and cash collateral guarantees that net balances will always be settled. This means that all payment orders that are technically and financially validated by the DNS system will automatically become final.

The Bank of Estonia determines the minimum debit cap according to the value of the interbank transactions performed by the participant. In the

case of an increase or decrease in value, the system manager may adjust the minimum debit cap.

At the beginning of each operating day, a participant sets up its debit cap by transferring funds through the RTGS system from its settlement account to the DNS system collateral account. The DNS system manager sets up the debit cap if the cash collateral is received on the DNS system collateral account and if the desired debit cap is at least equal to the minimum debit cap. A participant may manage the intraday liquidity in the DNS system by increasing or decreasing the debit cap. To increase the debit cap, the participant must transfer extra funds to the DNS system collateral account. A participant may decrease the debit cap only if the new debit cap is at least equal to its net obligation and minimum debit cap. If a participant wishes to decrease the debit cap, it notifies the DNS system manager. The DNS system manager checks whether it is possible to decrease the participant's debit cap by the required amount and, if it is possible, the DNS system manager pays from the DNS system collateral account an equivalent amount back to the participant's settlement account.

The cash collateral is an amount of money deposited on the DNS system collateral account by the participants each day to secure settlement of their net obligations netted through the DNS system. Each participant must transfer its cash collateral to the DNS system's cash collateral account in the Bank of Estonia's RTGS system before 9.30 a.m. on each operating day. If this is not done, the participant cannot participate in the DNS system for the entire operating day.

3.3.8 Pricing

As the DNS system and the RTGS system were developed at the same time, and as they use the same hardware and are operated by the same people, the fees are calculated according to the principle that the sum of fees

of both systems must cover the operational costs of both systems. The fees imposed on the participants by the system manager (the Bank of Estonia) include an entrance fee and a fixed fee per payment. There is no annual fee for the participants of the DNS system.

The participants in the Bank of Estonia's previous settlement system are automatically members of the DNS system and do not need to pay a special entrance fee for the DNS system. If a bank joins the DNS system and was not a member of the previous system, it has to pay an entrance fee of EEK 100,000 (€6,390). The fixed fee per payment is EEK 0.5 (€0.03).

3.3.9 Statistical data

Between the launch of the DNS system on 21 January 2002 and 12 April 2002, the DNS system processed a daily average of 55,000 payments, while the average daily value was EEK 612 million (€39,1 million). The maximum number of payments processed in one day was 121,000 and the highest daily value was EEK 970 million (€62 million).

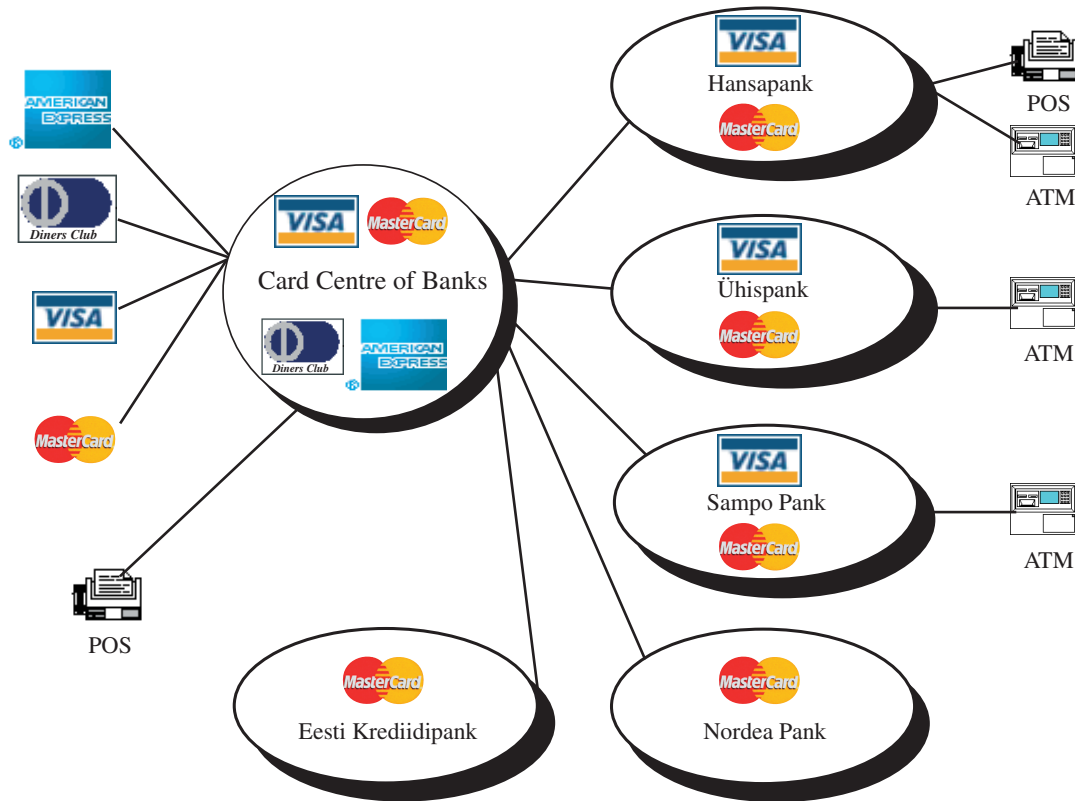
3.4 The retail payment systems

3.4.1 E-money schemes

At the end of 2001 there were no e-money schemes operating in Estonia.

3.4.2 Card-based schemes

In Estonia five commercial banks issue payment cards (credit and debit cards), while ATM networks are operated by the three largest commercial banks (Hansapank, Ühispank and Sampo Pank). Hansapank and the CCB operate EFTPOS networks. All card-issuing banks are linked with each other through the CCB so that all customers can use all ATMs/EFTPOSs (see Chart 7).

Chart 7**General structure of payment card processing in Estonia***Organisational set-up*

The CCB was established by the Estonian credit institutions in 1993 as an independent organisation. It is now owned by the three major commercial banks of Estonia (Hansapank, Ühispank and Sampo Pank).

Services provided

The main purpose of the CCB was to establish a domestic card payment system. The CCB provides banks with a card transaction environment for data interchange, routing and clearing. The CCB operates as an ACH, authorising card transactions, collecting 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. Other services provided to commercial banks include the cross-usage of

ATMs, the administration of credit cards and the monitoring of card abuse.

Data transmission

A commercial bank must have a connection to a bank data communication network or a direct line to the CCB in order to exchange data with the latter.

Authorisation

The authorisation of debit cards involves checking first the validity of a card and then whether there are sufficient funds on the account. In the case of credit card authorisation, the validity of the card is checked as well as the limit.

If the card transaction is made through the ATM/EFTPOS network operated by the card

issuing bank, both authorisation and settlement takes place at the card issuing bank. This method was used for 73% of the total volume of card payments in 2001.

If a card transaction is made using a card issued by a bank other than the operator bank of the ATM/EFTPOS network or a card issued abroad or through the EFTPOS network operated by the CCB, authorisation and the calculation of gross positions between banks takes place in the CCB. In 2001 about 27% of the total number of all card transactions were made through the CCB.

Clearing and settlement procedures

The clearing procedure of the CCB is based on the calculation of the bilateral gross position of each bank. The positions of banks are fixed at 11.30 a.m. on each banking day. After fixing the positions, the CCB sends them to the commercial banks. The settlement of gross positions takes place through the payment and settlement systems managed by the Bank of Estonia (through the RTGS or the DNS system) as a standard credit transfer between commercial banks.

Future developments

Estonian commercial banks completed an EMV project with Visa in 2001 and will complete an EMV project with Europay in 2002. By the end

of 2002, Estonian ATM and POS networks will be ready to accept chip cards. Banks are planning to start issuing EMV-compatible cards (chip cards) before the end of 2002.

Statistical data

In 2001 the CCB processed about 18 million card operations with a total value of EEK 9 billion (€575 million).

3.5 Future developments

In 2002 the Bank of Estonia will continue to develop the interbank payment system. In the course of the year it will implement the following features in the RTGS system:

- settlement of customer credit transfers (MT 103);
- online monitoring facility;
- real-time DVP transactions link for securities settlement; and
- optimisation mechanism for queued payments.

DNS developments will also be made in 2002; the main objective is to introduce the settlement of payments originating from interbank direct debits.

4 Securities settlement systems

4.1 General aspects

4.1.1 Institutional framework

In Estonia there is one SSS, which settles stock exchange and OTC trades.

The ECSD is the responsible body for securities settlement in Estonia. The ECSD was founded as a private company in March

1994 on the initiative of certain commercial banks, along with the Bank of Estonia and the Ministry of Finance. The main tasks of the ECSD are to offer secure conditions for holding registered securities in dematerialised form and to execute transactions involving securities.

In April 1995 the Bank of Estonia, the Ministry of Finance and 21 other financial organisations

founded the TSE as a private company, and it became operational in June 1996. Since its launch the TSE has been an electronic market in which a combination of the electronic dealer market and the order book market is used.

Since a restructuring of ownership in the second half of 2000, the TSE has been the parent company of the ECSD. In April 2001 the Finnish HEX Group acquired majority ownership in the TSE, and the latter was incorporated into the HEX Group under the name HEX Tallinn.

4.1.2 Organisational structure

HEX Tallinn is the operator of the Estonian SSS. Its subsidiaries, the TSE and the ECSD, provide, on a centralised basis, the environment for trading, clearing and settling securities transactions, listing services, market supervision, and maintaining the electronic securities register in Estonia. The HEX Group has a 62% ownership share in HEX Tallinn, the rest is owned by different local market participants.

HEX Tallinn operates as a joint stock company. The general meeting of HEX Tallinn's shareholders elects the Supervisory Board, which is responsible for planning and directing the operations of HEX Tallinn. The Supervisory Board in turn nominates the Management Board to provide leadership on operational issues.

4.2 Trading

Securities can be traded via the TSE trading system as TSE trades or directly between buyer and seller as OTC trades.

4.2.1 Institutional aspects

The general institutional framework

The TSE is the only regulated secondary market in Estonia which enables investors, via

the TSE members and electronic trading system, to engage in securities transactions and which gives listed companies access to a host of capital resources.

Organisational structure

The TSE has three independent committees to perform the stock exchange functions:

- Listing Committee, which is responsible for decisions pertaining to listed companies: listing, sanctioning, delisting;
- Surveillance Committee, which is responsible for the supervision of market participants; and
- Take-Over Committee, which is responsible for the approval of prospectuses and the results of take-over bids, and other areas as stipulated in the rules for take-over bids.

Disputes between the TSE, its members and their customers are settled by the independent and permanent Court of Arbitration. The members of the council of the court are elected by the EFSA and the TSE shareholders.

4.2.2 Operational aspects

Trading system

With the HEX Group's acquisition of the majority ownership in the TSE, it was decided to replace the old trading system of the TSE with the HEX trading system. The TSE currently uses the same technical solution as the HEX trading system, operating in a common trading environment for securities listed on the Tallinn and Helsinki exchanges. The trading of Estonian securities in the HEX trading system was launched on 25 February 2002. Securities prices in the TSE trading system are displayed in euro.

All member firms can, in their own name and on their own account or on their customers' accounts, enter transaction orders in the trading system for securities traded in the public order book. Orders entered in the order book are displayed to all market participants and can be executed immediately if there are matching orders.

Most deals are made via automatic matching. Alternatively, brokers can negotiate deals over the telephone before they are entered in the trading system. In addition to the data on closed deals, the system also distributes bid or offer quotations, transaction orders, issuers' announcements and other securities-related information necessary for trading.

Membership requirements

Investors use the TSE only through its members, which have the exclusive right to use the trading system. Membership of the TSE can be granted to a legal entity meeting the following requirements:

- has the status of a legal entity registered in Estonia, providing investment activities;
- holds a valid activity licence as a professional securities market participant;
- has the minimum share or stock capital in line with requirements of the Securities Market Act. The minimum share capital is either €125,000 or €730,000, depending on the range of investment services offered by the member;
- contributes to the Guarantee Fund of the TSE as determined by the TSE management.

Effective from January 2000, the TSE established remote membership status, which allows foreign securities intermediaries to trade on the TSE. Remote membership status can be conferred on foreign companies which have the right to provide cross-border investment services in Estonia in accordance

with the provisions of the Securities Market Act.

Member companies are obliged to disclose to the TSE their audited annual reports and interim reports of their biannual and quarterly financial results. In addition, TSE member firms must also inform the TSE immediately of any change in their business activities or financial position that might have an impact on their financial health.

In order to promote financial stability and protect the interests of investors, the Management Board of the TSE has the right to impose additional prudential and financial requirements on non-credit institution members, including requirements for minimum capital, capital adequacy, liquidity, compulsory reserve, risk concentration and investment exposure.

Credit institutions applying for membership and those that are already members of the TSE must hold a valid credit institution activity licence issued by the EFSA. Both member credit institutions and those applying for membership must therefore comply with the requirements for credit institutions stipulated by the Credit Institutions Act (9 February 1999) and other regulations issued by the Bank of Estonia.

TSE index

The TSE has established the "TALSE" index which reflects the price movements of shares listed on the Main List and the Investor List (I-List). Each share represented on the index is weighted by its market value, based on the number of shares outstanding and the closing prices of securities. The base value of TALSE is 100 and the base date is 3 June 1996.

Listing structure

The securities listed on the TSE are divided between the following lists: Tallinn Main List, Tallinn I-List, Tallinn Bond List and Tallinn Free

Market. Listed securities must meet the relevant conditions established in legal acts (Securities Market Act and decrees from the Ministry of Finance) and in the rules and regulations of the TSE. The listing requirements ensure that investors receive comprehensive and adequate information regarding the issuer and its financial health. The Listing Committee of the TSE decides whether a security meets the listing requirements. All securities listed on the TSE must be dematerialised, freely negotiable and registered with the EFSA and the ECSD.

be admitted to the Free Market if supported by at least three member firms. Securities can be traded there for a period of one year, after which time they have to apply for official listing or be removed from the Free Market.

Trading hours

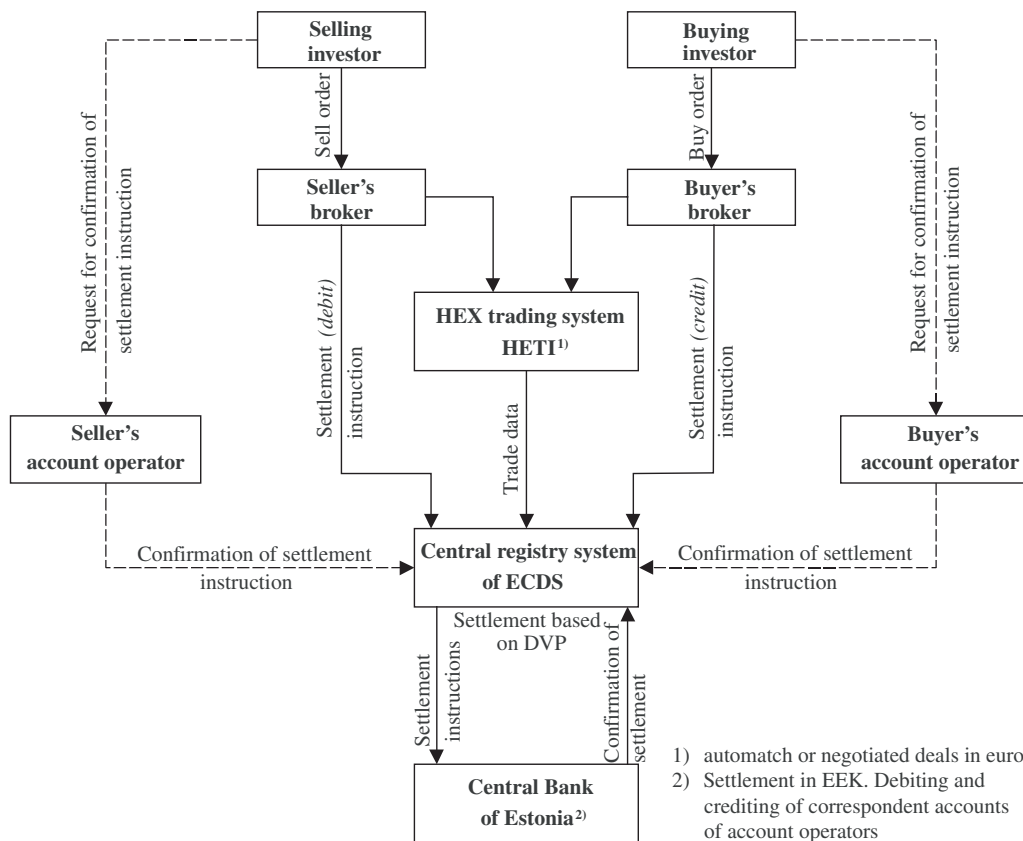
The trading day is divided into a continuous trading period, from 10 a.m. to 2 p.m., and an after-market trading period, from 2 p.m. to 2.30 p.m.

The Free Market is a pre-list of the TSE, established for trading securities which do not qualify for listing, or for which an issuer has not yet applied for listing. Such securities may

4.3 Clearing

The Estonian SSS does not include an independent clearing house. The ECSD is

Chart 8
Clearing and settlement of TSE trades



responsible for activities necessary for the execution of securities transactions.

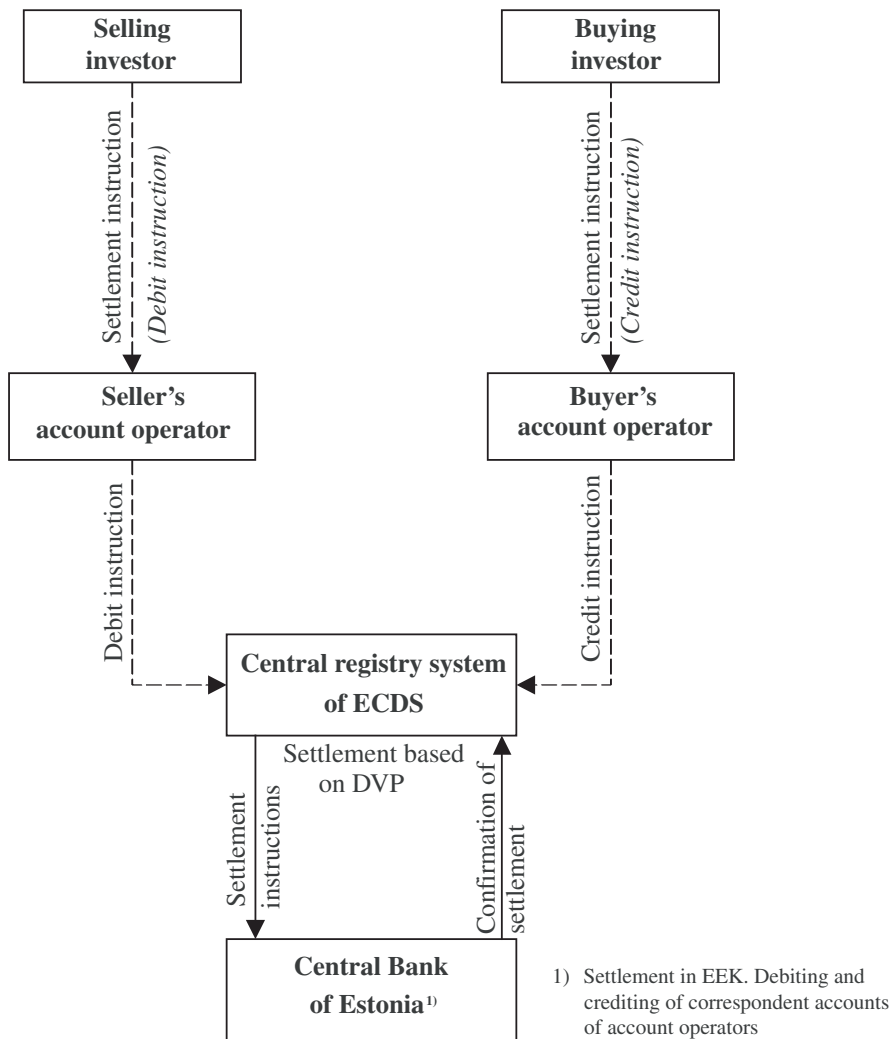
4.3.1 Clearing of TSE trade-based transactions

The settlement details of TSE trades are transmitted automatically to the ECSD. The seller's broker must send a debit instruction to the ECSD and the buyer's broker must send a credit instruction. If the broker is the buyer's or the seller's account operator in the ECDS system, all data for the calculation of the

settlement amount is collected. If this is not the case, the account operator(s) must confirm with the ECSD the debit and credit instructions issued by the brokers. All the above activities should be completed no later than 5 p.m. on day S-1.

The ECSD calculates the settlement amount, in securities and in monetary terms, of account operators based on model 3 described in the Report of the Committee on Payment and Settlement Systems of the Central Banks of the Group of Ten Countries

Chart 9
Settlement of OTC trades according to the DVP principle



(based on the net settlement of both securities and funds). The multilateral monetary net claims or obligations of brokers which are not members of the Bank of Estonia's RTGS system are added to the monetary claim or obligation of its account operator. The claims and obligations of account operators calculated by the ECSD form the basis for settlement.

4.3.2 Clearing of OTC trade-based transactions

In the case of OTC trade, investors can perform FOP or DVP transactions. In both cases, the seller's and the buyer's account operators must send their respective transfer orders for the securities transfer to the ECSD. The seller's account operator must send a debit instruction to the ECSD and the buyer's account operator must send a credit instruction. If the data in the transfer orders match and the securities requested are available on the securities accounts of the seller, the ECSD blocks the necessary amount of securities.

For OTC trades settled against payment, the ECSD calculates the settlement amount, in securities and in monetary terms, of account operators based on model 2 as described in the Report of the Committee on Payment and Settlement Systems of the Central Banks of the Group of Ten Countries (based on the gross settlement of securities and the net settlement of funds). The multilateral monetary net claims or obligations of brokers which are not members of the Bank of Estonia's RTGS system are added to the monetary claim or obligation of its account operator. The claims and obligations of account operators calculated by the ECSD form the basis for settlement.

4.4 Settlement

The ECSD manages the settlement process in the Estonian SSS. All trades, i.e. TSE trades and

OTC trades, are settled on the value date. The general settlement period for TSE trades is by default T+3 (where T is the day on which the trade data is entered in the ECSD system). For automatically matched TSE trades, the default settlement date is always T+3, while for negotiated trades the settlement date chosen by brokers can vary from T+1 to T+6. OTC trades are settled with a settlement date of no later than T+5.

4.4.1 Settlement of TSE trades

Settlement of TSE trades is based on the claims and obligations calculated by the ECSD during the clearing process (see Section 4.3.1). The ECSD starts the settlement of TSE trades by blocking the appropriate amount of securities on the securities account to be debited.

The calculated monetary multilateral net claims and obligations are settled in the Bank of Estonia's RTGS system by debiting and crediting the settlement accounts of the account operators. The ECSD sends settlement instructions to the Bank of Estonia at 1 p.m. on the value date.

After the Bank of Estonia has sent the ECSD a confirmation regarding the settlement of monetary obligations, the relevant securities transfers will be made. The settlement of TSE trades is final once the seller's securities account has been debited and the buyer's credited.

The TSE has the right to impose sanctions on the member firms of the TSE to ensure that transactions can be executed. These sanctions are stipulated in the rules and regulations of the TSE and relate to the submission of special orders to the ECSD, the buying or selling of securities, the usage of the TSE Guarantee Fund, etc. These sanctions can be imposed if the member firm of the TSE has not transmitted the transfer order necessary for the execution of the TSE-based security transfer, or if the transfer order cannot be processed for some other reason.

4.4.2 Settlement of OTC trades free of payment

In the case of OTC trade without payment, settlement takes place as soon as transfer orders from both transaction parties have been entered in the ECSD system and the ECSD has checked whether the securities requested are available on the securities account to be debited. This means that OTC trades without payment can be settled in real time.

4.4.3 Settlement of OTC trades against payment

The settlement of OTC trades against payment is based on the claims and obligations calculated by the ECSD during the clearing process (see Section 4.3.2). As a result of clearing, the relevant amount of securities is blocked on the securities account to be debited.

The calculated monetary multilateral net claims and obligations are settled in the Bank of Estonia's RTGS system by debiting and crediting the settlement accounts of the account operators. Following confirmation regarding the settlement of the monetary obligations of TSE trades, the ECSD sends settlement instructions to the Bank of Estonia at around 1.45 p.m. on the value date.

After the Bank of Estonia has sent the ECSD a confirmation regarding the settlement of monetary obligations, the relevant securities transfers will be made. The settlement of OTC trades against payment is final once the seller's securities account has been debited and the buyer's credited.

In the case of securities transfers against payment, there is no guarantee that the transfer orders will be effected. If one of the transaction parties has not submitted the transfer order via its operator, or the submitted transfer order cannot be processed for some other reason (for example, the requested securities are not available on the

account to be debited), the transfer will not be executed.

4.4.4 Links with other securities settlement systems

The ECSD has correspondent relations with two other SSSs: the Central Register of Privatisation Vouchers and the Latvian Central Depository for Securities.

The link with the Central Register of Privatisation Vouchers enables the transfer of privatisation vouchers from the privatisation vouchers account to the securities account in the ECSD and vice versa.

The link with the Latvian Central Depository for Securities enables FOP transfers of securities registered in the Latvian Central Depository for Securities to the securities account in the ECSD and vice versa.

4.5 The use of the securities infrastructure by the Bank of Estonia

Owing to the adoption of the currency board arrangement the Bank of Estonia does not participate actively in the interbank money market and does not initiate daily open market operations. There are no regular central bank refinancing facilities.

However, one half of the reserve requirement of banks could also be met by holding eligible foreign fixed income securities of investment grade or higher and nominated in an anchor currency. According to the Bank of Estonia's Decree No. 13 (22 December 2000), the Bank of Estonia has the right to obtain data on the banks' liquidity portfolio accounts and the fixed income securities held on these accounts to check whether the assets in the liquidity portfolio meet the requirements set by the Bank of Estonia. The market value of the liquidity portfolio is calculated by the Bank of Estonia on a daily basis.

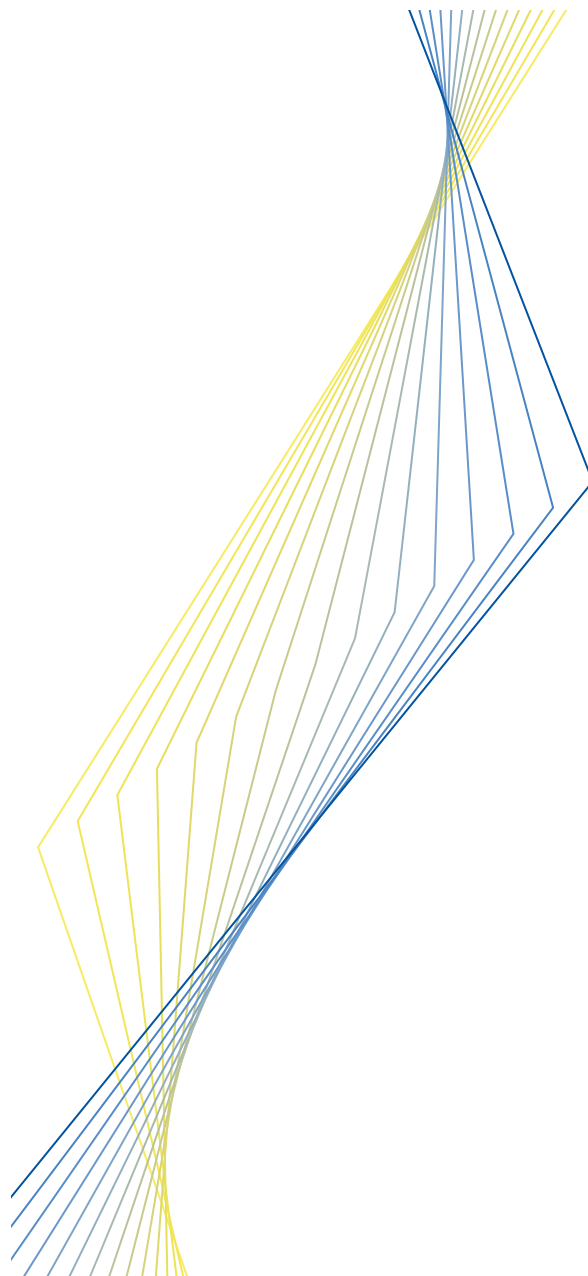
Finally, during the period prior to participation in EMU it will be necessary to start reforming the monetary policy operational framework to meet EMU standards. In the longer term, operational convergence towards the EMU framework will

take standing facilities as its starting-point, and may include the establishment of a collateralised lending facility. It is unlikely that open market operations will be implemented prior to Estonia's participation in EMU.

Estonia



EUROPEAN CENTRAL BANK



Hungary

August 2002

Hungary

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List of abbreviations

AGIRO/B	Software interface to PC GID
ÁKK	Government Debt Management Agency
BCE	Budapest Commodity Exchange
BSE	Budapest Stock Exchange
BUBOR	Budapest interbank offered rate
ELMASWIFT	Company that provides shared access to SWIFT
GBC	Giro Bank card Company
GIRO	GIRO Clearing House Ltd.
HBA	Hungarian Banking Association
HFSA	Hungarian Financial Supervisory Authority
HFTB	Hungarian Foreign Trade Bank
IBI matrix	Interbank indebtedness matrix
ICS	Interbank Clearing System
KELER	Central Clearing House and Depository Ltd.
KIS	KELER Internetwork System – communication network of KELER
MMTS	Multi-Market Trading System – the trading system of BSE
NBH	National Bank of Hungary
PC GID	Personal Computer Giro Interface Device – user access point to GIRO network
SPAN	Risk management system of KELER for derivatives
VIBER	RTGS system of the NBH

Introduction

Commercial banking was re-established in Hungary in 1987 and the restoration of the capital markets took place in 1989. The enormous task of restoring a market-based economic system required strong leadership from the National Bank of Hungary in the development of payment and settlement systems. Recognising the key importance of building efficient systems serving the needs of the business community, the National Bank of Hungary decided to involve the users of the systems in the development process. The Hungarian ACH, GIRO Clearing House Ltd. (GIRO), was established in 1988. The Central Clearing House and Depository Ltd. (KELER) was founded in 1993. The credit institutions and the National Bank of Hungary jointly own both these companies. The oversight competence of the Bank with regard to payment systems is clearly defined in the Act on the central bank. However, there is no legal basis for the oversight of the securities clearing and settlement systems. In the latter case, the National Bank of Hungary can promote its own interests using its stake in KELER.

Large-value and retail payments are clearly and increasingly separated. VIBER, the RTGS system operated by the National Bank of Hungary, is used for urgent and high-value payments, and the Interbank Clearing System (ICS), which is operated by GIRO, processes retail payments. These two systems are very closely linked and interdependent, since both systems operate on the basis of gross settlement, within distinct time frames. KELER concentrates on the depository, clearing and settlement functions and is the sole provider of these services to capital market participants. Cash settlement is split between KELER and the National Bank of Hungary, the former serving non-banks, the latter the banking industry. All of these systems are characterised by a high level of automation, sophisticated services, a proven record of reliability and advanced features for the containment of financial risks.

Banking and payment services are developing rapidly. The vast majority of employees receive their wages, salaries and benefits on bank accounts and most of them use payment cards. Initially, cards were used almost exclusively to withdraw cash. Recent trends show that cards are increasingly being used at POS. In order to overcome safety concerns and enable customers to control their spending, issuing banks actively send SMS messages to the mobile telephone of their customers to notify them of transactions. Cardholders can also send such messages to change their spending limits at any time throughout the day. One notable feature of the Hungarian system is the relatively low penetration of ATMs and the large number of POS used to withdraw cash at bank branches and post offices. The use of cheques is extremely limited and banks have stopped issuing cheque books. The most widely used payment instruments are credit transfers and direct credits (i.e. batch credit transfer orders). Despite the growing importance of bank services, the volume and value of postal payments are still very high, because many account holders still prefer postal orders to direct debits, since they are afraid of losing control over their finances.

Hungary has committed itself to taking over the *acquis communautaire* of the EU. It has adopted Recommendation 97/489/EC on electronic payment instruments and Directive 97/5/EC on cross-border credit transfers (the latter will come into force upon Hungary's accession to the EU). Directive 98/26/EC on settlement finality in payment and securities settlement systems has been partly implemented, and full implementation is expected in 2002.

The National Bank of Hungary puts great emphasis on the transparency of policies on payment and settlement systems and published its payment systems policy in a formal document in 2001.

I. Institutional aspects

I.1 The general institutional framework

1.1.1 Institutions

According to the first indent of paragraph 32/D of the Constitution of the Republic of Hungary (Act XX of 1949), the National Bank of Hungary bears constitutional responsibility for regulating the circulation of money. The development of payment and settlement systems, the promotion of their smooth and efficient functioning, and the regulation of payment and settlement services are defined as basic tasks of the central bank by Act LVIII of 2001 on the National Bank of Hungary. In order to perform these tasks, the National Bank of Hungary operates the RTGS system, settles payments for clearing systems, supports or manages the payment system development projects, and oversees payment arrangements in Hungary. Credit institutions and clearing houses are obliged to provide the National Bank of Hungary – regularly or upon request – with the information necessary to ensure the stability of the payment system.

Supervision of financial service-providing companies operating in the banking, insurance, pension fund management and securities markets is the responsibility of the integrated Hungarian Financial Supervisory Authority (HFSA). The overall objective of the HFSA is to contribute to the stability and efficiency of the Hungarian financial system.

The Ministry of Finance is responsible for the legislation governing the activities in the financial sector (i.e. those of credit institutions, investment firms, stock exchanges, fund managers, clearing houses and insurance companies).

1.1.2 The legal framework

The principal laws and agreements forming the legal framework for the payment and

settlement systems infrastructure are listed and described briefly below:

Act CXII of 1996 on credit institutions and financial undertakings (Banking Act) governs banking activities and financial services in general. It regulates among others the prudential supervision of financial institutions, the requirements for obtaining a bank licence, banking secrecy, the issuance of cashless payment instruments and the provision of payment clearing services. It lays down rules regarding the setting-up and operation of a payment clearing house. It is required by law that every financial institution join directly or indirectly one of the interbank funds transfer systems (VIBER or the ICS).

Act LVIII of 2001 on the National Bank of Hungary defines the basic tasks of the central bank, empowers it to regulate and oversee the domestic payment systems, contains the rules for keeping accounts for public and private sector bodies, authorises the conduct of on-site or off-site examinations with regard to the institutions falling under the scope of the Act, guarantees the independence of the central bank from the Government and establishes the Bank's main decision-making bodies. The Act partly implements Directive 98/26/EC on settlement finality in payment and securities settlement systems, exempting the Bank from insolvency rules in respect of collateral provided to it.

Act CXX of 2001 on the capital markets comprehensively regulates the functioning of the different segments and players of the securities market, i.e. the operation of the exchanges, pension funds, securities firms, the CSD and clearing houses, and the supervision of capital market-related activities and companies. The Act protects the settlement provider in respect of collateral security provided to it in case of insolvency of a participant.

Government Decree 232/2001 on the circulation of money, payment services and electronic payment instruments contains the rules for opening bank accounts, executing payment instructions, identifying customers, use of bank accounts and notifying customers. It also provides for the implementation of Directive 97/5/EC on cross-border credit transfers and Recommendation 97/489/EC on electronic payment instruments. This decree also regulates the issuance and use of electronic money. It defines e-money as a reloadable payment instrument other than a remote access payment instrument on which value units are stored electronically (a chip card or a computer memory). Only financial institutions can issue e-money and they are obliged to convert e-money to cash or a bank account balance upon request.

Decree 9/2001 of the Governor of the National Bank of Hungary on payment and clearing services defines the range of available payment instruments, the structure of the uniform bank account number, the structure and implementation of the international bank account number, the standardised (paper) forms, time-limits for executing payment instructions (both for banks and clearing houses), the order in which payment instructions have to be executed and administrative preconditions for performing clearing services.

1.2 The role of the National Bank of Hungary

The National Bank of Hungary plays a pivotal role in payment systems as it is responsible for the development of payment and settlement systems, the operation of VIBER, the regulation and licensing of payment clearing services and the exercise of the oversight function with regard to the interbank payment systems. The President of the National Bank of Hungary is authorised by law to issue decrees concerning payment services and payment systems.

1.2.1 Payment systems oversight

The Act on the National Bank of Hungary grants the National Bank of Hungary legal authority for the development of the national payment systems. The role played by the National Bank of Hungary in the various systems is in line with the significance of the relevant system in terms of systemic risk.

Within this framework, payment systems oversight covers the following activities:

- data collection and information gathering via statutory reporting, on-site inspections, consultations and informal requests;
- analysis, in particular of compliance of the systems' operating rules with internationally accepted standards, and evaluation of the various analyses prepared on the systems and operators;
- approval of the systems' operating rules and of the modification of the contracts underlying the systems. The National Bank of Hungary expresses its opinion on major development decisions. It may also order the auditing of the systems or the development of procedures ensuring their smooth and safe operation;
- regulation with regard to the circulation of money and the provision of clearing services. The National Bank of Hungary has the right to issue decrees within its scope of authority (see Section 1.1.2); and
- publications. The National Bank of Hungary has clearly defined its payment system objectives and disclosed publicly its role and major policies with respect to the systemically important payment systems.¹

¹ Role of the National Bank of Hungary in ensuring the smooth functioning of payment systems and in regulating payment services (www.mnb.hu/publications/other_publications).

In its capacity as an overseer, the National Bank of Hungary's aim is to ensure that the systems operate in accordance with its objectives, i.e. that the systems are safe and efficient and do not prevent fair market competition. In this context, the Bank deems it important, inter alia, to ensure that access to the systems is based on objective and public criteria. In the field of retail payments, the National Bank of Hungary pays particular attention to efficiency. Within the private sector, it aims to promote co-operation.

The establishment of a payment clearing house is subject to licensing by the National Bank of Hungary. Government and central bank decrees stipulate the human and material requirements for providing clearing services. The National Bank of Hungary regularly checks compliance with these requirements.

The National Bank of Hungary ensures compliance of its systems with internationally agreed standards by incorporating them into the systems' operating rules and regularly checking operations. As the policy and operational functions are separated, this task is carried out by the Payment Systems Department and the Internal Audit Department. The Payment Systems Department is responsible for policy issues, while the Internal Audit Department conducts regular inspections of the operational reliability and efficiency.

1.2.2 Activities in the area of securities clearing and settlement systems

Regulation of the securities clearing and settlement systems is the competence of the Ministry of Finance, while responsibility for the supervision of clearing houses is borne primarily by the HFSA. The HFSA approves the general terms of contracts and the rules of the clearing houses. The HFSA can intervene in the day-to-day business of a clearing house by restricting the access of customers to any account in certain circumstances. Both the HFSA and the National Bank of Hungary can

impose reporting obligations on the clearing houses. Given the National Bank of Hungary's interest in the efficiency and stability of the capital and money markets, it plays a proactive role in the development of the securities settlement system through its 50% shareholding in KELER.

The National Bank of Hungary provides cash settlement exclusively for credit institutions in the VIBER system, which is directly connected to the real-time settlement system of KELER, enabling settlement of OTC transactions according to DVP model 1 and of BSE and derivative transactions according to DVP model 3.

1.2.3 The operational role of the central bank

VIBER was established and is operated by the National Bank of Hungary. The operator of ICS is GIRO, a company that is jointly owned by the banking community and the National Bank of Hungary, with the latter being the minority shareholder. Card-clearing systems were established by commercial banks and therefore the Bank is not involved in their governance. The National Bank of Hungary is the settlement agent for one of these card-clearing systems (the Giro Bank card Company; GBC) and has initiated negotiations on the assumption of this function for the other two systems as well.

The National Bank of Hungary provides settlement services through VIBER. The Bank is the operator of the central accounting system, while communication takes place through the SWIFT network.

The National Bank of Hungary holds accounts for credit institutions, KELER, the State Privatisation and Holdings Ltd., the Hungarian State Treasury Ltd. and the Hungarian Post Office. In addition to holding settlement accounts, it also provides correspondent banking services to some indirect participants in VIBER and the ICS.

All banks have a single account with the National Bank of Hungary. Since credit institutions are required to meet reserve requirements on an average basis over a given period, reserve holdings can be used for settlement purposes during the day.

The National Bank of Hungary is settlement agent for the ICS and the GBC and settles the HUF leg of securities transactions.

1.2.4 Co-operation with other institutions

There is a general distribution of responsibilities between the three public sector institutions dealing with the regulation, supervision and oversight of the payment and securities settlement systems, the banking sector and the capital markets. The Ministry of Finance submits draft legislation (e.g. draft acts and government decrees) through the Government to the Parliament and exercises the State's ownership rights with regard to the National Bank of Hungary. The National Bank of Hungary is thus a company limited by shares, and the Ministry of Finance is the sole shareholder. However, this ownership structure has no impact on the independence of the National Bank of Hungary. The HFSA has no regulatory power, but it supervises all financial service providers. The National Bank of Hungary has regulatory competence in the field of payment systems and oversees the payment and settlement systems, and recently this oversight has been extended to SSSs. The distribution of tasks requires co-ordination among these bodies.

The National Bank of Hungary and the HFSA have a Memorandum of Understanding, under which the two institutions share information and co-ordinate statutory reporting as well as on-site inspections. The National Bank of Hungary cannot impose sanctions on the providers of payment services or system operators in the event that rules are infringed, but it can propose that the HFSA impose fines on the offending institutions. There is no

formal agreement between the Ministry of Finance and the National Bank of Hungary, the co-operation being based on public administration procedures.

1.3 The role of other private and public sector bodies

1.3.1 The Hungarian Financial Supervisory Authority

With effect from 1 April 2000, the Parliament established the HFSA with Act CXXIV of 1999. The HFSA is the general legal successor to the Hungarian Banking and Capital Market Supervisor, the State Insurance Supervisor and the State Private Fund Supervisor. It is a legal entity and operates as an independent budgetary agency.

The objectives of this consolidated supervisory authority are to promote the smooth operation of the money and capital markets, to protect the interests of customers, to enhance transparency of markets and to maintain fair and regulated market competition. These aims can be achieved by constantly monitoring the operation of organisations and entities engaged among others in the provision of financial services, clearing house activities, investment and fund management activities, and of stock and commodity exchanges and their members.

Among its other duties, the HFSA grants licences to credit institutions for the provision of payment services. From 1 January 2002, it took over the licensing of the issuance of cashless payment instruments and money transfer services from the National Bank of Hungary.

1.3.2 The Office of Economic Competition

Act LVII of 1996 on the prohibition of unfair and restrictive market practices, harmonised with EU legislation, contains provisions prohibiting the abuse of dominant positions,

anti-competitive price co-operation, unfair market practices, etc. The Act also sets out the tasks of the Office of Economic Competition, which is a publicly owned legal entity. It is entitled to impose penalties.

1.3.3 The Hungarian Banking Association

The Hungarian Banking Association (HBA) represents the interests of its member banks. Even though membership is voluntary, every bank has joined the association. The HBA participates in the drafting of laws and regulations concerning the financial sector and facilitates the formulation of a common position of its members on different issues. The HBA has been actively supporting the development of common market infrastructures

(such as the ICS, 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 associate status in 1998. It is an associated member of the European Committee for Banking Standards.

1.3.4 The Hungarian State Treasury Ltd.

The State Treasury offers quasi-banking services to 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 out of positive balances.

2 Payment media used by non-banks

2.1 Cash payments

The National Bank of Hungary has the exclusive right to issue banknotes and coins in Hungary and is responsible for their exchange, the replacement of worn banknotes and the withdrawal from circulation of counterfeit banknotes.

Cash payments continue to play an important role in payment transactions in the Hungarian economy, although the market share of electronic payment instruments (such as payment cards, credit transfers and direct debits) is continuously growing.

Both banknotes and coins are issued in seven denominations (banknotes: HUF 20,000; 10,000; 5,000; 2,000; 1,000; 500 and 200; coins: HUF 100, 50, 20, 10, 5, 2 and 1). A series of new banknotes and coins was issued in 2001.

The value of banknotes and coins in circulation rose from HUF 444 billion (€1.73 billion) in 1995 to HUF 1,038 billion (€4 billion) in 2001. The share of cash in M1 has fallen over the

past six years, from 42.8% in 1995 to 37.4% in 2001. The same trend can be seen when expressing cash in circulation as a percentage of GDP (7.9% in 1995 and 7% in 2001).

2.2 Non-cash payments

Bank customers have access to a wide range of payment instruments. The predominant means of payment are giro credit transfers, direct debits/credits, card payments and postal payments. A very high proportion of transfer instructions are initiated remotely (e.g. by bank card, telephone, personal computer, through telecommunication lines, etc.). Banks are also actively encouraging large organisations generating or receiving high volumes of recurring payments to use paperless electronic transfers.

Decree 9/2001 of the Governor of the National Bank of Hungary on payment and clearing services regulates non-cash payment instruments.

2.2.1 Credit transfers

The credit transfer is the most commonly used payment instrument in Hungary. The order to make a credit transfer can be given to a bank either on paper or in electronic form (on diskette or magnetic tape, or by file transfer).

The emergence of PC, telephone, internet and mobile banking is a significant new development. More and more account holders are presenting their payment orders electronically via telecommunication lines, making labour-intensive manual data capture within the banking system unnecessary. In 2001, more than 70% of the transfers were initiated electronically. The total number of transactions reached 136.5 million, with their value amounting to HUF 222,836 billion (€868.5 billion).

There are two types of credit transfer: the ordinary credit transfer and the direct credit.

Ordinary credit transfer

The ordinary credit transfer can be presented to the account-keeping financial institution either in paper form or via electronic channels. The payment can be routed through either VIBER or the ICS depending on the choice of the originator and the facilities offered by the banks to their customers. Generally speaking, VIBER is used to transfer large-value and/or urgent payments.

Direct credit

Direct credit is used by payers that regularly initiate mass transfers, such as wages, social benefits and allowances, pensions, insurance premiums, etc. Typically, the payment orders are presented in electronic batches either by sending them to the originator's bank or directly to GIRO (the ICS operator), which ensures a high level of automation of the transaction processing.

In 2001, 26.4 million transactions with a total value of just over HUF 1,499.2 billion (€5.8 billion) were effected. This represents an increase of more than 35.8% compared with 2000.

2.2.2 Cheques

Cheques have never been popular in Hungary. Debit cards took over the role of cheques very quickly. There is no cheque clearing system owing to the low volumes involved, meaning that cheques are exchanged bilaterally between banks. Considering the fact that banks have stopped issuing cheque books, it is expected that the settlement of this instrument will disappear in the near future. It should be mentioned that cheques issued in other currencies are present in the Hungarian payment system, but their role is not significant in cross-border payments.

2.2.3 Direct debits

Direct debits were introduced in Hungary in 1997. The volume of direct debit transactions has been increasing significantly and reached one-third of the total transactions processed by the ICS last year. Given the nature of this payment instrument, the average amounts are very small and it is more significant in terms of volume than value compared with other cashless payments.

In 2001, 19.96 million transactions with a total value of just over HUF 87.7 billion (€0.3 billion) were effected, representing an increase of more than 24% from 2000.

2.2.4 Payment cards

Currently, 23 commercial banks offer payment cards. A result of their vigorous promotional efforts, the number of bank-issued cards in circulation had reached 5 million by the end of 2001, with an overwhelming majority of debit

cards (4.6 million) and an increasing number of credit cards (0.45 million) and charge cards (0.006 million). In spite of the large number of banks issuing cards, there are only six banks interested in the card-acquiring business. These are typically large retail banks.

The card business has developed in a very competitive environment. In practice, the MasterCard and Visa brands have made mutual card acceptance possible, so the great majority of cards carry either of these logos.

Debit cards

The majority of debit cards (90%) can be used internationally since they carry either the Visa or MasterCard logo. The remaining 10% are exclusively for domestic use. Approximately 83% of the cards can be used only in an electronic environment. Some 97% of the cards can be used both to pay for goods and services and to withdraw money. The remaining 3% are cash-only cards, which can be used at ATMs and POS installed at bank branches as well as at any of the 3,265 post offices.

Currently, the magnetic strip enables the electronic use of the cards, but chip-card systems are in a testing phase prior to implementation. At ATMs, PINs must be used, whereas these are not mandatory in most retail outlets, where customers sign paper slips.

The volume of transactions with debit cards is growing continuously. During 2001, 127.5 million transactions were made, 77% of which were cash withdrawals. The value of these transactions was HUF 2,804.3 billion (€10.9 billion).

Credit and delayed debit (charge) cards

Bank-issued credit and charge cards only appeared in Hungary a few years ago, but their number is increasing rapidly. Their market share reached 9% of the total number of issued bank cards in 2001, and the corresponding turnover increased from HUF 33.8 million (€0.13 million) in 2000 to

HUF 57 million (€0.22 million) in 2001, which represented more than 2% of total bank card turnover.

One of the main reasons for this significant growth is that banks are investing substantial amounts in marketing campaigns transmitting the message to customers that they can use the banks' money free of charge for 30 to 40 days. Cardholders are utilising this interest-free credit facility offered by the banks and therefore the share of payments (despite cash withdrawals) is much higher for these cards (75.5%) than for debit cards (23%).

Retailer cards

As defined in the Banking Act, a retailer card can be used only in the network of the issuing company.

Currently, retailer cards are only issued by seven petrol companies and thus can only be used at the petrol stations run by the respective issuer. At the 1,400 petrol stations countrywide, more than 1,512 POS terminals and 703 manual imprinters are in operation.

By the end of 2001, more than 393,500 petrol cards had been issued and during that year 11.3 million transactions were recorded with a value of HUF 146.3 billion (€0.57 billion).

Single-purpose prepaid cards

Single-purpose prepaid cards are mainly used in the telephone industry, although recently other service providers, such as urban parking companies have started to make use of similar products as well, albeit on a smaller scale. All these cards are non-reloadable chip cards.

2.2.5 Electronic money

Even though some companies and one bank have already issued smart cards, this technology is not used for payments and so no e-money systems are in operation in Hungary yet.

2.2.6 Postal instruments

The Hungarian Post Office provides cash payment services. A large proportion of households use the postal network for making public utility bill and other regular payments (e.g. insurance premiums) or effecting occasional cash transfers to other individuals. A significant proportion of social security benefits and pension payments are also delivered through the postal network. There are currently around 3,265 post offices in Hungary compared with 2,888 bank branches. Banks and the Post Office settle their bilateral obligations through their accounts with the National Bank of Hungary (the Post Office is a VIBER participant).

The Post Office offers three types of cash payment service.

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. This instrument is typically used to pay utility bills and insurance premiums and is therefore a payment instrument competing with the direct debit. In 2001, about 211.3 million transactions were processed with a value of HUF 1,989 billion (€7.75 billion).

The domestic postal order is a money transfer order where the debtor's cash is handed over at the counter and delivered to the address of the beneficiary. The paper slips for this purpose can be obtained at post office counters. This payment instrument is generally used by individuals. In 2001, 3.8 million transactions were processed with a total value of HUF 63 billion (€0.24 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 for the total value of the orders, forward them to the post office 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. This instrument is heavily used by the different government agencies to pay out social benefits, pensions, etc. to beneficiaries who have no bank account. In 2001, 21.7 million transactions were processed with a value of HUF 344.8 billion (€1.34 billion).

2.2.7 Other payment instruments

There are some other payment instruments in Hungary, such as collection orders (similar to direct debits, but their use is confined to corporate accounts), traveller's cheques, letters of credit, cash withdrawal orders (similar to cheques). However, these instruments are used to a lesser extent than those mentioned above.

2.3 Recent developments

Internet banking

Many banks provide services through the internet, although the quality and content of the services offered vary. On the most developed websites, customers can carry out various common operations, i.e. they can interactively manage their current or securities accounts held by the bank, download different forms or documents, apply for credit, etc.

Mobile banking

The integration of banking services and mobile communication is a very challenging area of payment systems development. There are already different services in operation, which enable secure payment by credit, debit and charge cards. Cardholders can upon request receive an SMS message if a transaction is made with their payment card, or they can change their spending limit by sending an SMS message to their bank.

Chip migration

Although only a very small number of banks have already issued chip cards or hybrid cards (with both a chip and magnetic strip), the challenge over the next two to three years is expected to be the replacement of the magnetic strip systems with chip-card systems. Some of the technical service providers have already started to upgrade or change their POS terminals and other electronic devices.

Standardisation

The HBA in co-operation with the National Bank of Hungary have launched a project to introduce the IBAN for cross-border payments. The Central Bank Decree 9/2001 defined the structure of the IBAN and requires step-by-step implementation by the end of 2002. The structure of the 28-character Hungarian IBAN consists of three main parts according to the ECBS standard. The first part is the country code "HU", the second contains the check digits and the third incorporates the 24-character domestic account number.

3 Interbank exchange and settlement systems

3.1 General overview

In Hungary, there is a clear division of large-value and retail payment systems. The distribution between VIBER and the ICS is partly dependent on their different functions and partly on the free choice of users. There is no limitation in terms of value per transaction. The basis for direct participation in VIBER as well as in the ICS is the settlement account relationship with the National Bank of Hungary. The lists of direct participants in the two systems largely overlap.

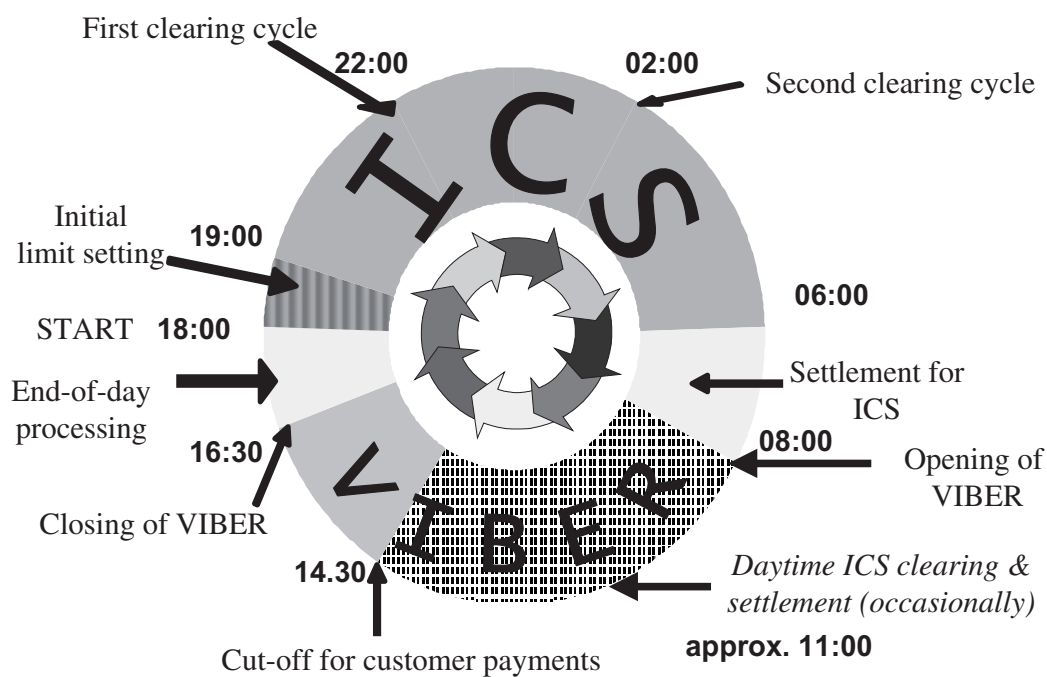
The core payment systems are closely linked and complement each other. Bulk payments are processed overnight in the ICS using the daily initial liquidity information on a batch-by-batch basis and settlement is carried out in the

National Bank of Hungary's accounting system before the opening of VIBER. Only the occasional second clearing cycle of the ICS during VIBER hours requires the splitting of the sending party's liquidity. Financial risks for participants and the National Bank of Hungary arise in a very similar way in both systems, although ICS participants should manage their liquidity *ex ante*, while in VIBER there are a number of tools for managing liquidity during opening hours.

The chart overleaf shows the daily schedule of the core payment systems (times given in C.E.T.).

The large-value payments tend to pass through VIBER, while the low-value payments are generally made through the ICS as can be seen from Table I below:

Table I		
Aggregate turnover of VIBER and the ICS in 2001		
	Transaction volume (in thousands)	Value of payments (EUR billions)
VIBER	239.8	544.67
ICS	139,573.2	167.52
Total	139,813	712.19

Chart**PS business day schedule (24-hour clock)**

There are three clearing systems for domestic card payments. International card associations operate two of these.

Furthermore, there are some other payment arrangements that, although not being an established payment system, bear some of the characteristics thereof.

The accounting system of the National Bank of Hungary provides a full settlement account service for those banks that are not direct participants in VIBER. The master accounts of VIBER participants (except for the National Bank of Hungary itself) are kept in the accounting system and entries are made before and after VIBER business hours. While ICS positions, the HUF leg of foreign exchange transactions with the National Bank of Hungary and the crediting of matured deposits with the National Bank of Hungary are settled in the morning, fees, interest payments, collection orders, loan repayments and the extension of overnight credit by the National

Bank of Hungary are entered in the participants' accounts after VIBER closure.

The accounting system of the Hungarian Savings Co-operatives' Bank works according to a similar arrangement. It provides the savings co-operatives with indirect access to the payment systems and enables intra-sectoral payments.

The Post Office operates an internal clearing system in connection with its cash-related services.

3.2 The real-time gross settlement system: VIBER

The Hungarian RTGS system, VIBER, has been operational since September 1999. It is owned and operated by the National Bank of Hungary.

3.2.1 Operating rules

The operating rules of the system are set out in the terms and conditions for the settlement accounting and VIBER services of the National Bank of Hungary. The rules include: membership criteria, operating hours, a timetable of the business day, revocability and finality provisions, message standards, responsibilities and obligations of participants, intraday credit and related collateral arrangements, prices, etc. Participating banks concluded an agreement on the time frames for executing customer payment instructions, which has been published in the Official Gazette of the Ministry of Finance.

3.2.2 Participation in the system

The system is open to domestic credit institutions and branches of foreign banks, the National Bank of Hungary, the State Treasury, KELER and the Hungarian Post Office. There are 39 direct participants. The criterion for direct participation of a credit institution is purely technical: it should have an account with the National Bank of Hungary (any credit institution can have one) and should be able to link up to the system (this requires membership of a SWIFT closed user group and successful testing). Only credit institutions registered in Hungary can be direct or indirect participants according to the rules of the system. Indirect participation has two salient features: customers of indirect participants can be addressed directly and indirect participants can send and receive bank-to-bank payments after the cut-off for customer payments. The position of an indirect participant is part of the position of the direct participant acting as an access provider.

3.2.3 Types of transaction handled

The system handles transactions regardless of their value. Participants other than the National Bank of Hungary and KELER can only

initiate credit transfers by submitting a SWIFT payment message. By contrast, the National Bank of Hungary and KELER can initiate debiting and crediting of the participants' accounts.

Customer payments

Every participant can send and receive payments on behalf of their customers using MT 100/103 message formats. SWIFT customer payments should be entered into the system before customer cut-off time at 2.30 p.m. C.E.T. SWIFT message standards have been extended to domestic account format to facilitate STP.

Bank-to-bank payments

Bank-to-bank payments are payments among participants (both direct and indirect) for their own account. Every participant can send and receive bank-to-bank payments during the system's opening hours (from 8 a.m. until 4.30 p.m. C.E.T.). MT 202 message formats are used for this purpose as well as for cover payments for international transactions and payments with banks not participating in VIBER (according to SWIFT rules).

Securities payments

These payment orders are initiated by KELER on the basis of settlement orders received from the parties involved or from the Budapest Stock Exchange (BSE) or directly from KELER as the central counterparty for exchange-traded derivatives. The parties to a payment transaction must be direct participants. If one party to the trade is an investment service provider and the other is a VIBER participant, KELER acts as an intermediary in VIBER. KELER uses this technique for:

- the settlement of securities transactions on a DVP basis. This applies to OTC transactions (primary and secondary markets, repo transactions, negotiated

block trades on the BSE). Since both the securities and cash legs of a trade are settled in RTGS systems and these are linked, the settlement of these trades fulfils the criteria for DVP model I as described in the CPSS report entitled "Delivery versus payment in securities settlement systems" published in 1992;

- BSE stock exchange (net) settlement; and
- debiting on the basis of margin calls in the case of exchange-traded derivatives.

The message formats for these transactions are proprietary, but are based on SWIFT messaging standards, using MT 298 sub-messages.

Central bank transactions

The National Bank of Hungary can debit and credit the accounts of participants in the case of settlement for other (net) systems (e.g. card clearing, occasional second ICS cycle), cash transactions (e.g. deposits and withdrawals at the cashier desks), or the placing of deposits at the National Bank of Hungary. These transactions are either entered directly at a workstation or through a direct link to the banking system of the National Bank of Hungary. In these cases, the participants receive MT 900/910 notification of the transaction. Refinancing loans are disbursed in a more conventional way, using MT 202 messages.

3.2.4 Operation of the system

When the system opens, it first imports the opening balances and limits² from the accounting system of the National Bank of Hungary. The starting balance may show an unauthorised overdraft if the participant's settlement account was debited with a central bank foreign exchange settlement transaction in the banking system and the participant lacked sufficient funds. When closing the

system, the closing balances and limits are exported to the National Bank of Hungary's accounting system.

The system is open from 8 a.m. until 4.30 p.m. C.E.T. Customer payments should be entered into the system before 2.30 p.m. C.E.T. Customer payments entered into the system before cut-off time and queued can still be settled after cut-off. Erroneous customer payments can also be returned after customer cut-off until 3.30 p.m. C.E.T.

Every order is settled in real time, except for forward value payments. Forward value can be up to seven calendar days ahead of the current business day. On the due day, these payments are the first to be executed among orders with the same priority. There is no back value dating (not even in the case of error correction). The originator may delete forward value and queued payments before settlement, although neither it nor any third party may revoke settled transactions.

When the system closes, participants receive a detailed statement of account in the form of a SWIFT message.

3.2.5 Transaction processing environment

The core of the system is formed by a central accounting system, a central terminal and two complementary computer units, one of which hosts the central accounting system, the other of which handles communication. Since these two computers back each other up, this is a fault-tolerant configuration. A hot remote backup is being established. According to the project plan, it will be implemented in May 2002.

² The limit is an intraday credit line fully covered by pledged securities accepted by the National Bank of Hungary. The use of the limit is free of interest and any other charge. This limit can be changed at any time during VIBER operating hours.

The participants can communicate through the SWIFT network using the SWIFT FIN Copy service. A closed user group has been established and only its members have access to the system. Some participants have shared access to SWIFT through ELMASWIFT, a specialised SWIFT access point operator.

The National Bank of Hungary can access the system from its premises through workstations. These workstations can be used to track the system and to manually capture certain central bank transactions (e.g. positions from net systems). In the event of a failure in their communications, participants can also use these workstations if they are unable to connect to the SWIFT network.

The system can process 18,000 transactions per hour and it can be extended flexibly. Currently, between 1,000 and 1,500 transactions are processed daily.

3.2.6 Settlement procedures

Settlement is carried out on a transaction-by-transaction basis with immediate finality. Settled payments cannot be revoked by the sender or a third party. If the sending direct participant does not have sufficient funds on its account, the payment will be queued and the sender receives notification. There are 99 priority levels in the system: the first seven are reserved for central bank transactions, the subsequent three for KLER transactions, and the remaining 89 priorities can be freely assigned by the participants. The payment at the front of the queue within each priority level will, once funds become available, be released and settled according to the FIFO principle. The system is able to automatically resolve gridlock, although this process must be initiated manually.

Payments remaining in the hold queue until closing time are automatically deleted at the end of the business day.

Participants obtain information via SWIFT on their balances, incoming and outgoing queued payment orders and settled payments.

3.2.7 Credit and liquidity risks

Since VIBER is an RTGS system settling in central bank money with immediate finality, participants are not exposed to liquidity and credit risks regarding the payments settled.

The National Bank of Hungary extends intraday interest-free credit against full collateral, which can turn into overnight credit at the marginal rate of interest if the participant is unable to repay the intraday credit. Only Hungarian government bonds and other government debt can be used as collateral. In order to limit its risk, the National Bank of Hungary applies collateral valuation and a haircut in the calculation of the amount of credit.

There are also a number of ways to limit the risk of gridlock in the system.

- The required reserve holdings (currently 7% of the reserve base) can be freely used. Banks should meet reserve requirements on a monthly average basis.
- The intraday overdraft limit can be changed at any time during the system's opening hours with an instruction to KLER. KLER blocks and releases collateral upon request from the participant and the National Bank of Hungary acts according to KLER's instructions. Nevertheless, collateral can only be released if the corresponding credit has not been drawn.
- The National Bank of Hungary schedules its own payments in a way that benefits other participants.
- The system's operating time is sufficiently long to meet the needs of the markets. It

was extended by two and a half hours in September 2001. In the run-up to EMU, the National Bank of Hungary is planning to extend the system's operating hours to match those of TARGET.

- There are two ways in which participants can rearrange their payment queues. First, they can delete queued transactions and re-send them in a new order. Second, they can change the priority code assigned to the queued transactions. Both can be achieved by sending SWIFT messages.
- Active liquidity management is facilitated by promptly notifying participants through a SWIFT message about every settled transaction (be it a credit or debit), the formation and disappearance of queues and limit changes. These notifications are sent automatically by VIBER. Participants may also use SWIFT messages to enquire about their current balance, settled transactions, and queued payments and receipts. These services allow participants to track their current balance in the system.
- Participants are urged to make payments without delay by an agreement between them and the National Bank of Hungary. In the agreement, participants undertook to carry out customer transactions within two hours of the receipt of an order.

The system is capable of automatic gridlock resolution using an algorithm initiated by the National Bank of Hungary.

Furthermore, the use of the system's DVP services can eliminate principal risk in securities transactions.

3.2.8 Pricing

The National Bank of Hungary charges a flat fee of HUF 1,200 (€4.67) for every payment transaction. The fee is payable by the debtor. The fee does not include the cost of communication arising from transactions, notifications and statements received from the system, which is paid by SWIFT members. There is no entrance or periodical fee. The pricing policy aims to ensure the return of the real value of investment in the system and operating costs within five years.

3.2.9 Statistical data

In 2001, the number of transactions in VIBER averaged around 20,000 per month, with a monthly turnover of HUF 11,646.46 billion (€45.38 billion), which corresponded to about 78% of GDP. The historical peak in volume was 2,054 transactions in October 2001, while the highest turnover was HUF 2,574.8 billion (€10 billion) in June 2001. The average transaction size in VIBER is HUF 582.8 million (€2.27 million).

3.3 Large-value payment systems

There is no large-value payment system operating in Hungary besides VIBER.

3.4 Retail payment systems

3.4.1 E-money schemes

Currently, there are no e-money schemes in operation in Hungary and there is no information on ongoing projects.

3.4.2 Card-based schemes

The clearing of payment transactions is administered by three different systems, which are the GBC, Visa and MasterCard national net settlement systems.

At present, 80% of card payments are processed in house, i.e. the issuing and acquiring banks are one and the same. This high proportion is the consequence of pricing policies which are preferential towards cash advances through the issuing bank networks. In the future, however, a growing part of the traffic is expected to be cleared through any of the three systems owing to the increasing popularity of purchase transactions.

The GBC provides clearing services to 11 members, of which three are shareholders in the company. Many important issuers and acquirers are not members of this company. Therefore, Hungarian banks have agreed to use the domestic clearing services of the Visa and MasterCard associations. There is no real competition with the GBC and only transactions made with cards bearing the GBC logo (together with Visa or Europay) can be cleared at the GBC.

While the National Bank of Hungary is the settlement agent for the GBC clearing system, a private bank – the Hungarian Foreign Trade Bank (HFTB) – acts as settlement agent for the Visa and MasterCard clearing arrangements. The GBC sends interbank positions to the National Bank of Hungary, which are processed by the latter on the same day. Visa and MasterCard notify participants in their respective systems about their net positions, and net debtors discharge their obligations with a credit transfer to the clearing account held with the HFTB via the ICS. Conversely, 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.

In each system, each participant has to pledge government securities as collateral, the value of which is calculated on the basis of the value of the transactions made with the issuing bank's cards outside its own network. The value of the collateral is reviewed from time to time and its minimum amount is determined.

The settlement agents (the National Bank of Hungary and the HFTB) are contractually obliged to extend overnight credit up to the nominal value of the collateral of the participant if it cannot meet its obligations. Non-failing participants share the losses exceeding the market value of the failing party's collateral according to their contribution to the collateral pool.

In all three systems, the National Bank of Hungary manages the collateral deposited with KELER.

3.4.3 Interbank Clearing System

GIRO operates the ICS which, although primarily a retail system, should be considered as a systemically important payment system. In 2001, the ICS processed 99% of interbank HUF payments in volume terms and, by contrast, 24% in value terms. VIBER and the ICS complement each other as they have distinct operating hours, which enables participants to use the same liquidity source in both systems. This entails a close interrelationship and dependency between these systems. Each system can only commence operations if the other has completed its daily operations. GIRO is a private joint stock company, owned by 27 commercial banks, KELER and the National Bank of Hungary, the latter having a 14.6% stake.

The ICS is a gross payment system, settling at a designated (deferred) time and processing in batches. It processes credit and debit transfers, direct credits, collection orders (including direct debits and letter of credit), cheques, and bills of exchange. The system started operating in 1994.

The system's general terms and conditions include the clearing agreement, the operating rules and the applicable standards. Any modifications to these should be agreed upon by ICS participants. Before entering into force, the National Bank of Hungary approves

amendments to the rules and has the right to veto them.

3.4.3.1 Operating rules

The ICS operates according to its general terms of contract, applicable standards, manuals and other internal rules. GIRO and participants are in a bilateral contractual relationship under uniform conditions. The general terms of contract are published in the Official Gazette of the Ministry of Finance. Credit institutions are expected to contribute to the improvement of the ICS by participating in the Interbank Experts' Committee, which operates under the aegis of GIRO. However, all modifications and additions to rules require the approval of the National Bank of Hungary. Rules governing settlement can be found in the settlement account contract of the National Bank of Hungary.

3.4.3.2 Participation in the system

Any domestic credit institution or branch of a foreign bank may apply for membership. Domestic credit institutions licensed to provide payment services, with the notable exception of savings co-operatives, are obliged to join directly either the ICS or VIBER or both according to the Banking Act. Nevertheless, participation is subject to the approval of the National Bank of Hungary. As a precondition for approval, the National Bank of Hungary requires a certificate of successful testing from GIRO. The system only recognises domestic credit institutions and branches of foreign banks as direct or indirect participants. Besides credit institutions, the National Bank of Hungary, the State Treasury and KELER also participate in the system directly. There are 57 direct and 279 indirect participants in the system.

3.4.3.3 Types of transaction handled

The ICS supports the following payment instruments:

Transfer orders

- *Ordinary transfer orders (i.e. credit transfers)*
Ordinary transfers may be customer payments or bank-to-bank payments.
- *Direct credit*
A direct credit is a particular kind of transfer order. The originator hands the instruction into its bank in electronic batch format. There is one transferor and a number of transferees in an instruction. GIRO not only carries out the transfer order, but it also draws up a detailed status report of the settled and failed payments for the originator.

Collection orders

The system can handle collection orders. Collection orders may be initiated either with a non-clearing message (request for collection) or with a letter with the relevant documents attached. Therefore, the system does not match the requests for collection with the actual transfer messages.

Cheques, bills of exchange and letter of credit collection orders

These types of collection are always initiated with a letter.

Direct debit

A direct debit is a pre-authorised batch collection order. There is one originator and a large number of payees in an instruction. Records of direct debit requests are kept by the system and corresponding transfers are matched. The ICS not only carries out the transfer order, but also prepares a detailed status report about the settled and failed payments for the originator. The debtors' banks forward their customers' authorisations to the beneficiaries through the ICS in electronic form.

All transactions have the same priority. There is no limit on the value of a payment. The system processes transactions exclusively in the national currency, the Hungarian forint. Forward value transactions are not handled by the system. Debit transfers (e.g. collection orders) processed in the system are always traced back to credit transfers, i.e. the beneficiary's bank sends a debit request and the actual funds transfer is always initiated by the debtor's bank. Therefore, there are so-called clearing (i.e. payment) and non-clearing (i.e. initiation of collection) transactions. Original and rejected payment transactions are clearly distinguished.

3.4.3.4 Operation of the system

The system starts operating at 7 p.m. C.E.T. with the importing of data on the participants' collateral. This is composed of the closing settlement account balance with the National Bank of Hungary and the initial intraday credit limit (see Section 3.2.4) of the participants. The credit limit is set after the daily closure of the accounts in the accounting system of the National Bank of Hungary and remains unchanged during ICS operating time through until the opening of VIBER. When the system closes, the participants receive detailed transaction files, a report on their settlement position and some other reports (the most notable of which is the National Bank of Hungary's settlement position report).

The system is open from 4 p.m. C.E.T. until 2 a.m. C.E.T. for the receipt of payment messages that are forwarded in electronic batches. Both direct participants and customers may forward direct credit instructions to the clearing house directly. This facility is primarily used by government agencies, which are clients of the State Treasury.

Payments are processed on a batch-by-batch basis. Transaction batches are opened and processed if there are available funds. If sufficient funds are not available, all payments from the same batch are held pending in a

queue. Incoming payments are added to the funds, as a result of which further batches can be processed.

The processing of batches is not continuous. Batches received before 10 p.m. C.E.T. are processed in the first run within the next hour, while those received later are processed in the second run just after 2 a.m. C.E.T.

The operator clears the transactions and creates output files in electronic batches. These files are sent to the participants between 6 a.m. and 7 a.m. C.E.T. Files created after the first run are available after midnight. Normally, the operation is finished with settlement in the books of the National Bank of Hungary at around 7 a.m. C.E.T.

If some transaction batches remain queued after the overnight processing, a second processing cycle is run from 9.30 a.m. C.E.T. on the next day, provided that by that time at least one or more of the failing banks have raised liquidity for all of their remaining debit items. Once the liquidity has been transferred to the National Bank of Hungary's account in VIBER, a new clearing cycle can start. The intraday settlement position report is produced by about 11 a.m. C.E.T. and the position is settled in VIBER soon after. If a bank cannot raise the required liquidity in time, its queued batches are cancelled and the bank can re-enter the transactions the next day or, in the case of important or urgent payments, transfer them through VIBER. Output files are forwarded to the interested participants between 11 a.m. and 12 p.m. C.E.T.

3.4.3.5 Transaction processing environment

The means of communication is GIRO's proprietary X.400 network. In order to limit the risk of failure, the communication network has appropriate backup, duplication of lines and fault-tolerant configurations. Physical transportation of magnetic data media is used only in emergency situations. Direct participants are equipped with computer-based terminals,

the 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 interfaces (called AGIRO/B) to connect the PC GIDs to their accounting systems.

A live and a remote hot backup system are available at GIRO. Up until now, there have been no system breakdowns. In the event of a serious breakdown of the ICS, a backup computer facility is available to process items with a one-hour time-lag. The live and the backup systems have identical capacity. The system can process 1 million transactions per hour. On peak days, 1.9 million transactions are cleared.

3.4.3.6 Settlement procedures

The National Bank of Hungary receives a settlement position report (often referred to as the interbank indebtedness (IBI) matrix) from GIRO. Settlement takes place at around 7 a.m. C.E.T. for the first cycle and at around 11 a.m. C.E.T. for the second cycle. There is certainty of settlement for cleared transactions since, in the first cycle, settlement is carried out promptly and with finality before the opening of VIBER. The settlement obligations in the second cycle are pre-funded (see Section 3.4.3.4.).

3.4.3.7 Credit and liquidity risks

As the ICS settles on a gross basis in the National Bank of Hungary's accounting system, the participants are not exposed to credit and liquidity risks regarding the batches settled.

The risk of batches remaining unprocessed owing to a lack of liquidity is relatively low because of the relatively high level of required reserves (7% of liabilities) usable for payment purposes, the availability of intraday credit from the National Bank of Hungary and also that of the second clearing cycle when the

money market is open. Nevertheless, fewer liquidity management tools are available in the ICS than in VIBER. Participants cannot cancel or modify transaction batches, rearrange queues, change limits or receive position information during processing. However, there are some ways to help smooth the flow of payments. First of all, participants can decide to route high-value transactions into VIBER. Incoming funds received from a partner could also serve the purpose of making further payments. The participants may also pursue a prudent batching strategy. Creating more output files with relatively low totals in each transaction batch helps to avoid gridlock. It is equally important to pledge as much collateral overnight as possible, since this entails less opportunity cost than daytime pledging.

3.4.3.8 Pricing

ICS participants pay transaction fees based on the value of the transactions processed. The fees also contain the cost of communication. The ordering bank pays the fee, except in the case of multiple direct debits where the initiator (beneficiary's bank) pays. A fee is charged for all transactions. Participants pay a 0.1% commission to GIRO, with a minimum of HUF 8 (€0.03) and a maximum of HUF 350 (€1.36) per transaction. In the case of direct debits and direct credits, the commission is also 0.1%, but with a minimum of HUF 6 (€0.024). Non-clearing transactions (e.g. the initiation of collections) are charged with a flat fee of HUF 5 (€0.02) per transaction. Return payments are processed free of charge.

GIRO charges those participants with low turnover a monthly minimum fee. This fee is HUF 140,000 (€545.62).

The pricing policy is revised yearly. Fees tend to cover operational costs and the investments of GIRO, plus a return on capital for shareholders.

3.4.3.9 Statistical data

In 2001, the number of transactions in the ICS averaged around 11.6 million per month, with a monthly turnover of HUF 3,582 billion (€13.96 billion), which corresponded to about 0.24% of GDP. The historical peak in volume is 1.7 million transactions. The average transaction size in the ICS is HUF 308,000 (€1,200).

3.5 Future developments

The Board of Directors approved the implementation of VIBER's remote hot backup system in the first half of 2002. The National Bank of Hungary is considering the installation

of monitoring terminals at the premises of VIBER participants, enabling them to better follow their position and more efficiently manage their liquidity.

The National Bank of Hungary plans to take over the settlement agent function for the Visa and MasterCard national net settlement systems. Negotiations with the interested parties are under way.

In 2002, GIRO started offering a PKI service to the banking community, which has improved the security of electronic payments by enabling better authentication of the identity of parties to a payment.

4 Securities settlement systems

4.1 Trading

4.1.1 The Budapest Stock Exchange

4.1.1.1 Institutional aspects

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. Securities traded on the BSE are cleared and settled in the securities clearing and settlement systems operated by KELER.

According to the recent Capital Markets Act, only dematerialised securities can be issued publicly, except for government debt certificates which remain in paper form. Securities issued in physical form before 1 January 2002 must be dematerialised by 31 December 2004 at the latest.

The BSE is a sui generis association. However, its members (banks, investment firms and the

National Bank of Hungary) have already decided to transform it into a joint stock company and the process is expected to be completed in the first half of 2002.

The Exchange Council is the BSE's governing body. It is composed of nine people appointed by the members of the Exchange. The Exchange Secretariat is responsible for the day-to-day operations of the BSE. There are a number of professional committees dealing with various issues, such as trading, clearing, listing, legal matters and ethics, and there is a permanent court of arbitration to solve disputes between members.

Act CXX of 2001 on the capital markets and the BSE's internal regulations constitute the legal framework within which the BSE operates. Membership criteria are laid down by the aforementioned Act, which stipulates that no applicant may be refused entry if it meets the public membership criteria and that the number of members may not be limited. At present, the BSE has 34 members, which are banks and investment firms. In the last few years, the number of members has substantially decreased. Some members closed

down their businesses or merged with other members and, in parallel, universal banks merged their broker subsidiaries.

The BSE is subject to HFSA market surveillance and prudential supervision.

4.1.1.2 Operational aspects

Trading in the cash market is conducted in two sections: the equities and the government securities sections. Shares, investment notes, corporate bonds and compensation notes are traded in the equities section, while government bonds, discount T-bills and bonds issued by international financial institutions are bought and sold in the government securities section.

There is an electronic remote trading system on the cash market, where exchange members trade directly via a workstation in their offices. The cash market is order-driven without market-makers and there is an automated order matching and trade execution system. The trading system uses two basic order-matching algorithms in the course of normal trading.

When using the equilibrium price-based matching algorithm, the system takes the orders entered during the order collection sub-session and identifies the market depth at which trades may be concluded for the highest quantity of securities, and trades will be executed at that price.

When the continuous matching algorithm is used, the order book keeps orders in the sequence of execution (ranked according to price and time). A new order entering the order book will be matched with an order of the opposite type that has the best price and that matches it in every respect (overlapping or identical prices and quantities). The price of the deal is determined by the price of the order that entered the order book earlier. In the event that a newly entered order cannot be matched or can only be matched partially with orders in the order book, it will be held

in the order book according to the priorities of order execution.

Trading includes several sessions or periods in the equities section; the opening period is based on the equilibrium (single) price-matching algorithm, while the free period uses continuous order matching to conclude trades (trading in the government securities section includes a free period only).

The BSE introduced auction orders to allow traders to conclude extraordinary high-volume "block" deals in the secondary market, both in the equities and in the government securities sections. Auction orders facilitate the buying or selling of exchange-listed securities in quantities over a specific high volume.

One of the most important trading rules provides that no exchange deals may be withdrawn or revoked for reasons of invalidity. All orders entered into the trading system are matched according to pre-determined rules and matching takes no account of the party that made the order (i.e. the system is anonymous, any member of a section may conclude a deal with any other member and no one can tell in advance who the other party to a trade will be, except in the case that certain special order methods are used). All in all, this means that risks are shared by section members. MMTS (Multi-Market Trading System) I, the trading system of the cash market, was implemented to offer a full range of trading services and support to trading firms in the equities and debt securities sections of the BSE.

Trading hours match those in London and New York and the trading platform handles transactions by continuous order matching according to price and time priorities between 10 a.m. and 4.30 p.m. In addition, participants may place orders in the equity market before that time each day, which in turn will be processed, matched into trades and published by another algorithm of the system based on the equilibrium price at 10 a.m. The BSE

publishes each equilibrium price as the opening price of the corresponding equity.

The trading system supports market-making; this function is exploited by specialist members of the debt securities section, who ensure a liquid market for the securities by maintaining continuous quotes for government securities and a few corporate bonds during periods of the trading day announced in advance.

MMTS I also includes a primary auction module which has been used by the Government Debt Management Agency (ÁKK) for many years to issue government securities on the primary market. This module also allows parties to sell share packages of larger value in the equities section under the rules provided in the Code of Trading.

In order to ensure compliance with the trading rules and to avoid any violation of investor interests, a market surveillance terminal has been set up at the HFSA enabling it to monitor the market in real time.

Taking into account the requirements of market participants and international trends, MMTS II, a derivatives trading system modelled on the specialised equity and government securities market functions of MMTS I, was launched in October 2000. With MMTS II in place, the BSE could consistently apply a more secure and controlled trading technique in the futures and options markets as well. Furthermore, new technical solutions for derivatives trading were added, including a “request for quote” function, advanced market-maker functions, spread trading (synthetic orders and direct use of spread orders), real-time position management and monitoring, and risk management functions, such as “close out” status and the configuration of order rules at the instrument level, both of which enhance transparency and flexibility in trading.

Trading hours in the futures and options markets match those in the cash market,

allowing these markets to operate concurrently. In these markets, equilibrium price trading also precedes the free trading period, which starts at 10 a.m. By this time, the system has generated an opening price from the orders queued in the system and the algorithm uses that price to match trades. Section members may apply the same technique to enter a closing session in the futures and options markets once trading in the cash market has closed. Real-time and continuous data transfer between the BSE and KELER enables the derivatives market to continue trading when a firm fails to maintain proper margins, as it is sufficient to suspend the firm with the shortage of funds from trading.

MMTS I and II have technical features that stand up to international comparison. One of the most important system features is robustness, which means that there are at least two copies of each software and hardware component of the system. Whenever an error occurs, the system automatically switches to the components that function correctly. Another advantage is scalability: if the number of users increases (by a factor of five even), only new hardware components need to be purchased. Lastly, the speed of the system deserves a mention, as MMTS is capable of processing incoming orders at a rate of 50-450 transactions per second.

All transactions traded on the BSE are cleared and settled by KELER, which has an automated electronic connection to the BSE.

4.1.2 The Budapest Commodity Exchange

4.1.2.1 Institutional and legal aspects

The Budapest Commodity Exchange (BCE) is a self-governing and self-regulating organisation, with 97 members altogether (49 in the grain section, 24 in the livestock section and 24 in the financial section).

The right of BCE membership can be transferred only through sale or purchase, although the trading rights arising from exchange membership may be leased (without any further possibility of sub-leasing).

The supreme organ of the BCE is the General Meeting, which brings together all of the exchange's members. The managing body is the Board of the Exchange composed of at least nine and at most fifteen people. The Board members elect its Chairman from among themselves by simple majority.

The general controlling organ is the Supervisory Board consisting of three to five people. The majority of the Supervisory Board members are elected by the General Meeting from among the officers and employees of the exchange members.

Act XXXIX of 1994 on the commodities exchange and transactions on the commodities exchange forms the legal basis for the operation of the BCE.

4.1.2.2 Operational aspects

In the grain and livestock sections, bulk commodities are traded, while the financial section deals especially with EUR, USD, JPY, GBP, and one and three-month BUBOR (Budapest interbank offered rate) contracts. Deals are made on the basis of standardised agreements (contracts) and regulations. The basic transaction types are spot, futures and, since 1998, futures options. Contracts allow both parties to agree upon the price, quantity and delivery date. Delivery months are also fixed, although there can be variations depending on the product.

The BCE launched its electronic tele-trading system at the beginning of 1999. Since its introduction, the electronic system has been used for trading in the financial section. Since the second half of 2000, it has also been possible to use the electronic trading system

in the grain section, although participants still favour open outcry trading in the pit.

According to the turnover figures since the foundation of the BCE, the lion's share of the contracts has been concluded in the grain section. For example, in 2000 the volume distribution was: grain section 96.9%, livestock section 3%, financial section 0.014%.

The BCE is one of the shareholders of KELER.

The liberalisation of the domestic energy market necessitates the establishment of an electrical energy exchange. Therefore, one of the future plans of the BCE is to establish a new section for trading in energy contracts.

4.1.3 The OTC market

There is no organised trading platform for the OTC market. Deals are concluded on a bilateral basis using telecommunication lines and the Reuters dealing system. Although government securities are also traded on the BSE, the OTC market has a much higher share in terms of turnover. OTC derivatives play a key role in banks' risk management.

KELER can settle OTC securities contracts for its customers upon request. Two main types of transaction on the OTC securities markets are public issues of government or private securities and secondary market transactions. Primary issuance of government securities takes place through the primary dealing system. There is a group of around ten primary dealers appointed by the ÁKK with an obligation to act as market-makers.

The activity of the market players is regulated by the Capital Markets Act and supervised by the HFSÁ. The banks make the dominant proportion of the deals, although some investment firms are very active as well.

4.2 Clearing

There is no independent clearing house in Hungary. KELER plays the role of both clearing house and settlement agent for securities as well as for derivatives (see Section 4.3 below).

4.3 Settlement

4.3.1 Institutional and legal aspects

Act CXX of 2001 on the capital markets regulates the clearing and settlement of securities and derivatives in Hungary. The Act specifies the following clearing and settlement services: clearing, cash settlement, securities (commodity) settlement, the provision of settlement guarantees and the operation of a securities lending system. A clearing house operating as a specialised credit institution may grant all of these services, while a clearing house with another legal form (e.g. a limited company) or an exchange itself may only perform the functions of clearing, securities (commodity) settlement and securities lending. As a result of this provision in the new Act, KELER will transform itself into a specialised credit institution in the near future. Any clearing house may be a CSD, or the HFSA may designate any clearing house to provide this service.

Currently, KELER, the Hungarian CSD, is the sole provider of clearing house services in

Hungary. It has all the functions specified in the Act and, consequently, the legislation requires KELER to become a specialised credit institution in 2002.

The company, established in 1993, is limited by shares and jointly owned by the National Bank of Hungary (50%), the BSE (25%) and the BCE (25%). The Board of Directors is the main decision-making body. It consists of six members (two from the National Bank of Hungary, one from the BCE, one from the BSE, the CEO of the company and an independent person appointed by the users, the latter being the Chairman). The Supervisory Board has three members, one being delegated by each owner. The main task of the Supervisory Board is to check compliance with laws and regulations as well as the implementation of decisions taken at the shareholders' general meeting.

There are a number of different systems operated by KELER. Membership criteria for each system differ, as do the methods used for risk management.

KELER opens and keeps securities accounts for those entities listed in the Capital Markets Act as being eligible to hold such an account with it. These entities are investment firms, credit institutions, foreign custodians, BCE members (for the purpose of providing collateral), issuers (with respect to their own securities), the National Bank of Hungary, the State Treasury and the ÁKK.

Table 2

Financial products traded on the BSE and market sections of the BCE

BSE	BCE
Equities and other securities (T+5 settlement)	Financial section
Government securities (T+2 settlement)	Grain section
Foreign exchange derivatives	Livestock section
Interest rate derivatives	
Stock and stock index derivatives	

KELER handles two basic types of securities account for its participants. The first is a depository account available to all participants, and the second is a settlement account for stock exchange clearing members. While a depository account can be divided into an unlimited number of sub-accounts (to segregate own and customer activities, customer groups or individual customers), the settlement account only has two sub-accounts, the participant's own sub-account and an omnibus customer sub-account.

The terms of participation for the settlement of exchange-traded products depend on the market section. The financial products traded on the BSE as well as the market sections of the BCE are shown in Table 2.

Three categories of membership have been defined:

General clearing members can participate directly in the system and may grant access to sub-members.

Individual clearing members can participate directly in the system, but may not grant access to sub-members.

Clearing sub-members are entitled to conclude deals on the exchange, but are obliged to settle via a general clearing member. The sub-member, although recognised by the rules of

the system, does not have a contractual relationship with KELER and does not contribute to the collective guarantee funds.

Direct clearing membership is established by concluding a contract with KELER, before which the following conditions should be met:

- a licence for trading in the relevant section should be obtained from the HFSA;
- the capital requirements as laid down in the General Terms of Business of KELER should be met;
- the required accounts should be opened; and
- the applicant should undertake to report regularly to KELER in the required format.

The capital requirements in the various sections are shown in Table 3. KELER provides OTC DVP services to the National Bank of Hungary, credit institutions and investment firms, provided that the cash settlement account of the respective institution is held by the National Bank of Hungary or KELER.

The respective rules and regulations of KELER governing operational procedures are approved by the HFSA.

Table 3
The capital requirements in the various sections
(HUF millions)

	Derivatives		BCE Other	Spot	
	BCE Grain	BCE Livestock		T+5 market	T+2 market
Sub-members	10	3	20	20	20
Individual members	20	20	100	100	100
General members	500	500	500	500	500

4.3.2 Operational aspects

KELER operates an integrated IT system for the provision of its services. Its system is composed of a number of elements which are integrated by middleware technology. KELER operates different settlement patterns for BSE cash market trades, block trading and off-exchange transactions. While BSE cash market transactions are settled on a multilateral net basis (with a T+5 cycle for equities and T+2 for bonds), block trades and off-exchange transactions (T+x trading) are settled on a gross basis.

4.3.2.1 BSE securities

BSE securities clearing

The BSE carries out trade matching on day T. After the end of the business day, the BSE sends a batch file to KELER containing a detailed list of matched trades. Each trade is marked as a “customer” or “for own book” transaction. KELER performs multilateral netting for cash as well as for securities. In the morning of T+1, KELER sends net position reports to the participants for information and reconciliation purposes. KELER does not require confirmation of these net positions from participants. Negotiated block trades and auction trades are not netted.

BSE securities settlement

Net sellers have to place the net amount of sold securities on their own and their customers’ (omnibus) accounts until 9 a.m. on settlement day, T+2 or T+5 respectively, and the same goes for the cash side. Segregation of own and customer securities accounts is mandatory. Settlement takes place on a DVP basis. Net securities are blocked in the accounts of the net sellers and then KELER carries out cash-side settlement. Cash accounts may be held in the books of KELER or in VIBER. In the latter case, KELER can debit and credit the accounts of the participants in VIBER. After completion of cash

settlement, securities are delivered to the buyers. Finality is achieved at the same time for cash and securities at the point when assets are credited to the respective accounts.

In order to limit the risk of failure, participants are required to pledge collateral in the form of securities and to contribute cash to the collective guarantee fund.

If a net seller does not have the securities at its disposal, KELER initiates automatic borrowing. If KELER does not find a lender for that type of security, it may take the collateral of the member and initiate forced purchase. In this case, KELER buys the securities using the collective guarantee fund. Should KELER be unable to find a seller, it deletes the transaction and recalculates positions. KELER informs the BSE and the participants about every forced purchase.

In the case of a cash-side shortage, KELER provides liquidity to the participant in the form of a repurchase agreement or takes the buyer’s collateral and draws cash from the collective guarantee fund. Subsequently, KELER periodically tries to debit the cash account of the buyer.

KELER informs the BSE about cases of non-delivery and the BSE may decide to suspend the trading rights of the member. Cash entering the buyer’s account is used to replenish the collective guarantee fund.

Block trades and auction trades are settled on a trade-by-trade (gross) basis. KELER manages separate collective guarantee funds for the T+2 and T+5 markets.

KELER plans further developments, such as the shortening of the T+5 cycle to T+3 as soon as possible. The main obstacle to this is the high probability of failures owing to the long conversion time for shares traded in GDR/ADR form. KELER intends to become the central counterparty for the stock market and also plans to change the composition of

the collective guarantee funds' portfolio from cash to securities.

4.3.2.2 *Exchange-traded derivatives*

Exchange-traded derivatives clearing

KELER fulfils the role of central counterparty for the BSE and BCE derivatives markets. Parties to futures and options deals become counterparties of KELER when the latter confirms the deals. Obligations to a counterparty are calculated using netting by novation. Members have to distinguish between their own and their customers' deals. KELER manages positions at an individual customer level.

In order to limit its exposure to the financial risk of a member, KELER sets trading limits such as a maximum daily trading volume, a market share limit, a capital-based limit or the naming of customers placing large orders. The breaching of limits entails the obligation to pledge additional collateral. KELER reserves the right to carry out on-site inspections on the premises of members.

Traders on the BSE use an automated trading system and transaction data are forwarded to KELER continuously in real time. Members can enquire about their position online through the KIS (KELER Internetwork System) network. KELER officially notifies members of their position with a daily position report sent at the end of the day. KELER continuously monitors the open position. In case of wild swings in the market, intraday clearing can be effected for the whole market or for a specific segment (e.g. a member, product, group of products, or a certain maturity) without interrupting dealing.

The vast majority of deals on the BCE are concluded in an open outcry system and therefore KELER only receives daily reports. As a result, intraday clearing can only be effected if dealing stops for a period of time.

The margin requirements are calculated for each customer of the members. During the batch processing conducted in the evening, positions are updated and marked-to-market based on the price movements of the daily matched trades (i.e. both initial and variation margins are calculated) and the settlement procedure is carried out.

Exchange-traded derivatives settlement

Considering that KELER acts as CCP, the settlement of derivative transactions has the highest priority and is carried out ahead of other types of transaction at the beginning of the business day. In order to ensure orderly variation margin settlements on time and by any 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. Thanks to the comprehensive approach taken by KELER, the clearing system, other KELER systems and VIBER are interlinked, so that daily profits and losses are immediately credited and debited to members' accounts. Initial margin funds can be used by KELER for final variation margin settlements on the date T, but these initial margin funds must 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 account positions to a sound clearing member. After three days of non-performance, an institutional receivership procedure is initiated. KELER requires members to set aside cash in collective guarantee funds (one fund for the BSE and another for the BCE). The purpose of the funds is to eliminate or, at least, mitigate the consequences of failure of one member to pay on time. Members and KELER jointly own the funds, while KELER sets up the funds, manages them and decides on drawings and replenishment.

In order to avoid a significant build-up of credit and liquidity risks, KELER has also introduced an intraday settlement facility. In the event of extreme price movements, when preset limits are breached, trading is suspended until the exchanges have transferred trades and KELER blocks intraday margin amounts in the accounts concerned. As a rule, this procedure may take no longer than 20 minutes.

KELER uses its SPAN system, developed by the Chicago Mercantile Exchange, to determine the daily initial margin commitments to be provided by a member. KELER's SPAN system 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 in an omnibus customer account. These figures, together with any requirements for positions on the proprietary account, are shown in 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.

4.3.2.3 Settlement of OTC transactions

All investment firms and credit institutions, which hold securities accounts with KELER and cash accounts with either the National Bank of Hungary or KELER, are allowed to participate in the settlement system for OTC transactions.

Settlement instructions are submitted directly by KELER participants via the KIS.

KELER matches trades and checks securities and cash balances trade by trade. After matching, KELER informs the counterparties of any unmatched trades in order to give them an opportunity to amend instructions.

For matched instructions, KELER checks securities and cash balances, settles the trade in real time and sends confirmations to all interested participants. As credit institutions have their settlement accounts at the National Bank of Hungary, KELER uses its online real-time link to VIBER for cash settlement of trades involving at least one bank. Auction trades and negotiated block trades are settled using this mechanism.

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.

As the settlement of OTC derivatives is not supported by KELER, the parties to a trade in such an instrument should decide on how to settle.

4.3.2.4 International securities settlement

KELER has a bilateral link with Clearstream Banking, allowing settlement for foreign securities. This connection enables KELER to offer DVP settlement to its members. In this case, KELER holds both securities and foreign exchange cash accounts for its customers. KELER keeps a nominee account for Clearstream, enabling it to settle trades in Hungarian securities efficiently.

4.3.2.5 The use of the securities infrastructure by the central bank

The National Bank of Hungary uses the securities settlement system for two main purposes:

- for open market operations in the form of repurchase agreements. KELER delivers the securities involved on a real-time DVP basis.
- for the pledging of collateral to obtain central bank credit. KELER manages this process. The National Bank of Hungary

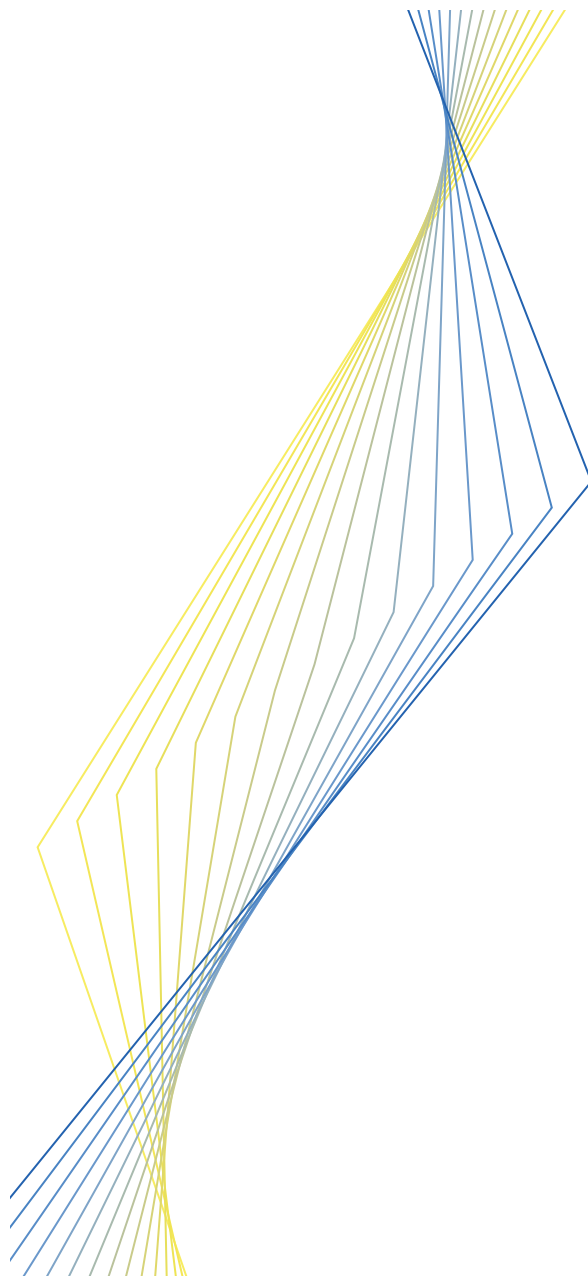
determines the haircut and the collateral value of eligible securities on a daily basis. The pledging of securities can be initiated with a message to KELER. On the basis of the collateral value supplied by the National Bank of Hungary for each security accepted as collateral, KELER calculates the total value of collateral pledged by each participant and reports it to the National Bank of Hungary. Collateral blocked throughout the day is valued and reported by KELER and thus the limit of the participant can be raised. Collateral releases are validated by the National Bank of Hungary prior to the actual release of securities. A pledged security can also be withdrawn. First, the

participant should notify KELER of this wish and it is KELER's task to calculate the corresponding credit amount. Upon receiving KELER's notification, the National Bank of Hungary checks the availability of the credit limit and reduces the limit accordingly as well as notifying KELER about the acceptance of the limit change. In its system, KELER blocks and releases securities on the accounts of the participant and does not transfer them to the account of the National Bank of Hungary. In the case of intraday credit, an initial credit limit may be set, and this limit can be changed at any time during VIBER opening hours.

Hungary



EUROPEAN CENTRAL BANK



Latvia

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Latvia

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List of abbreviations

BankServiss	Bank Service Centre
BCC	Baltic Card Centre
CAS	Central Accounting System, the component of SAMS
DENOS	SSS operated by the Latvian Central Depository
EKS	Electronic Clearing System – <i>Elektroniskā klīringa sistēma</i>
FCMC	Financial and Capital Market Commission
ICN	Interbank Communication Network
ITS	Internet Transaction Server
LCD	Latvian Central Depository
LKA	Association of Commercial Banks – <i>Latvijas Komerčbanku asociācija</i>
LVL	Latvian lats
NMC	National Payment Centre – <i>Nacionālais maksājumu centrs</i>
PNS	Postal Accounting System – <i>Pasta norēķinu sistēma</i>
RSE	Riga Stock Exchange
RICI	Riga Stock Exchange Price Index
SAMS	Name of the RTGS system – <i>Starptanku automatizēto maksājumu sistēma</i>
VNS	SSS operated by the Bank of Latvia – <i>Vērtspapīru norēķinu sistēma</i>

Introduction

Over the past few years a number of important reforms have been implemented in the field of payment systems in Latvia. The main purpose of these reforms has been to minimise the risks arising from interbank settlements and to harmonise the infrastructure and legal framework of the Latvian payment system with EU standards and requirements.

Notable changes have been made to the legal framework of the payment system. A number of laws and regulations have been amended to incorporate the requirements of EC Directives. A new law was drafted to implement Directive 98/26/EC on settlement finality in payment and securities settlement systems.

The Bank of Latvia has exclusive responsibility for the oversight of the payment system, whereas supervision of capital market institutions, including credit institutions, is the responsibility of the Financial and Capital Market Commission (FCMC), the new consolidated supervisory authority which commenced its activities on 1 July 2001.

Large-value interbank payments in national currency (lati) are effected using the Bank of Latvia's real-time gross settlement system (SAMS). SAMS began operations in September 2000, replacing the interbank gross settlement systems used previously. The new system provides enhanced risk control and is an effective tool for the implementation of monetary policy.

The major interbank retail payment system in Latvia is the Bank of Latvia's electronic clearing system (EKS). It is an ACH system in which payment processing is fully automated and only electronic instructions are accepted.

A distinctive feature of the Latvian payment system is the predominance of credit transfers. Electronic credit transfers and payments by payment card have been on the rise in recent years. Likewise, the number of POSs and ATMs has grown. Recent years have seen an increased use of electronic means of payment. Most banks have started to offer online services to their customers. The banks are actively taking advantage of recent innovations in information technology and expanding their services by offering home banking, internet-based and phone-based banking to their customers.

The securities market infrastructure in Latvia consists of one stock exchange – the Riga Stock Exchange (RSE) – and two SSSs – the DENOS system operated by the Latvian Central Depository (LCD) and the Bank of Latvia's SSS, the VNS. The latter is used to issue and transfer government debt securities and to register collateral used in the Bank of Latvia's monetary policy operations. Trades and transactions with private sector securities are largely settled by DENOS.

I Institutional aspects

I.1 The general institutional framework

The main providers of payment services are credit institutions, the Bank of Latvia and Latvia Post.

The 1992 Law on the Bank of Latvia assigns the central bank the responsibility of promoting the smooth functioning of payment systems in the Republic of Latvia. The Bank of Latvia is to fulfil this objective through the oversight of payment systems. The oversight of payment systems, for which the Bank has sole competence, forms an integral part of the

Bank of Latvia's wider responsibility for monetary and financial stability.

Under the Law on the Bank of Latvia, the central bank has an exclusive right to issue national currency in the form of banknotes and coins.

On 1 July 2001, the FCMC took over the supervision of credit institutions from the Bank of Latvia. Pursuant to the 2001 Law on the Financial and Capital Market Commission, the FCMC regulates and supervises all participants in the financial and capital markets.

Under the 1994 Postal Law, Latvia Post is authorised to issue postal payment instruments and is thus also a participant in the Latvian payment system. The regulation and supervision of Latvia Post is the responsibility of the Ministry of Transport.

The general regulatory framework for the Latvian payment system is based on a set of laws, regulations and agreements.

The 1995 Law on credit institutions governs the activity of credit institutions, which are the main providers of payment services in Latvia. Under this Law, the receiving of deposits and other repayable funds and the issuing of non-cash payment instruments are activities for which credit institutions have exclusive responsibility.

The 1938 Cheque Law, which is based on the Geneva Convention of 1931, relates to the issuing, design and transfer of cheques.

The 1995 Law on securities 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 Law ensures, inter alia, the dematerialisation of securities, the segregation of the assets of participants from those of their customers and the transfer of the title to securities on the settlement date.

General principles governing guarantees for the deposits of natural persons held with banks are outlined in the 1998 Law on guarantees for the deposits of natural persons, which implements Directive 94/19/EC on deposit-guarantee schemes. Pursuant to amendments to this Law, the deposit guarantee scheme will also apply to the deposits of legal persons as of 2003. In addition, the 2001 Law on the protection of investors, which transposes Directive 97/9/EC on investor compensation schemes into national law, provides for the protection of investors' interests in cases where a capital market participant has become insolvent. The 1998 Law on the prevention of laundering of the proceeds of criminal activity establishes the responsibilities and rights of financial institutions, credit institutions and their supervisory and control authorities with the aim of preventing the laundering of the proceeds of criminal activity.

In order to incorporate the EC's SFD into Latvian legislation, the Law on settlement finality in payment and securities settlement systems was drafted.

Most aspects relating to the issuance of payment instruments and the provision of payment services are covered by contracts between financial institutions, customers and retailers. The 1992 Law on the protection of consumer rights prevents the inclusion of unfair terms and conditions in legal contracts, and all agreements with customers must comply with this law.

In order to ensure the efficient and sound functioning of clearing and payment systems, the Bank of Latvia is entitled to issue regulations pertaining to the payments system and payment services. On the basis of the powers conferred upon it by the Law on the Bank of Latvia, the Bank has issued a Regulation on credit transfers and Recommendations for transactions effected by means of electronic payment instruments.

The Regulation on credit transfers governs the procedure for domestic and cross-border credit transfers and stipulates the rights and obligations of all parties involved in credit transfers. It was also implemented to cover the requirements for the execution of cross-border credit transfers established by Directive 97/5/EC on cross-border credit transfers.

The Recommendations for transactions effected by means of electronic payment instruments have been developed to establish the minimum requirements for issuing, servicing and using electronic payment instruments in Latvia. The recommendations have been developed in accordance with Commission Recommendation 97/489/EC of 30 July 1997 on transactions by electronic payment instrument and, in particular, the relationship between issuer and holder.

An out-of-court redress procedure in line with Commission Recommendation 98/257/EC of 30 March 1998 on the principles applicable to the bodies responsible for out-of-court settlement of consumer disputes is currently under development. It is intended to use the procedure to settle disputes between clients and banks over cross-border credit transfers and electronic payment instruments.

To collect the statistics necessary for the oversight of payment systems in Latvia and for the implementation of monetary policy, the Bank of Latvia has adopted the Regulation on compiling credit institution payment statistics.

1.2 The role of the Bank of Latvia

The role of the Bank of Latvia with regard to payment systems consists of three main elements: oversight of the payment system, operation of interbank payment and settlement systems, and issuance of national currency. Carried out for the purpose of controlling and minimising the potential risks inherent in payment systems, oversight of the

payment system serves to promote both the stability of the financial system as a whole and public confidence in money. The operational role derives from the need for banks to have a reliable and safe environment for processing interbank payments and from the Bank of Latvia's need for a secure channel for the execution of monetary policy.

1.2.1 Payment systems oversight

The oversight function is formally assigned to the Bank of Latvia by virtue of Article 9 of the Law on the Bank of Latvia, which states that "The Bank of Latvia shall promote the smooth operation of the payment systems in the Republic of Latvia. The Bank of Latvia is entitled to approve regulatory requirements and regulations in order to ensure the efficient and sound functioning of the clearing and payment systems".

The Bank of Latvia performs this function independently by overseeing systemically important payment systems, issuing regulations and recommendations, providing settlement services for banks or other payment and clearing systems, as well as by taking other supportive action to facilitate private sector initiatives that contribute to the safe and efficient functioning of payment systems.

Oversight focuses mainly on large-value interbank payment systems that are used for settlement of the Bank of Latvia's monetary policy operations and which constitute the largest source of systemic risk in the Latvian payment system. The Bank of Latvia oversees these systems by analysing their compliance with the Core Principles for Systemically Important Payment Systems and requiring payment system operators to take all reasonable measures to achieve full compliance.

Only SAMS (see Section 3.2) is currently regarded as a systemically important payment system in Latvia. However, EKS (see Section

3.4.3.1) is the only retail payment system in Latvia which processes a large number of customer payments. The Bank of Latvia also oversees EKS in accordance with the Core Principles. The Bank of Latvia conducts day-to-day monitoring of the technical and operational functions of SAMS and EKS and analyses their statistical data, in addition to developing and approving regulations governing operation procedures, risk reduction measures, and principles for participation in the systems.

The responsibility for the safe and efficient functioning of other retail clearing systems is vested with the institutions which operate such payment systems and their participants, but the Bank of Latvia oversees retail payment systems and, together with the system operators, evaluates the risks inherent in these systems and provides consultations on risk reduction.

On 13 September 2001, the Bank of Latvia's Board of Governors approved the "Bank of Latvia's Payment Systems Policy", which outlines the Bank's role and objectives with regard to payment systems in Latvia. To encourage public awareness of the role of payment systems and the Bank of Latvia's objectives in this regard, the Bank of Latvia issued a report on the oversight of payment systems in Latvia.

1.2.2 Activities in the area of securities clearing and settlement systems

As a fiscal agent of the Government, the Bank of Latvia organises auctions of government debt securities issuance in the primary market. The Bank of Latvia also operates an SSS – VNS (see Section 4.3.2). The Bank of Latvia uses the VNS to register book-entry rights of credit institutions and the Bank of Latvia in securities, as well as collateral used in monetary policy operations.

1.2.3 The operational role of the central bank

The Bank of Latvia operates two interbank payment systems. SAMS (see Section 3.2) is used for the real-time settlement of large-value payments through the banks' settlement accounts, and the EKS (see Section 3.4.3.1) processes retail payments. The Bank of Latvia also operates the VNS and performs the settlement of the cash leg of transactions processed through the LCD. The Bank of Latvia defines and formulates the rules and regulations governing the payment and securities settlement systems which it manages.

The Bank of Latvia executes State Treasury payments in addition to providing settlement services for other payment and clearing systems in central bank money. The Bank of Latvia issues banknotes and coins, which are distributed through the branch network of the Bank of Latvia.

1.2.4 Co-operation with other institutions

In performing its role of overseeing payment systems, the Bank of Latvia co-operates with the FCMC. The Bank of Latvia and the FCMC have signed an agreement on information exchange in order to ensure that all information which is relevant to the responsibilities of both institutions is shared fully and freely.

The Bank of Latvia maintains close contacts with market participants, with whom it regularly meets in order to convey its ideas and obtain feedback on how the Bank's work in the area of payment and securities settlement systems is perceived. For example, the introduction of SAMS and EKS took place in close co-operation with commercial banks. Similarly, the Bank of Latvia provides the necessary support for private sector initiatives by participating in various projects relating to payment instruments. In addition, all regulations proposed by the Bank are widely

discussed with market participants before finalisation.

The Bank of Latvia co-operates with other central banks and international organisations on issues relating to payment and securities settlement systems.

insurance intermediaries, credit unions, the RSE, the LCD, investment firms, brokers, investment companies and investment consultants. FCMC grants licences to provide financial services, including custody services and other intermediary activities in the Latvian financial and capital market.

1.3 The role of other private and public sector bodies

1.3.1 The Financial and Capital Market Commission

Pursuant to the Law on the Financial and Capital Market Commission, passed on 1 June 2000 (which entered into force on 1 July 2001), the FCMC regulates and supervises the financial and capital markets and the activities of their participants. Resulting from a merger of the Credit Institutions Supervision Department of the Bank of Latvia, the Securities Market Commission and the Insurance Supervision Inspectorate, the FCMC commenced its activities on 1 July 2001. The financial and capital market participants supervised by the FCMC are issuers, investors, credit institutions, insurers, private pension funds,

1.3.2 The Association of Commercial Banks

The Association of Commercial Banks (LKA) represents the interests of the Latvian banking sector. The LKA was created in 1992 as a public 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 plays an active role in setting standards for payment instruments in the banking sector. The LKA also assists in drafting laws and regulations governing the activities of banks and is represented on the Consultative Council of the FCMC.

2 Payment media used by non-banks

2.1 Cash payments

The national currency of the Republic of Latvia is the Latvian lats (LVL), divided into 100 santims. The Bank of Latvia issues the national currency in the form of banknotes and coins, including commemorative coins of various nominal values. Banknotes with the following nominal values are in circulation: LVL 5, LVL 10, LVL 20, LVL 50, LVL 100 and LVL 500. The nominal values of the coins in circulation are as follows: 1, 2, 5, 10, 20 and 50 santims and LVL 1, LVL 2, LVL 10 and LVL 100.

Cash is widely used in Latvia (mainly by individuals in "face to face" transactions for goods and services). No estimate is available for the value or number of cash payments, but the share of cash in M1 in Latvia has been declining slightly for a number of years (from 62.1% in 1996 to 56.2 % in 2001).

On 31 December 2001, currency in circulation amounted to LVL 485.2 million (€872.2 million). As the economy continues to grow, the amount of currency in circulation is rising steadily; however, the development of non-cash settlement instruments has gradually reduced the role of cash in money circulation.

2.2 Non-cash payments

The use of payment instruments other than banknotes and coins has become more widespread in Latvia, reflecting a general widening of the population's banking habits. Non-cash payments are effected predominantly through current accounts. Customers are free to choose the currency in which to open their accounts. Current accounts in lats are used mainly for domestic retail payments, whereas accounts in foreign currencies are used for both cross-border and domestic payments. In Latvia non-cash payments are effected mainly by means of credit transfer. Postal instruments are also widely used, but their value is significantly less than that of credit transfers via the banking system. The overall trend seems to be that financial institutions are gradually expanding their electronic, internet, telephone and mobile banking services. The use of other payment instruments, such as payment cards, is also on the rise.

2.2.1 Credit transfers

Credit transfers play a very significant role in effecting payments between customers. In 2001, 56.8 million credit transfers with a total value of LVL 265,480.0 million (€474,020.6 million) were processed. The share of credit transfers in non-cash payments represented 83.6% of the total volume and 99.9% of the total value. Credit transfers are initiated primarily by paper-based payment order, but in recent years the use of modern electronic payment instruments has expanded. In the last few years, the most rapid rise, both in terms of value and volume, has been recorded in electronic banking (home banking), internet and telephone banking transactions, as a number of banks have been initiating and expanding these services.

2.2.2 Cheques

Traditionally, the role of cheques has been very limited and cheques are rarely used as a payment instrument in Latvia. Almost all cheques are drawn in foreign currencies. In addition to cheques issued by foreign and domestic banks, there are also traveller's cheques, which are used by international companies, embassies and travellers.

2.2.3 Direct debits

Direct debits emerged in Latvia in 1994, when several banks developed these as an intrabank payment instrument for the payment of utility bills by their customers. In September 2000 the National Payment Centre (NMC) launched an interbank direct debit system with five banks. This is an open-end system that allows any utility or commercial bank to join and thus start providing direct debit benefits to its customers.

2.2.4 Payment cards

A wide variety of international card products are available in Latvia. Bank customers use different types of card: credit cards, debit cards, debit cards with an overdraft facility and local cash withdrawal cards (mainly issued when a current account is opened and intended for withdrawal of cash from the account).

By the end of 2001, banks had issued 893,159 cards: 409,280 with a credit function and 702,911 with a debit function (debit cards with an overdraft facility are included under both categories). By the end of 2001, 19 banks out of 23 had issued payment cards to customers.

Payments made by payment card (bank and retailer) accounted for 16.2% of the total volume and 0.08% of the total value of payments made by cashless payment instruments.

Debit cards

Debit cards have been issued in Latvia since early 1992. Over the past few years, banks have enhanced their debit card-related services by developing a POS and ATM infrastructure and by offering an increasing number of debit cards with an overdraft facility. By the end of 2001, 702,911 cards with a debit function had been issued (this figure includes both debit cards and debit cards with an overdraft facility). The most widely used card with a debit function is Maestro, followed by Visa Electron and local cards with a debit function. The choice of card scheme offered by any individual bank depends on factors such as risk management, the availability of electronic card acceptance networks, the 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 a special card account.

Credit cards, travel and entertainment cards

Banks in Latvia offer credit card products with both credit and debit functions. Thus, the "Cards with a credit function" category includes both credit cards and debit cards with an overdraft facility (see the "Debit cards" Section).

The number of credit card holders is smaller than the number of debit card holders and mostly limited to business customers. However, owing to promotional efforts undertaken by banks, the number of locally issued credit cards is beginning to increase. Most of the credit cards issued by banks are Visa and Europay products. Credit cards are predominantly used outside Latvia.

Retailer cards

Retailer cards have gained in popularity over the past few years. These are single-purpose cards and, unlike bank payment cards, can only be used at POSs controlled by their issuers

(mainly petrol companies). Some companies process their card transactions themselves and some are serviced by card processing centres (the Baltic Card Centre (BCC) or the Bank Service Centre (BankServiss)).

Prepaid cards

Prepaid cards are mainly used for telecommunications and the schemes are single purpose-oriented. There is a single purpose smart card project, called "Riga Key", which was implemented by the company NetI Nordic/Netcards at the beginning of 2001. Riga Key is a prepaid rechargeable smart card which customers use to pay for entry to Riga's old town by car. Riga Key was designed in such a way that it can be used as a multi-purpose smart card in the future.

ATM and POS networks

Two of the existing ATM and POS networks are managed by BankServiss and the BCC. In addition, four banks each manage their own ATM network and two their own POS network.

The development of ATM networks began in 1996. By the end of 2001 there was a total of 791 ATMs in six networks (managed by BankServiss, BCC and four local banks). The networks are compatible, but the transaction fees may differ depending on the pricing policy applied by each network manager and card issuer. International debit and credit cards are accepted across all ATM networks. Acceptance of local cards depends on the product: local cards are generally accepted across the ATM network of the card issuer bank, but banks can conclude agreements among themselves for the acceptance of these cards also in other networks. In 2001, 72.4% of all ATMs were multi-functional, allowing customers to perform various banking operations, such as paying bills, making deposits to savings accounts, withdrawing cash and verifying current account balances.

The first steps in building up a POS network were taken in 1992. At the end of 2001 there were 5,877 electronic POS terminals installed across four networks (managed by BankServiss, BCC and two local banks). The POS network accepts all types of payment card circulating in Latvia, as well as international cards issued by foreign banks. Banks have modernised the servicing of payment cards and have increasingly been using electronic equipment to ensure online authorisation. For this reason, the number of electronic POS terminals has increased, while the number of imprinters has declined. International debit and credit cards are accepted across the different POS networks; local cards are normally accepted across the POS networks of the card issuer bank, or banks can conclude agreements with merchants (who participate in the POS network of another bank or card centre) on the acceptance of these cards.

2.2.5 Postal instruments

Cashless payments can also be made through Latvia Post. Functioning outside the banking system, Latvia Post offers means of payment primarily used by the social security authorities to make pension payments and by companies and individuals to make money transfers. Money orders are convenient for those who do not have a bank account. In 2001 a significant proportion of non-cash payments in terms of volume (only 30.5% less than credit transfers in the banking system) was effected through Latvia Post, albeit that postal instruments were largely used for small-value retail payments (for a total amount of LVL 505.3 million (€902.2 million)). Like banks, Latvia Post offers its customers standing order and electronic credit transfer facilities; however, paper-based payment instruments

account for a large part of all transfers executed by Latvia Post. Since the autumn of 2001, Latvia Post has also offered its customers the possibility of using debit cards issued in co-operation with a local bank.

2.2.6 Other payment instruments

No other payment instrument plays an important role in the Latvian payment system.

2.3 Recent developments

Over the past few years, most banks have started to offer online services to both their corporate and retail customers. Banks are actively taking advantage of recent innovations in information technology and are increasingly offering home banking, internet-based and phone-based banking to customers. The latest developments are WAP banking applications (mobile phone-based banking services), which were launched in 2000 and are currently offered by some banks.

In addition, wages and salaries are increasingly being credited directly to employees' accounts by electronic funds transfer. These services, provided by banks, are normally accompanied by the possibility of using payment cards linked to customer accounts.

Recently, banks have been devoting more attention to the transition to chip technologies in card-based schemes. In order to reduce the costs connected with ATM network maintenance and improve customer service, banks have started to merge ATM networks and conclude agreements on allowing customers to use other ATM networks without additional charges.

3 Interbank exchange and settlement systems

3.1 General overview

The Bank of Latvia provides clearing and settlement services for interbank transfers through the operation of two fully automated payment systems: SAMS and the EKS. All banks participate directly in these systems (see Chart 1).

SAMS replaced both of the gross settlement systems previously used by the Bank of Latvia in September 2000 and is used for processing large-value and urgent money, foreign exchange and capital market-related transfers as well as large-value interbank and customer payments. In addition, it settles the net positions of other payment systems (e.g. the EKS, the payment systems of LCD and

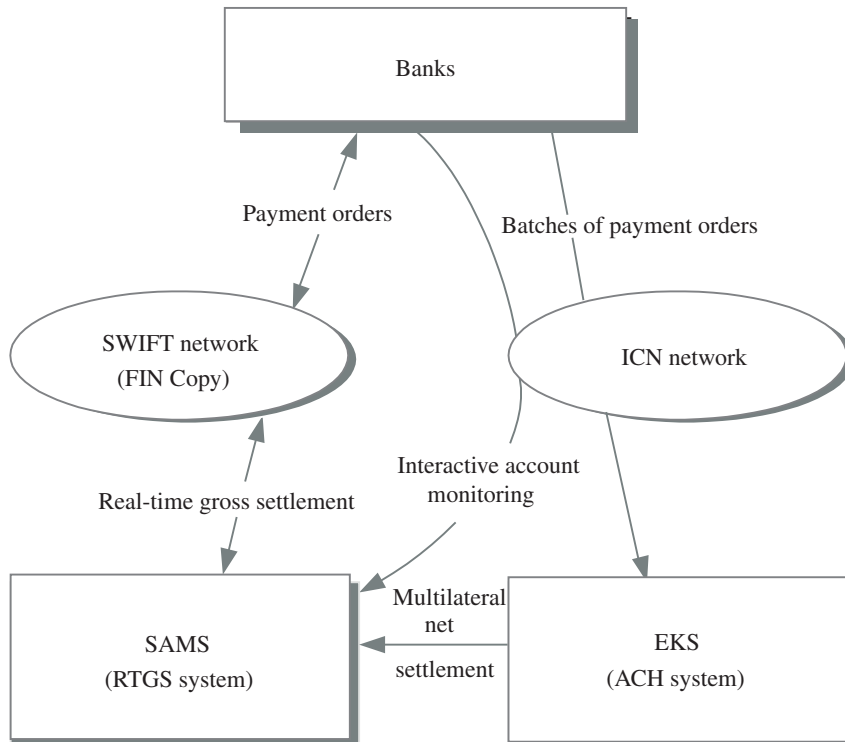
BankServiss) and processes payments relating to monetary policy.

Most 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 payment messages are transferred in batches between the system participants and the Bank of Latvia via the local interbank communication network (ICN).

In addition there are four main payment service providers: two card centres (card-based payment systems), Latvia Post (the postal payment system) and NMC (the giro system).

Chart 1

Interbank payment and settlement systems in Latvia



3.2 The real-time gross settlement system (SAMS)

SAMS began live operation on 8 September 2000. The system is fully automated and consists of two major components, the Central Accounting System (CAS), the software for which was provided by Logica UK Ltd., and the messaging network, i.e. SWIFT. For the purposes of monitoring their account positions, the members use the participant workstations connected to CAS by the ICN. All participants hold settlement accounts with the Bank of Latvia in SAMS.

3.2.1 Operating rules

The operating rules adopted by the Bank of Latvia are contained in the Regulation on interbank settlements effected by the Bank of Latvia and are binding on all of the system's participants. This regulation defines:

- the access criteria;
- the system's daily timetable;
- the rights and obligations of participants and the Bank of Latvia;
- the definition of finality and the irrevocability of payments;
- rules regarding the exclusion of a participant from the system;
- the contingency procedures.

Prior to any operation in the system, the participant and the Bank of Latvia sign a bilateral agreement on participation in SAMS and an agreement on operation in the ICN. The SAMS agreement describes the liabilities and responsibilities of the participant and the operator of the system in detail. The ICN agreement contains the responsibilities and liabilities of those participating in SAMS through the ICN network. Since the payment messages are submitted via SWIFT,

the participants must comply with the message standards and rules as defined by SWIFT.

3.2.2 Participation in the system

Direct participation in SAMS, other than on the part of the Bank of Latvia itself, is restricted to domestic banks and branches of foreign banks licensed by the FCMC. To participate in the system the bank must have a settlement account with the Bank of Latvia and comply with the technical and security requirements for participation, as defined both in the Regulation on interbank settlements effected by the Bank of Latvia and in bilateral agreements with the Bank. The participant must also be a member of SWIFT.

By the end of 2001 there were 22 participants in the system: 21 banks and the Bank of Latvia. Additionally, on the basis of bilateral agreements, the Bank of Latvia can execute payments in SAMS on instruction from the State Treasury, the LCD and a number of other institutions which do not participate in SAMS.

3.2.3 Types of transaction handled

SAMS processes the following types of transaction:

- large-value interbank transactions, e.g. the LVL leg of foreign exchange deals, interbank loans, etc.;
- customer payments;
- settlement of final positions for the EKS, retail clearings, e.g. BankServiss and the LCD;
- monetary policy operations.

In addition, the Bank of Latvia has an exclusive right to manually transfer funds directly between the participants' settlement accounts held in SAMS. This facility is used for:

- the settlement of net positions for the EKS and retail clearings;
- the settlement of DVP transactions received from the LCD;
- transactions relating to the granting of intraday credit limits and lombard loans.

3.2.4 Operation of the system

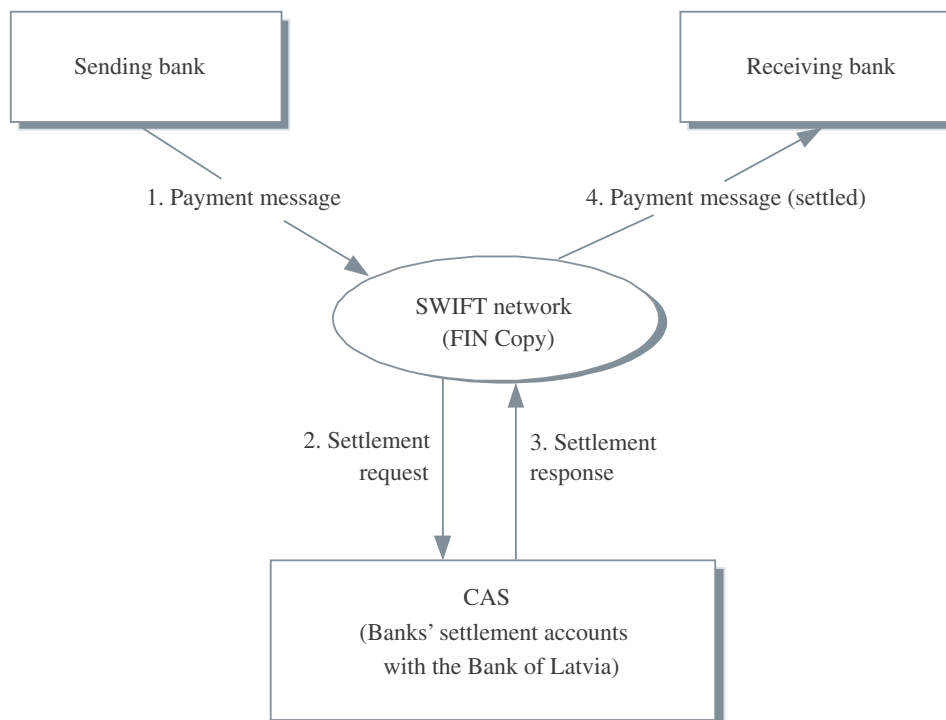
All participants in SAMS are members of a SWIFT closed user group and the messages are processed using the SWIFT FIN Y-Copy (i.e. store-and-forward message-processing) mode. A switchover to the T-Copy mode is possible in contingency situations.

SAMS accepts the following SWIFT message types: MT 100 (customer transfer), MT 102 (multiple customer credit transfer), MT 103 (single customer credit transfer), MT 202 (general financial institution transfer) and MT 205 (financial institution transfer execution).

In Y-Copy mode a fund transfer in SAMS is initiated by submitting a SWIFT payment message addressed to the destination member. Before passing the message to the receiving bank, it is intercepted and held pending by the FIN Copy service while a settlement response from the Bank of Latvia is awaited. For this

Chart 2

Operation of SAMS: SWIFT FIN Y-Copy mode



purpose, all the relevant data (the BICs of the sending and the receiving members, the value date, the value and the reference of the transaction) are copied from the original message and sent to the CAS. The CAS then checks whether there are sufficient funds in the sender's account to cover the payment. If there are sufficient funds in the account, the CAS settles the payment in real time by transferring the funds between the settlement accounts of the sending and receiving participant, and sends a settlement response to FIN Copy (see Chart 2). FIN Copy then forwards the queued payment message to the destination member. In the event that there are insufficient funds on the account of the sending member, the payment is placed in SAMS' queue until sufficient funds are received.

Timetable

SAMS operates every business day from 8.30 a.m. to 4 p.m. The timetable for SAMS is shown in Table I below.

Queuing

The CAS queues payments that are otherwise ready for settlement, except for the fact that

the funds on the account of the sending member are insufficient. The payments are also queued if the system is busy or if one of the member accounts involved in the payment or the whole CAS is suspended. All queues are released on the basis of the FIFO principle, taking into account the priorities of the messages in a queue. The participants assign priorities when sending the message. In the absence of any assigned priority, a default value is set by the system. Queued payments may be cancelled or have their priority changed by the sending member through the submission of a SWIFT message to SAMS. The highest payment priorities are reserved exclusively for the Bank of Latvia.

Gridlock

A payment system is in gridlock when payments cannot be settled via the normal sequential settlement process. A gridlock can be solved either by using incoming funds from banks or through simultaneous settlement of queued transfers using the CAS gridlock resolution algorithm. This is initiated periodically at a frequency of 30 minutes. The Bank of Latvia's system manager can also initiate the gridlock resolution manually.

Table I

The timetable for SAMS

Time	Activity
8.30 a.m.	Open for business
3 p.m.	Customer payments (MT 100, MT 102, MT 103) are closed
3 - 3.30 p.m.	The times between which the participants must adjust their settlement account balances
3.30 p.m.	Interbank payments (MT 202, MT 205) are closed
3.30 - 4 p.m.	The times between which granting and settling of the overnight lombard loans for those banks which still have a debit position at the end of the business day takes place
4 p.m.	Close of business and archiving of the data

Enquiries and monitoring

All participants can monitor the status of their accounts and payments in real time via their participant workstations, which are connected to the CAS by the ICN. Additionally, participants may submit enquiry requests in the form of SWIFT messages concerning the status of their account and payments sent to or from their account, including queued payments. The response from the CAS is automatically sent to the submitter of the enquiry request.

The Bank of Latvia's system manager has exclusive access rights to view information about any participant.

3.2.5 Transaction processing environment

SAMS consists of two major components: CAS and the SWIFT FIN Y-Copy service. The CAS provides the settlement and accounting facility for payment instructions and runs on IBM RS/6000 using an AIX operating system. SWIFT in turn provides the system with the communication network between the participants of SAMS and the CAS.

The ICN is used to connect participant workstations, used for monitoring functions, and the CAS. This network consists of a central communication point at the Bank of Latvia and local communication points in each bank. Frame relay technology (64 Kbit/s lines) is used as the primary connection, with ISDN as a backup. Encryption of communication lines has been implemented on the Cisco routers level, and all electronic information is also electronically signed and encrypted using Entrust/PKI software.

SAMS operates on a central server located on the premises of the Bank of Latvia and is equipped with "hot backup" facilities.

3.2.6 Settlement procedures

SAMS accepts credit payments for same-day settlement only. However, it is possible to submit a payment message for next-day settlement after the close of the current business day. All members have access to collateralised overdraft facilities in the form of interest-free intraday credit limits (see Section 3.2.4).

Payments are settled in the order of arrival and according to the particular priority. Both sides (debit and credit) of the transaction occur simultaneously and have the same time stamp. When the receiving member receives the payment message, the payment is already settled. When settled, a payment becomes final and irrevocable, as defined in the Regulation on interbank settlements effected by the Bank of Latvia.

3.2.7 Credit and liquidity risk

The credit risk in SAMS is eliminated by settling funds in real time, using the SWIFT FIN Y-Copy mode (see Section 3.2.4) and by processing the payments only within the debit balance or the fully collateralised intraday credit limit. All funds on banks' settlement accounts, including minimum reserves, are available for settlement.

The intraday credit limit is free of charge and can be requested or changed at any time during the business day. If the participant wishes to change the intraday credit limit, it can apply to the Bank of Latvia. The Bank of Latvia in turn pledges the respective securities by transferring them from the bank's securities account to the bank's collateral account for the intraday credit limit in the VNS, increases the bank's intraday credit limit in SAMS and sends the member confirmation of a change in the intraday credit limit. In the event that a bank wishes to reduce its intraday credit limit, a similar, but reverse, procedure takes place.

If, at the end of the settlement day, there is a debit balance on a bank's settlement account, the Bank of Latvia extends to the bank an automatic lombard loan within the respective debit balance. This lending attracts an overnight interest at the rate set by the Bank of Latvia. As collateral, the Bank of Latvia selects securities pledged for the intraday credit limit with the shortest terms to maturity.

Additionally, the members of the system can effectively monitor their liquidity in a real time (see Section 3.2.4).

3.2.8 Pricing

The initial investment in SAMS was made by the Bank of Latvia; the participants merely needed to provide adequate hardware and software of their own in order to be able to connect to SAMS via SWIFT and the ICN. There is no entry fee for participation in the system. For the time being only a fixed transaction fee is levied from the participants. The current transaction fee is LVL 0.20 (€0.36). To minimise the number of erroneous payment messages, there is a higher fee of LVL 0.50 (€0.90) for rejected payments. Additionally, the participants in the system bear all the expenses related to the implementation of their SAMS participant workstation as well as any expenses arising from membership of SWIFT.

3.2.9 Statistical data

In 2001 the volume of payment instructions processed in SAMS was 85,212, with a total value of LVL 26,270.6 million (€46,906.8 million).

3.3 Large-value payment systems

No other large-value payment systems play an important role in Latvia.

3.4 Retail payment systems

3.4.1 E-money schemes

At the end of 2001 there were no e-money schemes operating in Latvia.

3.4.2 Card-based schemes

There are two non-banks, the Baltic Card Centre (BCC) and BankServiss, which provide services to the banking system by processing card transactions and servicing and administering ATM and POS networks. The limited liability company BankServiss was established on 29 April 1992 by Latvian commercial banks. Since the end of 1999, the only shareholder in the company has been the Norwegian company Euro Processing International. BCC, a joint stock company which entered the market in 1996, is owned by three member banks and a few private individuals.

Both centres provide standard international processing services for a range of credit and debit card products available under the Eurocard/MasterCard (Europay) and Visa trademarks and local card services for various domestic and retailer cards. BankServiss also provides connections to American Express and Diners Club networks.

By the end of 2001 BankServiss supported a network of 5,637 POSs and operated a network of 155 ATMs, while the BCC serviced a network of 1,173 POSs and 367 ATMs. The services provided by card centres include management of the POS terminal and ATM networks, 24-hour online authorisation, collection of data, and chargeback and retrieval request processing in accordance with the Europay and VISA account processing procedure.

International transactions using Europay and Visa card products are cleared at Europay International and Visa respectively, and card centres provide their customers with primary

processing of information by preparing the clearing information to be processed in international and local clearing systems. BCC uses one commercial bank as the settlement institution for clearing and settling local transactions, whereas BankServiss provides multilateral clearing for participating banks and submits net positions to the Bank of Latvia for final settlement.

In addition, card centres provide their members with issuing services and are working on developing appropriate measures to reduce the number of fraudulent card transactions in Latvia and the consequent damage done to banks, merchants and card users.

Future developments

During 2001, both card centres paid more attention to the development of chip technologies.

BankServiss and the BCC plan to implement, together with commercial banks, all measures necessary for meeting the EMV standard, and work in this direction has already started.

Card centres are continuously working on improving the quality of their services and on introducing new technologies that would enable commercial banks to provide e-commerce and m-commerce services. For example, BankServiss offers the ITS (Internet Transaction Server) – a new service that provides payment card authorisation for purchases over the internet. The ITS software is integrated into the internet home page of the respective merchants.

3.4.3 Retail credit, debit and cheques transfer systems

3.4.3.1 The EKS

Organisational set-up

The EKS is a fully automated multilateral net settlement system which was implemented in November 1998 as a replacement for the paper-based clearing system. The EKS is an ACH system which handles bulk payments in electronic form.

The EKS is owned by the Bank of Latvia, which is responsible for formulating, issuing and applying the system's operating rules. To participate in the system, the banks sign a mutual agreement with the Bank of Latvia, thereby accepting the rules, responsibilities and liabilities relating to their participation in the EKS. In addition, the participants sign a bilateral agreement with the Bank of Latvia regulating the use of the ICN, which is used for the transfer of data from and to the EKS.

The EKS is a retail payment system. However, the Bank of Latvia is seeking ways to minimise systemic risk in the EKS by adhering to the Lamfalussy standards:

- Direct participation in the system is granted to all banks. Non-bank entities are not authorised to participate in the system. In addition, procedures are established for removing a participant from the system.
- The system's operational procedures ensure that banks with a shortage of liquidity are able to arrange the necessary funds in the interbank market via the RTGS system to cover their debit positions.
- As the EKS's net positions are settled in SAMS, banks are provided with the same liquidity facilities by the Bank of Latvia as

in SAMS (see Section 3.2.7). The intraday liquidity facility substantially reduces the occurrence of delays in the final settlement.

- An unwinding procedure is established for exceptional circumstances – for example, when a bank fails to meet its obligations by a specified cut-off time.
- The Bank of Latvia ensures reliable operational and technical facilities to complete the daily processing activities of the EKS.

Moreover, the changes in the Regulation which came into force on 1 February 2002, to the effect that the amount of any single payment order in the EKS shall not exceed LVL 50,000 (around €90,000), have further reduced the possibility of liquidity and credit risk in the system and the possible debit positions of the participants.

Participation in the system

Participation in the EKS is restricted to licensed banks and branches of foreign banks operating in Latvia and to the Bank of Latvia. Owing to the risks involved in the net settlement system, non-banks are not authorised to take part in the EKS. At the end of 2001, 21 banks and the Bank of Latvia were participating in the EKS.

Types of transaction handled

The EKS is a multilateral net settlement system which settles bulk payments with the same day value date. The EKS processes only corporate and retail payments in the form of electronic credit transfers. The message format of the payments processed corresponds to the SWIFT message types MT 100 (customer transfer) and MT 103 (single customer credit transfer).

In order to further reduce the risks in the EKS, the EKS has been accepting payments of up to only LVL 50,000 (around €90,000) since 1 February 2002.

Transaction processing environment

The EKS operates on a central server located on the premises of the Bank of Latvia and is equipped with “hot backup” facilities. The ICN is used for the data exchange (see Section 3.2.5).

Settlement procedures

Banks prepare files of payment instructions (batches) in electronic form which are then submitted to the Bank of Latvia daily between 8.30 a.m. and 10.30 a.m. 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. First, all the debit positions are settled, and only then does the settlement of the credit positions take place. If a bank fails to cover its debit position, final settlement is postponed until that bank receives the necessary funds. Funds can be received from other banks, settled through SAMS, or by accessing intraday liquidity facilities, but by no later than 1 p.m. on the same day. If the funds are not received by this time, the system initiates the unwinding procedure, cancels all payment orders sent and received by any bank in a default position, and the net positions for the remaining banks are recalculated. After the execution of final settlement, the EKS submits the accepted payment instruction files to receiving banks together with the clearing results.

Pricing

To cover the system’s operational costs, banks are charged a transaction fee of LVL 0.02 (€0.04) for the processing of payment messages in the EKS.

Statistical data

In 2001 the volume of payment instructions processed in the EKS was 14.5 million, at a total value LVL 7.3 billion (€13.0 billion).

3.4.3.2 Latvia Post

Latvia Post, which is authorised under the 1994 Postal Law to issue postal payment instruments, also manages the Postal Accounting System (PNS). PNS was developed in 1996 and is managed by the Postal Accounting Centre, which is a branch of Latvia Post. PNS ensures convenient, fast and secure execution of a variety of payments among private individuals and legal persons, using modern data-processing technology and electronic data interchange. A number of different money orders and postal payment orders issued by Latvia Post are used as payment instructions in the PNS (see Section 2.2.5). This system benefits from an extensive branch network. At the end of 2001 Latvia Post had a network of 969 branches and 56,313 accounts were opened in the PNS.

3.4.3.3 The National Payment Centre

NMC was established in 1998 by the company Swedgiro, which is a subsidiary of Swedish Post. The main objective of the company is to develop a modern billing and bill payment system in Latvia. In September 2000, the NMC launched an interbank direct debit system and currently has interfaces with five banks and more than thirty utilities, housing companies and other institutions. This is an open-end system which allows every utility or commercial bank to join the giro system, thereby providing direct debit instruments to customers (see Section 2.2.3). Since the summer of 2001, the

company provides a direct debit interface for mobile phone and internet-based bill payment services.

The NMC receives billing files from partnership utilities, extracts files with information required for direct debit instructions and sends instruction files to respective banks. Direct debit transaction information received from banks is validated against billing files and transferred to utilities.

NMC has plans to develop new services for utilities, such as simplifying the procedure for salary transfers to employees' accounts with different banks.

3.5 Future developments

The main focus in the future will be on improving the operation of payment systems operated by the Bank of Latvia and on minimising the systemic risk inherent in these systems. The possibility of connection to the payment systems of the EU is also very important. This functionality feature was one of the requirements at the time of implementation of SAMS.

With the aim of shortening the time lag for retail payments and of enhancing the quality of service for bank customers, the Bank of Latvia is considering introducing several netting cycles in the EKS as well as extending SAMS' operating hours.

4 Securities settlement systems

4.1 Trading

The basic categories of instrument traded in the Latvian securities market are:

- government debt securities traded on the RSE and the OTC market. Interest-bearing, fixed-rate Treasury bonds are issued with a maturity of two, three or five years, whereas Treasury bills are issued with a maturity of one, three, six or twelve months;

- corporate debt securities traded on the RSE and the OTC market. This category includes corporate money market instruments – commercial papers, certificates of deposit and capital market securities – corporate bonds, mortgage bonds, etc. deposited with the LCD;
- equity shares traded on the RSE or the OTC market;
- mutual fund units.

At present there is no central market for derivatives, although some banks issue and trade such instruments with their customers and other banks.

4.1.1 Institutional aspects

Securities trading takes place for the most part at the RSE. RSE is the sole licensed stock exchange in Latvia. It is owned by 20 financial intermediaries – banks and brokerage companies – and is incorporated as a joint stock company. The RSE operates a fully automated electronic continuous trading system based on a public order book. Any bank or brokerage company licensed by the FCMC can become a shareholder, and thus a member, of the RSE. Remote (foreign) participants are also eligible for membership of the RSE. It is supervised and regulated by the FCMC. The operational procedures of the exchange, such as the admission of new members, the listing requirements, the trading and quotation rules, clearing and settlement rules and other issues are established in the Rules and Regulations of the RSE.

OTC trades are supported by both SSSs operated by the LCD and the Bank of Latvia. The Bank of Latvia trades government debt securities through its tender system.

4.1.2 Operational aspects

In order to buy or sell securities quoted on the RSE, an investor has to approach an RSE member – a licensed bank or a brokerage company. The RSE had 14 members at the end of 2001.

The RSE provides continuous trading at variable prices and offers its members a fully automated service for order execution. Trading in the continuous market at variable prices is conducted between 10 a.m. and 2 p.m. Block trading and OTC trades start at 3.45 p.m. on the previous business day. Investors are able to see the market depth during the session and buy and sell securities online through their brokers.

Trading in the RSE involves the following stages:

- The client places a buy/sell order with a financial intermediary – a brokerage department of a bank or a brokerage house – which acts as both a custodian and a broker. When the order is accepted, the client's cash/securities positions will be checked.
- A member of RSE submits the order to the RSE by the end of the trading session on T-day. Pre-trading netting is not permitted.
- RSE is an automatic trading system (ATS). During the trading session, the RSE matches the orders and quotes the price of securities.
- The RSE member is automatically notified upon execution of the order.

The market segments are as follows:

- the fixed or central market, which was the first trading platform of the RSE;

- the continuous market at variable prices – the main trading platform for shares;
- the accept trading system (advanced block trading platform) – mainly for debt securities;
- the block trading system;
- reopening (trading for ten minutes after the central market is closed).

The main indexes of the RSE are the RSE Dow Jones capitalisation index (including the official and second list securities) and the Riga Stock Exchange Price Index (RICI) (including official and second list securities).

In addition, the RSE offers trading results and exchange news to information providers, as well as organising seminars for participants and other interested persons.

A memorandum of understanding has been signed between the RSE, the Tallinn Stock Exchange and the National Stock Exchange of Lithuania. The aim is to harmonise the three markets into a single investment area which would be a liquid, attractive and easily understandable market for the international investor community. At the end of 1999 the Latvian, Estonian and Lithuanian Stock Exchanges approved the companies for the Baltic list, which contains the Baltic blue chip companies. A real-time data-feed allows brokers in Estonia, Latvia and Lithuania to simultaneously view real-time price and trading information on all three markets from their own terminals. The data-feed allows brokers to obtain online trading information on the other markets in a fast and reliable way at no additional cost. The RSE's projects for the future are based on its strategic integration with the Finnish HEX group.

Alongside the customary trades in the RSE, OTC trading has also been developed in Latvia. OTC trading with securities registered in the

LCD is supported by DENOS (see Section 4.3.1). Participants of the system conclude the trade mutually and give transfer instructions to DENOS.

OTC trading with the government debt securities registered in the Bank of Latvia is supported by VNS. The Bank of Latvia as the government's financial agent sells government debt securities in the primary market through its tender system. Prior to the auction, the Ministry of Finance announces the auction details: auction date, settlement date, offered amount, ISIN code, 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 the participants by means of SWIFT messages. After the auction has been completed, the participants receive information about the results. The amount of securities issued is always equal to the amount of securities bought in the auction. In the secondary market, government debt securities are bought/sold by the Bank of Latvia through tenders or by the participants concluding trades mutually (settlement of these transactions, see Section 4.3.2.2). The Bank of Latvia also organises repo tenders of securities eligible for use in monetary operations.

4.2 Clearing

There is no separate clearing house currently operating in Latvia.

4.3 Settlement

There are two SSSs in the Republic of Latvia – DENOS, operated by the LCD, and VNS operated by the Bank of Latvia (see Chart 3). The Bank of Latvia and the LCD have established a bilateral correspondent relationship to transfer securities from the VNS to DENOS and vice versa. All Government securities issued and other eligible securities

that are settled via VNS are registered with LCD.

Transactions in Latvian government debt securities are mainly settled in VNS. DENOS also provides settlement services for Latvian government securities and manages customer accounts. VNS provides settlement services only for banks. Since the government securities are not common for non-banks, the settlements of these securities are mainly settled in VNS. Trades in other Latvian securities (equities, corporate debt securities and mutual fund units) are settled in DENOS. The settlement period for trades on the RSE using net settlement is usually the trade date (T)+3; for OTC trades and RSE trades using real time gross settlement, the period is T+0 (trading parties can also agree on a later settlement period, which can be up to T+360).

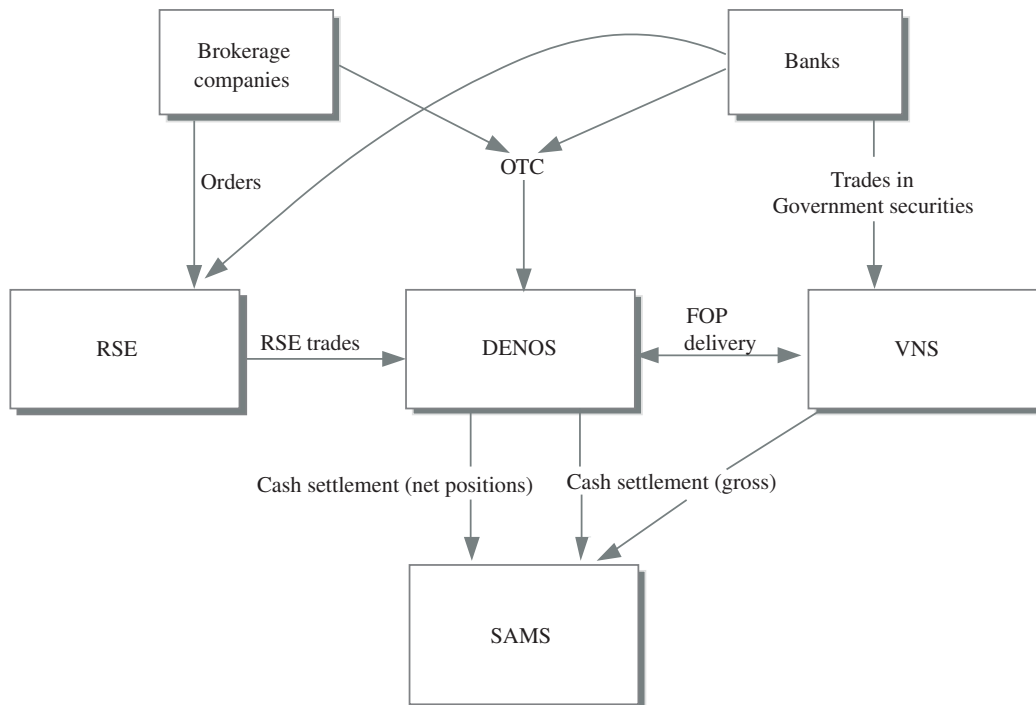
4.3.1 DENOS

4.3.1.1 Institutional and legal aspects

DENOS, which was launched on 27 June 1995, is an SSS operated by the LCD. The LCD is a private institution which operates in accordance with the 1995 Law on securities as well as in compliance with the rules and regulations approved by the FCMC. Like the CSD, the LCD provides safe custody services for deposited securities, clears and settles stock exchange and OTC trades, manages corporate actions and provides information to securities market participants. LCD does not act as a central counterparty; there is no central counterparty in DENOS. The services of the LCD are available only to authorised members; the latter are not, however, required to become LCD shareholders.

Chart 3

Securities settlement systems in Latvia



The participants in DENOS are banks, brokerage companies and securities issuers. Special participation status is granted to RSE, the Bank of Latvia, the Estonian Central Depository for Securities, the Lithuanian CSD, institutional investors and mutual funds. Banks and brokerage companies licensed by the FCMC to operate in the securities market are direct participants and may be custodians of securities accounts. Brokerage companies, however, are not allowed to open cash accounts and conduct cash settlements. Thus, their cash settlements are executed on the basis of an agreement with a bank which is a DENOS participant. For the safe custody and settlement of securities, individual investors open securities accounts with a bank or brokerage company which is a DENOS participant. Institutional investors and investment funds can open securities accounts with the LCD and be sub-participants in DENOS. A sub-participant has securities accounts with the LCD and participates in DENOS via a direct participant. The direct participant records the securities on behalf of the sub-participant. There are also special terms and conditions enabling non-resident participants to open a securities account with the LCD.

4.3.1.2 Operational aspects

The daily operating hours of DENOS are from 9 a.m. to 6 p.m. local time (GMT+2) every business day.

DENOS performs the following transactions:

- 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 in relation to securities which are in public circulation in Latvia;

- securities lending and borrowing;
- execution of corporate events (the LCD administers lists of shareholders for the purpose of general meetings of shareholders, prepares lists of all shareholders as of a specific date, as well as paying dividends on shares and interest and principal on debt securities. Issuers use the LCD to allocate premium shares, to change the characteristics of securities and to execute other corporate events).

DENOS operates in a real-time processing environment. Only the LCD participants are authorised to initiate transfers in DENOS. Data exchange between participants in DENOS is carried out electronically by applying special data formats to all documents used in securities transactions. At present, communication between DENOS and participants is made via SWIFT messages sent through the SWIFT network and message files using dial-in access.

Two types of settlement are used by DENOS to settle securities transactions: net settlement and gross settlement.

Net simultaneous settlement of securities and cash (DVP model 3) is used to settle transactions concluded at the RSE. The settlement day for trades concluded on the central and continuous markets is T+3, but for block trades it may be from T+1 to T+40. The RSE uses a direct link to transmit information on concluded trades to the LCD on a daily basis. The day before settlement, custodians must confirm trades in accordance with client instructions. Starting on the settlement day, the LCD calculates the multilateral net positions of market participants for securities and cash. If the securities positions are sufficient for settlement, the settlement cycle is started and the LCD sends an irrevocable instruction to the Bank of Latvia to transfer cash. If cash positions are sufficient, the Bank of Latvia transfers the cash, and the LCD transfers the securities. If the cash positions

at the Bank of Latvia are not sufficient, a second settlement attempt is made in the middle of the settlement day. In order to minimise systemic risk, members of the RSE are obliged to contribute to a guarantee fund managed by the RSE. The guarantee fund contains only cash reserves and is used to ensure final settlement in the event of settlement failure due to insufficient funds on the part of a participant. There is no possibility of unwinding a participant in the event of failure. As a result, the risk of another participant failing owing to the failure of the first participant is eliminated. If a participant fails, it must pay a penalty.

Gross simultaneous settlement of securities and cash (DVP model I) on a real-time basis is used to settle trades concluded either on the stock exchange (for settlement period T+0 only) or on the OTC market. Each trade is settled separately. To initiate settlement for an OTC trade, brokers or custodians submit DVP instructions to the LCD. In order to facilitate communication, instructions can be submitted by one counterparty, while the other counterparty confirms information that is received from the LCD. The LCD matches the instructions and, if necessary, requests confirmation. For matched trades, the LCD checks to see whether there is a sufficient amount of securities in the account of the seller. If so, it blocks the securities and sends an instruction to the Bank of Latvia to transfer cash. The Bank of Latvia transfers the cash, and the LCD transfers the securities.

FOP transactions are executed on an RTGS basis. This type of settlement is used to settle FOP securities transfers between the DENOS participants, between DENOS and the VNS, between DENOS and the Estonian Central Depository for Securities and between DENOS and the Lithuanian CSD. Therefore, securities transfers through links with DENOS are only FOP.

Transaction fees in DENOS are regularly revised and set in accordance with its actual

operational and administrative costs, which are thereby recovered. The fees for each type of transaction processed in DENOS differ.

In 2001, 23,501 trades concluded either on the stock exchange or in the OTC market were settled through DENOS. The total value of securities settled reached LVL 713.2 million (€1.3 billion).

4.3.2 The VNS

4.3.2.1 Institutional and legal aspects

The VNS, launched in December 1993, is an SSS operated by the Bank of Latvia and used mainly for its monetary operations. The Regulation on the securities settlement system organised by the Bank of Latvia, which the latter approved, determines the legal basis for the VNS, securities holdings and transfers made through the VNS. The VNS does not act as a central counterparty.

Banks, foreign banks and international financial institutions which have a settlement account in lats with the Bank of Latvia (i.e. a cash account) may be participants in the VNS. The State Treasury and the FCMC are special users. The Bank of Latvia also uses the VNS to settle its monetary operations and to register operations with collateral.

An agreement has been concluded between the Bank of Latvia and the State Treasury on participation in the SSS organised by the Bank of Latvia.

4.3.2.2 Operational aspects

The VNS provides the following services:

- settlement of the trades in the primary government securities market;
- settlement of the operations conducted with the Bank of Latvia: outright transactions, reverse transactions, collateral

services for lombard loans, intraday credits and forex transactions with securities collateral;

- settlement of interbank operations: interbank securities transfers, pledging and release operations;
- securities transfers between the VNS and DENOS;
- securities redemption, and interest payments;
- provision of statements of holding and other settlement-related information.

The VNS is a continuous gross settlement system. The transactions are processed individually in real time. The daily operating hours are from 8:30 a.m. to 4 p.m. local time (GMT+2) every business day. The system processes operations with government securities in the primary and secondary markets as well as operations with corporate debt securities (a list of securities approved by the Chairperson of the Bank of Latvia's Executive Board) in the secondary market. All operations processed by the VNS are OTC transactions. The SWIFT network is used for securities transfer between the VNS and participants. Paper-based messages are used between the Bank of Latvia and both the State Treasury and the FCMC (non-users of SWIFT).

The VNS settles securities on both a DVP and FOP basis.

DVP gross settlement is used to settle primary market transactions and monetary operations of the Bank of Latvia which are concluded in the secondary market. The VNS is linked to SAMS, so that the cash leg of a transaction can be settled if necessary. If the securities and cash positions are sufficient, SAMS transfers the cash and the VNS transfers the securities. The VNS uses DVP model I: 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.

FOP transfers are used to settle transactions between participants, pledge securities and transfer securities between the VNS and DENOS. The deliverer of securities sends an unconditional credit transfer order in electronic format as a SWIFT message. The VNS checks the balance on the account of the deliverer. If the relevant securities are in the account, the account is debited, the account of the receiver is credited and both are notified of the transaction.

The VNS does not provide securities borrowing/lending facilities. The VNS is a continuous real-time gross settlement system which settles transfer instructions for securities and funds on a trade-by-trade basis. The only condition for performing settlements is a sufficient balance on the securities account with the VNS, thus eliminating settlement risk in the system. The VNS uses only DVP settlement, and all transactions are collateralised. The VNS has the capacity to monitor participants' accounts continuously during working hours. Both participants involved in the securities transfer promptly receive settlement confirmation.

The VNS is an integral part of the Bank of Latvia and operates as a non-profit entity. There are no annual fees or participation fees. Participants in the VNS pay only transaction fees. Securities transfers from the VNS to DENOS cost LVL 0.8 (€1.4), and interbank securities transfers and pledging securities cost LVL 0.5 (€0.9) per transaction. Statements of holdings and other settlement-related information are available upon request via SWIFT.

In 2001 the VNS settled 6,705 transactions with a total value of LVL 10.5 billion (€18.7 billion).

4.4 The use of the securities infrastructure by the Bank of Latvia

The Bank of Latvia registers its holdings of securities with VNS and uses VNS for settlement when carrying out operations directly related to monetary policy. The Bank of Latvia mainly uses securities registered in the VNS as collateral for monetary operations. However, certain corporate debt securities (a list of securities approved by the Chairman of the Bank of Latvia's Executive Board) deposited with the LCD are also available for use as collateral for monetary operations at the Bank of Latvia.

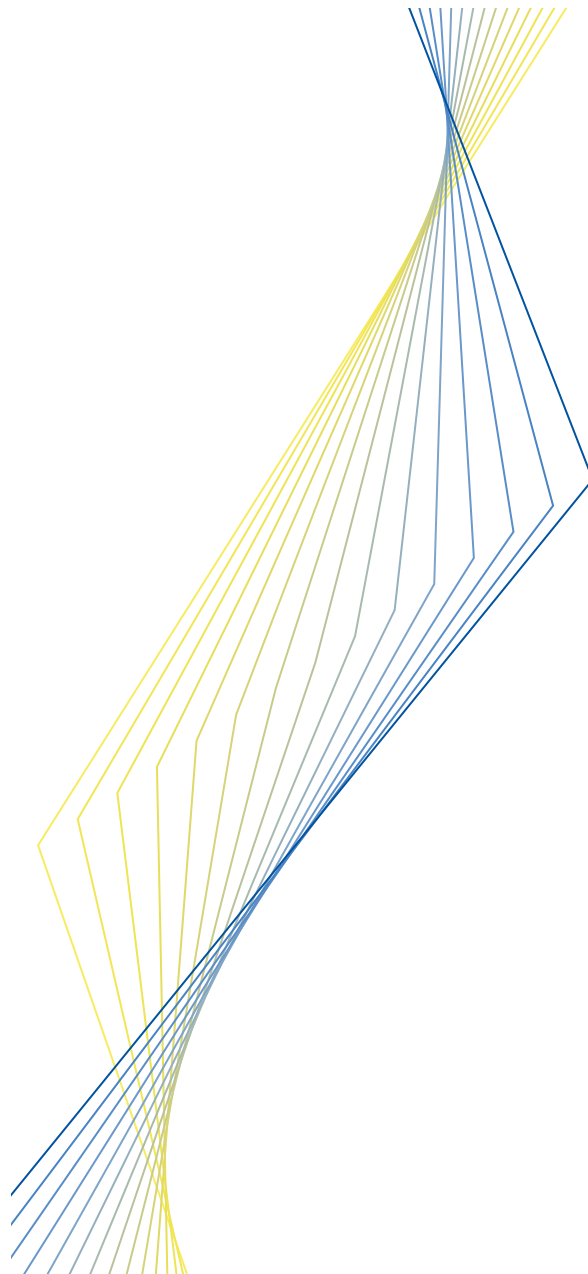
Outright and reverse transactions, in which the Bank of Latvia acts on its own behalf in implementing monetary policy, are executed in the form of tenders. Banks which are willing to enter into a deal with the Bank of Latvia submit bids to the Bank of Latvia via SWIFT. On the basis of concluded trades, 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).

The VNS processes operations with collateral for intraday credits and lombard loans concluded between commercial banks and the Bank of Latvia. A bank may access the cash liquidity facilities provided by the Bank of Latvia at any time during a settlement day by sending a request to the Bank of Latvia. On receiving the request, the Bank of Latvia calculates the necessary amount of collateral and initiates a DVP transfer in the VNS. All collateral for transactions with the Bank of Latvia is managed through the VNS. If the necessary securities are not in the VNS, the bank can transfer them from DENOS to the VNS and then use it as collateral. The cash leg of the transaction is settled in SAMS (see Section 3.2). The collateral is transferred from a participant's securities account to a pledge account for holding until repayment of the loan. The Bank of Latvia releases collateral by sending a DVP instruction to the VNS after it has received the request from the bank.



EUROPEAN CENTRAL BANK



Lithuania

August 2002

Lithuania

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List of abbreviations

BBAN	Banks' Bank Account Number
FMI	Financial brokerage company – <i>Finansų maklerio įmonė</i>
LCVPD	Central Securities Depository of Lithuania – <i>Lietuvos centrinis vertybinių popierių depozitoriumas</i>
LTL	Lithuanian litas
MKS	Payment Card Systems – <i>Mokėjimo kortelių sistemos</i>
NVPB	National Stock Exchange of Lithuania – <i>Nacionalinė vertybinių popierių birža</i>
TARPBANK	The Bank of Lithuania Interbank Funds Transfer System – <i>Lietuvos banko tarpbankinė lėšų pervedimo sistema</i>
VPK	Lithuanian Securities Commission – <i>Lietuvos Respublikos vertybinių popierių komisija</i>

Introduction

The current Lithuanian payment system was established in 1990 when the socialist banking model was dismantled and replaced by a commercial banking system headed up by the Bank of Lithuania. The Bank of Lithuania played a very important and proactive role in the country's payment system from the outset because commercial banking was still in its infancy. The Bank of Lithuania helped to build the payment system infrastructure and was involved in the detailed regulation of banking activities related to payment services. More recently, the Bank of Lithuania has moved from a strictly regulatory approach to play more of a co-ordinating role, encouraging banks to enhance the quality of payment services through banking co-operation.

However, the Bank of Lithuania still plays a key role in the payment system infrastructure, since interbank and customer payments in the national currency between credit institutions all entail transfers between accounts held at the Bank. The Bank of Lithuania runs the clearing and settlement system, TARPANK, for these kinds of transaction. It also provides cash settlement facilities for the settlement of

securities transactions performed by the Central Securities Depository of Lithuania (LCVPD).

Owing to the instability of the banking sector in 1995 and 1996 and the general public wariness of technological innovations, cash still plays a dominant role and is used for a high percentage of payments. Credit transfers are the main instrument used for non-cash payments in Lithuania. However, electronic payments are rapidly gaining in popularity. The use of debit and credit cards as well as prepaid cards has increased substantially in recent years. The latest developments include the expansion of online PC banking and Internet banking.

With a view to modernising the payment system, the Bank of Lithuania has been developing a new automated system using real-time gross settlement. This project also includes the design of a new securities settlement system. The introduction of this system will markedly improve the quality and degree of automation of the services offered by the Bank of Lithuania.

I Institutional aspects

I.1 The general institutional framework

The Lithuanian payment system has a highly centralised, two-tier structure. The lower tier consists of the commercial banks, which provide payment services to the population, companies and organisations. The Bank of Lithuania operates on the upper tier. It provides fund transfer services to commercial banks. The Bank of Lithuania also provides cash settlement services to capital market intermediaries for the settlement of securities transactions. The functions related to the settlement of securities transactions are performed by the LCVPD.

The legal basis for property relations between private individuals is the Civil Code of the Republic of Lithuania (18 July 2000, No.VIII-1864), which, inter alia, establishes the general principles for the contractual relations between banks and customers with regard to opening accounts and executing payments.

The main provisions with respect to the payment system in Lithuania are stated in the Law on payments (28 October 1999, No. VIII-1370). This lays down the rules governing the Lithuanian payment system, payment instruments and the relations between participants in the system effecting payments within the Republic of Lithuania.

The activities of commercial banks are regulated by the Law on Lithuanian commercial banks (21 December 1994, No. I-720). However, this Law does not contain specific provisions with regard to payments. Its purpose is to regulate the activities of commercial banks in order to ensure a stable, reliable, efficient and safe banking system. It defines the procedures and terms for the establishment and licensing of banks, as well as specific characteristics of their activities. Other legal acts also regulate banking activities and specify standards for these activities. Commercial banks carry out all types of banking operation, including those related to payments.

The monetary unit of the Republic of Lithuania is the litas (LTL), which consists of one hundred centas. The litas is the only legal tender for making payments and settlements in the Republic of Lithuania. This is established by the Law on the currency of the Republic of Lithuania (1 July 1993, No. I-199). The Law on foreign currency in the Republic of Lithuania (7 July 1993, No. I-202) stipulates that foreign currency can only be used for the settlement of transactions with foreign legal entities and natural persons located outside Lithuania.

There are no limits on cash and non-cash payments in Lithuania. However, according to the Law on the prevention of money laundering (19 June 1997, No. VIII – 275), banks and other credit institutions are obliged to identify the customer and notify the relevant state institution with jurisdiction in this matter whenever the amount of a non-cash payment transaction exceeds a specified amount.

The Law on the credibility of the litas (17 March 1994, No. I-407) specifies that the litas put into circulation by the Bank of Lithuania shall be fully covered by the Bank's gold and foreign currency reserves. The official exchange rate of the litas is fixed against the chosen anchor currency (since 2 February 2002 this has been the euro), pursuant to the procedure set out in this Law.

Other related items of legislation are the Law on bills of exchange and promissory notes (16 March 1999, No. VIII-1087) and the Law on cheques (16 March 1999, No. VIII-1088). These two laws comply with the respective international Geneva Conventions.

The issuing and use of credit and debit cards as well as prepaid multi-purpose cards is based on agreements signed between the card issuers and holders. According to the Law on payments, only banks and other credit institutions can issue prepaid multi-purpose cards. Legal acts regulating this area are to be adopted in the near future. Once they have been adopted, the provisions of the European Commission Recommendation of 30 July 1997 “concerning transactions by electronic payment instruments and in particular the relationship between issuer and holder”, and requirements for electronic money schemes established by the ECB in the Report on electronic money, will be implemented.

The legal framework for a safe, open and efficient functioning of the securities market is provided by the Law on the securities market (17 December 2001, No. IX-655), that came into effect on 1 April 2002. The Law on the securities market replaced the Law on public trading in securities (16 January 1996, No. I-1169). The Law on the securities market stipulates that all securities issued in Lithuania are to be in book-entry form. It also regulates the activities of the LCVPD, which it entrusts with opening and managing securities accounts for account managers and personal accounts in the manner laid down by the Lithuanian Securities Commission (VPK), and with ensuring that transacted securities are entered into securities accounts in a timely manner. This therefore gives the LCVPD an exclusive role as the securities register in the SSS. Securities settlements are subject to specific rules, approved by the VPK and agreements concluded by financial intermediaries, the LCVPD and the Bank of Lithuania.

The provisions of Directive 98/26/EC on settlement finality in payment and securities settlement systems are to some extent covered by the existing Lithuanian legislation. In the near future the SFD as well as Directive 97/5/EC on cross-border credit transfers will be implemented in full by the adoption of new legal acts and the amendment of existing ones.

1.2 The role of the Bank of Lithuania

1.2.1 General responsibilities

The Bank of Lithuania is the country's national central bank and is wholly independent from the government. Its primary objective, as stated in the Law on the Bank of Lithuania (13 March 2001, No. IX-205), is to seek price stability. In the pursuit of its primary objective, the Bank of Lithuania performs the following functions: it issues the banknotes and coins of the Republic of Lithuania; it formulates and implements monetary policy; it manages the gold and foreign currency reserves; it acts as a State Treasury agent; and it issues and revokes licences to credit institutions, and supervises their activities. As regards payment systems, the function of the Bank of Lithuania is to develop and manage the interbank funds transfer system and set out the requirements for system participants.

1.2.2 Payment systems oversight

There is no specific clause in the Law on the Bank of Lithuania explicitly giving the Bank an official oversight role for the payment system. Nevertheless, this role is implied by the unique position occupied by the Bank of Lithuania in the payment system of the country. Currently the TARPBANK system, managed by the Bank, clears and settles almost all interbank payment transactions in Lithuania. The Bank of Lithuania adopts legal acts creating the conditions for the efficient and reliable operation of the system and seeks to ensure its compliance with various international standards. In carrying

out these tasks, the Bank of Lithuania works in co-operation with the market participants and other relevant private and public bodies such as the State Treasury and the State Tax Inspectorate. Regular meetings are held with system participants to discuss and co-ordinate in advance the decisions of the Bank of Lithuania related to the TARPBANK system.

The Bank of Lithuania participates in the formulation of the policy on the guidelines for securities settlements through its representation on the LCVPD Board.

1.2.3 Operational role of the Bank of Lithuania

Credit institutions in Lithuania hold settlement accounts with the Bank of Lithuania to facilitate the settlement of their own and their customers' payments. The LCVPD and securities market intermediaries also hold settlement accounts at the Bank of Lithuania for the cash settlement of securities transactions. The Bank of Lithuania owns and operates the TARPBANK system with which it provides funds transfer services for account holders.

The operational rules of the TARPBANK system as well as the requirements for system participants are laid down in the Rules of the Interbank Funds Transfer System of the Bank of Lithuania (20 September 2001, No. 149) as approved by the Bank's Board. The Bank of Lithuania enters into a bank account agreement with an entity that is permitted to have an account with it and complies with the requirements for participants as stipulated in the Rules. Once the agreement has been entered into, the Bank of Lithuania opens a settlement account for the entity, and this then acquires the status of system participant.

1.3 The role of other private and public sector bodies

1.3.1 Lithuanian Securities Commission

The Lithuanian Securities Commission (VPK) is an independent capital market supervisory institution. Since January 1996 the VPK has been organising its activities according to the Law on the securities market (formerly the Law on public trading in securities). This Law established the VPK as an independent institution, reporting directly to the Seimas (Parliament) of the Republic of Lithuania. The VPK authorises capital market intermediaries, registers securities issues and regulates the securities market.

1.3.2 The Central Securities Depository of Lithuania

The LCVPD operates on the basis of the Law on the securities market. The main functions

of the LCVPD are to conduct the general accounting of book-entry securities, specify accounting procedures for its members and perform securities transfers between accounts. The LCVPD also operates the settlement system for securities transactions traded on the National Stock Exchange of Lithuania (NVPB) and over the counter. The LCVPD is also authorised to prepare and present the rules for the accounting of securities to the VPK for approval.

1.3.3 Representative bodies

The Association of Lithuanian Commercial Banks represents the interests of banks. The interests of securities market intermediaries are represented by the National Association of Financial Brokers. The National Consumer Rights Protection Council is responsible for consumer protection (bank customers).

2 Payment media used by non-banks

2.1 Cash payments

Although cash is still widely used for retail payments in Lithuania, its importance is declining slightly. At the end of 1997 cash in circulation made up 50% of the narrow money supply (M1); by the end of 2001 the share of cash in M1 had decreased to 43%.

Recently, more widespread use has been made of non-cash means of payment. Employers have started to contract with banks for the automatic transfer of salary payments to the bank accounts of their employees. As a result, the number of payment cards and ATMs has been increasing rapidly. However, the historical importance of cash is such that its significance as a means of payment will probably decline only gradually.

The Bank of Lithuania introduced litas and centas on 25 June 1993. The currency in circulation consists of LTL 1, 2, 5, 10, 20, 50, 100, 200 and 500 notes, and coins worth 1, 2, 5, 10, 20 and 50 centas and LTL 1, 2 and 5.

Banknotes are printed abroad; coins are manufactured at the Lithuanian Mint.

At the end of 2001 banknotes in circulation accounted for 97.2% of the value of all cash, with coins making up the remaining 2.8%.

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 75.6% of all non-cash payment instruments in terms of volume and over 98% in terms of value. A credit transfer is when a customer instructs its bank in writing or by an electronic message to transfer funds from its account to a beneficiary's account. All large-value payments are made by credit transfers, and this instrument also dominates in retail transactions. Payment instructions are usually presented to banks in writing, and the banks then forward the information to the TARPANK system in the form of electronic messages. However, customers are increasingly being attracted by the possibility of sending their payment instructions to banks in paperless form, i.e. through the internet, by telephone or using special software installed on a bank customer's PC. In 2001, 11% of all payment instructions were sent to banks electronically, compared with 9% in 1999 and 10% in 2000.

In the household sector, special forms are used to pay for telecommunication services, electricity, gas and heating. In many cases the payee (public utilities and telephone companies) takes the initiative by sending a completed transfer form along with the bill. All the payer has to do is sign the form and submit it to their bank. In some cases, however, the payer may still have to fill in the form. These forms are submitted to banks accompanied either by instructions to debit the payer's account or with the cash sum enclosed. The latest trend is to place utility transfer forms on the web pages of the banks or of a special internet service provider, thereby making it possible to fill in the forms and pay the bills online. The banks process the forms and transfer the funds to the bank accounts of the companies providing the services.

The volume and value of credit transfers increased steadily between 1997 and 2001. In 2001, Lithuanian banks effected 39.5 million credit transfers worth LTL 337 billion (€94.1 billion).

2.2.2 Cheques

Cheques are not popular in Lithuania. They account for a negligible 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 substantial administration costs involved. Lithuanians tend to prefer bank drafts. Banks issue these drafts for the amounts deposited in cash or debited against the applicant's account at the time of issue. Bank drafts are often used to pay foreign suppliers for goods and services.

2.2.3 Direct debits

Direct debits have been used in Lithuania since 1997. In 2001 direct debits accounted for 1.9% of all non-cash payment instruments in terms of volume. Direct debit is mostly used for recurring payments, e.g. to pay for telecommunications or other utilities, insurance payments or leasing instalments. For this type of payment, a payer authorises the payee (the service provider) to charge their account for services rendered. According to this contract, the bank is permitted to debit the customer's account and transfer the funds to the account of the payee. Only payers who have an account with the same bank as the payee can use the direct debit service.

2.2.4 Payment cards

There has been a substantial rise in the use of payment cards in recent years. By the end of 2001 there were 2.6 times more payment cards than in 1999 and 1.6 times more than in 2000. The volume of payments made using payment cards has also grown significantly – there are now 3 times as many as in 1999 and 1.8 times more than in 2000. Payment cards also account for a larger share of total non-cash payments in volume terms. In 2001 the volume of payments by payment cards made up more than 22.5% of the total

non-cash payments, compared with 15.9% and 19.1% in 1999 and 2000 respectively. The growth of the payment card market is due mainly to the significant investment made by banks in the payment card infrastructure as well as marketing efforts in this area. At the end of 2001 eight commercial banks were issuing payment cards in Lithuania.

Debit cards

Debit cards are the most popular form of payment card in Lithuania. At the end of 2001 they accounted for 82.5% of all payment cards issued in the country. International cards predominate. A number of banks are members of Visa International and Europay International and issue debit cards bearing the Visa Electron and Maestro brand names. Domestic cards have only a negligible share (less than 1%) of all debit cards. Recently several Lithuanian banks have ceased issuing the Globus domestic card. The only remaining domestic card, Vilniaus banko kortelė, is issued by just one bank. All debit cards feature a magnetic strip, but banks are planning to replace this with a microchip in the near future.

Credit cards

Credit cards are not as popular as debit cards in Lithuania. At the end of 2001 credit cards comprised only around 1.6% of all issued payment cards. However, the number of credit cards in circulation is increasing gradually. Currently all credit cards are international cards issued by Visa and Europay.

Retailer cards

No statistical information is available on the extent to which retailer cards are used in Lithuania. These are offered by petrol stations and other firms with large numbers of individual customers. They are usually free of charge and companies encourage their use by offering discounts on selected goods and services.

Prepaid cards

The most widespread prepaid card is the single-purpose telephone card issued by the telecommunication company Lietuvos telekomas. This enables national and international telephone calls to be made from payphones.

There is one multi-purpose prepaid card scheme, called eLitoCard (formerly ImparCard), launched in May 1996 by the bank Snoras. ImparCard initially achieved the largest market share (over 30%) in terms of the number of bank payment cards used in Lithuania at the end of 1997. A wide service network, which was developed immediately after this scheme appeared in Lithuania, means that the prepaid cards were more popular than the traditional payment cards that were introduced at about the same time. However, the situation has changed in recent years. The huge supply of other banks' payment cards saw a decline in the number of prepaid cards in use. Nevertheless, prepaid card schemes still had a market share of 15.9% at the end of 2001. In response to payment card market developments, the bank Snoras extended its prepaid card product to include the traditional debit card payment function, resulting in a so-called hybrid card. Cards with the brand names eLitoCard, eLitoCard LAS, eLitoCard Tangomanija, eLitoCard Amber, eLitoCard LSP, eLitoCard Maestro and ImparCard EC/MC are issued under the eLitoCard scheme. eLitoCard is an electronic purse-based card product. eLitoCard Maestro and ImparCard EC/MC are hybrid cards featuring a chip as well as a magnetic strip, and can be used as Maestro and Eurocard/MasterCard cards. eLitoCard LSP cards double as student identification cards and bear a student photo, bar code and magnetic strip. They were developed together with the Lithuanian Students Association. Further details on the prepaid card scheme are described in Section 3.4.1.

ATM and POS networks

The largest Lithuanian bank, Vilniaus bankas, has issued almost 60% of all Lithuanian credit and debit cards. It and two other banks each have their own ATM and EFTPOS networks. The remaining banks share the same ATM and EFTPOS network and use MKS services for transactions processing. However, all ATMs and EFTPOS in Lithuania are interoperable and are connected to the international networks. It is therefore possible to use a payment card issued by one bank at the ATM or EFTPOS of another.

At present most ATMs can be used to withdraw cash and consult account balances. However, some banks are set to extend the functions of their ATMs. For example, one bank currently allows its cardholders to use its ATMs to transfer funds within the bank. ATMs can also be used to load multi-purpose prepaid cards from the holders' accounts.

Today most POS are equipped with EFTPOS terminals. This is perfectly normal given that the vast majority of payment cards are debit cards requiring online authorisation. All transactions processed via EFTPOS are authorised by ordinary telephone communication.

As a response to the growing use of payment cards, ATM and POS networks have been expanding rapidly. At the end of 2001, there were 689 ATMs and 10,901 POS accepting

payment cards in Lithuania. At the end of 2000 the number of ATMs and POS was 473 and 7,228 respectively. From 2000 to 2001 the volume of ATM and POS transactions increased by a factor of 2.7 and 2.2 respectively. Over the same period, the value of transactions grew by a factor of 2.7 for ATMs and 1.5 for POS. However, the network of ATMs and POS is still not extensive enough, so growth rates are expected to remain high in the near future.

2.3 Recent developments

In line with global trends, most Lithuanian banks have started developing electronic banking products. Currently the majority of banks enable customers to manage their accounts and send payment instructions for domestic and cross-border fund transfers using internet and online PC banking applications.

Telephone banking and mobile banking is starting to make inroads on the Lithuanian payment services market. Several banks recently made it possible to obtain account balance and transaction information and to submit payment instructions by telephone. To date, mobile telephones have only been used to receive balance and transaction information; however, mobile banking functions should soon be extended to allow users to submit payment instructions as well.

3 Interbank exchange and settlement systems

3.1 General overview

The TARPBANK system, the settlement system owned and operated by the Bank of Lithuania, is used to clear and settle interbank payments in the country. The system is designed to allow settlements to be made via participants' accounts with the Bank.

The TARPBANK system processes almost 30% of all bank and bank customer non-cash payments made in Lithuania in terms of volume, and up to 50% in terms of value. The remaining payments are intrabank and are processed by banks internally, or are payments arising from payment card transactions. Thus, the TARPBANK system is a systemically important

payment system and it is very important for the Bank of Lithuania to ensure that it operates smoothly.

3.2 The real-time gross settlement system

At present there is no RTGS system operating in Lithuania. The Bank of Lithuania has launched a new payment system implementation project that will establish such a system in Lithuania at the end of 2003 (see Section 3.5 for more details).

3.3 The large-value payment system: TARPBANK

TARPBANK is a DNS system consisting of two clearings and settlements each business day. The TARPBANK system was designed and implemented by the Bank of Lithuania. It began operating in 1990, the year when the Bank of Lithuania was reopened. The TARPBANK system has undergone continuous improvement and development since it was first introduced.

In 1995 a mechanism was created to synchronise the operation of the TARPBANK system and the securities settlement system operated by the LCVPD. Securities market participants were henceforth allowed to use the TARPBANK system to settle the cash leg of securities transactions. The securities settlement system is reviewed in Section 4.

In 2001 participants were offered the possibility of being connected to the TARPBANK system through dedicated lines (frame relay data transfer technology was implemented). In order to enhance STP possibilities, extra fields were added to the messages.

3.3.1 Operating rules

The system operator is the Settlements Centre, a department of the Bank of Lithuania. Although the system is maintained and developed by the Bank, any system changes are considered by and discussed with all participants.

The TARPBANK system is regulated by the Rules of the Interbank Funds Transfer System of the Bank of Lithuania, approved by the Board of the Bank on 20 September 2001. These rules are published in the official bulletin ("Valstybės žinios") and are posted on the Bank of Lithuania website. They include criteria for participation in and operation of the system, along with back-up and contingency procedures.

In addition, the basic legal issues (responsibilities and obligations of the Bank of Lithuania and system participants, dispute resolution, termination of the agreement) as well as the pricing scheme are established in bilateral agreements between the Bank of Lithuania and each system participant.

Upon decision of the Board of the Bank of Lithuania, the operator may apply restrictions on incoming or outgoing payments or limit the use of participants' funds available for settlement (for example, to prevent utilisation of required reserves).

3.3.2 Participation in the system

The Bank of Lithuania has established legal criteria for participation in the TARPBANK system. The system is open to any commercial bank in Lithuania holding a banking license and to foreign bank branches authorised by the Bank of Lithuania. Upon request, commercial banks may secure participation for their branches for the purposes of exchanging payment information. The system is also open to securities market actors such as the LCVPD and financial brokerage companies (FMIs) licensed and supervised by the Securities

Commission. Organisations providing clearing or settlement services as well as foreign credit institutions may also join the system by a separate decision of the Board of the Bank of Lithuania. Only commercial banks and foreign bank branches are given access to the credit facilities of the Bank of Lithuania and are able to increase liquidity during the final settlement in the TARP BANK system. As settlement involves the use of funds with the Bank of Lithuania, all participants must have settlement accounts with it. If a participant loses its legal status – i.e. if a banking or FMI license is revoked – it may be expelled from the system. No financial or other restrictions on participants are established. However, participants must meet certain technical requirements in order to install the necessary software and join the TARP BANK information system.

At the end of 2001 the system participants were the Bank of Lithuania, nine commercial banks, 97 branches of commercial banks and four foreign bank branches. There were also 17 securities market actors (the LCVPD plus 16 financial brokerage companies) participating in the TARP BANK system.

3.3.3 Types of transaction handled

All participants' payment transactions in the TARP BANK system (interbank and customer) are settled at fixed hours two times per day. The system also settles payments arising from the Bank of Lithuania's own transactions with participants, primarily the trading of currencies and the bank deposit and withdrawal of Lithuanian notes and coins. Additionally, the system provides settlement of the cash leg of securities transactions (see Section 4).

All settlements are made in litas, although technically it would be possible to settle in any number of currencies.

The TARP BANK system is able to execute both credit and debit transfers of funds. Credit transfers are used for participants' payments,

while debit transfers are used solely for certain types of participants' transactions with the Bank of Lithuania.

3.3.4 System operation

The TARP BANK system is open each business day. Participants can submit payment instructions to the system between 8 a.m. and 3 p.m. If certain conditions are met (see Section 3.3.6), the settlement of these transactions becomes final and irrevocable shortly after clearing at 11 a.m. and 3 p.m. There is no limit on the number of payment instructions that participants can send to the system.

The TARP BANK system checks all of the compulsory details in a payment instruction when the instruction is received. If the instruction does not comply with the agreed conditions for the use of the system it is immediately returned to the sender.

Payment instructions submitted by participants are queued according to both their priority (ordinary or urgent, as indicated by the participants) and the time they were received. Participants can revoke a payment instruction that is still being held in a queue or change its priority.

3.3.5 The transaction processing environment

The exchange and processing of payment instructions are fully automated in the TARP BANK system. The system design uses a V-shaped message flow.

The central components of the TARP BANK system and the components at the participants' locations are connected over dedicated, encrypted lines. Payment instructions to the system and settlement results to participants are submitted by means of electronic messages. Electronic messages exchanged by the operator and the participants are

transferred using secure electronic mail software. The information transferred is encoded. The message standards applied are the original TARPBANK system standards defined by the Bank of Lithuania. Participants may connect to the system only using the software developed and provided by the Bank of Lithuania. The software uses a standard link with participants' information systems.

The TARPBANK system is backed up by a secondary site in a different location. Both sites are interconnected by an FDDI optic network (fibre distributed data interface, high-speed communication technology). After every settlement cycle, the results are transmitted to the back-up system. If the primary system fails, it is possible to continue to run the whole process from the back-up site using the existing input data if these were not destroyed and if the communication lines are available. If this is not the case, the banks are instructed to redeliver their data to the back-up site. Detailed contingency procedures are described in the Bank of Lithuania's Rules on the interbank funds transfer system (No.149, September 2001) as approved by the Bank's Board.

3.3.6 Settlement procedures

There are two clearing and settlement cycles each business day in the TARPBANK system. The first starts at 11.00 a.m. and the second at 3.00 p.m. First, the system determines the amount of funds each participant has available for settlement (the balance on the participant's settlement account plus any overnight loan possibilities). The funds available to a bank for settlement are decreased by the amount of any restriction on using part or all of its required reserves. Then the various 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, any payment instructions for which there are insufficient funds are eliminated.

Ordinary payment instructions are eliminated first, the elimination beginning with the last instruction to have been submitted. Instructions eliminated during the first clearing are held in queues for the next clearing. However, those eliminated during the final clearing are simply cancelled. The net values that result from processing are entered in participants' settlement accounts shortly after 11 a.m. for the first clearing, and shortly after 3 p.m. for the second clearing. At that moment, the payment becomes final and irrevocable. Each participant is notified by electronic message about the final balance on the settlement account. In addition, information on the status of customers' accounts and a list of payment instructions that were not settled owing to a shortage of funds is sent to each participant.

3.3.7 Credit and liquidity risk

The TARPBANK system only processes payment instructions when the participants have sufficient funds available to meet the net claim. The fact that participants are not permitted to exceed the funds available for settlement – the balance on their settlement account with the Bank of Lithuania less any required reserve restrictions, plus the amount available as an overnight loan – helps to avoid credit risk.

Since the system is based on V-shape message flow, settlement results and customer account information are forwarded to the participants only after the settlement becomes final.

In order to manage the risk that the participant will be unable to repay an overnight loan, the Bank of Lithuania determines the amount of an overnight loan that the bank will be allowed to take out on that day. According to the Bank of Lithuania's rules for the granting of overnight loans (12 December 1997, No. 295) a loan may not exceed 80% of collateralised securities. In addition, the Bank of Lithuania may also take into account the debtor's situation and

circumstances in order to define further borrowing restrictions, and may even simply refuse to grant a loan.

There are several measures in the TARPBANK system for managing liquidity risk.

Commercial banks are allowed to use their required reserves in the national currency to perform settlement obligations. The banking sector has been in a very favourable liquidity position in recent years thanks to a high level of reserves. Moreover, the Bank of Lithuania grants collateralised overnight loans to system participants.

If a participant has insufficient funds at the final clearing cycle, an optimisation procedure is available that will accept for settlement as many payment instructions as possible.

Each participant receives a statement of its accounts twice a day, enabling it to optimise the use of its funds. In addition, at 2.45 p.m. the system calculates preliminary positions, giving the participant the opportunity to mobilise the liquidity required for the final settlement cycle.

3.3.8 Pricing

The charges for the services provided by the TARPBANK system cover its operating costs. There is no annual or entrance fee. Participants pay LTL 0.21 (€0.06) for each payment instruction submitted and LTL 0.21 (€0.06) for each payment instruction received. In addition, participants in the securities settlement system pay a monthly fee of LTL 40 (€11.17) per account for the management of their settlement accounts. The system development costs are included in the price of the software acquired by the participant.

3.3.9 Statistical data

In 2001 the TARPBANK system processed an average of 826,000 payments per month. The average daily volume was 40,000, with an average daily value of LTL 467 million (€130 million).

3.4 Retail payment systems

3.4.1 E-money scheme – eLitoCard

Lithuania currently has one multi-purpose card-based electronic money scheme, called eLitoCard. One bank (Snoras) issues and acquires e-money, as well as operating and supporting the eLitoCard scheme. The eLitoCard (formerly ImparCard) project was launched in May 1996.

eLitoCard is a reloadable, pre-authorised electronic purse. Cards issued under this scheme are loaded with cash from the cardholder's bank account by means of online authorisation using a PIN. There is no restriction (except microchip capacity) on the maximum download or transaction amount. The cardholder can review the last three loading operations and last ten payments for each currency. Payments are made in litas (although it is technically possible to extend the system to other currencies) and are done offline using the PIN. The value of the transaction is transferred from the card to the retailer's device, which communicates the stored aggregate value to the acquirer (Snoras) once a day. It then credits the retailer's account.

3.4.2 Card-based scheme – Payment Card Systems

Payment Card Systems (MKS) is a private company owned by two commercial banks and a foreign data processing company. It performs card transaction authorisation and processing services for five banks that issue payment cards

in Lithuania. In addition, MKS rents EFTPOS and ATM terminals to several banks, supports these terminals, and performs card activation and personalisation, transaction authorisation and processing services for a number of retailer card issuers. MKS is also entrusted by the banks to accept payment card holders' notifications in the event of card loss and to settle disputes when holders detect unauthorised or wrongly performed operations.

The banks participating in the MKS system are not active payment card acquirers, and the MKS system currently processes only 30% of all payment card transactions in Lithuania. The remaining 70% is served by the other banks' own processing centres.

The MKS system is based entirely on agreements. MKS operates the system which processes and clears transactions originating from card payments at ATM and EFTPOS

terminals. MKS provides participants with detailed information on the transactions and calculates bilateral net positions. Since there are no standardised procedures for interbank settlements, MKS participants settle their positions through the TARPBANK system in the manner and time set out in bilateral agreements.

3.5 Future developments

The Bank of Lithuania is currently designing a new payment system that will perform interbank settlements in real and designated time. The project also includes the design of a new SSS. The system uses state-of-the-art technologies and is wholly in line with international standards, thereby ensuring a high level of system security and transaction integrity. The new system is scheduled for launch in late 2003.

4 Securities settlement systems

4.1 Trading

4.1.1 Institutional aspects

The organised trading of securities (shares, rights, Treasury bills, corporate and government bonds) on the secondary market takes place at the NVPB. This operates pursuant to the Law on public trading in securities (superseded on 1 April 2002 by the Law on securities market of 17 December 2001, No. IX-655) and is supervised by the VPK. The NVPB is a public company with the Ministry of Finance as its principal shareholder. Other shareholders of the NVPB are commercial banks, FMIs, other companies and private individuals. The NVPB was registered with the VPK on 11 May 1993 as a non-profit organisation. In 1998 the NVPB was reorganised into a public company.

Only members of the NVPB – namely the FMIs authorised by the VPK to act as market

intermediaries in the public trading of securities and banks licensed to deal in securities – may trade on the NVPB. In order to become a member of the NVPB, these institutions have to obtain the permission to trade from the NVPB Board.

Since 1 January 2000 the initial own capital requirements for FMIs have complied fully with the requirements of the EC Directive on investment services in the securities field (93/22/EEC) and are as follows:

- €730,000 for Category A companies;
- €125,000 for Category B companies;
- €50,000 for Category C companies.

Only those FMIs in possession of a general category A license or a specialised category B license may trade on the NVPB. When applying

for permission to trade on the NVPB, FMIs and banks have to become members of the guarantee fund (i.e. to pay the initial contribution), pay the annual fee for participation in the NVPB trading, and acquire the technical tools and software required to participate in the NVPB trading.

The main document regulating trading on the NVPB is the Trading Rules of the National Stock Exchange of Lithuania (22 December 1998, No. 36). These rules cover:

- the principles and procedures of listing;
- the management of trading lists;
- procedures for the organisation of securities trading;
- the order of settlement for transactions concluded at the NVPB;
- the requirements for NVPB shareholders seeking to become members;
- the distribution of information, and NVPB fees and dues.

Three market segments may be accessed via the NVPB: the Official List, the Current List and the Unlisted Tier of Securities, each of which has different listing requirements. The trading list indicates the reliability and liquidity of assets traded on the NVPB.

If securities are listed on the Official or Current list then there is an obligation to execute trades in the NVPB trading system. Trades in other securities may be executed either through the NVPB trading systems or OTC. Account managers must report to the VPK about all OTC transactions.

4.1.2 Trading system

The NVPB operates a single trading system. NVPB trading is order-driven, which means

that transaction prices are determined by the orders. Trading is fully computerised and paperless. At the NVPB, transactions can be executed on the central market or directly negotiated (so-called “block trades”). The buyer and/or the seller of shares may only participate in the NVPB trading via an authorised NVPB member.

Central market

The main objective of the central market is to create the necessary conditions allowing the NVPB members to submit public orders to sell and/or buy securities. The procedures for trading on the central market apply to all securities on the Official or Current Lists. Upon the decision of the NVPB Board, the central market procedures may also be applied to trading in certain unlisted securities.

Trading on the central market is carried out in two stages: the opening auction of the trading session and the continuous trading period (10 a.m.-2 p.m.). In the opening auction of the trading session all transactions are concluded at a single price. Shares and subscription rights are traded at the opening auction. The placement of orders starts the day before the auction at 4 p.m. Information about the orders placed by NVPB members is not disclosed to the other members. Order placement ceases at 9.30 a.m. and information about the placed orders is then disclosed to all NVPB members. At 9.55 a.m. the opening price is established and at 10 a.m. continuous trading begins. The principal criterion used when establishing opening price is the maximisation of volume.

The main feature of continuous trading is that as soon as the system receives a new order it is automatically checked against other orders in the book. If a match is found, the order will be executed immediately; if no match is found, the order is locked in the order book. An executed order and a registered trade are reported without delay to all Exchange members. Continuous trading is used for all securities: shares, subscription rights and debt securities.

Block trades

Block trades are buy/sell transactions of securities directly negotiated between NVPB members (via the NVPB's platform) to buy and/or sell no less than the established minimum amount of securities at the price indicated in the order. The NVPB member seeking to conclude a block trade may publish an offer to buy and/or sell securities on the Electronic Bulletin Board. Block transactions may be concluded in all the securities listed on the Official and Current Lists as well as Unlisted Securities.

4.1.3 Future prospects

On 21 June 1999 the NVPB Board adopted a decision to enhance the trading system by implementing a new three-tiered automated trading system. The envisaged trading system will be reliable, fast, flexible and developed on the basis of modern technological solutions and state-of-the-art equipment.

With the aim of merging the securities markets of the three Baltic states into a single investment area – which would be a liquid, attractive and easily understandable market for the international investor community – the NVPB has launched a co-operation project with the Tallinn and Riga Stock Exchanges. This co-operation is based on the Memorandum of Understanding signed on 23 April 1999.

As a result of this, on 3 January 2000 the Estonian, Latvian and Lithuanian stock exchanges launched the common list of Baltic blue-chip securities (the so-called "Baltic list"). The list consists of up to 15 of the largest firms listed on the official lists of the three exchanges.

4.2 Clearing

Lithuania currently has no clearing house. The post-trade and pre-settlement clearing services

that are performed in connection with the settlement procedures are described in Section 4.3.

4.3 Settlement**4.3.1 Institutional and legal aspects**

The LCVPD is the only clearing and settlement organisation in Lithuania operating an SSS – the LCVPD system – and providing the services of a CSD. The LCVPD operates pursuant to the Law on public trading in securities (superseded by the Law on the securities market on 1 April 2002) and is supervised by the Lithuanian Securities Commission. The LCVPD began life on 30 August 1993 as a structural unit of the NVPB. On 25 February 1994 it became an independent non-profit organisation. In July 1998 the LCVPD was reorganised into a public company. It is owned by the Bank of Lithuania (60% of the shares), the Ministry of Finance (32%) and the NVPB (8%).

According to the Law on public trading in securities, all securities in Lithuania are dematerialised (book-entry system), i.e. they are recorded as entries in the personal securities accounts opened for the securities owners or collateral takers, and in the nominee accounts of foreign custodians operating on behalf of their customers.

The LCVPD, acting as a CSD, opens and operates securities accounts for account managers (issuers and intermediaries); prepares and presents to the VPK for approval the rules for the accounting and circulation of securities; and verifies whether the account managers, representing the investors, comply with the rules and instructions governing securities accounting.

The LCVPD, as an SSS operator, organises the settlement of NVPB and OTC transactions, ensuring simultaneous cash and securities transfer between the accounts of securities account managers.

The procedure for securities settlement, indicating the actions and procedures of each participant, is described in the Rules of Settlements for Securities Transactions Concluded at the National Stock Exchange (20 April 2000, No.8), approved by the VPK. The LCVPD concluded an agreement with the Bank of Lithuania for servicing the cash settlement for securities settlement transactions using central bank money.

Category A and B FMI's licensed by the VPK, and commercial banks acting through their own specialised brokerage departments, can participate in the SSS of the LCVPD. As participants in the LCVPD system they must hold special accounts with the Bank of Lithuania dedicated entirely to the cash settlement of securities settlement transactions.

4.3.2 Operational aspects

4.3.2.1 Securities operations handled

Settlement for all transactions concluded at the NVPB (with the exception of block trades) and for some OTC transactions is executed through the LCVPD system, ensuring compliance with the DVP principle. Settlement for block trades may be executed through the LCVPD system (DVP) or directly between transaction counterparties.

Every participant in the LCVPD system must hold a settlement account with the Bank of Lithuania for the cash settlement of DVP transactions. The LCVPD has developed an automated interface with the Bank of Lithuania's TARPBANK system. This allows the LCVPD to provide settlement of the cash leg using central bank money.

The settlement cycle for shares and non-government debt securities traded on the NVPB is T+3. The settlement cycle for government securities is T+1. The settlement cycle for block transactions can be from T+1 to T+5 for all securities (T+0 cycle is applied when

both parties to a transaction act through the same custodian). The cycle for the settlement of OTC transactions can range from T+1 to T+30.

Settlement of fixed-price central market transactions (at the opening auction) is executed according to the net positions of the participants. For all other trades (continuously traded central market transactions, block and over-the-counter transactions), securities and funds are transferred on a gross basis. Instructions on securities transfers are processed by the LCVPD system in a single daily batch processing cycle.

A real-time settlement system for securities transactions is under development in co-operation with Bank of Lithuania. The system will make it possible to settle transactions as soon as they are submitted to the system. The new securities settlement model is planned to be up and running by the end of 2003.

4.3.2.2 Settlement procedures

For the DVP settlement of stock exchange transactions, the NVPB transmits information on traded securities to the LCVPD. On settlement day the LCVPD sends information on the amount of participants' funds needed for cash settlement to the Bank of Lithuania's TARPBANK system. Shortly after 11 a.m. the LCVPD receives fund limits based on the cash available in participants' settlement accounts from the TARPBANK system and checks the information received against the initial information on the funds needed for settlement. The funds in participants' settlement accounts are then blocked until the LCVPD submits the transfer instruction. During the period when the funds are blocked, the LCVPD checks on the availability of securities in participants' securities accounts. If sufficient funds and securities are available, the LCVPD submits instructions to TARPBANK on credits and debits to and from participants' settlement accounts. The transfer of funds in the

TARPBANK system is performed at 3 p.m. At the same time the LCVPD starts the daily securities batch processing cycle in order to transfer the securities between the relevant securities accounts. If there are insufficient funds or securities, the LCVPD selects transactions to be excluded from the settlement. Using the re-estimated results, the transfer of funds and securities then takes place with the same timing and in the same way as described above.

For the settlement of stock exchange transactions that do not require DVP (the direct securities settlement procedure for block trades between transaction counterparties), on the day of settlement the LCVPD transfers the securities to the parties concerned according to the information on trades provided by the NVPB, unless a participant has failed to receive cash and reports a transfer default to the LCVPD. The obligation on the participant to settle the defaulted transfer is then added to its settlement obligations for the next day. The transaction is annulled if the participant fails to deliver cash within two days.

The transactions arising from OTC trades, repos and securities lending are settled by the LCVPD according to the participants' instructions (against payment or free of payment).

For OTC DVP transactions (repos) participants submit orders for matching to the LCVPD which then checks the positions of securities accounts. After receiving confirmation from the TARPBANK system that there are sufficient funds to cover the transactions, at 3 p.m. the LCVPD sends TARPBANK the order to transfer funds between participants' settlement accounts. The securities leg is made final when the daily batch processing cycle at the LCVPD has been completed. A DVP settlement procedure with matching for other OTC transactions (with or without custodians) is in the process of being developed.

4.3.2.3 Risk management

The settlement procedures seek to eliminate all credit risk. The cash and securities positions of counterparties are matched against instructions prior to the settlement. In addition, the NVPB operates a guarantee fund to ensure the settlement of central market transactions.

If a participant has insufficient securities or cash to cover a central market securities transaction, this transaction is removed and its settlement is postponed to the next day. This postponement may be repeated for four days in the case of insufficient securities and for one day if there is insufficient cash.

In the event of a failure to deliver the necessary securities, on the fifth day the NVPB is obliged to buy the necessary securities on the central market and deliver them to the buyer. If a participant has insufficient funds to pay for these central market transactions, the NVPB covers the shortfall out of the guarantee fund on the second day. The guarantee fund, in return, gains ownership of the securities that the defaulting participant should otherwise have received. The defaulting participant has to indemnify the injured party according to the rules established by the NVPB for any damages that occurred.

The guarantee fund only secures transactions concluded on the central market. If participants do not deliver a sufficient amount of cash or securities to cover the settlement of block trades or OTC DVP transactions, the settlement of these transactions is cancelled.

The LCVPD never plays the role of the central counterparty in settlements; it never lends securities or cash to settlement participants. Therefore counterparty risk occurs only in cases of default by the participants where they fail to deliver either cash or securities in good time. The volume of such cases is illustrated by due date settlement criteria. According to the clearing and settlement best practices of the Fédération Internationale des Bourses de

Valeurs (FIBV; now the “World Federation of Exchanges”) and the recommendations of the International Securities Services Association (ISSA), acceptable norms for suspended and deferred settlements are 1% of the total value of transactions and 2.5% of the total number of transactions. By the end of 2001 these indicators stood at 0.12% and 0.10% respectively in the LCVPD system.

4.3.2.4. Pricing policies

The participants in the LCVPD pay the following fees:

- an entrance fee;
- a fixed fee per transaction;
- a quarterly custody 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 Bank of Lithuania for funds transfer services are indicated in Section 3.3.8.

4.3.2.5. Links with other SSSs

For the purpose of cross-border transfers of securities, the LCVPD has established a two-way link with the Latvian Central Depository and a one-way link with Clearstream Banking

Luxembourg (CBL), where the LCVPD acts as custodian for their respective members. All links are FOP. The LCVPD intends to create a two-way link with the CBL and to promote the national currency, the litas, as a settlement currency at the CBL.

4.4 The use of the securities infrastructure by the Bank of Lithuania

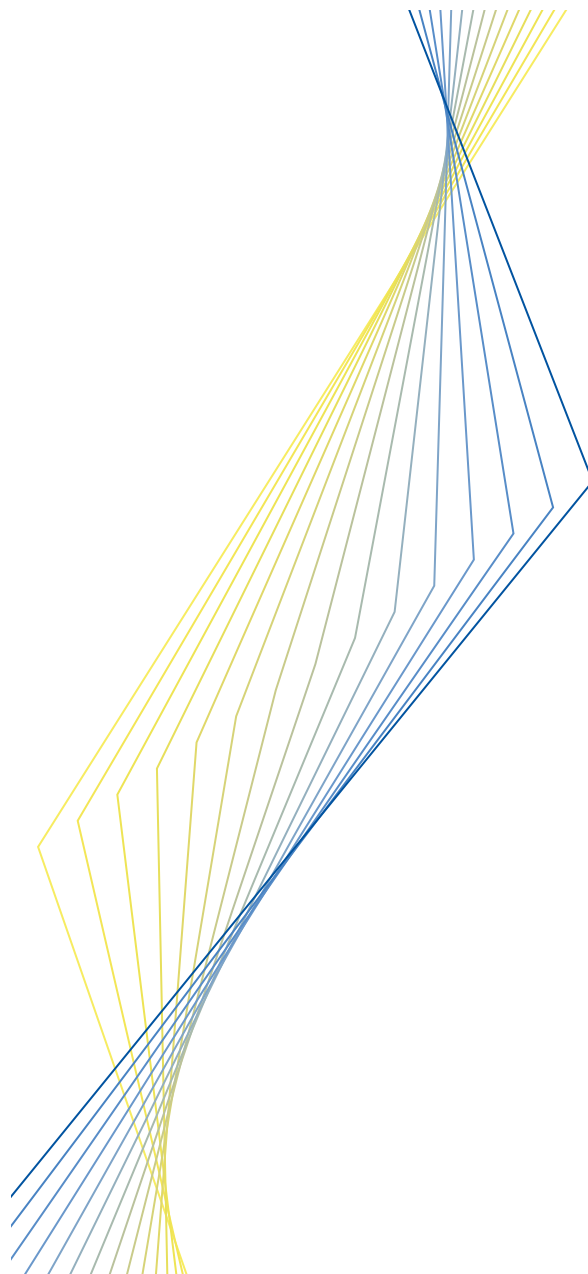
To ensure commercial bank liquidity during final settlement in the TARPBANK system, the Bank of Lithuania grants collateralised overnight loans. The Bank uses the LCVPD system to receive collateral from counterparties. The securities accounts of the Bank of Lithuania in the LCVPD are used for the pledging of securities held by counterparties. The Regulations Governing the Granting of Overnight Credits by the Bank of Lithuania (12 December 1997, No. 295) allow counterparties to receive credits for 80% of the value of marketable Lithuanian government securities with a redemption period of up to three years.

In the first half of 1997, the introduction of repo transactions as a monetary policy instrument of the Bank of Lithuania was accompanied by procedures for settling these transactions. The Bank of Lithuania thereby became an ordinary participant of the SSS for OTC transactions.

Lithuania



EUROPEAN CENTRAL BANK



Malta

August 2002

Malta

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List of abbreviations

MFSC	Malta Financial Services Centre
MaRIS	Malta Real-time Interbank Settlement System
MATS	Malta Stock Exchange Trading System
MSE	Malta Stock Exchange

Introduction

Compared with other financial systems, the number of participants in Maltese payment systems and the volumes that flow through them are relatively small. The payment channels in the Maltese financial system have therefore tended to develop around standard technology without the need for a separate retail payment system for low-value credit transfer orders. Much of the focus when upgrading the payments infrastructure has thus been devoted to increasing the efficiency of the system via the dematerialisation and electronic transmission of payment instruments.

Where high-value interbank payments are concerned, the limited number of credit institutions operating domestically – two institutions cover 90% of the payments market – necessarily conditions the flow of payments between banks. Both in value and in volume, payments tend to be lower than in comparable countries. Consequently, systemic exposure cannot be fully mitigated by payment system design alone, and adequate participant supervision is just as important as a sound legal infrastructure if the systemic implications of participant failure are to be kept to a minimum.

In the event of participant failure, the application of the zero-hour rule in Maltese law is implicitly contained in the Companies Act. This specifies (in Article 223) that the date of dissolution in a court winding-up order shall be deemed to be the date that the winding-up application is filed. This is interpreted as meaning that dissolution is effective from midnight of that date. A corresponding provision is made in the case of the voluntary winding-up of a company: Article 226 states that the date of dissolution shall be deemed to be the date specified in the resolution for dissolution and subsequent winding-up, or, if no date is mentioned, the date that this resolution is passed.

There are approximately 100 high-value payments of at least MTL 50,000 (€125,000) per day. These are settled gross in real time through settlement accounts in the books of the Central Bank of Malta using standard

SWIFT messaging, with each bank having a correspondent relationship with the Bank.

An RTGS system, the Malta Real-time Interbank Settlement System (MaRIS), is being prepared and should become operational during the third quarter of 2002.

The fact that cheques still occupy a significant share of the market in volume terms has forced the pace of the electronic development of domestic payment systems to a point where there is now a virtually dematerialised cheque clearing system. Cheques are truncated at the bank on which they are drawn, with the paid cheque being retained by the paying branch instead of being forwarded to customers along with statements. The paying bank creates an electronic form of each cheque and forwards that for payment through the clearing system. Settlement is done on a daily basis, with each bank settling gross the total amount of cheques presented by the other participants.

It is encouraging to note that rapid progress has been made in the use of other forms of payment, such as credit transfers. The continued expansion in the use of credit and debit cards has helped to achieve greater flexibility in the way that retail payments are handled. ATM and POS networks give retail customers access to banks operating in Malta.

The volume of business passing through the Malta Stock Exchange (MSE) account generates around 35 deals per day. Securities traded on the MSE are dematerialised and recorded in a central register held at the exchange.

The value of cross-border payments transacted by the local banking system is in excess of MTL 2.4 billion (€6.04 billion) annually, roughly distributed between inward and outward transfers. This figure represents more than 160% of Malta's GDP, reflecting the high degree of openness of the economy. Most cross-border payments are effected using SWIFT between correspondent banks.

I Institutional aspects

I.1 The general institutional framework

The Banking Act of 1994 and the Financial Institutions Act of 1994 made the Central Bank of Malta responsible for licensing credit and financial institutions. Since 1 January 2002 this function has been performed by the Malta Financial Services Centre (MFSC). In this role, the MFSC is also responsible for issuing banking directives and ensuring that credit and financial institutions comply with the provisions of the law and the conditions of their licences. Such directives have force of law and any breach can result in penalties. Various banking directives over time have brought the prudential supervision of banks in Malta virtually in line with EU requirements. Banking directives imposing an obligation or requirements on the general public can only be issued by the Minister of Finance through regulations passed under the Banking Act of 1994.

The banking sector is at the centre of the money transmission system. According to Chapter 371 of Maltese law, a “bank” or “credit institution” means any person engaged in the business of banking. “The business of banking” is in turn defined as the business of a person who accepts deposits of money from the public that may be withdrawn or repaid on demand or after a fixed period of notice, or who borrows or raises money from the public (including the borrowing or raising of money by the issuing of debentures or debenture stock or other instruments creating or acknowledging indebtedness), in either case for the purpose of employing such money in whole or in part by lending to others or otherwise investing for the account and at the risk of the person accepting such money.

According to the Central Bank of Malta Act of 1967, the Bank is empowered to promote the establishment of a bank clearing system and to provide facilities for it. Other than this generic

statement, there is no specific legislation concerning the regulation of and criteria for accessing the payment system. These are determined by the Rules of the Malta Clearing House which is chaired by a Central Bank of Malta official. It is envisaged that this shortfall will soon be remedied since the Central Bank of Malta Act of 1967 will be amended to provide for the setting up, oversight and regulation of payment systems and for reducing systemic and legal risks.

Additional legislation has given other regulatory powers to the MFSC in its role as the competent authority. Of particular note is section 29 of the Banking Act of 1994 which allows the MFSC to adopt various measures if a bank has become unable to meet its obligations. Measures vary from giving directions to the bank, to appointing a person to control or liquidate the assets of a bank. A winding-up order issued by the MFSC under this provision will be regulated by the specialised procedures established under the Controlled Companies (Procedure for Liquidation) Act of 1995, introduced with the specific purpose of winding up the affairs of a bank avoiding recourse to the law courts.

There is no deposit protection law in Malta. A working group composed of representatives of the Central Bank of Malta and the Malta Bankers' Association recently analysed the adoption of deposit insurance law in Malta under the chairmanship of the Central Bank of Malta. The Working Group has also taken into account EU requirements on deposit protection and drafted a proposal. The law is expected to take effect in 2002, with the MFSC assuming the responsibilities associated with the operation of the scheme.

The soundness of the banking system is further protected by the application of other laws, including the Prevention of Money Laundering Act of 1994, the Insider Dealing Act of 1994 and the Professional Secrecy Act of 1994.

1.2 The role of the Central Bank of Malta

Chapter 204 of the Central Bank of Malta Act of 1967 assigns the Bank the general function of “influencing the volume and conditions of supply of credit so as to promote the orderly and balanced economic development of Malta and a rising level of employment and income consistent with the maintenance of monetary stability and the external value of the currency”. It is also responsible for promoting a sound financial structure and for fostering an orderly capital market, besides maintaining external reserves in order to safeguard the international value of the currency.

1.2.1 Payment systems oversight

By virtue of the Central Bank of Malta Act of 1967, the Central Bank of Malta is empowered to promote the establishment of a bank clearing system and to provide facilities for it. Thus the Central Bank of Malta has a leading role in the provision of interbank settlement systems. It is also instrumental in the implementation of MaRIS, and could eventually oversee the implementation of the system to ensure compliance with the Core Principles for Systemically Important Payment Systems.¹

The Central Bank of Malta Act of 1967 will be amended to provide for the setting up, oversight and regulation of payment systems and for reducing systemic and legal risks. To this end, a Payment Systems Office has been set up at the Central Bank of Malta. Under the proposed legislation, the establishment of a payment system requires the Bank’s prior approval and authorisation. According to the proposed law, the Central Bank of Malta will be able to issue payment systems directives abolishing the zero-hour rule applying under bankruptcy laws, provide for the finality of settlement and legal enforceability of netting, and ensure the enforceability of collateral.

The Central Bank of Malta will also be given the power to issue directives for the purpose of adopting the EC Directives on settlement finality in payment and securities settlement systems, on cross-border credit transfer services and electronic payment services, including, but not limited to, the provision of debit and credit cards, and electronic money services.

1.2.2 Activities in the area of securities clearing and settlement systems

All trading on the Malta Stock Exchange is settled on a net basis through Central Bank of Malta settlement accounts.

1.2.3 The operational role of the Central Bank of Malta

The Central Bank of Malta Act of 1967 empowers the Bank to maintain and operate accounts for credit institutions. The Bank provides settlement account services to four licensed institutions. Through these accounts, the institutions settle for clearing, large/small-value interbank transactions and other transactions directly with the Central Bank of Malta. Interbank payments are settled gross in real time. The bank also provides payment settlement services for the MSE.

The Central Bank of Malta Act, in its amended 2002 form, will enable the Bank to operate MaRIS, the real-time gross settlement system that should enter service in the first half of 2002. All credit institutions providing services to residents in the local currency are expected to be participants.

In its role as banker for the government, the Central Bank of Malta maintains accounts for the various government departments in both Maltese liri and foreign currency. In addition,

¹ Committee on Payment and Settlement Systems, BIS, January 2001

the Bank holds other accounts for parastatal corporations and other entities. An increasing volume of payments are effected through these accounts on an almost daily basis. The bulk of government salaries, wages and social benefits are paid using cheques drawn on the Central Bank of Malta. All foreign exchange transactions undertaken by the government are likewise effected through the Bank.

The Bank may trade in government stocks and treasury bills. In practice, it has refrained from purchasing such securities directly from the government and has limited its trading to the secondary market.

1.2.4 Co-operation with other institutions

Since the beginning of 2002 the MFSC has been the competent authority according to the terms of the Banking Act and the Financial Services Act, thus becoming the country's only supervisor of credit institutions, the stock exchange and stockbrokers. However, this change will require the Central Bank of Malta, as the regulator and overseer of payment systems subsequent to the amendments of the Central Bank of Malta Act, to co-operate closely with the MFSC in the field of systemically important payment systems and in the area of securities settlement.

Co-operation and exchange of information between the Central Bank of Malta and the MFSC is permitted under the provisions of the Central Bank of Malta Act of 1967 and by the Malta Financial Services Centre Act, subject to the requirements for confidentiality. Regular co-ordination also takes place under the aegis of the Joint Banking Committee set up according to the provisions of the Banking Act. This committee is composed of three members from the Central Bank of Malta, one of whom is the Governor, and two members from the competent authority (currently the MFSC). Its task is to formulate banking regulatory and supervisory policy and to monitor the soundness of the banking system.

In 2000 the Central Bank of Malta together with the commercial banks represented in the Malta Banker's Association set up the Payment Systems Users' Group. This group then drew up the rules and regulations for MaRIS.

1.3 The role of other private and public sector bodies

1.3.1 The Malta Banker's Association

The Malta Bankers' Association represents the interests of all licensed credit institutions. Its objectives are:

- to identify and discuss matters of common interest to its members and to implement or organise the implementation of the corresponding solution;
- to develop and maintain harmony or coherence within the banking community in policies of common interest and to lobby and negotiate in support of these with the authorities and other bodies; and
- to encourage, promote, sponsor or assist in any way all research being done on matters related to banking and finance.

1.3.2 The Payment Systems Users' Group

The Payment Systems Users' Group is composed of the four licensed Credit Institutions providing services to residents, the MSE and the Central Bank of Malta. The Group has to date discussed the various EC Directives concerning payment and securities settlement systems, electronic payment instruments and cross-border payments in view of their adoption in Malta. Discussions have also covered the European Code of Conduct for electronic payments, finality and other issues related to the field of payments. It has also been instrumental in drafting the

operating rules of the local RTGS system, MaRIS.

1.3.3 Financial intermediaries that provide payment services

In Malta there are five licensed banks (credit institutions), including one in which the state is a minority shareholder and one bank that lends solely for housing activities. All credit and financial institutions are supervised by the MFSC and classified as such under appropriate legislation together with various related supervisory and regulatory directives.

A variety of payment services are provided by the deposit-taking institutions and financial institutions through a network of 100 branches (one branch per 4,000 inhabitants).

The majority of these branches are owned by the two larger credit institutions which hold almost 94% of all current accounts in value terms.

The credit institution which lends solely for housing activities was licensed to engage in deposit-taking activities in 1995. It is owned by one of the major credit institutions and is expected to merge its operations with the parent institution over the coming two years.

Maltapost plc is not a credit institution. It offers a limited payment service in the sense that it provides a facility to sell/purchase postal and money orders through its branch network all over the country.

Access (MasterCard/Eurocard) and Visa are the main credit card brands used in Malta and are issued by credit institutions.

2 Payment media used by non-banks

2.1 Cash payments

Currency in circulation at the end of 2001 stood at MTL 441.83 million, representing 27% of GDP. This is equivalent to MTL 1,151 (€2,898) per inhabitant and is one of the highest figures in Europe.

According to the Central Bank of Malta Act of 1967, the Bank has the exclusive right to issue legal tender currency notes in Malta. The unit of currency is the Maltese lira. Banknotes come in the following denominations: MTL 2, MTL 5, MTL 10, and MTL 20.

The Central Bank of Malta also has the sole right to issue legal tender coins. These are issued in the following denominations: MTL 1, 50 cents, 25 cents, 10 cents, 5 cents, 1 cent, 5 mils, 3 mils and 2 mils (MTL 1 = 100 cents; 1 cent = 10 mils). Coins are acceptable as legal tender up to the following amounts:

1 cent coins: MTL 0.20

2 cent coins: MTL 1.00

5 cent coins: MTL 10.00

10 cent coins: MTL 10.00

25 cent coins: MTL 10.00

50 cent coins: MTL 10.00

MTL 1 coins: MTL 20.00

The Central Bank of Malta Act of 1967 empowers the Central Bank of Malta to withdraw currency notes and coins from circulation once due notice has been given by the Minister of Finance in the Government Gazette. At the end of this notice period, the currency notes and coins concerned will cease to be legal tender but may be redeemed at the Central Bank of Malta on demand and at par for ten years following the end of the period mentioned in the Government Gazette.

2.2 Non-cash payments

2.2.1 Payments by means of credit transfers, cheques and direct debits

(a) Credit transfers

Customers make extensive use of standing orders to effect regular payments to specific payees, such as premiums to insurance companies, rents or instalments on the purchase of goods or services.

Paperless credit transfers are also often used for paying wages, salaries and benefits. At present more than 55% of government employees receive their monthly salary by means of a credit transfer. In the private sector, the use of credit transfers is much more widespread. The order is given by the customer making the payment to his bank either in paper form or in an automated form, such as on computer diskette or magnetic tape.

In 2001 some 1.86 million credit transfers were effected, with a total value of MTL 2.3 billion (€5.75 billion).

(b) Cheques

Cheques as a means of payment are regulated by the provisions of the Commercial Code. However, this contains few provisions regulating cheques specifically and for the most part it simply includes them under the detailed provisions on bills of exchange.

Cheques are still the most widely used means of payment. It is estimated that 9.8 million cheques were drawn in 2001, the equivalent of 25 cheques per person for that particular year. The total value of these cheques was MTL 2.6 billion (€6.55 billion), while the volume of cheques drawn on the Central Bank of Malta was 2.04 million, worth a total of MTL 434 million (€1,093 million).

Cheques drawn on the Central Bank of Malta can be encashed at the Central Bank of Malta or can be paid at the counters of credit institutions. Since the Central Bank of Malta does not have any branches, an agreement exists with the credit institutions to negotiate cheques drawn on the Central Bank of Malta but paid at the credit institutions' counters. As many of the cheques still represent payments of a repetitive nature, banks are trying to promote greater use of credit transfers and other alternative forms of payment. Likewise, the Central Bank of Malta is encouraging the Treasury to switch from cheques to credit transfers for the regular payment of salaries, social benefits, etc.

For domestic systems, commercial bank charges are limited to the cashing of cheques. The two largest commercial banks charge customers a fee of MTL 0.75 (€1.88) for encashing cheques drawn on another bank. However, one of them waives this fee if the cheque is deposited into the account of the drawing customer.

(c) Direct debits

This facility has only recently been introduced in Malta and has yet to gain any real popularity.

2.2.2 Payments by card

Credit and debit cards have gradually gained in popularity in Malta as a means of payment over the past ten years. However, growth has been dramatic and already over 344,000 cards are held by the public (about 19 cards for every 20 inhabitants), with the younger generation holding the bulk of them.

Credit cards issued by banks give the holders a credit facility, the amount of which depends on the standing of the customer. A customer's credit account is kept distinct from other accounts, current and savings, and the card holder receives a monthly statement showing any outstanding balances on the credit card account. It is up to the customer to decide

whether to settle the full amount in one transaction or to take advantage of the credit period allowed by the bank issuing the card. Interest has to be paid if use is made of the credit period. Until a few years ago Maltese law capped the interest charged on these balances at 8% and, naturally enough, many people chose to take full advantage of this restriction. This provision has since been abolished, allowing banks to charge higher rates of interest on outstanding balances.

Debit cards are payment cards issued by banks allowing customers to effect transactions directly on their current or savings account. Customers therefore have the facility to withdraw funds from these accounts or effect payment directly to the supplier of goods and services.

The debit card is more popular than the credit card in Malta, as is the case in most countries. In fact, while at the end of 2001 there were around 249,000 debit cards, the figure for credit cards was just 94,000. Over 13.6 million transactions were effected by means of debit cards for a total value of around MTL 247 million (€622 million).

Bank customers currently have access to the following services through the ATM network: cash withdrawals, deposits of cash to own or third-party accounts, service payments, balance enquiries, requests for cheque/deposit books, funds transfers, PIN number changes, requests for statements and details of recent transactions.

The various ATM networks are not yet interconnected. However, via the Malta Bankers' Association the banks are actively

considering the feasibility of linking their respective networks to achieve interoperability. The benefits of this linkage would eventually be felt by both the banks' customers and the banks themselves.

At end 2001 there were 139 ATMs in Malta, and their use is gaining in popularity every year. In fact, the volume of transactions effected using ATM machines almost doubled during 2001 compared with the previous year: in 2000 there were 7.5 million ATM transactions and in 2001 there were 13.6 million, with a total value of MTL 246.8 million (€617 million).

2.3 Recent developments

Use of single-purpose prepaid cards on which value is held and used to pay for the issuer's services is at present limited to the telephone card. No multipurpose prepaid cards exist. The number of retailer cards and cheque guarantee cards is modest and limited to a handful of corporate customers.

Electronic (internet/PC) banking is gaining ground as a result of the introduction of web/remote account access by one of the credit institutions. This service allows customers to access account-related information and send payment instructions. Take-up of the service has been slow because it provides the same basic services offered by the more popular debit cards through the ATM networks. While the laws on the regulation of e-commerce, including provisions on electronic banking, are expected to enter into force by mid-2002, the relevant law on data protection was already in place by December 2001.

3 Interbank exchange and settlement systems

3.1 General overview

Transfers of funds denominated in Maltese liri between banks in Malta are effected via their

respective call accounts at the Central Bank of Malta. The arrangement uses SWIFT for messaging and employs STP. This system is expected to be replaced by a real-time gross

settlement system, called MaRIS, in the third quarter of 2002.

In the retail payments area, the most widely used instruments are cheques and debit cards. While cheque instruments are cleared through the Malta Clearing House, each bank has its own network of ATM and POS terminals so that debit cards can be used without the need for exchanging payment data with other banks.

3.2 The real-time gross settlement system

The current interbank real-time gross payment arrangement is expected to be replaced by a real-time gross settlement system, called MaRIS, in the third quarter of 2002. The current system is described below, while MaRIS is described in detail in subsequent sections.

The current system

Banks can effect payments on their accounts with the Central Bank of Malta in real time via the SWIFT messaging system. SWIFT payment instructions received from the banks are dealt with upon receipt and settled across the Central Bank of Malta's real-time accounting system, with balances updated immediately. During 2001 incoming SWIFT messages were fully integrated into the Central Bank of Malta's core accounting system. This implies that such payments are settled automatically without limit checks in real time using STP, thereby facilitating the immediate reuse of received funds. Minimum reserves are available for commercial banks to meet their intraday liquidity requirements. Intraday credit is advanced on the understanding that it will be settled by the end of the day through interbank lending or through the use of overnight credit facilities available with the Central Bank of Malta and where the credit extended must be fully collateralised. The intraday and overnight credit facility is, however, seldom used by the commercial banks, since the level of reserves,

at 4% of customer deposit liabilities, is relatively high compared with the daily payment needs. The Central Bank of Malta conducts auctions of deposits with a term to maturity of two weeks to absorb liquidity temporarily from the banking system, while it uses repos, generally with the same term to maturity, to inject liquidity.

The interbank real-time gross payment arrangement operated by the Central Bank of Malta is a bilateral correspondent relationship between each commercial bank and the Bank, with each participant holding a settlement account with it. The account holder can effect settlement of both interbank obligations and customer payments. These accounts are furthermore used for the settlement of monetary policy operations and for the settlement of obligations arising out of participation in the Malta Clearing House. The system is open to credit/financial institutions licensed in Malta that have a Maltese lira-denominated settlement account with the Central Bank of Malta. The arrangement lacks the formality required to guarantee payment delivery, is based on SWIFT standards for delivery with no refinements, and lacks the contingency planning to ensure the required level of security and efficiency. Furthermore, current legislation does not afford payments the finality required to reduce systemic risk, thereby making the mitigation of associated payment risks much more complex. These shortcomings are being addressed by the revision of the Central Bank of Malta Act 1967 and the establishment of MaRIS (expected to become operational in the second quarter of 2002).

At the end of 2001 the system was processing approximately 22,000 transactions annually, with a total value of MTL 3.653 billion (approximately €9.3 billion). There are no fees levied for the operation of the settlement account or for the processing of individual transactions.

The new RTGS system, MaRIS

A new development in the field of payments will be the introduction of MaRIS, the Malta Real-Time Interbank Settlement System. The system is expected to become operational in the third quarter of 2002 and all domestically operating commercial banks are expected to participate. The system will be used for the same-day real-time settlement of interbank obligations and customer payments. It will be operated by the Central Bank of Malta and managed by an association of participants. The following sections detail various aspects of the MaRIS system.

3.2.1 Operating rules

The agreement that each participant has to accept before becoming a member of the system covers the different aspects required for the system to function smoothly and efficiently while providing the required legal safeguards which in turn reduce settlement risk to a minimum. In this respect, the national legislation is being amended to guarantee finality of payment for the participants involved. The agreement also binds the participants with regard to the timely delivery of funds to the ultimate beneficiary. The rules include membership criteria, operating hours, the timetable for the business day, message standards, responsibilities and participants' obligations.

3.2.2 Participation in the system

Participation is open to institutions, predominantly but not limited to credit and financial institutions, brokers and public entities that comply with a number of established criteria and conditions. Among other things, these include membership of SWIFT and the maintenance of a settlement account at the Central Bank of Malta. The institutions must be technically equipped to send and receive authenticated payments, and

adequate contingency arrangements must be in place to avoid disrupting the smooth operation of the system. The technical requirements mainly address contingency arrangements and participation in SWIFT. Given the low turnover of the domestic system, there are no minimum turnover restrictions.

3.2.3 Types of transaction handled

The system will accept only credit transfers with same-day value in Maltese liri between participants. These can originate both from customer transfer orders or payments and from any other interbank obligation and monetary policy operation, provided that the order is unconditional and irrevocable. This includes the settlement of obligations arising from participation in the Malta Clearing House and the Malta Stock Exchange.

3.2.4 Operation of the system

The Central Bank of Malta is responsible for the operation of the settlement system and has full responsibility and control of the day-to-day business operations of the settlement accounts. The Central Bank of Malta is also responsible for invoking contingency arrangements and may extend the business day.

The Central Bank of Malta is responsible for starting up MaRIS each day, with the RTGS system being open for payments from 8 a.m. CET until the Central Bank of Malta cut-off time of 2.30 p.m. For customer payments the cut-off time is one hour before the system cut-off time, i.e. 1.30 p.m., and it is the responsibility of the participant bank to deliver incoming funds to the account of the final beneficiary held by that same participant on the same day the payment is delivered by the system. It is also the responsibility of each participant to submit payment requests to the system as soon as practically possible and to ensure that the settlement account has the

liquidity required for a smooth flow of payments. MaRIS will operate on all days except Saturdays, Sundays and all official bank, national and public holidays in Malta, which are: 1 January, 2 January, 10 February, 19 March, 31 March, 1 May, 7 June, 29 June, 15 August, 8 September, 21 September, 8 December, 25 December and 26 December.

3.2.5 Transaction processing environment

The system will use SWIFT FIN services as the messaging solution, and has automated message processing, queue resolution and collateral use facilities. The system directly updates the books of the Central Bank of Malta in real time and provides web-enabled liquidity and settlement account management information. Payment instructions should comply with the standard SWIFT format rules for MT 100/MT 103 Single Customer Payment Instructions and for MT 202 Single Bank-to-Bank Payment Instructions. The central operating unit will work using an Oracle database and will be directly interfaced to the Central Bank of Malta's Core Accounting system.

3.2.6 Settlement procedures

Payments are only settled if sufficient funds are available. Any payments which would have the effect of reducing the settlement account of the paying participant's balance below zero, after taking into consideration all available fully collateralised intraday credit, will queue for settlement until a balance becomes available. Queue resolution is automated with servicing on a FIFO basis. Any outstanding payments will be rejected two hours from the time of acceptance or at the end of the business day. Settlements at the Malta Clearing House and the Malta Stock Exchange occurring before 10 a.m. CET have no priority or preference over other payments made through the system.

3.2.7 Credit and liquidity risk

MaRIS settlements are done in Central Bank of Malta money and, when the law on the finality of payments is passed, all settled payments will immediately be final. Participants will therefore not be exposed to credit and liquidity risks with respect to settled payments.

3.2.8 Pricing

Although the level of traffic is relatively low, the system participants have agreed to share all the initial system development and operating costs. Thus each participant will pay the same joining fee, a common yearly membership fee and a transaction fee of MTL 0.10 (€0.25). However, the transaction fee will subsequently be revised according to the number of transfers effected through the system.

3.2.9 Statistical data

Projections to date indicate that the system will be able to handle much more than the current 22,000 transfers a year, with a total value of almost MTL 3.7 billion (€9.3 billion).

3.3 The large-value payment system

There is no other large-value payment system in Malta in addition to the existing real-time gross payment arrangement in Malta.

3.4 Retail payment systems

3.4.1 E-money schemes

No such schemes are currently available and none are planned as yet.

3.4.2 Card-based schemes

The banks currently issue the standard types of credit card provided by Visa and MasterCard. They accept payments over their networks for a number of international card issuers, namely Visa, MasterCard, Cirrus, American Express, JCB and EDC/Maestro. Each bank has individual arrangements with the issuer of these cards and uses satellite links or direct leased lines to exchange payment and settlement information.

Three commercial banks issue debit cards which are used for retail payments and at ATMs. Each of the larger commercial banks owns a POS network for its own cards. They provide service access to a third commercial bank that issues debit cards. The cards of the different network operators are not interoperable and there are therefore no payment exchange and settlement arrangements. Transactions at the point of sale are performed online, with either dial-up, ADSL or cable network technology being used.

3.4.3 Retail credit, debit and cheque transfer systems

The only retail system in Malta is the Malta Clearing House which clears cheques and money orders across the banking system. This system is described in Subsections 3.4.3.1-3.4.3.6. The role of the clearing house is to establish an interbank agreement for the encashment, exchange and clearing of cheques between the participants. The implementation of the agreement is handled by all participants, with the settlement of obligations through the interbank payment system being handled by the Central Bank of Malta.

The payment arrangements for debit and credit transfers are presented in Sections 3.4.3.7 and 3.4.3.8 respectively.

3.4.3.1 Operating rules – Clearing House

There is no specific legislation concerning the clearing process for cheques in Malta. The system is based entirely on agreements, rules and regulations established by the Malta Clearing House. These rules specify the participants, the decision-making mechanism and associated voting rights, and the operational rules for the clearing of cheques drawn on the respective banks. The Central Bank of Malta has been given the necessary authority by the Central Bank of Malta Act to promote the establishment of a bank clearing system and to provide facilities for it. The Clearing House was set up in the early 1970s and its running costs are still borne in full by the Bank. The tasks involved in the processing of cheques through the Clearing House are shared between the participating institutions, with the Clearing House only facilitating the exchange of the instruments and the associated electronic information.

3.4.3.2 Participation in the system – Clearing House

The four credit institutions participating in the Clearing House each have a call account with the Central Bank of Malta. Should a bank decide not to become a member of the House, it may appoint one of the existing members as its agent and settlement could then take place through that agent's call account. The other participating banks would treat this bank as another branch of the agent bank. Participation is open to any credit institution providing related services. All credit institutions operating cheque issuing accounts denominated in Maltese liri are eligible to join the Clearing House.

3.4.3.3 Types of transaction – Clearing House

This system handles cheque payments and money orders.

3.4.3.4 Operation of the system – Clearing House

The Clearing House meets at 7.15 a.m. every day (Monday to Friday) at the Central Bank of Malta and under its supervision, and cheques and data diskettes are exchanged. The cheques and corresponding electronic details are immediately delivered to each bank's respective clearing centre for processing. By 10 a.m. each bank sends a SWIFT payment message to the Central Bank of Malta to settle the cheques which were drawn on it but negotiated by the other banks. This system is based on gross bilateral agreements. Each bank settles using SWIFT through the real-time gross payment arrangement of the Central Bank of Malta. Payment is performed automatically with STP by the Central Bank of Malta by debiting the bank sending the message and crediting the beneficiary banks.

Money orders drawn on Maltapost plc and deposited at the Central Bank of Malta are delivered directly to Maltapost plc, which in turn settles the amount by issuing a cheque in favour of the Central Bank of Malta.

3.4.3.5 Transaction processing environment – Clearing House

The banks at which the cheques are presented create an electronic representation of the cheque. This electronic claim is delivered the next morning on a diskette to the paying bank together with the cheques themselves, and processing is then handled by the paying bank.

For cheque clearing through the one-day cycle, the instrument is presented over the counter of the issuer, which settles the obligation individually through the interbank payment system operated by the Central Bank of Malta.

3.4.3.6 Settlement procedures – Clearing House

The system has procedures in place for two types of clearing cycle, one of three business days and another of one business day for

cheques whose value exceeds MTL 50,000 (approximately €125,000).

The three-day clearing cycle:

Day one: customers deposit cheques at various branches. In the afternoon, these cheques are presented to the respective Clearing Data Centre of the bank in question.

Day two: cheques are presented and exchanged at the Malta Clearing House. Settlement accounts at the Central Bank of Malta are debited/credited accordingly.

Day three: cheques received by a particular bank are delivered to its various branches and customers' accounts are debited with same-day value. Cheques that are not accepted by the issuer are not paid.

Day four: any cheques returned unpaid are again exchanged at the Clearing House.

Day five: the unpaid cheques are received by the branch where they were originally deposited. A claim for their value is issued to the presenting bank. The claim is settled on the day it is presented, with the funds being returned to the rejecting bank.

Since the clearing cycle is somewhat long, banks advise their customers not to draw cheques against cheques still in the clearing cycle unless they have credit facilities at their disposal, usually an overdraft.

The one-day clearing cycle:

This is also referred to as special clearing. Cheques in excess of MTL 50,000 (approximately €125,000) may be specially presented by the collecting bank to the drawee bank up to 12 noon in order to obtain same-day value. Settlement of these clearings are effected by SWIFT.

The rules and regulations of the Malta Clearing House provide an additional

mechanism for the commercial banks to clear cheques for values less than MTL 50,000 (approximately €125,000) amongst themselves. Cheques drawn in any amount can thus be specially cleared, although the underlying amount is settled during the next clearing session, i.e. on the next working day.

All settlements are effected through the large-value payment system operated by the Central Bank of Malta using the SWIFT MT 202 payment instruction on a gross basis.

3.4.3.7 *Direct debit*

There is no interbank clearing of direct debits. The service providers using the facility have an account with each participating credit institution through which all claims with respect to the customers of that institution are settled.

3.4.3.8 *Retail credit transfers*

Developments in this area mainly concern the introduction of a new standard for the exchange of credit transfers in electronic

format between the domestic credit institutions. The standard was implemented in December 2001 and is used by six participants. These are the five credit institutions offering retail services to residents, and the Malta Stock Exchange. It allows the exchange of SWIFT MT 103-formatted instructions in batch electronic credit transfer files delivered on diskette. These files are encrypted and individually settled via the participant's account held at the Central Bank of Malta on the day the transfers are due. This standard has also been implemented by the Malta Stock Exchange for the payment of dividends to individual beneficiary accounts. The system allows each bank to create any number of batches for any value on a daily basis. There is also no limit to the value of the transactions processed. The arrangement has yet to formalise access criteria and operating times. The current participants do not levy a charge for processed transfers.

As at the end of 2001, some 2 million retail credit transfers were processed, with a total value of MTL 447.4 million (€1,118.5 million).

4 **Securities settlement systems**

Listed securities

The Malta Stock Exchange was established in 1991 under the provisions of the Malta Stock Exchange Act of 1990 and is owned by the government of Malta. The MSE is responsible for promoting "an orderly, equitable and visible securities market" and is empowered to issue legally binding "bye-laws" as it may deem necessary for its proper functioning. It also supports trading by providing administrative facilities, including a settlement procedure and central registry functions.

There are 19 stockbrokers licensed to deal on the MSE. Four local banks and nine investment services firms are licensed to act as intermediaries between customers and the stockbrokers.

Legislation is expected to be passed in 2002 whereby regulatory competence for the local capital market will be transferred from the Central Bank of Malta to the MFSC, which will be authorised to take over the licensing function. Under the proposed regime, the MFSC will also become responsible during 2002 for the supervision of the MSE and the stockbrokers. At a later stage the MFSC is also scheduled to take over the responsibility for authorising new listings on the stock exchange.

Non-listed securities

There are a number of securities which are not listed on the MSE, but by far the most prevalent in this category are the Treasury bills. Under the provisions of the Malta

Treasury Bill Act of 1952, the Government of Malta is authorised to issue short-term debt in the form of bills maturing within one year. To date, the Treasury has issued bills with maturities of 28, 91, 182, 273 and 364 days, with the 91-day bill being the benchmark issue. These bills are issued by the Treasury on a weekly basis through an auction-based system to which both resident and non-resident persons/institutions can tender. Market participants are given prior notice of the maturity of bills to be issued through a calendar published monthly in the Government Gazette. Bidders have to submit their offer by 10 a.m. every Tuesday, and successful bidders are advised by the Treasury (normally on Tuesday or Wednesday) of the amount allotted to them. The transaction then has to be settled by 10 a.m. on Friday (the issue date).

4.1 Trading

Listed securities

The Malta Stock Exchange Trading System (MATS based on the Canadian EFA software) went live on 24 July 1996. The system uses IBM hardware and message queuing technologies and integrates the whole trading, clearing, settlement and registry environment. The system uses the order-driven trading method and settles on a T+3 basis. When a member (a stockbroker licensed by the MSE to place orders on the system) places a selling order on the market, the system checks in real time in the central registry (and before executing the trade) to ascertain whether the securities are actually available in the seller's account. The system can also support parallel markets in securities denominated in different currencies. The listing has securities denominated in Maltese liri, two securities denominated in U.S. dollars and, since only very recently, a corporate bond denominated in euro.

A key feature of the Maltese market-place is the "put-through" market or agency crosses. The "put-through" is where a stockbroker has

both buying and selling clients in the same security at the same price and at the same size. These are entered during a special session prior to the market opening session. In the put-through stage any broker may challenge the original bid or offer prices. If a challenge is placed, the original broker has the option of reviewing his original orders. The MSE takes a very strong view on best execution on the market floor, and trading rules insist on the market testing trades to ensure that both parties to a transaction get the best possible consideration for their transaction.

The securities currently traded on the MATS are fixed-income securities issued by the government and by corporates, as well as equities issued by listed companies.

Non-listed securities

The Treasury bill is the only major investment instrument in Malta which is still certificate-based. Given that the Treasury bill has not, to date, been listed on the MSE, it can be freely traded over the counter in the secondary market. The Central Bank of Malta fulfils the role of market-maker for Treasury bills in the secondary market, quoting bid and ask prices on a daily basis to the major market players and on Reuters. The Central Bank of Malta, through its Money and Capital Markets Office, provides an OTC facility for secondary market trading which is available every day (Monday to Friday). Dealing in Treasury bills is carried out at both the retail level (for amounts up to MLT 49,999 or approximately €125,000) and the wholesale level (for amounts equal to or in excess of MLT 50,000).

4.2 Clearing

There is no clearing house for the securities market.

4.3 Settlement

Listed securities

Securities are settled on the trading date on a gross basis in a batch processing cycle that runs at the close of the trading session. Settlement of cash takes place on a net basis at T+3.

The net cash position is settled directly via the Central Bank of Malta accounts: each broker is either debited or credited in a broker-designated Settlement Account opened with the Bank. There is therefore no direct link between the securities and the cash leg of a trade, and DVP is not ensured. In the event of cash settlement failure, the selling investor is compensated through a specific compensation fund established by the bye-laws of the Malta Stock Exchange.

In order to facilitate the settlement of the cash, net paying brokers have to prefund their designated settlement account. This is generally done by the brokers' cash correspondent (a local credit institution) via the Central Bank of Malta's payment system. The MSE has made arrangements for a standby credit facility (through a local commercial bank) which is triggered when a broker fails to effect the necessary funding. This facility is backed up by the bank's own standing lending facility with the Central Bank of Malta.

At the end of the settlement process, the balance of the broker's designated settlement account at the Central Bank of Malta will be transferred to the broker's account with its cash correspondent.

The MSE maintains the central registry for each security and ensures custody services and deals with all communications for holders, including the dispatch of dividend and interest payments and other corporate events.

Non-listed securities

Treasury bills are still in certificate form and trading entails the actual physical delivery of a certificate to the buyer. Physical delivery should take place on T+0 and is handled by the Central Bank of Malta. Payments are processed through Central Bank of Malta accounts when credit institutions are the counterparties, while for individuals the cash leg is transacted through a cheque payment (typically settled on T+3).

On the Treasury bill secondary market, trading outside the Central Bank of Malta's OTC facility may be carried out freely by any party, although in practice trading is mainly conducted between credit institutions and the Treasury Department. In this case, since they all have an account with the Central Bank of Malta, settlement instructions for the cash leg are sent to the Bank via SWIFT. Information regarding the issue, maturity, transaction date, yields and prices are reported by the selling party to the Central Bank of Malta for statistical purposes.

The registration of outstanding Treasury bills issued is done directly by the issuer (i.e. the Treasury Department). However, the Treasury is actively looking into the possibility of dematerialising the Treasury bill instrument to allow its registration in book-entry form. Consultations with the Central Bank of Malta, the MSE and other major market players are currently under way in this regard with a view to dematerialising the Treasury bill by the end of 2002.

4.4 The use of the securities infrastructure by the Central Bank of Malta

The Central Bank of Malta uses the securities infrastructure to receive collateral for monetary policy and for payment system credit operations with commercial banks. For monetary policy operations, collateral is the

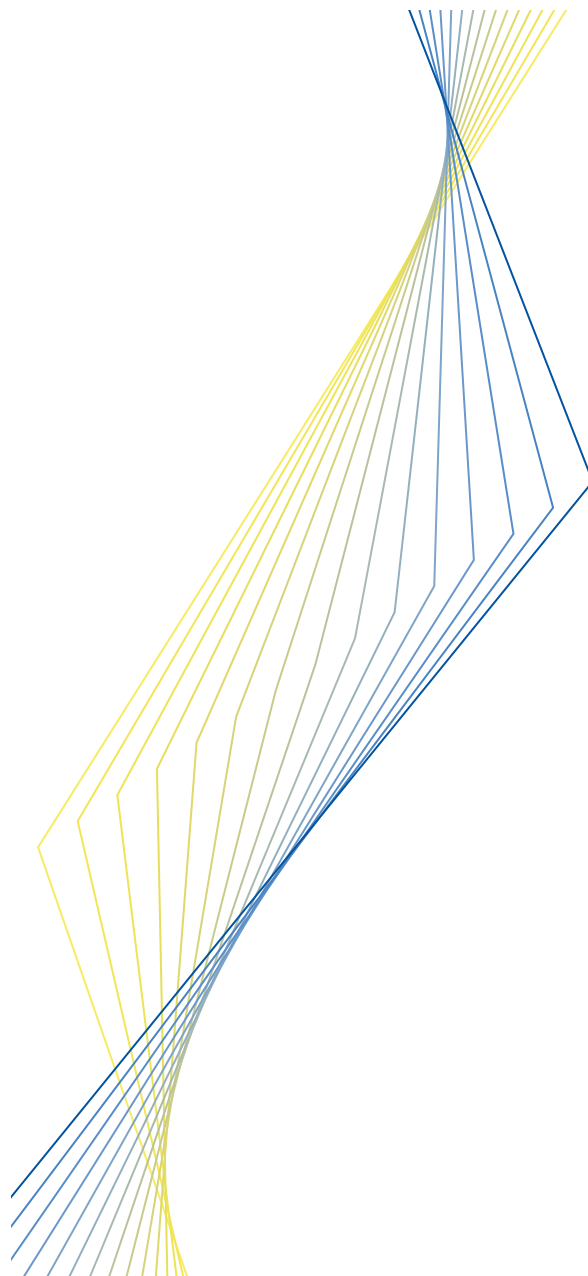
Malta

object of repurchase agreements, while for payment system needs it is pledged as security for the advance of intraday credit and overnight loans. Each participant in the

payment system individually pledges eligible collateral with the MSE in favour of the Central Bank of Malta in order to have access to liquidity in the system.



EUROPEAN CENTRAL BANK



Poland

August 2002

Poland

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List of abbreviations

ATS	Automatic Trading System
BFG	Bank Guarantee Fund
BRIR	Regional branch of KIR
CRBS	Central Register for Treasury Bills
CeTO	Central Quotation Table
DPPK	National Bank of Poland's Monetary and Credit Policy Department
DSP	National Bank of Poland's Payment Systems Department
ELIXIR	System for the exchange of electronic payment orders in KIR
GOWD	Main Branch of Foreign Exchange in Warsaw
GPW	Warsaw Stock Exchange
KDPW	National Depository for Securities
KIR	National Clearing House
KPWIG	Securities and Exchange Commission
KSR	Special settlement system for payment card transactions, operated by PolCard
PGF	Polish Financial Exchange
RBP	Bills Register of the National Bank of Poland
RWKB	Bank Card Issuers Board
SEBOP	Book-entry system for bills of the National Bank of Poland
SKARBNET	Book-entry system for Treasury bills
SORBNET	System for Banks' Accounts Servicing at the National Bank of Poland's Head Office (RTGS system)
SYBIR	System for the exchange of paper-based payment orders in KIR
ZBP	Polish Bankers Association
ZUS	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 also underwent substantial transformation.

During the period in which Poland had 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. Settlement documents were sent between banks by post, and copies were then submitted separately to the National Bank of Poland's regional branches for the purpose of updating the banks' accounts. Debiting of the current accounts of sending banks and crediting of the current accounts of receiving banks was not performed 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, 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 National Bank of Poland.

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), i.e. on 17

banks, but, since 1 July 1994, they have applied to all banks operating in Poland. Since then payments in Poland have been processed by two different systems: large-value payments by the RTGS system of the National Bank of Poland and retail payments in KIR.

In April 1993 the National Bank of Poland introduced a real-time gross settlement system (SORB) for large-value interbank transactions. The introduction of a new version of the RTGS system, SORBNET, began in March 1996 and was completed by the end of 1998. The system fulfils the requirements for a modern RTGS system, i.e. payments are processed electronically, in real time on a gross basis, and, once settled, they are final and irrevocable. SORBNET processes large-value payments, including interbank money market payments, the payment leg of the operations cleared by the National Depository for Securities (KDPW) and large-value customer payments.

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, credit transfer orders are still the predominant form. Cheques have never been a popular payment instrument in Poland and use of the direct debit has been increasing very slowly since June 1998.

The securities market has been growing very quickly over the past ten years. There are currently three SSSs operating in Poland, two within the National Bank of Poland and one within the KDPW.

I Institutional aspects

I.1 The general institutional framework

For the functioning of the payment and settlement systems the most important bodies are:

- the National Bank of Poland – Poland's central bank;
- KIR – responsible for the clearing of retail payments;

- the KDPW – responsible for registering securities and clearing securities transactions;
- the Securities and Exchange Commission (KPWiG) – responsible for the supervision of the capital market.

The Banking Law of 29 August 1997 (Banking Law) regulates, for banks operating in Poland, the principles for conducting banking activities, establishing and organising banks and exercising banking supervision; in addition, it establishes procedures relating to rehabilitation, liquidation and bankruptcy proceedings. The most recent amendment to the Banking Law, of 23 August 2001, introduced regulations on payment instruments and rules for the execution of cross-border credit transfers. Banks as financial entities are also subject to other common 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 National Bank of Poland are set out in the Act on the National Bank of Poland of 29 August 1997. Both the Banking Law and the Act on the National Bank of Poland empower either the Bank's President or its Management Board to specify detailed regulations within the Bank's sphere of competence.

In terms of payment systems the National Bank of Poland's President determines the manner for interbank settlements (Regulation 6/2000 of 5 April 2000, as amended by Regulation 15/2001 of 11 December 2001, which specifies the basic rules of the RTGS system, the basic conditions for settlement agents, etc.). Moreover, the National Bank of Poland Act gives the Bank's Management Board powers to set the terms and conditions for opening and maintaining commercial bank accounts with the National Bank of Poland. Details relating to the servicing of the current accounts of banks are specified in a standard bank account agreement concluded with all of the country's banks.

Under the Banking Act, the President of the National Bank of Poland is authorised to regulate the numbering standard for bank accounts and, pursuant to the above Regulation, the Ministry of Finance is authorised to determine the format of paper-based payment documents used by the banks.

Under 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 KIR are set out in the KIR Regulation on clearing procedures performed by KIR. This Regulation determines the mutual obligations of KIR and the banks as well as the time schedules for the exchange of payment orders in the two systems, namely SYBIR (the paper based clearing system) and ELIXIR (the electronic clearing system) – operated by KIR.

The principles governing the co-operation between banks and their customers, in particular with regard to the settlement of payment instructions, are regulated in bank account agreements. By contrast with the regulations that existed under the centralised system, 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 the bankruptcy of banks, while the provisions of the Bankruptcy Law of 24 October 1934 govern matters that are not regulated by the Banking Law.

Under Article 15 of the Bankruptcy Law, the date of bankruptcy is the date of the court decision declaring the bankruptcy. However, in Polish legislation this decision is the final stage in bankruptcy proceedings and has no effect on the payment system. Such an effect results from an order of the Commission for Banking Supervision to suspend the bank's operations,

as, pursuant to Article 159.1.1 of the Banking Law, the bank shall not settle its liabilities while its operations are suspended. Once the decision on suspension has been issued at the beginning of the day, the bank concerned cannot send payments to the RTGS system. In the case of retail payments, the suspended bank is excluded from settlement, and payments are no longer settled on that day (the unwinding procedure, as described in Section 3.3.2., is performed by KIR). The unwinding procedure relates to those transactions which have not yet been settled by banks and thus not yet credited to beneficiaries. During a suspension, the suspended bank may only execute payments which have been approved by the Commission for Banking Supervision.

Special provisions relating to insolvency proceedings are contained in the Act on settlement finality in payment and securities settlement systems and on the rules of oversight of these systems of 24 August 2001, by way of which the SFD (Directive 98/26/EC) was transposed into Polish law.

Supervisory functions with regard to the public trade in securities and the activities of the stock exchange, commodity exchanges, commodity exchange clearing houses and entities operating brokerage companies in the securities market and the exchange of goods market is performed by the KPWiG, a centralised state body. The KPWiG is responsible, in particular, for ensuring compliance with the rules governing 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 licenses for brokerage activity.

Poland has binding regulations on consumer protection in relation to trade and services. However, these regulations 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 (BGF; the Fund) of 14 December 1994. Under the latter, since January 2002 funds in bank accounts up to the equivalent of €1,000 are 100% guaranteed by the Fund, while funds up to the equivalent of €18,000 are covered by a 90% guarantee.

1.2 The role of the National Bank of Poland

The National Bank of Poland's functions in the field of payment systems are specified in Article 3.2 of the National Bank of Poland Act. They comprise establishing the main rules for clearing and settlement and the conditions necessary for the development of the banking system.

1.2.1 Payment systems oversight

The oversight role of the National Bank of Poland for payment systems in Poland is stated in the Act on settlement finality in payment and securities settlement systems and on the rules of oversight of these systems. Pursuant to this Act, the National Bank of Poland is authorised to collect data from all payment systems operators. The permission of the National Bank of Poland is required to start the activity of a new system. Any important changes in the rules of the systems have to be approved by the National Bank of Poland.

1.2.2 Activities in the area of securities clearing and settlement systems

The National Bank of Poland plays an important role in securities clearing and settlement systems. First, the National Bank of Poland is the owner and operator of two SSSs – namely SKARBNET (for Treasury Bills) and SEBOP (for National Bank of Poland bills). The National Bank of Poland is also a settlement agent for the KDPW.

The settlement of funds relating to trading in Treasury securities, registered at the Central Register for Treasury Bills (CRBS), and in National Bank of Poland bills, registered at the RBP (National Bank of Poland Bills Register), is effected in central bank money held in banks' current accounts maintained by the National Bank of Poland's Payment Systems Department (DSP). From July 1999 the settlement of other securities, for which the KDPW is the depository and settlement agent for the cash leg, also takes place at the DSP.

The CRBS and the RBP have adopted procedures for the real-time gross settlement of Treasury and National Bank of Poland bills in accordance with the DVP principle model I for participants holding current accounts in the DSP (i.e. real-time settlement of individual instructions relating to securities and cash). This has facilitated the creation of a highly liquid market for such securities.

Under the Act on settlement finality in payment and securities settlement systems and on the rules of oversight of these systems, the KPWiG is responsible for granting licenses to new SSSs after obtaining the opinion of the National Bank of Poland.

1.2.3 The operational role of the National Bank of Poland

The National Bank of Poland's main function in relation to payment services is to service 66 current accounts of banks (62 of which are in the SORBNET system for the processing of large-value transactions between banks) and, in particular, to settle interbank payments.

The National Bank of Poland is the owner and the operator of SORBNET, which settles, on a gross basis, all credit transfers that the banks submit to the National Bank of Poland in electronic form. SORBNET is linked to the SKARBNET and the SEBOP systems, which in accordance with the DVP model I, allow settlement of individual transactions relating

to securities recorded in these systems (i.e. Treasury bills and National Bank of Poland bills).

The National Bank of Poland also offers the settlement service for the KIR system. Net claims and liabilities of banks resulting from the exchange of payment instruments via KIR are cleared by SORBNET in settlement sessions held during the hours agreed with the National Bank of Poland.

The National Bank of Poland is also a direct participant in KIR. It transfers to and receives from KIR payments of budgetary units whose accounts are operated by the National Bank of Poland branches.

In servicing the accounts of its customers, the National Bank of Poland executes payment instructions, provided that the accounts contain sufficient funds to cover the settlement (no overdraft facilities are provided).

1.2.4 Co-operation with other institutions

In the field of payment systems the National Bank of Poland co-operates with:

- the Polish Bankers Association (ZBP) – there are National Bank of Poland representatives on a number of working groups of the ZBP, which is consulted on all payment systems regulations;
- the Ministry of Finance – co-operation is focused on legal issues, especially the drafting of regulations governing the banking system.

Moreover, on 1 July 1998 the Management Board of the National Bank of Poland established the Payment System Council (Council) to act as its advisory body. The Council consists of the First Deputy President of the National Bank of Poland (Chairman), the presidents of four commercial banks and

representatives of the ZBP, the Ministry of Finance, KIR, the KDPW, PolCard (see Section 3.3.1), the Polish Post Office and Telbank.

The tasks of the Council include the analysis and evaluation of the Polish payment system and the formulation of proposals for bringing the system into line with EU requirements.

1.3 The role of other private and public sector bodies

Other entities which participate in payment services in Poland include:

- KIR, which is responsible for clearing retail payments; it was established in November 1991 as a company with equity capital by 17 commercial banks, the ZBP and the National Bank of Poland;
- the KDPW, a central depository institution for public trading in securities; under the Law on public trading in securities of 21 August 1997 it is authorised to provide depository and settlement functions for the public securities market. The KDPW operates as the central depository for securities issued in dematerialised form and as a clearing and settlement institution for the regulated market and off-market transactions;
- the Polish Bankers Association (ZBP), which plays an important role as a co-ordinator of standardisation and regulatory work. Moreover, numerous working groups act

under the auspices of the ZBP; these address, in particular, issues relating to payment cards, electronic banking and direct debits; and

- the Bank Card Issuers Board (RWKB), established in April 1994 by the ZBP. Most Polish banks issuing payment cards are members of the RWKB, which was established with the aim of supporting card-issuing banks in their relations with linking organisations such as Visa and Europay, co-operating with the state administrative bodies on legal regulations relating to payment card activities in Poland, and co-operating on card development and promotion as well as on the establishment of the uniform technical infrastructure necessary for card operations.

Simultaneously, two other organisations linking banks with other 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.

PolCard is a company, owned by the ZBP and a group of banks, which acts as an authorisation and clearing centre for card transactions throughout the country. PolCard co-operates with card issuing banks. 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 (the KSR) established to offset claims and liabilities arising from card transactions.

2 Payment media used by non-banks

Pursuant to Article 63 of the Banking Law, a payment can be effected either in cash or using non-cash instruments, in particular by means of credit transfers, settlement cheques, direct debits and payment cards. The Act also distinguishes between a cashier cheque and a settlement cheque; the former is classified as a cash payment and the latter as a non-cash payment.

2.1 Cash payments

The Polish zloty (PLN) has the following denominations:

- banknotes: PLN 10, PLN 20, PLN 50, PLN 100 and PLN 200;

- coins: PLN 0.01, PLN 0.02, PLN 0.05, PLN 0.10, PLN 0.20, PLN 0.50, PLN 1, PLN 2 and PLN 5.

At present banknotes account for approximately 97% of the total value of currency in circulation. No data are available on the number and value of cash payments. Having a bank account is not common: hence, a large number of pensions, disability allowances and even salaries are paid in cash. A large number of shops and services outlets, particularly those outside the big cities, do not accept non-cash forms of payment.

2.2 Non-cash payments

Non-cash payments encompass, in particular, credit transfers, settlement cheques, direct debits and payment cards.

The Banking Law does not specify value dates for the performance of customers' instructions. Under 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 to the bank for the execution of payment instructions.

The existing system for the settlement of customers' transactions via KIR 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 (for more details, see Section 3.3.3.3).

The Act on economic activity of 23 December 1988 imposes an obligation on economic entities to settle transactions in excess of €3,000 using interbank transfers. If the turnover between two entities exceeds €10,000 per month, the obligation to settle in non-cash form is applicable to every transaction of over €1,000.

2.2.1 Credit transfers

Credit transfers are the main instruments for non-cash payments made in Poland. They account for approximately 99% of all transfers processed by KIR in terms of volume.

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 developments in the payment card market, their importance has diminished further. In Poland, only a bank can be a drawee of a cheque.

A cashier's cheque is an instruction given by the issuer to the drawee to debit his/her account with the amount stated on the cheque, and to pay out this amount to the bearer of the cheque or the person named on it. Of this type of cheque, those relating 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 and payment cards in circulation, their importance has been rapidly diminishing.

A settlement cheque provides exclusively for transfers between a debtor's account and the account of the bearer of the cheque or the person named on it, with no possibility of a cash withdrawal. While the settlement cheque exists as a payment medium, its importance is negligible compared with credit transfers. A cheque can be presented to any bank, but it must be delivered to the drawee. The settlement procedures are described in Section 3.3.3.3.

2.2.3 Direct debits

Direct debits were introduced by the National Bank of Poland in October 1997 and the first transactions were effected in July 1998.

Under the Banking Law, direct debits are allowed provided that:

- both the creditor and the debtor hold a bank account with a bank which has entered into the agreement on direct debits;
- the debtor has authorised the creditor to debit its account on an agreed payment date 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 €1,000 in the case of individuals and €10,000 in the case of legal entities.

The settlement of direct debits is performed exclusively via the electronic ELIXIR system in KIR. As at the end of December 2001, 44 banks had signed the agreement on direct debits.

The use of direct debits is increasing, but this instrument still plays a marginal role in retail payments.

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 seen 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; in June 1998 the figure was 1.55 million; and by December 2001 it had reached 14,39 million. Despite this

dynamic increase in the use of payment cards, their share – both in terms of value and volume – in total non-cash payments in Poland remains relatively small.

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 sometimes carry the PolCard logo and/or the logo of the issuing bank.

a) Debit cards

Debit cards and deferred debit or charge cards¹ account for the majority of payment cards issued by banks operating in Poland. At the end of December 2001, Polish banks had issued 12.74 million debit cards and 1.05 million charge cards.

Initially many banks issued cards which only allowed cash withdrawals at their own ATMs; however, these were later equipped with payment functions. As some banks issue debit cards with no embossing (Visa Electron, Maestro, PolCard BIS), their use is limited to ATM and POS terminals only.

b) Credit cards and travel and entertainment cards

Credit and travel and entertainment cards are issued by a small group of Polish banks. These cards carry the logo of the Visa International, Eurocard/MasterCard or American Express systems. 0.6 million credit cards had been issued as at the end of December 2001.

c) Retailer cards

Retailer cards (loyalty cards) are issued mainly by large stores (Geant, Carrefour). These kinds of card are not treated as payment cards, because the issuer is the only merchant

¹ Charge cards are similar to credit cards but with one distinction – the customer must pay the full amount of debt at the end of the month.

involved (cards cannot be used outside of the issuer's network).

d) Prepaid cards

In Poland there are no prepaid cards ("electronic purses") in circulation. However, a number of pilot programs to develop chip card technology have been implemented at the local area level, for instance at a university, in a small town, in ski lifts, parking meters and public transport networks. Most of these schemes involve single purpose cards and the National Bank of Poland does not treat these as e-money.

Thus far there are no plans to introduce a multi-purpose prepaid card scheme in Poland. Nor have computer network schemes been initiated.

Telephone cards are issued by Telekomunikacja Polska SA. These cards cannot be reloaded.

e) ATMs and POS networks

When ATMs were first introduced, banks established their own ATM networks and issued cards for cash withdrawals only at their ATMs. This policy resulted in the establishment of 15 separate ATM networks, and customers could only use their own bank's network. Subsequently a number of banks 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. A number of other banks joined the agreement later. The extension of the agreement to nearly all banks operating in Poland has resulted in the mutual recognition of cards in all ATMs installed throughout the country.

In addition, a company named 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 of December 2001 the network had 708 ATMs; the total number of ATMs in Poland was 6,476.

2.2.5 Postal instruments

The Polish Post Office is authorised to perform a number of banking activities, including postal transfers, payments via the Post Office to bank accounts and payments of pension and disability allowances.

The basic postal network includes some 7,600 post offices. Only the larger post offices have accounts with banks and they then supervise payment instrument use for a number of smaller offices.

Postal transfers are used for transferring money between individuals who do not have bank accounts. In this case one post office accepts a cash payment (for a fee) and another one pays the amount to the receiver. The operation is performed outside the banking system. The post office sends a transfer order for the total sum of all instructions received to the branch of the bank where it has its current account. This bank then settles via KIR, like any other bank customer.

For pensions and disability allowance payments, those regional branches of the National Bank of Poland which hold current accounts of the Social Insurance Institution (ZUS) transfer adequate funds via KIR to accounts at regional post offices (there are several throughout the country). The ZUS directly provides the post office with individual documents for beneficiaries, meaning that once the information has been received from the ZUS it can immediately start making the relevant payments.

2.3 Recent developments

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. Moreover, a few Polish banks have started to add microprocessors to their cards, 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 by using special software provided by the bank. This service is currently provided by the majority of banks operating in Poland.

3 Interbank exchange and settlement systems

3.1 General overview

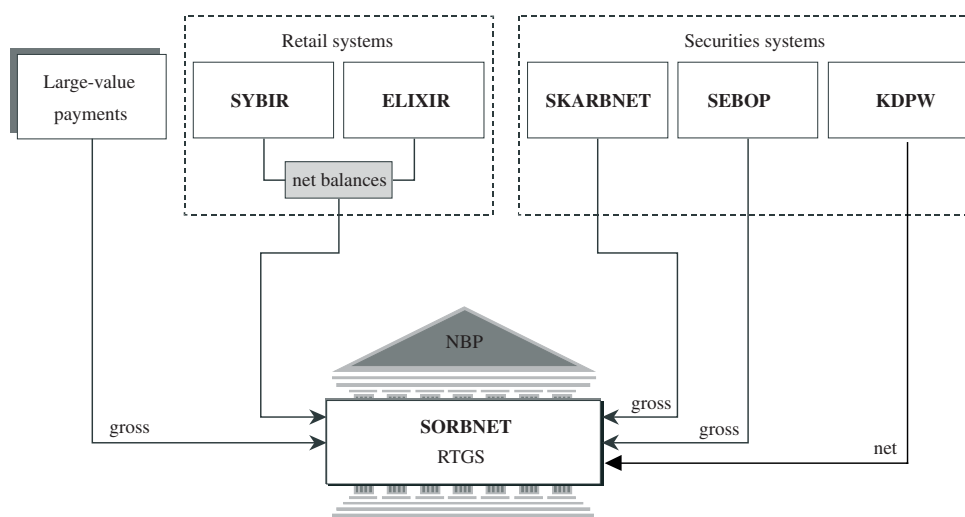
The rules on interbank settlements are specified in Regulation No. 6/2000 of the President of the National Bank of Poland of 6 April 2000, as amended in November 2001, on the manner of performing interbank settlements. Polish banks exchange payment instructions relating to large-value payments (i.e. mainly money market, foreign exchange market and securities market transactions)

directly through the National Bank of Poland and payment instructions related to retail payments via KIR. The latter, acting as a clearing house, records mutual claims arising from such instructions and submits instructions concerning banks' net positions to the National Bank of Poland.

Since all banks operating in Poland are members of KIR, either directly or indirectly, most of the interbank transactions (in terms

Chart I

Interbank exchange and settlement systems in Poland



of volume) are settled through this clearing house. KIR operates two retail net settlement systems: SYBIR – a paper-based system, and ELIXIR – an electronic system. Detailed descriptions of these systems are provided in Sections 3.3.3 and 3.3.4 respectively.

Interbank settlement takes place through the banks' settlement accounts held with the National Bank of Poland. The National Bank of Poland operates the SORBNET system. This real-time gross settlement system processes large-value interbank payments. It is also used for the settlement of net positions received from three clearing agents, i.e. two systems operated by KIR and one system operated by the KDPW. The KDPW submits payment orders relating to transactions in securities conducted on the Warsaw Stock Exchange (GPW) and the Central Quotation Table (CeTO). Final settlement arising from the above systems is performed at the National Bank of Poland in the SORBNET system.

3.2 The real-time gross settlement system: SORBNET

SORBNET was launched in March 1996, replacing SORB, which had been in operation since April 1993. Although SORB fulfilled the basic requirements of an RTGS system, it was not a fully efficient system, since banks could submit their payment instructions only on paper or floppy disk. Since December 1998 all banks have been able to transfer their instructions electronically.

3.2.1 Operating rules

The operating rules for the SORBNET system are specified in the resolutions of the National Bank of Poland's Management Board and in the bank account agreement concluded between the National Bank of Poland and the individual banks which have their settlement accounts with the National Bank of Poland's head office in the SORBNET system. The resolutions

cover access criteria, types of payment to be processed, general prerequisites concerning the technical infrastructure and pricing, while the provisions of the agreement, which are identical for all banks, regulate the operating times and other operational details.

3.2.2 Participation in the system

As of 31 December 2001, there were 62 banks participating in the SORBNET system. The requirements for banks wishing to become participants in SORBNET are specified in Resolution No 14/2000 of the National Bank of Poland's Management Board on terms for opening and maintaining banks' accounts with the National Bank of Poland of 31 March 2000, as amended in December 2000 and December 2001. Banks wishing to open a settlement account with the National Bank of Poland must meet the following requirements:

- The bank has to have been conducting operational activity for at least six months.
- The financial standing of the bank must be deemed satisfactory by the National Bank of Poland.
- The bank must meet the prescribed technical requirements for the electronic exchange of payment order messages and other information between the bank and the National Bank of Poland, and it must receive a positive rating from the National Bank of Poland in tests conducted in this regard.

In addition, in the SORBNET system there are banking accounts handled for two clearing agents, i.e. KIR and the KDPW.

3.2.3 Types of transaction handled

SORBNET settles banks' payment instructions relating to the interbank money market,

foreign exchange and securities market transactions and transactions between banks and the National Bank of Poland. SORBNET can be used for processing payment instructions sent by banks on their own behalf or on behalf of their customers (for large value and/or urgent payments). A large-value customer payment is one which exceeds an amount of PLN 1,000,000 (€272,480). The system is also used for settling banks' obligations arising from clearing systems: net positions arising from KIR in relation to retail payments and net positions arising from the KDPW in relation to the capital market.

3.2.4 Operation of the system

In general, participants may access the system between 7.30 a.m. and 6 p.m., while customer payment orders may be sent until 4 p.m. However, between banks participating in the Interbank Agreement on the Rules of Co-operation between Correspondent Banks, customer payment orders may be sent until 5 p.m. After 6 p.m. payment messages are no longer accepted.

Messages transferred between banks and the National Bank of Poland are encrypted 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 are transferred to the SORBNET system via electronic post. In the event of any disruption to the system, instructions relating to banks' payments can be transferred on floppy disk or on paper (including via fax). Instructions filed on paper

must be registered with the National Bank of Poland. Customer payment instructions can be transferred on floppy disk only.

Electronic transmission is effected using client-server technology via the electronic post system X.-400 within the network of the Bank Telecommunications Company TELBANK SA. The system works under UNIX, and messages are created in accordance with the EDIFACT standard.

3.2.6 Settlement procedures

SORBNET provides for real-time gross settlement via banks' settlement accounts with the National Bank of Poland. The system processes payment instructions presented by banks, the National Bank of Poland, the KDPW and KIR. Banks may only make credit transfers by sending orders to debit their own accounts, and the National Bank of Poland, the KDPW and KIR are all authorised by the banks to send credit transfers by debiting the banks' accounts. Payment instructions submitted by KIR have the highest priority; next in the order of priority are the instructions submitted by the National Bank of Poland, thereafter the instructions of the KDPW. The instructions presented by banks have the lowest priority.

Payment instructions are processed according to the instruction numbers assigned by senders. Instructions are processed provided that a bank has a sufficient balance on its account.

The National Bank of Poland's own instructions relating to the sale of legal tender, interest and fee payments and instructions of the KDPW issued on behalf of banks and on its own behalf, are processed in the same way as any other transaction. The net balances arising from the different clearing schemes in KIR are settled in SORBNET in three settlement sessions during the day (see Section 3.3. for details). The net balances

arising from the KDPW are settled in SORBNET in five settlement sessions during the day (see Section 4.3.2.1 for details).

Depending on the balance available in a bank's account, instructions are immediately effected or placed in a central queue until sufficient funds are available to execute queued payments. 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. Banks may ask the National Bank of Poland for details of balances on their accounts and of their payment orders awaiting execution in the queue. They are able to obtain information on the outgoing payment orders only and have the option of cancelling queued payments before they are settled. Payments from the queue are settled automatically when liquidity is available, in accordance with the instruction numbers and the FIFO principle. The queue optimisation mechanism is implemented in the SORBNET system. Payment orders waiting in the queue at the end of the day are rejected automatically and the senders are informed accordingly.

At the end of the day the system automatically prepares and sends settlement account statements to the banks.

3.2.7 Credit and liquidity risk

Being an RTGS system, SORBNET provides for credit risk minimisation.

Banks have access to liquidity through the intraday use of their minimum reserve requirements. Moreover, the National Bank of Poland grants free intraday credit against collateral. Banks must conclude intraday credit agreements in advance. Currently, only Treasury bills are eligible as collateral. It is foreseen that Treasury bonds will be accepted as collateral in 2003.

The following are the main rules governing the granting of intraday credit:

- On all operating days banks may obtain intraday credit if they transfer Treasury bills to the National Bank of Poland's securities account (on an intraday repo basis). At 5.30 p.m. the SORBNET system generates credit repayment orders.
- In the event that the bank cannot refund the credit, this automatically turns into an overnight credit with interest being charged at the Lombard rate.
- If the bank fails to provide the funds necessary for repayment of the credit together with the interest due by the specified time (10.30 a.m.) on the next operating day, the National Bank of Poland will sell the securities in order to cover the bank's debt.
- If the bank fails to repay intraday credit by 6 p.m. twice in any given month, then it will lose the right to obtain intraday credit from the National Bank of Poland for the next 30 days.

Banks may also obtain secured loans at the Lombard rate from the National Bank of Poland. The secured Lombard facility can be drawn upon throughout the day. In order to minimise the time required 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. Treasury bills and bonds are used as collateral for Lombard loans.

3.2.8 Pricing

The National Bank of Poland has been charging fees for the maintenance and servicing of banks' settlement accounts within the SORBNET system. Banks pay a flat entry fee of PLN 25,000 (€7,152.46). A quarterly fee of PLN 3,000 (€858.30) is paid for the

maintenance of accounts. Additionally, a bank is charged PLN 4 (€1.14) for the processing of every individual instruction. In the case of customer instructions, lower fees (PLN 6, i.e. €1.72) are charged for large-value instructions and higher fees (PLN 20, i.e. €5.72) for urgent instructions.

Currently these fees do not fully cover the costs. However, the National Bank of Poland intends to implement the full cost recovery rule on a gradual basis.

3.2.9 Statistical data

The average volume of payments processed in the SORBNET system per month was 43,343 and 44,976 in 2000 and 2001 respectively.

In 2000, the average of daily transactions amounted to 2,063 in terms of volume and PLN 38.91 billion (€9.71 billion) in terms of value.

In 2001, the average number of transactions per day reached 2,142, and the average of daily transactions in terms of value increased to PLN 53.56 billion (€14.59 billion).

3.3 Retail payment systems

3.3.1 Card-based schemes

In the case of payment cards, the settlement mechanism is similar for debit, charge and credit cards. Data on the transaction are submitted by the service provider to the acquirer with which it has signed an agreement, either electronically via the POS terminal or in paper form. In Poland there are currently five acquirers: three banks and two joint stock companies, PolCard and eService. Depending on what the bank decides (as the card issuer), the transaction is then directed to one of the payment systems used for the processing of card transactions. There are currently three such systems offered to Polish

banks: KSR, operated by PolCard; PNNSS operated by Visa; and EDCSS operated by Europay/MasterCard. All of these are net systems; the final multilateral balances of all the participating banks are settled by the settlement agent via KIR. The settlement agent for all these systems is one of the Polish commercial banks.

3.3.2 Retail credit, debit and cheques transfer systems

3.3.2.1 Organisational set-up

KIR is the only clearing house in Poland. It is a joint stock company established under the Commercial Code of 27 June 1934. Its shareholders are the National Bank of Poland, the Polish Bankers Association and 13 commercial banks. (Over the past few years some of the initial shareholders have merged). The Supervisory Board comprises shareholders' representatives, each holding one vote. KIR's activities are supervised by its Management Board.

KIR'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. On the basis of this structure, KIR links all bank branches operating throughout the country. This is especially important for the paper-based SYBIR system. KIR operates two different systems – SYBIR and ELIXIR (the latter being an electronic system) – the functioning rules of which are specified in KIR's regulations.

3.3.2.2 Participation in the system

Each bank wishing to participate in the exchange of payment instructions carried out via KIR must be licensed to perform banking activities in Poland, have the approval of KIR's Supervisory Board, sign a bank account agreement with the National Bank of Poland and meet the technical requirements specified by KIR SA. In order to

receive the approval of the Supervisory Board a bank must also meet certain financial criteria. The above requirements and criteria, which are uniform for all banks, are set out in the KIR Regulation.

3.3.3 The SYBIR system

3.3.3.1 Types of transaction handled

The paper-based SYBIR system provides for the exchange of credit-related documents (credit transfers and payment slips) and debit-related documents (cheques).

3.3.3.2 Transaction processing environment

Banks deliver paper documents together with a floppy disk containing the payment information on the paper documents to the relevant BRIR. Documents are sorted into settlement packages for each receiving bank branch.

3.3.3.3 Settlement procedures

Credit documents

The settlement mechanism for credit documents (credit transfers, payment slips) in SYBIR enables the transfer of funds between the accounts of customers of different banks within two working days.

Payment instructions delivered in paper form by customers are grouped into settlement packages and delivered together with a floppy disk to the relevant BRIR according to the 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, which is sent to KIR's 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 during the settlement session of the following day. 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. This estimate is also submitted to the National Bank of Poland after 8 p.m.

KIR'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 the results to KIR's 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 netting cycle under ELIXIR and are then presented to the National Bank of Poland for settlement during the morning settlement session held between 10.30 a.m. and 11 a.m.

After 11 a.m., once KIR's head office has been notified of the successful completion of the settlement, it in turn notifies all BRIRs. On the basis of this confirmation, the BRIRs can commence issuing documents to bank branches. Funds relating 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 National Bank of Poland's head office notifies KIR thereof and returns its payment instruction. A bank which fails to meet its payment obligations is excluded from the settlement process via KIR, and its instructions are unwound. KIR recalculates the claims and liabilities of the remaining participants and transmits these to the National Bank of Poland's head office. The National Bank of Poland 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 (along with credits in favour of customers of defaulting banks) to a relevant BRIR during the night, they will be returned unprocessed to the initiating branches on the following day.

Debit documents

The system provides for cheque settlement within three working days. After having been presented to a bank, cheques are transported with the credit documents and delivered via a BRIR to the branch of the issuer's bank on the second day; however, by contrast with the credit documents, which are paid during the morning settlement session, cheques are not paid.

Preliminary net positions are prepared by BRIRs on the evening on the first day. If insufficient funds are available in the issuer's account, the issuer's branch can refuse to make a payment. In such cases the branch must notify its BRIR before 4 p.m. 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 held on the second day in the cycle between 5 p.m. and 5.30 p.m. On the third day, if the issuer's bank has not rejected 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.

3.3.3.4 Pricing

Banks are charged according to the tariffs set by KIR. A fee is charged for each settlement package, regardless of how many documents are in the package. The fees charged are the same irrespective of the distance between the BRIRs involved in the exchange.

The fee is charged only to the sending bank.

3.3.3.5 Statistical data

The SYBIR system processed 246.58 million transactions in 2000 and 246.06 million in 2001. The value of these transactions was PLN 479.78 billion (€119.7 billion) and PLN 304.55 billion (€82.95 billion) respectively.

The daily average number of transactions was 976,507 in 2001 and the average value per transaction was PLN 1,237 (€336.9).

3.3.4 The ELIXIR system

3.3.4.1 Types of transaction handled

In the past ELIXIR, the electronic system, dealt exclusively with credit transfers, but since July 1998 it has handled direct debits, and since January 2001 has also processed cheques drawn on saving accounts up to an amount of PLN 1,000 (€286), which are covered by the special interbank agreement.

3.3.4.2 Transaction processing environment

The exchange of information is made by means of floppy disk, X-25 transmission or X.400 electronic post serviced by BPT TELBANK SA. Security is guaranteed through quality software and cryptography equipment using the RSA algorithm for electronic signature. The algorithm uses asymmetric keys. Each participant has a private key for use with the decryption algorithm and a public key for use with the encryption algorithm. The public key of the sending participant is available to

anyone wishing to communicate with the former.

3.3.4.3 Settlement procedures

Credit transfers

Payment instructions – in the form of electronic messages transmitted by the Telbank network or 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 National Bank of Poland's 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 individual transactions to ELIXIR and not packages as in SYBIR;
- due to the electronic transmission of data, time-consuming transportation of documents is avoided, which speeds up the settlement cycle;
- there are three clearing cycles in ELIXIR and only one in SYBIR;
- final settlement is effected in three settlement sessions (10.30 a.m., 2.30 p.m., 5 p.m.) as opposed to two for SYBIR (one for credit transfers, the second for debit documents);
- banks have online access to their position in the system, which reduces the risk of uncovered positions at the moment of interbank settlement.

Debit transfers

Debit transfers, settled by ELIXIR, are direct debits from and cheques drawn on savings accounts up to an amount of PLN 1,000 (€286). They are processed according to the

schedule agreed in advance by banks in the interbank agreement.

Direct debits are sent by the beneficiary's bank to KIR via a special message to the first daily session. The instruction is sent by KIR to the debtor's branch, which, up to 4 p.m., can refuse to pay for any reason 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 National Bank of Poland.

Cheques from saving accounts are truncated at the branch of the bank in which they are presented. On the basis of the special interbank agreement, the issuing bank receives the electronic message in the ELIXIR system.

3.3.4.4 Pricing

Banks are charged according to the tariffs determined by KIR. In ELIXIR, the message is the basis for charging any fee. However, the amount of the fee depends on the message type, transmission media and the time of delivery of files to KIR. KIR promotes electronic and early transmission by charging lower fees.

As with SYBIR, the fee is charged only to the sending bank.

3.3.4.5 Statistical data

ELIXIR processed 189.37 million and 271.29 million transactions in 2000 and 2001 respectively. These represented a value of PLN 3,359.32 billion (€838.12 billion) in 2000 and PLN 4,256.45 billion (€1,159.12 billion) in 2001.

In 2001 the average daily volume was 1,076,547 transactions and the average value per transaction was 15,690 PLN (€4,273).

In 2001 the share of the ELIXIR system in the total turnover of KIR was 52.5% in terms of volume and 93% in terms of value.

3.4 Future developments

At present the most important and ambitious plan is to abolish the paper-based SYBIR system by 2004. A wide and complex range of preconditions must be met before this goal can be attained (e.g. standardisation of banking documents, substantial development of the direct debit system, elaboration of the legal aspects of cheque truncation).

The project on the basis of which the main goal is to be achieved is called IMBIR, which stands for “paper document scanning system”. The process lines are currently installed in all 17 BRIRs. Once implemented, the project will assist banks in the automatic processing of paper documents, which will significantly reduce banks’ workload and operating costs.

4 Securities settlement systems

In Poland there are three different systems for the settlement of transactions and the safekeeping of securities. The first system is designed for securities quoted on the GPW and on the CeTO – the company that organises the OTC market. The KDPW acts as a clearing house and depository for both markets. The second system relates to Treasury bills issued by the Minister of Finance, where the National Bank of Poland acts as an issuing, depository and settlement agent. The third relates to bills issued by the National Bank of Poland, for which the National Bank of Poland performs the depository and settlement functions. All types of security are dematerialised.

with the acquisition or sale of securities, while the Law on Commodity Exchanges of 26 October 2000 applies to transactions conducted on the commodity exchanges. Additionally, the regulatory framework also includes the Act on investment funds of 31 December 1999, amendments to the Act on investment funds of 16 November 2000, the implementing decrees and the Act on bonds dated 29 June 1995.

4.1 Trading

4.1.2 Institutional framework

4.1.1 Legal basis

The Law on public trading in securities assigns the overall supervision of the GPW, the CeTO and the KDPW to the KPWiG. The interbank market for trading in Treasury Bills is supervised by the National Bank of Poland.

Trade in the majority of securities, except for Treasury bills and National Bank of Poland bills, takes place on the GPW. Trade on the OTC market takes place on the CeTO.

a) *The Securities and Exchange Commission*

The Law on public trading in securities of 21 August 1997 constitutes the legal basis for the functioning of the major capital market institutions. Stock exchange transactions are also subject to this Law. Transactions in securities are also subject to the Foreign Exchange Law of 18 December 1998 on funds transfers from and to Poland in connection

The KPWiG exercises supervision and control over the securities market. It also prepares draft acts on the securities markets for legislative approval. As a central government administrative body, the KPWiG has clear powers to license securities admitted to public trading, along with brokers, investment advisors, OTC markets, mutual funds, commodity exchanges, exchange clearing houses, commodity brokers, and brokerage houses in commodities markets. The Minister of Finance oversees the activities of the KPWiG. The KPWiG is responsible, in particular, for ensuring compliance

with the rules of fair trading and competition which ensure the smooth functioning of the securities market.

b) The Warsaw Stock Exchange

The GPW was founded by Government decree and commenced operation as a joint stock company in April 1991, with the State Treasury as a major shareholder. The remaining GPW shareholders are banks and brokerage houses. It is a self-regulatory organisation supervised by the KPWiG.

The GPW organises the primary and secondary trade in securities in the exchange market. It organises trading in securities and futures. The Statute of the GPW, the Rules of the GPW and the Detailed Rules relating to trading on the exchange constitute the legal basis for the exchange activity of the GPW.

The Exchange's Supervisory Board is responsible for granting membership status of the GPW to new members.

c) The Central Quotation Table

The CeTO organises primary and secondary trading in securities in the OTC market. The CeTO was established as a joint stock company by 48 banks and brokerage houses in 1996. In 2000, the GPW became the main stakeholder of CeTO (53.28%). The CeTO organises trading in bonds, other debt securities, the equities of small and medium-sized corporations which do not participate in trading on the GPW, and futures.

The CeTO operates in accordance with the Law on public trading in securities of 21 August 1997. The CeTO adopts rules and regulations with regard to its activities and supervises the operations conducted by its members.

The Statute of the CeTO, Resolution No. 29/01 of the Supervisory Board of the CeTO of 30 October 2001 on trading rules,

the Detailed Rules relating to trading, as well as a number of other regulations and procedures established by the Supervisory Board constitute the legal basis for the activity at the OTC market.

The admission of securities for OTC trading requires the consent of the CeTO's Supervisory Board. The KPWiG is informed thereof.

d) The National Depository for Securities

The KDPW acts as a clearing house and depository for securities quoted on the GPW and the CeTO. The KDPW supervises cash settlements which take place through bank accounts held with the National Bank of Poland. The KDPW is owned by the GPW, the State Treasury and the National Bank of Poland in equal shares. Its main activities encompass the safekeeping, registration, clearing and settlement of publicly and non-publicly traded securities and the management of the settlement guarantee fund. In addition it ensures that the volume of issues registered by the KDPW corresponds to the number of securities in circulation, as well as providing services to issuers.

e) The National Bank of Poland

The National Bank of Poland acts as a cash settlement agent for transactions settled via the KDPW, as an issuing agent for Treasury bills and as issuer of National Bank of Poland bills, and as a depository and settlement institution for these securities. Transactions in Treasury bills, in both the primary and secondary markets, are registered at the CRBS operated by the National Bank of Poland. The National Bank of Poland also maintains the RBP. Moreover, the National Bank of Poland organises auctions for Treasury bonds.

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 the Resolution of the Minister of

Finance on the issuance of Treasury bills of 26 August 1999, as well as and in appropriate resolutions of the Minister of Finance on the issuance of Treasury bonds.

f) The Minister of Finance

The Minister of Finance is the issuer of Treasury securities.

g) Other institutions

The Law on public trading in securities regulates the operations of companies dealing on the stock exchange, of companies and banks engaged in brokerage activities (i.e. entities acting as intermediaries in the primary and secondary markets) and of public companies participating in securities issuance.

Commodity exchanges are regulated by the Law on commodity exchanges.

4.1.3 Operational aspects

4.1.3.1 The GPW

The GPW is a fully order-driven electronic market. Transactions conducted on the GPW are performed through the WARSET system.

WARSET is a new, fully electronic trading system. It was launched in November 2000 to handle the opening and closing price-setting auctions together with the intervening continuous trading period. The WARSET system is compatible with systems used by other foreign stock exchanges, i.e. Paris, Brussels, Lisbon, etc. It enables and ensures the online disclosure of prices and quantities of market transactions.

Equities traded in the main market and derivatives are listed through a continuous trading system. Other equities are quoted through single-price auction mechanisms once or twice a day in accordance with their level of liquidity.

Large blocks of securities may be traded off-session at a price different from the official quotation.

Customers' instructions are filed with a broker who then transmits them to the GPW. Information passed between brokers and the GPW is transmitted directly via a telecommunications network to the WARSET system. The GPW prepares the agreements on the transactions executed and sends these to its members. The broker sends a transaction confirmation to the customer. The WARSET system conveys information in real time.

All transactions concluded on the GPW are transferred in electronic form to the KDPW.

4.1.3.2 CeTO Electronic trading system

The CeTO market is an OTC and price-driven market and, consequently, most transactions are concluded in a bilateral manner. In any case, there is an obligation to disclose information relating to prices and quantities. The CeTO uses an electronic trading system called ExTra. The ExTra system operates in real time. Participants have direct access to the system. Information passed between the CeTO and participants is transmitted directly via a telecommunications network.

4.1.4 Future developments

The disproportion in the volume of trading between the GPW and the CeTO may give rise to the need for a new formula for the OTC market. In particular, in order to improve the settlement and trading system on the secondary market for Treasury bonds, the CeTO signed a co-operation agreement with the Polish Financial Exchange (PGF), a company acting under commercial law which was not supervised directly by the KPWiG and which offered treasury bills, Treasury bonds and National Bank of Poland trades on the secondary interbank market. This was the first step towards merging the functions of both

companies. In January 2002 the CeTO took over the PGF. The next steps, aiming at the full integration of the CeTO with the PGF, are under way.

It is also planned to implement what is known as a primary dealers' system for the trading of Treasury securities. The electronic trading system – known as the Automated Trading System – which is currently used by the PGF will be used to service the primary dealers system, while the WARSET system will be used to service trading transactions in non-Treasury securities. The clearing and settlement of transactions conducted on the OTC market in securities, except for Treasury bills, will be performed through the KDPW system (see Section 4.3.2.1). Transactions in Treasury bills will be settled through the SKARBNET system (see Section 4.3.2.2).

4.2 Clearing

There is currently no separate entity acting as a clearing house. Clearing services are performed in the SSSs described in Sections 4.3.2.1, 4.3.2.2 and 4.3.2.3 respectively.

4.3 Settlement

4.3.1 Legal basis

In general, securities clearing and settlement is regulated by the Law on public trading in securities of 21 August 1997, the Act on commodity exchanges of 26 October 2000 and the Act on the National Bank of Poland of 29 August 1997.

4.3.2 Providers of securities settlement services

4.3.2.1 The KDPW

The KDPW handles the clearing and settlement of all transactions executed on the

GPW, the CeTO and the interbank market, with the exception of Treasury bills and National Bank of Poland bills. An entity named the Clearing House for Derivatives has been established for derivatives market transactions within the KDPW.

The main legal regulations governing clearing and settlement in the KDPW are the Statute of the KDPW, the Rules and Detailed Rules of the KDPW, the procedures for registration, and the Rules governing guarantee funds – also covering the derivatives markets – and investor compensation funds.

The regulations mentioned above specify, in particular, the rights and obligations of the participants in the KDPW, the functioning of the settlement system and the system for supporting liquidity for settlement purposes.

The following types of entity may participate in the KDPW: issuers of securities, financial institutions – including brokerage companies, banks, the National Bank of Poland – and other financial institutions whose scope of activities encompasses, pursuant to relevant regulations, the maintenance of deposit or securities accounts (e.g. trust funds).

With the consent of and on terms specified by the KPWiG, non-resident entities acting as CSDs or settlement agents for securities transactions may also participate. (There are currently no such participants.)

4.3.2.2 The National Bank of Poland

In the settlement phase, the National Bank of Poland performs the function of cash settlement agent for transactions involving securities registered in the KDPW (see Section 4.3.2.1). Thus, settlement is effected in central bank money.

The National Bank of Poland is issuing agent for Treasury bills and the issuer of National Bank of Poland bills, as well as being a depository and settlement institution for these

securities, which are handled in the CRBS and the RBP respectively.

1) CRBS – SKARBNET

The CRBS is the CSD for Treasury bills.

Depository accounts with the CRBS can be held by the National Bank of Poland, auction participants – i.e. entities which meet the requirements specified in the Resolution of the Minister of Finance of 26 August 1999 on the issuance of Treasury bills – domestic banks, branches of foreign banks operating in Poland and the KDPW.

Apart from depository accounts, the CRBS maintains an issue account for the Treasury bills issuer, representing the actual amount of the Treasury bills issued.

The CRBS is serviced by the SKARBNET system (see Section 4.3.2.2), owned by the National Bank of Poland.

2) RBP - SEBOP

The RBP provides for the issuance and settlement of National Bank of Poland bills.

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 National Bank of Poland; separate sub-accounts should be held for banks' own portfolios and the portfolios of customers; and
- the BFG.

Transactions in National Bank of Poland bills are performed through the SEBOP system (see Section 4.3.4.3) owned by the National Bank of Poland.

4.3.3 Oversight

By virtue of the Law on public trading in securities, the KPWiG exercises supervision of and control over the securities market and, in particular, oversees the functioning of the KDPW system. The National Bank of Poland, acting as an owner of the SKARBNET and SEBOP systems, oversees their functioning.

According to the Act of 24 August 2001 on settlement finality in payment and securities settlement systems and on the rules on oversight of these systems, KPWiG shall oversee the functioning of all SSSs other than those mentioned above.

4.3.4 Operational aspects

4.3.4.1 KDPW system

Types of transaction handled

The KDPW registers different types of operation, which can be divided into two major groups:

- operations resulting in a payment (e.g. stock exchange transactions made in the regulated market; transactions made outside the regulated market; OTC transactions; public trade in new shares; and movements of securities resulting from the settlement of Treasury debt instrument auctions);
- operations other than the above, e.g. transfers of customers' portfolios; the conversion of registered shares into bearer shares; and operations relating to the realisation of issuers' liabilities towards shareholders.

The KDPW also settles transactions made in the derivatives market.

Transaction processing environment

Information passed on between the GPW and the KDPW is transmitted directly via a telecommunications network. To communicate with the KDPW, the participants can use the electronic system for the distribution of information (ESDI), which is based on the X.-400 electronic post system. Messages transmitted through the ESDI are coded and an electronic signature is used.

Settlement procedures

The GPW and the CeTO service trading and concluding transactions respectively on the stock exchange and OTC markets (see Section 4.1.3.2.).

The settlement cycle for transactions made on the GPW and the OTC market is three days for stocks. For transactions in bonds and CeTO “package” transactions (transactions with a strictly defined volume of securities) the cycle is two days. 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 for each transaction.

Each counterparty which intends to deal in the capital market must hold a settlement account and securities account with a brokerage firm or a bank. Each GPW or CeTO participant dealing in a given market must have a deposit account with the KDPW and a bank account with the National Bank of Poland or with its settlement bank which, in turn, must have a bank account with the National Bank of Poland. The KDPW, acting as a clearing house, holds a technical account with the National Bank of Poland.

The settlement of payments arising from transactions and operations handled by the KDPW is effected through the SORBNET system in compliance with DVP model 2 (net settlement in the cash leg and gross

settlement in the securities leg), except for the settlement of Treasury bonds purchased in the primary market, which is effected in compliance with DVP model 1 (gross settlement in the cash leg and gross settlement in the securities leg).

Following confirmation that settlement can be effected, funds on the accounts with the National Bank of Poland and securities in the accounts of its participants are moved in parallel by the KDPW.

On the basis of the agreements between the KDPW, the National Bank of Poland and banks, the KDPW has the right to transfer payment orders relating to transactions in securities to the SORBNET system on behalf of banks, via a special application called the “KDPW module”.

As soon as payment orders have been settled in the SORBNET system, securities are transferred/registered in the accounts of the KDPW’s participants.

Since December 2001, settlement in the SORBNET system has taken place five times a day. This extends the possibilities for same-day settlement, in particular for transactions relating to Treasury bonds. The KDPW system has an additional three settlement sessions for securities settlement on an FOP basis.

Interbank market operations on Treasury bonds are not settled on a DVP basis, and the lack of a real-time system for the recording of securities is considered to be the main weakness of the current infrastructure.

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 for Derivatives, where the investors’ positions are registered and settlements in cash and derivatives are effected. The KDPW is the

counterparty for each forward transaction. The other counterparty is a participant which settles transactions made in its own name or on behalf of a customer.

Risk management

In order to protect the settlement of transactions made between participants in both the GPW and the CeTO, special guarantee funds have been created.

In the event that funds are insufficient to cover the participants' liabilities, the participants are obliged to pay in additional contributions.

In derivatives markets the settlement guarantee system comprises the following protection measures: an initial settlement deposit, a guaranteed deposit for the protection of daily settlements, a settlement fund calculated as a ratio of the value of transactions settled, and the KDPW's own capital.

The KDPW is responsible for the management of the investor compensation fund. In line with EU regulations, the Law on public trading in securities, as last amended on 8 December 2000, implements this function. The KDPW has established a mandatory investor compensation scheme, which by 2008 will reach the level of compensation envisaged in Directive 97/9/EC on investor compensation. This will ensure that, in the event of bankruptcy on the part of a brokerage house, its clients will have the right to receive compensation for the assets collected on their accounts held with the brokerage house.

Pricing policy

Pursuant to its Regulation, the KDPW charges fees and commissions for activities performed on behalf of participants. The charges are specified in the list of tariffs appended to the KDPW Regulations.

Future developments

The main project for the KDPW is to establish an RTGS system for securities recording, and to link this system to the central bank's RTGS system, which will be consistent with the principle of DVP model I. It is planned to introduce the new KDPW system at the beginning of 2003.

Currently, work focuses on reorganising settlement procedures in order to ensure the possibility of implementing intraday credit for banks, with Treasury bonds serving as collateral. Intraday credit should be automatically accessible at the start of the processing day and automatically reimbursed at the end of the day.

Moreover, the KDPW is considering establishing links with other CSDs, in particular those of EU Member States.

4.3.4.2 SKARBNET

Types of transaction handled

The system provides for services relating to Treasury bills: primary market, secondary market and open market operations.

Transaction processing environment

Information is exchanged between the CRBS participants and the National Bank of Poland on paper and delivered either personally or transmitted by fax. Information from instructions is entered in and automatically processed by SKARBNET. SKARBNET generates payment instructions for electronic transmission to SORBNET. The processing of transactions in Treasury bills in SKARBNET and the settlement of funds in SORBNET are carried out automatically via servers operating on UNIX and local networks.

Settlement procedures

The solutions adopted in the SKARBNET system used by the CRBS and in the SORBNET system used by banks ensure consistency with DVP model I. (The securities leg and the cash leg are settled on a gross basis.) Treasury bills can be registered at the CRBS once payment has been made. Once the payment orders in SORBNET have been effected, the Treasury bills are finally registered in SKARBNET. After any operating day resulting in changes in a participant's balance on the CRBS account, the participant receives a paper statement.

Primary market – auction service

An auction participant purchasing Treasury bills in the primary market places its offer within prescribed deadlines and presents it to the National Bank of Poland together with an authorisation to debit its settlement account with the purchase amount, both on its own behalf and, where relevant, on behalf of its customer. If the participant has no account with the National Bank of Poland, the account of a designated bank is debited.

If the offer has been accepted, a payment instruction is automatically generated on the payment day for a given auction and electronically transmitted to SORBNET. As soon as payment has been settled in accordance with the payment instructions, the Treasury bills purchased are registered in the account of the CRBS participant.

Secondary market

For purchase/sale transactions, CRBS participants holding settlement accounts with the National Bank of Poland authorise it to debit their settlement accounts and submit instructions to register the transactions.

If the information contained in both instructions is consistent and it has been checked that the selling party does indeed own Treasury bills

which it can dispose of, bills are blocked in the selling party's account on the transaction day and a payment instruction is automatically generated and electronically transmitted to SORBNET. Following 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 National Bank of Poland, both parties file consistent instructions to register the purchase/sale transaction in Treasury bills without a payment instruction. This means that the National Bank of Poland is not responsible for the performance and correctness of settlement, which is performed via KIR.

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 settlement by the National Bank of Poland.

Intraday credit

Since December 2001 the National Bank of Poland has granted intraday credit against collateral. Currently only Treasury bills registered in SKARBNET are eligible for use as collateral (see Sections 3.2.7. and 4.4.).

Risk management

SKARBNET settles transactions on a gross basis in real time. There is thus no special fund to guarantee settlement of transactions.

Pricing policy

The National Bank of Poland is an issuing agent for Treasury bills. Under the agreement made on 30 September 1999 between the National Bank of Poland 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 depository account statements by fax.

Future developments

The scope of the system will be enhanced with the provision of interbank loans collateralised by Treasury securities and of open market operations based on Treasury securities between the National Bank of Poland and commercial banks.

Procedures allowing for the exchange of data in electronic form will also be implemented.

4.3.4.3 SEBOP

Types of transaction handled

The system is used for purchases of National Bank of Poland bills in the primary market, purchases/sales in the secondary market and the redemption of bills by issuers.

Transaction processing environment

The exchange of information between RBP participants and the National Bank of Poland is made via e-mail and, in the event of any disruption to the system, on paper (including via fax). The processing of transactions in National Bank of Poland bills and the settlement of related funds take place automatically via UNIX servers operating over local area networks.

RBP participants transfer their instructions relating to transactions in National Bank of Poland bills by e-mail using the TELBANK network. This solution has replaced the previous one, in which data from the paper documents were manually entered into the SEBOP system.

Settlement procedures

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).

Transactions in National Bank of Poland bills can be registered at the RBP provided that prior payment has been made. The National Bank of Poland receives electronic payment instructions to debit the settlement account of the bank concerned; once an instruction has been carried out, the final registration of bills is performed in SEBOP.

Primary market – auction

An auction participant acquiring National Bank of Poland bills in the primary market places its offer and gives authorisation to debit its settlement account by the relevant amount. Payment is effected on the day stipulated in the National Bank of Poland's auction announcement.

If the offer is accepted, a payment instruction is issued and submitted to SORBNET. When the payment is made in accordance with the instructions given, the National Bank of Poland bills purchased are registered in the RBP deposit account of the participant.

Secondary market

In the case of transactions between RBP participants, parties send the National Bank of Poland instructions to register the transaction at the RBP. The instructions should be submitted on the transaction day.

If the information contained 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, the bills are blocked in the seller's account on the transaction date and payment instructions are sent to SORBNET. Following receipt of payment, the transaction is registered at the RBP.

FOP deliveries are also possible.

Risk management

As with the CRBS, the DVP model I approach adopted at the RBP ensures maximum credit risk reduction.

Pricing policy

The National Bank of Poland charges a flat rate for opening a deposit account for its bills and a quarterly fixed charge for account maintenance. Moreover, a fee is charged for every fax transmission of an account statement.

4.4 The use of the securities infrastructure by the National Bank of Poland

Collateral management

To ensure the functioning of the financial system and implement monetary policy, the National Bank of Poland provides intraday liquidity and carries out open market operations. These needs can be covered through the issuance of National Bank of Poland bills, the use of reserve requirements, and/or the extending of credit.

Lombard credit

Banks may draw Lombard credit collateralised by Treasury debt instruments (Treasury bills and Treasury bonds). These assets are recorded and settled in two separate

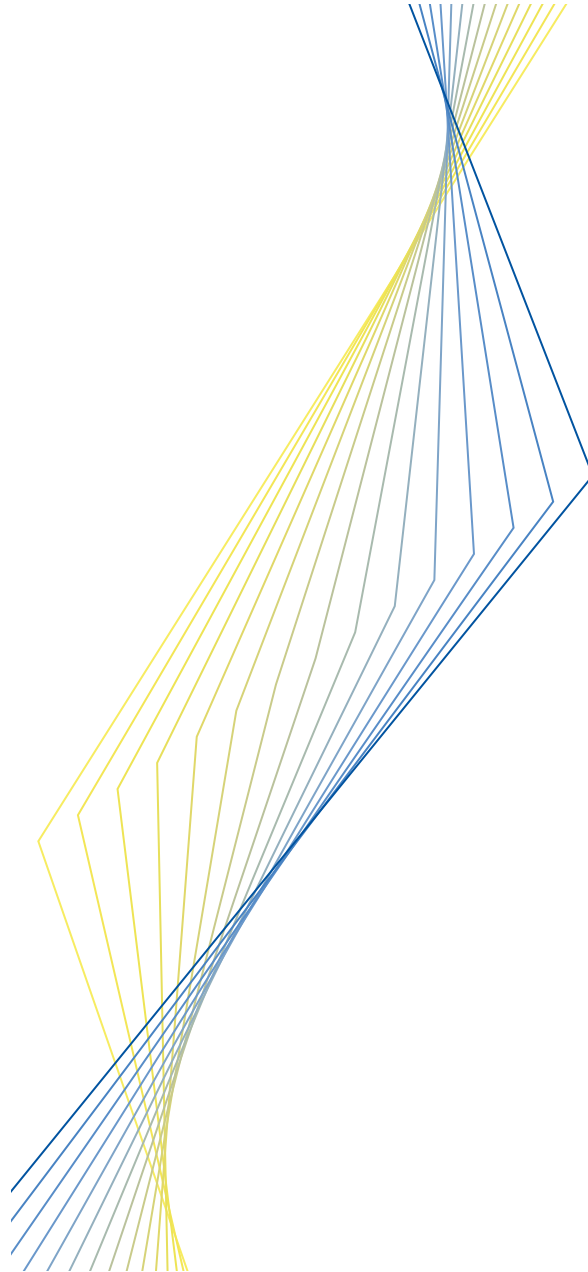
depositories: Treasury bills at the National Bank of Poland and Treasury bonds at the KDPW. SKARBNET, which services the CRBS, is a real-time gross securities settlement system, and, since it facilitates the immediate provision of collateral for central bank credit, is used for this purpose to a much greater extent than the KDPW system.

Intraday credit

Since December 2001, the National Bank of Poland has granted credit intraday against collateral. Banks must conclude intraday credit agreements in advance. Currently only Treasury bills may be used as eligible collateral. Each bank may obtain intraday credit if it transfers the Treasury bills from its account in CRBS to the National Bank of Poland's Treasury bills account (i.e. intraday repo). This function is realised in the SKARBNET system. Banks can transmit their instructions on intraday credit in the same way as for other transactions. These instructions can be transmitted during the transaction day. 80% of the value of Treasury bills transferred by a bank to the National Bank of Poland's securities account is granted to that bank as intraday credit. Each bank must reimburse intraday credit before the end of the operational day in the SORBNET system (between 5.30 p.m. and 6 p.m.). If it reimburses, then its collateral is returned. In the event of default by the bank, the collateral will become the National Bank of Poland's property (see Section 3.2.7).



EUROPEAN CENTRAL BANK



Romania

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Romania

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List of abbreviations

ANSVM	National Association of Securities Companies – <i>Asociatia Nationala a Societatilor de Valori Mobiliare</i>
BVB	Bucharest Stock Exchange – <i>Bursa de Valori Bucuresti</i>
CEC	Romanian Savings Bank – <i>Casa de Economii si Consemnatiuni</i>
CIP	Payment Incidents Bureau – <i>Centrala Incidentelor de Plati</i>
CNVM	National Securities Commission – <i>Comisia Nationala a Valurilor Mobiliare</i>
EXIMBANK	The Export-Import Bank of Romania – <i>Banca de Export-Import a Romaniei</i>
FGDB	Bank Deposits Insurance Fund – <i>Fondul de Garantare a Depozitelor in Sistemul Bancar</i>
GSRS	Government Securities Registration and Settlement System
RASDAQ	Romanian Association of Securities Dealers Automated Quotation system
SNCDD	National Securities Clearing, Settlement and Depository Company – <i>Societatea Nationala de Compensare, Decontare si Depozitare a Valurilor Mobiliare</i>
TRANSFOND	National Company for Funds Transfer and Settlement – <i>Societatea Nationala de Transfer de Fonduri si Decontari</i>

Introduction

Romania's current payment system is the result of the establishment between 1992 and 2001 of a homogeneous legal framework, based on new banking laws. The new laws (inter alia) give commercial banks and the State Treasury the right to issue and manage the payment instruments and explicitly designate the National Bank of Romania as the regulatory body in the area of payments. This is in line with the fundamental changes that have occurred in the Romanian financial and banking system in recent years and serves the implementation of monetary policy goals. The result has been a gradual shift in the relative importance of the various payment services and instruments in the Romanian banking industry.

Since April 1995, when Romania's current payment system started to operate, the National Bank of Romania – which plays the leading role – has constantly promoted the full integration of all participants into the system. The purpose of this has been to increase competition, and thus raise the quality of banking and payment services, as well as to increase the use of central bank money, providing a source of certainty and stability for the whole financial system.

The most important result of these efforts was the creation of the National Interbank Payment System. All commercial banks licensed by the National Bank of Romania, as well as other financial institutions that provide banking intermediation, are participants in this system and all have equal rights and obligations.

In 1999, the National Bank of Romania decided to externalise most parts of its funds transfer and settlement activities. It took a decision together with the Romanian banking community to establish a separate institution to process and settle interbank funds transfers. To this end, the banking community in Romania set up the National Company for

Funds Transfer and Settlement (TRANSFOND)¹ in June 2000. The company became operational in early May 2001 when it took over, as the National Bank of Romania's agent, a significant part of the activity of the Bank's former Banking Settlement Department. TRANSFOND's main objective is to implement and operate, together with the National Bank of Romania, the new interbank electronic payment system.

The funds transfer and settlement activities are currently shared between the National Bank of Romania and TRANSFOND, as described in Sections 1.2.3 and 1.3.4.

As regards SSSs, there are only two regulated capital markets in Romania: the Bucharest Stock Exchange (BVB) and the Romanian Association of Securities Dealers Automated Quotation system (RASDAQ). On both markets, equities issued by Romanian companies are traded and cleared. Since the end of 2001 floating rate municipal bonds have also been traded on the BVB. There is no regular secondary market for government securities, and no special trading infrastructure for government securities. The National Bank of Romania is involved in operations related to government securities (i.e. placement, registration, transfer and settlement) as the agent of the Ministry of Public Finance.

The BVB clears its own securities transactions, and RASDAQ trades are cleared by the National Securities Clearing, Settlement and Depository Company (SNCDD). The cash payments related to these transactions are netted by the BVB's and SNCDD's clearing houses, and finally settled by the National Bank of Romania.

¹ TRANSFOND is a joint stock company. The shareholders are the National Bank of Romania, with 33.33% of the equity capital, and 28 banks with 66.67%. In 2000, shareholders accounted for as much as 93% of the payments value and 87% of the volume processed.

I Institutional aspects

I.1 The general institutional framework

At present, the main providers of payment services in Romania are the National Bank of Romania, commercial banks, the State Treasury, TRANSFOND, the Romanian Post Office and the co-operative credit organisations.

The legal framework for banking activities 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 credit institution bankruptcy. There is no specific law on payment systems or funds transfer systems, but the legal framework enables banks to provide payment services to their customers as part of their normal business.

In order to protect the interests of consumers, the legal framework requires that all funds transfer systems, as well as all payment instruments, be licensed by the National Bank of Romania prior to their introduction or issuance. Interbank netting and settlement arrangements are also subject to the authorisation of the National Bank of Romania. The Law on banking stipulates that “in order to strengthen the discipline of cashless payments and to reduce the cost of banking activities, the National Bank of Romania can license, on demand, any legal entity to act as an interbank clearing house”.

The Law on credit institution bankruptcy sets out the conditions according to which a bank is deemed insolvent. It does not contain a “zero-hour” rule. As modified by Government Emergency Ordinance No. 138/2001, the Law also stipulates that the exact moment of a payment instruction’s acceptance into the payment system should be defined by the rules of the system and the laws and regulations of the National Bank of Romania. The above-mentioned ordinance implements some of the provisions of Directive 98/26/EC of the

European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems.

The co-operative credit organisations carry out banking activities, including payment services, in accordance with Government Emergency Ordinances Nos. 97/2000 and 272/2000.

According to Law No. 72/1996 on public finance, the State Treasury holds current accounts for all public institutions, and the National Bank of Romania processes, in accordance with an agreement concluded with the Ministry of Public Finance, all payments related to these public institutions.

The Romanian Post Office operates in accordance with Government Resolution No. 371/1998. It also carries out its activities on the basis of Law No. 83/1996 on postal services.

Two state-owned banks are established under special laws: Romanian Savings Bank (CEC) and The Export-Import Bank of Romania (EXIMBANK). The structure and the range of activities of CEC are defined by Law No. 66/1996 on the reorganisation of the CEC as a public limited company. This Law allows it to carry out the whole range of banking activities and establishes the National Bank of Romania’s powers of supervision and control over it. The Export-Import Bank of Romania (EXIMBANK) is both a bank and an insurance company. It was established in 1992 and is unique in the Romanian banking and financial system. At present, EXIMBANK is governed by Law No. 96/2000 and the Law on banking.

The use of paper-based debit payment 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: Law

No. 59/1934 on cheques and Law No. 58/1934 on bills of exchange and promissory notes, which were re-introduced, with slight amendments, in September 1994. Pursuant to these laws, the National Bank of Romania has issued regulations concerning the standardisation of these payment instruments.

In order to ensure the development of e-commerce and electronic services, including electronic payment services, Law No. 455/2001 on the electronic signature was passed, opening the way for improved electronic banking services.

The Romanian securities markets are governed by Law No. 52/1994 on securities and stock exchanges (the Securities Law). It provides the legal basis for all the 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 activities of the self-regulatory bodies it licenses (for the time being, the BVB and SNCDD). These self-regulatory bodies can adopt rules and regulations for the registration of members, set listing standards, decide on trading mechanisms, and carry out transfer, clearing, settlement and registration activities. They may also adopt regulations and perform other functions on the basis of powers delegated to them by the CNVM. The Securities Law stipulates the financial intermediaries which are allowed to trade in the securities markets. A securities company is licensed to trade either for its own account or on behalf of its customers. Under the Securities Law, banks cannot be involved directly in securities transactions (with the exception of transactions in government securities), but only through securities subsidiaries. Foreign banks are subject to the same requirements for trading in Romanian securities as Romanian banks, and may only trade if they have a securities subsidiary. Foreign securities companies are allowed to

operate in the Romanian securities market only through a subsidiary incorporated under Romanian law.

Besides the main legal framework provided by the Securities Law, the Statute of the BVB Association and the Ethical Code, market operations are governed by 12 other main regulations issued by the BVB. These concern various different areas, such as membership, listing requirements, trading procedures, clearing and settlement, ownership transfer, risk management, taxation, the Insurance Fund, etc.

Securities companies, which are authorised by the CNVM and automatically accepted as members by the BVB for trading activities, participate in the settlement system of the BVB. They participate on their own account and/or on behalf of their customers. The process of clearing and settling trades on the BVB is performed according to the operational principles of a clearing house and is based on the participation of banks in the settlement of the cash leg.

1.2 The role of the National Bank of Romania

According to Law No. 101/1998 on the Statute of the National Bank of Romania, it is the main objective of the Bank to ensure the stability of the national currency in order to contribute to price stability. To accomplish this goal, the National Bank of Romania is responsible for defining and implementing its monetary policy, its foreign exchange policy and its credit and payment systems policies. It both authorises banks to operate and exerts prudential supervision over them, in order to ensure the smooth operation of the banking system and promote a financial system appropriate to a market economy. The Bank carries out its payment activities through its headquarters and its 22 branches located in the cities that are county seats.

1.2.1 Payment systems oversight

The above-mentioned law establishes the National Bank of Romania's responsibilities in the field of payment systems as follows:

- regulation of the Romanian payment system as a whole, including payment instruments;
- oversight of individual payment systems;
- identification of the steps to be taken to prevent any situation that might jeopardise the smooth functioning of payment systems;
- monitoring and prevention of risks that might occur in payment systems, by collecting and disclosing, on request, data and information regarding payment incidents and credit risks in the banking system.

In order to accomplish these tasks, the Bank is empowered to issue regulations, circulars and Governor orders with regard to interbank payment systems and related payment instruments, and to monitor and oversee the observance of their provisions.

The National Bank of Romania is also empowered by Law No. 58/1998 on banking to carry out the following activities:

- licensing of the funds transfer systems and the legal entities performing the transfer of funds between banks (Article 63);
- approval of payment instruments and payment circuits for each bank (Article 63) before their implementation;
- licensing, of legal entities to act as interbank clearing houses. The law says that no collective arrangement for the purpose of interbank clearing and interbank settlement is valid on Romania's territory without prior authorisation from

the National Bank of Romania (Article 64).

1.2.2 Securities clearing and settlement systems

According to Law no. 81/1999 on public debt, Law no. 101/1998 on the Statute of the National Bank of Romania and the agreement concluded between the Ministry of Public Finance and the National Bank of Romania, the Bank is involved in operations related to government securities (i.e. placement, registration, transfer and settlement) as the agent of the Ministry of Public Finance.² In this respect, the Bank is empowered to regulate the activities on both primary and secondary markets.

Government securities, denominated in Romanian lei (ROL) or US dollars (before 2002 also in Deutsche Marks)³, are issued with maturities of 91, 182, 364 days or more, and are traded on the secondary market. Securities issued in dematerialised form are sold to both residents and non-residents, by auction or by public subscription.

Besides issuing securities in a dematerialised form through the National Bank of Romania, the Ministry of Public Finance also uses its own Treasury for this purpose, as well as some commercial banks.

The Government Securities Register, which is held by the National Bank of Romania and organised on single-tier basis⁴, keeps a record

² Law No. 81/1999 on public debt governs the issuance of government securities for budget deficit financing. Government securities issues are assigned national codes, as Romania does not use the international coding system ISIN.

³ For the time being, the Ministry of Finance has not launched issues for domestic market denominated in euro, but only in US dollars and Deutsche Marks. Issues denominated in Deutsche Marks matured during 2001.

⁴ In the second half of 2002, the Government Securities Register will be re-organised into two tiers.

of all outstanding government securities. It evidences each issue and includes a record of every movement made by T-Bill holders for the entire life of the issue (placement, sale, purchase, pledging and transfer). The register shows, by category, any freezing/unfreezing of securities made by banks for the collateralisation of payments, whether settled on a multilateral or bilateral basis. The Government Securities Register also monitors other types of pledge of government papers by banks or their customers.

Only banks licensed⁵ by the National Bank of Romania can carry out operations in government securities on the primary market. Banks may act in their own name or in the name of their customers. It should be noted that under current legislation the National Bank of Romania is not entitled to buy on the primary market for government securities.

On the secondary market for government securities, operations take place between banks, between banks and their customers, and between banks and the central bank (mainly for monetary policy purposes). Banks may also participate, using government securities as collateral, in repo/reverse repo auctions organised by the National Bank of Romania for monetary policy purposes. Auction results are automatically recorded in the Government Securities Register, and the payment is initiated by the buyer (a payment order is required).

The National Bank of Romania's new Regulation on dealings in non-paper-based government securities, which was drawn up in 2001 to replace Regulation No. 2/1997 but whose entry into force was postponed until 2002, is based on the following principles:

- the existence of primary dealers; banks and securities companies authorised to operate in Romania can be authorised as primary dealers if they fulfil certain conditions;

- the existence of secondary dealers; banks and securities companies authorised to operate in Romania, other than primary dealers, can be authorised as intermediaries in the secondary market if they fulfil certain conditions;
- the Government Securities Register is to be organised on a two-tier basis:
 - a) a primary register, kept by the National Bank of Romania, recording all operations of banks and primary/secondary dealers (other than banks);
 - b) secondary registers, kept by primary and secondary dealers, recording operations performed for the dealer's customers;
- placement methods: government securities may be sold by public subscription or auction (other procedures are also allowed). The auction is conducted on the basis of the multiple price method or the uniform price method. There are two types of auction bid – competitive and non-competitive;
- secondary market operations are to be concluded on the basis of direct negotiations between participants, through banks, other secondary market intermediaries, the inter-dealer-broker system or the BVB. Primary and secondary dealers must quote, on a daily basis, a certain number of issues, in accordance with the legal provisions. Government securities operations will be settled on a DVP basis.

The National Bank of Romania is not empowered by law to oversee the activity of SSSs. Legislation assigns the oversight of these systems, such as the BVB and SNCDD, to the CNVM.

⁵ All but a few banks are licensed to operate on the primary market.

1.2.3 The operational role of the National Bank of Romania

According to Law No. 101/1998 on the Statute of the National Bank of Romania, the Bank keeps a current account for the State Treasury, for each local and foreign bank licensed to operate in Romania. The National Bank of Romania can also open settlement accounts for resident interbank clearing houses, for foreign central banks and for foreign institutions (i.e. non-resident international organisations).

The final settlement of payments, denominated in lei, between account holders is carried out through the current accounts held with National Bank of Romania (for each interbank payment system, settlement takes place in a specific sub-account of the current account).

The minimum reserves of banks are also held on these accounts. The banks can use these reserves in full for payments during the operating day. Settlements of leu-denominated payments through correspondent accounts, which are based on bilateral agreements between banks, have been considerably reduced. They are only allowed for banks specially authorised to use them by the National Bank of Romania.

The State Treasury's general current account, which is held with the National Bank of Romania by law, is governed by an agreement concluded between the Bank and the Ministry of Public Finance.

According to Article 24 of Law No. 101/1998 on the Statute of National Bank of Romania, the Bank may provide clearing, depository and payment services through accounts opened on its books. It may also conclude, in its own name or for and on behalf of the State, clearing, depository and payment agreements, or any other contracts with central institutions or specialised collective organisations located abroad, be they public or private.

Since May 2001, when TRANSFOND became operational, the role of the National Bank of Romania has been limited to the final settlement of interbank funds transfers and the net positions of clearing houses (TRANSFOND, the BVB, SNCDD) and settlement account holders (Visa, Europay). For the State Treasury, the Bank still processes all funds transfers. The Bank acts as the settlement agent for RASDAQ, for the BVB and for domestic-currency denominated card transactions (Visa, Europay). Should there be insufficient liquidity on a bank's account for a settlement to be completed, the National Bank of Romania may supply the necessary liquidity by granting access to a lombard lending facility. The lombard credit needs to be fully collateralised.⁶

According to Article 29 of the Law on the Statute of the National Bank of Romania, the Bank is allowed during the financial year to grant uncollateralised short-term credits, based on conventions concluded with the Ministry of Public Finance, in order to cover deficits in the current account of the State Treasury.⁷

The National Bank of Romania also manages the Government Securities Register (see Section 1.2.2).

1.2.4 Co-operation with other institutions

The National Bank of Romania co-operates with the Ministry of Public Finance with regard to the regulation of transactions in

⁶ So far, the only eligible assets are government securities and deposits with the National Bank of Romania.

⁷ The loans may have a maturity of no more than 180 days; the interest due equals the daily average of the interest rate on interbank deposits; in one financial year, the value of total loans may not exceed 7% of state budget income in the previous year; the current debt of the State Treasury with the National Bank of Romania may not be more than twice the amount of the Bank's capital and reserve fund. These requirements are stipulated by Article 29 of the law on the Statute of the National Bank of Romania.

government securities and State Treasury payments, and with the CNVM regarding the settlement of operations of independent clearing houses which process capital market transactions.

1.3 The role of other private and public sector bodies

1.3.1 Commercial banks

At the end of 2001, the Romanian banking sector comprised 36 commercial banks incorporated under Romanian law and eight branches of foreign banks; two banks were subject to the special settlement procedure⁸ and another three were in bankruptcy procedures.

Banks conduct their business under a licence issued by the National Bank of Romania. Of the total number of licensed banks, three are state-owned.

The legal framework for payment systems treats Romanian and foreign commercial banks on equal terms.

1.3.2 Co-operative credit organisations

In accordance with Government Emergency Ordinances Nos. 97/2000 and 272/2000, the co-operative credit organisations, which at present operate outside the banking system (under Law No. 109/1996 on the organisation and functioning of credit co-operatives) despite carrying out banking activities, are in the process of being assessed for authorisation by the National Bank of Romania. After licensing, these entities will be subject to supervision by the Bank. Up to the end of 2001, no co-operative network had been authorised.⁹

1.3.3 The State Treasury

Although the State Treasury is not subject to the provisions of the Law on banking, it has the legal right to provide payment and collection services for the state.

According to Law No. 72/1996 on public finance, all public institutions are obliged to hold a current account with the State Treasury. The State Treasury operates both these accounts and the accounts designated for collecting state revenues from taxpayers. The operations related to public debt management are also performed through the account maintained with the State Treasury.

All funds transfers to/from the State Treasury are settled through an account held with the National Bank of Romania, based on an agreement between the Ministry of Public Finance and the Bank. The service provided by the Bank in this respect is free of charge, in accordance with the Law on the Statute of the National Bank of Romania.

1.3.4 TRANSFOND

In 1999, the National Bank of Romania decided to externalise part of its settlement and funds transfer activities. In June 2000, together with a number of banks, it established a joint stock company named TRANSFOND. The registered share capital of the company is owned by the National Bank of Romania (33.33%) and by 28 commercial banks (Romanian legal entities and

⁸ The special settlement procedure is a procedure which can be imposed by the National Bank of Romania on banks which have insufficient funds to meet their payment obligations. It consists of a scheduled settlement on a gross basis of all payments.

⁹ A credit co-operative is a credit institution which may perform activities such as taking deposits, granting loans, issuing and managing payment instruments, payments and settlements, funds transfers, foreign exchange operations for individuals, as well as operations as an agent under National Bank of Romania regulations. The Central House of credit co-operative institutions is a credit institution set up by a credit co-operative institutions' association for the purpose of mutual interest protection.

foreign bank branches; 66.67%). The ownership shares of the 28 banks were equal at the time of subscription. TRANSFOND has its headquarters in Bucharest. It is complemented by a network of 41 branches in all major Romanian cities (county seats).

In 2001, the National Bank of Romania licensed the system operated by TRANSFOND as an interbank clearing house. Each TRANSFOND branch operates a separate interbank clearing house.

TRANSFOND became operational in May 2001. As the National Bank of Romania's agent, it took over a large part of the Bank's payment activities, such as:

- the multilateral netting of retail payments initiated through paper-based payment instruments;
- the transfer of generally large-value amounts between banks (including banks subject to the special settlement procedure);
- the transfer of funds between banks and interbank clearing houses and/or other holders of a settlement account for the interbank clearing systems;
- the transfer of funds between banks and the National Bank of Romania, related to the Bank's administrative payments as well as to money market operations, foreign exchange and secondary securities markets transactions.

TRANSFOND has now also taken over from the National Bank of Romania the responsibility for monitoring collateral posting related to the settlement of cleared payment orders, securities transactions and card transactions denominated in lei.

The final settlement of the payment orders processed by TRANSFOND is performed by the National Bank of Romania.

All activities carried out by TRANSFOND are based on National Bank of Romania regulations, relevant laws and contractual agreements between the Bank and the holders of settlement accounts.

1.3.5 The Romanian Post Office (Posta Romana S.A.)

The Romanian Post Office operates in accordance with Government Resolution No. 371/1998 on the foundation of The National Company Posta Romana S.A. as a result of the reorganisation of the former Romanian Post. Accordingly, it has neither the status of a credit institution nor the right to keep giro accounts. Despite this, the Post Office – on the basis of the principle of the universality of postal services and according to Law No. 83/1996 on postal services – provides domestic and cross-border payment services such as cash-to-cash transfers for individuals (including cash payment of pensions and postal money orders) denominated in lei or foreign currency. Postal money orders are sent via the postal network. They are settled via the Post Office's accounts with commercial banks. Through its membership of the Eurogiro system, the Romanian Post Office also performs cross-border funds transfers.

1.3.6 National Securities Clearing, Settlement and Depository Company

SNCCD is the central depository and settlement system for securities traded on the RASDAQ market. It provides its direct users (i.e. brokers, dealers and custodial agents), which are also direct users of RASDAQ, with the following services for securities:

- recording of all trades executed between direct users on the RASDAQ market as reported by RASDAQ;

- trade clearing and delivery of securities and funds on behalf of direct users;
- trade affirmation for custodians;
- custody and safe-keeping of securities traded on the RASDAQ market.

SNCDD has now been authorised by the National Bank of Romania to operate as an interbank clearing house for payments related to securities transactions performed on the RASDAQ market.

SNCDD's activity in connection with securities transactions is regulated by the CNVM.

Only banks licensed by the National Bank of Romania are allowed to participate in the clearing of funds performed by SNCDD. SNCDD's clearing house activity is governed by regulations issued by the Bank.

1.3.7 The Bucharest Stock Exchange

The BVB is a non-profit-making public entity managed by its members. It is open to new members: initially, 24 securities companies formed the Stock Exchange Association, whereas now there are 110. The BVB is regulated by the Securities Law (No. 52/1994).

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 members;
- custody and safe-keeping of the securities traded on this market.

Only shares of authorised companies are traded on the BVB, and shares listed on the BVB may not be traded on the RASDAQ market. The BVB is authorised by the National

Bank of Romania to operate as an interbank clearing house.

The funds clearing related to BVB market transactions is in conformity with the interbank clearing house operating principles established by the National Bank of Romania. Settlement is performed through banks authorised by the National Bank of Romania as participants in BVB clearing.

1.3.8 Independent processors of card transactions

At present, there are three independent processors dealing with Visa and Europay card transactions denominated in lei and in foreign currency: Romcard, Provus Service Provider and Paynet. These processors are private legal entities. Banks are allowed to hold shares in their capital.

1.3.9 The Bank Deposits Insurance Fund

The Bank Deposits Insurance Fund (FGDB) was founded in 1996. Its main goal is to ensure the reimbursement, in the case of a bankruptcy of a bank, of individuals' deposits up to an established limit (approximately €3,500). This limit is updated in line with inflation on a half-yearly basis. All banks licensed by the National Bank of Romania to operate in Romania are obliged to participate in the FGDB.

The insurance of legal entities' bank deposits is envisaged for the future.

1.3.10 The National Securities Commission

The CNVM's activity is regulated by the Securities Law (No. 52/1994) which defines its Statute.

The main objectives of the CNVM are to ensure the sound functioning of the securities markets, to protect investors against unfair practices and to increase the transparency of public information concerning the activity of the securities markets. It is managed by seven commissioners, appointed by Parliament. The CNVM is responsible for all regulation and supervision of the capital markets, including the activity of the licensed self-regulatory bodies. By law, the CNVM licenses joint stock companies to participate as dealers and brokers in the securities markets.

National Bank of Romania regulations oblige the Bank to consult the CNVM on the process of authorising an interbank clearing house to perform the netting function for cash in the securities markets.

1.3.11 The National Association of Securities Companies

The National Association of Securities Companies (ANSVM) is a non-profit-making professional association of securities intermediaries. It was set up in 1995 with the approval of the CNVM. The main objectives of the ANSVM are to:

- participate in 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 ensure securities markets objectives are met;
- increase the professional standards of market participants.

The ANSVM provides operational assessment, training and RASDAQ market supervision of member companies located throughout Romania.

1.3.12 Romanian Association of Securities Dealers Automated Quotation system

RASDAQ S.R.L. is the RASDAQ market network operator, owned by the ANSVM. Only securities companies can participate in the RASDAQ trading system.

1.3.13 The Payment Incidents Bureau

The National Bank of Romania plays an active role in the prevention of debit payment instrument fraud through its Payment Incidents Bureau (CIP). The CIP became operational in 1997, in accordance with a regulation issued by the Bank.

The CIP is a national centre for data exchange and the handling of payment incidents involving cheques, promissory notes and bills of exchange. Major payment incidents involving cheques require the bank of the cheque's issuer to ban the customer from issuing cheques for one year. The bank may revoke the ban only if it was imposed by mistake. This is the only legal way a person can be removed from the "black list". The information stored in the CIP database is disclosed to users (banks, public authorities, legal entities or individuals) on request or on the CIP's own initiative. Any individual or legal person can obtain this information by approaching any branch of a commercial bank. The latter will forward the request to its headquarters or to the nearest branch of the National Bank of Romania.

2 Payment media used by non-banks

2.1 Cash payments

The National Bank of Romania, through its 22 branches, puts banknotes and coins into circulation and ensures that the public's cash needs are met in both quantitative and qualitative terms. Banknotes and coins are the predominant retail payment means (55.41% of M1 as at the end of December 2001). M1 was ROL 64,308.6 billion (approximately €2.3 billion) at end-December 2001, of which currency held outside banks amounted to ROL 35,635.3 billion (approximately €1.3 billion). Since August 1999 the Bank has issued new banknotes printed on polymer, while keeping the main design characteristics of the former banknotes. The result has been a substantial increase in the life of banknotes, and the disappearance of counterfeiting of the relevant denominations. Old banknotes will be replaced step-by-step by the new polymer notes.

At the end of 2001, the banknotes in circulation had denominations of ROL 500,000, 100,000, 50,000, 10,000, 5,000, 2,000, and coins had denominations of ROL 5,000, 1,000, 100, 50, 20, 10, 5 and 1.

2.2 Non-cash payments

The following payment instruments and means of payment are used: credit transfers, cheques, bills of exchange and promissory notes, as well as cards, direct debits and standing orders. Bills of exchange and promissory notes are both payment and financing instruments. Moreover, the postal system provides payment services using a specific instrument (the postal money order).

2.2.1 Credit transfers

The credit transfer is the cashless payment instrument most commonly used for

commercial payments by legal entities. It can also be used by individuals.

The legal framework for credit transfers is established by the National Bank of Romania. It comprises several regulations concerning the use of credit transfers, the discharge of financial obligations and the standardisation of paper-based payment orders (which are the physical representation of credit transfers). The provisions of these regulations stipulate that a credit transfer may be performed either in paper-based form or electronically. For the time being, all interbank credit transfers, even those initiated electronically, have to be printed on paper for settlement.

In terms of volume, the daily average for paper-based interbank payment orders was 47,132 in 2001.

The interbank circuit for credit transfers is governed by special rules which take into account the value and urgency of the transfers. Low-value payments (less than ROL 500 million – approximately €18,000) are multilaterally cleared by the interbank clearing houses, but large-value payments (greater or equal to ROL 500 million) or urgent payments are processed on a gross basis by the large-value funds transfer system. In both arrangements transactions are settled through the commercial banks' current accounts (i.e. sub-accounts of the current account) with the National Bank of Romania, payments must be executed within predetermined time-limits, and information must be provided to customers regarding the maximum time needed to perform each credit transfer.

The average time needed for a funds transfer between the payer's account and the beneficiary's account is 3.67 days. However, interbank processing of a payment order via the large-value funds transfer system and settlement on the banks' accounts take place on the day the order is entered in the system.

2.2.2 Cheques

Cheques are used less frequently than credit transfers. Their main use is for commercial payments by legal entities. In 2001, 13,519 interbank cheques on average were settled each day.

The interbank circuits for cheques and the maximum periods within which the banks must make the funds available to the beneficiary are regulated by the National Bank of Romania.

The time it takes banks to credit cheques to the payee's account remains longer than that for credit transfers, because cheques are still perceived by banks as a risky payment instrument, involving higher administrative costs to prevent fraud or overdrafts. The average time between the drawer's account being debited and the payee's account being credited is approximately five business days.

2.2.3 Direct debits

Direct debits are governed by the National Bank of Romania's Regulation No. 4/1996 on payments using direct debit. The direct debit is not regulated as a payment instrument but as a means of making payments. The regulation refers only to interbank payments. Direct debits for intrabank payments are based only on arrangements between the customer and the bank.

Direct debits are less frequently used than other payment instruments. Their main use is to pay for services and utilities.

No statistical information is collected regarding the use of direct debits.

2.2.4 Standing orders

Standing orders are governed by the National Bank of Romania's Norm No. 9/1996 on

payments using standing order. The standing order is not regulated as a payment instrument but as a means of making payments. Standing orders for intrabank payments are based only on arrangements between the customer and the bank.

Standing orders are less frequently used than other payment instruments. Their main use is to pay for services and utilities.

No statistical information is collected regarding the use of standing orders.

2.2.5 Cards

Debit cards denominated in lei have been issued since 1997. 18 commercial banks issue cards under the Visa and Europay logos to customers, i.e. individuals or legal entities. 13 of the banks are Visa card issuers and nine are Europay card issuers.

Two types of card are issued:

- cards denominated in lei, which means that the associated account is opened in lei;
- cards denominated in US dollars, which means that the associated account is opened in dollars.

Some cards denominated in lei can be used only for leu payments in Romania (single currency cards), whereas others can be used both for leu payments in Romania and for payments in any other foreign currency abroad (multi-currency cards). At present, about 2 million cards denominated in lei have been issued in Romania. Approximately 10% of these are credit cards. Payments with cards denominated in US dollars inside Romania are processed in accordance with the provisions of the National Bank of Romania's Regulation No. 3/1997 on foreign currency operations.

a) Debit cards

For the time being, debit cards have a dual function, i.e. they can be used for both cash withdrawals at ATMs and payments at POS (by EFTPOS). They can also be used to pay telephone bills directly at ATMs. Most debit cards also have an overdraft facility, with limits set by the issuing bank depending on the type of guarantee provided by the card holder (i.e. bank deposits, an agreement between the bank and the card holder for the latter's salary to be paid into the debit card account etc.).

Some debit cards denominated in lei can be used only inside Romania, while others can also be used abroad.

Certain Visa and Europay member banks issue cards denominated in US dollars. The only major difference is that payments made with these cards are not settled by the National Bank of Romania. Debit card transactions are processed by one of the three existing card processors (Romcard, Provus Service Provider and PayNet), and subsequently cleared by Visa and Europay processing centres. The National Bank of Romania is the agent for the final settlement of these transactions, in accordance with agreements concluded with Visa and Europay.

b) Credit cards

There are credit cards denominated both in lei and in US dollars, issued under the Visa and Europay logos, but those denominated in lei can be used only in Romania. As with debit cards, credit cards can be used for cash withdrawals at ATMs and for payments at POS (by EFTPOS), as well as for payment of telephone bills at ATMs. Credit card payments are processed similarly to debit cards.

c) ATMs and POS networks

ATMs are designed to allow only cash withdrawals and the payment of mobile telephone bills.

In Romania, the ATM networks are owned individually by banks. They are interlinked through three card processing companies to form a national ATM network.

There are currently no providers of ATM or POS networks, or similar services, other than banks.

At the end of 2001, the national ATM network comprised 1,283 machines, while the POS network had approximately 1,300 devices and there were approximately 7,000 card acceptance points.

2.2.6 Postal instruments

The Romanian Post Office provides a specific type of payment instrument, the postal money order, which can be used only for cash-to-cash transfers between different post offices, at the request of an individual or legal entity. The following alternatives can be included in this category: the real-time transfer of cash (real-time postal money order), and the transfer of money from/to other countries using an international postal money order. Because the Romanian Post Office is not allowed to hold accounts for its customers, funds transferred using postal money orders can only be collected in cash. The Post Office also participates in international retail credit transfer systems such as Western Union and Eurogiro.

2.2.7 Other payment instruments

According to Law No. 58/1934 on bills of exchange and promissory notes (which was re-introduced in September 1994) and the National Bank of Romania's Regulation concerning the standardisation and processing by banks of bills of exchange and promissory notes as payment instruments, bills of exchange and promissory notes are both financing and payment instruments.

Bills of exchange and promissory notes are still scarcely used by banks' retail customers, since the public has little confidence in them. They are mostly used for commercial payments by legal entities. For instance, in 2001 only 302 bills of exchange were issued and settled in the entire country, which means a daily average of 1.19. In the same period, the daily average number of promissory notes issued and settled was 4,600. Bills of exchange and promissory notes are processed, in accordance with their maturity, as debit payment instruments, and are settled after their submission to one of the TRANSFOND clearing houses.

2.3 Recent developments

In recent years a large number of electronic banking (e-banking) services have been developed. 17 banks currently offer e-banking services, such as PC banking, mobile banking

and internet banking, mainly to allow customers to view their current account balances, receive account statements, initiate credit transfers (domestic and cross-border), standing orders and currency exchange transactions, and make fixed-term deposits denominated in lei and foreign currencies. Funds transfers initiated using the above services are settled either through the large-value funds transfer system – for transfers of ROL 500 million (approximately €18,000) or above – or through the interbank multilateral clearing system – for transfers below ROL 500 million.

In order to develop and implement a new interbank electronic payment system in Romania (see Sections 3.2 and 3.5), the National Bank of Romania has been working on regulations regarding the use of payment instruments in electronic form, based on the provisions of Law No. 455/2001 on the electronic signature.

3 Interbank exchange and settlement systems

3.1 General overview

There are two types of interbank exchange and settlement system operating in Romania: the large-value funds transfer system and the interbank clearing system.

Large-value interbank payments and payments for the settlement of net balances calculated by clearing houses (other than TRANSFOND's clearing houses) are processed through the large-value funds transfer system. This system is owned by the National Bank of Romania, but it is operated by TRANSFOND acting as its agent, i.e. in the name and on behalf of the Bank.

Interbank payments of low value are cleared through the interbank clearing system owned and operated by TRANSFOND.

The final settlement of all interbank funds transfers is effected by the National Bank of Romania via its accounting system.

Low-value as well as large-value payments to and collections from the State Treasury are not processed via the aforementioned systems, but are cleared and settled directly in the books of the National Bank of Romania's headquarters, branches and territorial offices where the State Treasury holds accounts.

The time in which interbank payments and payments in relation to the State Treasury are processed depends mainly on their value:

- large-value payments are processed on the same day on a gross basis;
- low-value payments are processed on a bilateral net basis within a period

depending on the type of payment instrument and the location of the payer and the payee. It can vary from three to five days.

3.2 The planned real-time gross settlement system

For the time being, there is no RTGS system operating in Romania. However, following the finalisation of a project co-financed by the PHARE programme of the EU Commission, it is expected that an RTGS system will be introduced by end-2003. The project comprises an integrated automated payment and settlement platform, in which an RTGS system would play a central role. It would serve as the tool for the final settlement of all cashless payments (see Section 3.5).

3.3 The large-value funds transfer system

The large-value funds transfer system is a settlement system in which payment orders are received one by one by the settlement agent during the business day, but in which final settlement takes place at the end of the day on an aggregate gross basis.

3.3.1 Operating rules

The operation of the large-value funds transfer system is based upon common rules and standard procedures for the transmission and settlement of obligations between participants. These rules and procedures were established by the National Bank of Romania. The following apply: the National Bank of Romania's Regulation No. 1/2002 regarding the large-value funds transfer system, the agency contract concluded between the National Bank of Romania and TRANSFOND, and various payment and other service agreements concluded between the National Bank of Romania, banks and TRANSFOND.

3.3.2 Participation in the system

Participants in this system are: 44 commercial banks, the National Bank of Romania, the State Treasury, the resident clearing houses (TRANSFOND, SNCDD, the BVB), Visa and Europay. The latter two are only settlement account owners (i.e. non-resident clearing houses). Indirect participation in the system is not possible for the moment.

3.3.3 Types of transaction handled

The system settles credit transfers with a minimum value of ROL 500 million (approximately €18,000) or urgent payments, whatever the value.

It processes the following types of transaction:

- large-value or urgent interbank funds transfers ordered by participants on their own behalf or on behalf of their customers;
- large-value or urgent funds transfers of banks in relation to the State Treasury;
- payments related to money and foreign exchange market transactions.

3.3.4 Operation of the system

For reasons of safety and efficiency, the National Bank of Romania imposes the following on the participants by means of regulations and compulsory procedures:

- a timetable for entering payment instructions into the system;
- instruction-by-instruction processing of payment orders and settlement of them on an aggregate gross basis at the end of day;

- final settlement of funds transfers only if the amount of the payment orders does not exceed the funds available on the payer's current account;
- rejection of payment orders which exceed the amount available on the payer's current account at the moment of their intended final settlement.

3.3.5 The transaction processing environment

In order to process large-value payments and those related to money and foreign exchange market transactions, TRANSFOND and the National Bank of Romania provide their participants with 43 access points to the system. 41 of them are located in the respective county seats, and two are located at the headquarters of the National Bank of Romania and TRANSFOND in Bucharest. Following the implementation of the planned RTGS system, TRANSFOND will process all large-value interbank funds transfers (including those related to money and foreign exchange market transactions, as well as funds transfers in relation to the National Bank of Romania) through a single access point located in Bucharest.

In order to help banks automate their procedures for payments, an application based on internet technology now allows them to enter credit transfer instructions for large-value interbank funds transfers, mainly those related to money and foreign exchange market transactions, directly into the system. However, by law, the payment orders must still be submitted on paper. As soon as the National Bank of Romania's regulation regarding payment instructions in electronic form, which are needed for the new RTGS system, is in force, it will be possible to submit payment instructions to the system in electronic form only, i.e. it will not be necessary to send the order on paper.

3.3.6 Settlement procedures

Large-value interbank funds transfers are processed on a gross basis, i.e. instruction by instruction, and in chronological order. All payment orders received are stored in a queue for final settlement.

The final settlement of large-value interbank funds transfers takes place on the same banking day. Most large-value interbank funds transfers are settled at the end of the operating day on an aggregate gross basis, through participants' current accounts with the National Bank of Romania. However, there are a few types of large-value interbank funds transfer which are settled finally in a sequential way at certain pre-defined times during the operating day. These are transfers related to money and foreign exchange market transactions between banks and in relation to the National Bank of Romania, transfers related to the National Bank of Romania's permanent credit facilities, and transfers related to the settlement of net balances of clearing houses.

Information regarding the final settlement of large-value funds transfers and transfers related to money and foreign exchange market transactions is provided to participants through paper-based or online statements of account, using the electronic system (interbank computer network) provided by the National Bank of Romania to the commercial banks' headquarters.

The final settlement of large-value funds transfers between banks and the State Treasury, which are processed by the National Bank of Romania, takes place on a next banking day basis, i.e. on the banking day following the day of acceptance of the payment order by the system.

3.3.7 Credit and liquidity risk

A gross settlement system implies no credit risk, as payment orders are settled only if the sending participant has sufficient funds available on its account. If there is insufficient liquidity available on the sending participant's account at the end of the operating day, TRANSFOND is empowered to refuse to process a part of the participant's payments according to the principle that the large-value payment/payments having the nearest value to the value of the lack of funds available on the participant's account is/are rejected.

3.3.8 Pricing

The fees charged for these services take the form of a fixed amount per transaction, set with the intention of covering all related costs. At the end of 2001, the fee per transaction was ROL 150,000 (approximately €5.38) for both the payer and the payee.

3.4 The retail payment systems

In Romania there are only two types of retail payment system, i.e. the card-based schemes and the retail credit, debit and cheque transfer system.

However, an ACH for the clearing of low-value credit transfers and debit payment instruments (cheques, bills of exchange, promissory notes) is planned within the next two years.

3.4.1 Electronic money schemes

At present Romania has neither a legal framework for the issuance and the use of e-money nor e-money products which would conform to a definition accepted in the EU.

3.4.2 Card-based schemes

There are two clearing systems for card payments in Romania. They are provided by Visa and Europay, which clear transactions only for cards issued under their logos.

Settlement of the multilateral net obligations related to ROL-denominated card transactions takes place through the large-value funds transfer system operated by TRANSFOND, according to the agreements concluded between the National Bank of Romania and the settlement account holders, i.e. Visa and Europay. Final settlement is done by the National Bank of Romania at 3 p.m. on the day the reports of the net positions are received. The settlement is guaranteed according to National Bank of Romania's Regulation No. 8/1996 (see guarantee procedures described in Section 3.4.3).

3.4.3 The retail credit, debit and cheques transfer system

The low-value interbank funds transfer system owned and operated by TRANSFOND comprises a network of 42 territorial clearing houses (one for each TRANSFOND branch, plus one at its headquarters). This interbank clearing system has been designed for the multilateral clearing of cashless low-value paper-based payments, such as credit transfers, cheques, bills of exchange and promissory notes of participating banks. It is a net settlement system.

The multilateral clearing includes payment orders between banks (their headquarters and/or their branches located in the cities which are county seats) according to the principle "one account – one bank" (i.e. each bank branch can hold only one account in the territorial clearing house) .

3.4.3.1 Participation in the system

At present, there are 47 direct participants in the interbank clearing system for retail payments. They are commercial banks, the National Bank of Romania and the State Treasury. Indirect participation in the system is not yet possible.

3.4.3.2 Types of operation handled

The system processes the following types of funds transfer:

- credit transfers with a value of less than ROL 500 million (approximately €18,000) and debit transfers irrespective of their value;
- low-value funds transfers from/to the State Treasury (credit transfers with a value of less than ROL 500 million);
- credit and debit transfers related to administrative payments to/by the National Bank of Romania from/to other banks (credit transfers and direct debit irrespective of their value).

TRANSFOND clears both credit payment instruments in paper form and debit payment instruments (cheques, bills of exchange, promissory notes) on a multilateral basis.

3.4.3.3 Operation of the system

Payments are submitted in paper form. The clearing houses perform multilateral clearing according to specific National Bank of Romania regulations. These regulations set out compulsory clearing circuits for paper-based payment instruments, with settlement cycles depending on the type of instrument. The National Bank of Romania's Regulation No. 10/1994 on multilateral interbank cashless paper-based payments clearing establishes compulsory clearing and settlement cycles between the day of acceptance of the payment order and the day of the payment's final settlement.

The average time between the payment initiation and the crediting of the beneficiary's account is 3.6 days for credit items and five days for debit items.

Clearing sessions take place at every TRANSFOND branch on every business day, between 10 a.m. and noon.

At the end of every clearing session, each branch calculates the net balances of the participating banks. Details are then transferred to TRANSFOND's headquarters for processing through the large-value funds transfer system. These net balances (positions) are subsequently settled on a gross basis on the same day. The final settlement of the banks' net-net positions is performed by the National Bank of Romania at 1.30 p.m. on the same day.

Within clearing sessions, debit items (such as cheques, bills of exchange, promissory notes) are also presented to the payer's bank for verification. They are settled according to the circuits established by the National Bank of Romania.

Although the State Treasury and the National Bank of Romania make payments to and collections from banks, neither institution is yet a direct participant in the multilateral interbank clearing system. In the case of the National Bank of Romania this is because of its organisational structure; in the case of the State Treasury, its own territorial intrabank network is insufficiently developed. Thus, low-value funds transfers of banks to/from the State Treasury are cleared bilaterally by the National Bank of Romania through its headquarters and 42 territorial locations. Funds transfers related to the National Bank of Romania's administrative payments are cleared bilaterally by TRANSFOND.

3.4.3.4 The transaction processing environment

The netting at TRANSFOND's territorial clearing houses is for the most part done manually.

The net positions of every participating bank are calculated by every territorial clearing house. The calculation of the multilateral net-net positions and their recording on the participants' accounts with the National Bank of Romania are made electronically, based on automated procedures.

3.4.3.5 Settlement procedures

The final settlement of all multilateral net-net positions takes place through accounts held at the National Bank of Romania on the same day as these positions are calculated.

3.4.3.6 Credit and liquidity risk

The settlement of net-net debit positions is performed only if banks have sufficient funds (or collateral) available to cover these positions.

Collateral is provided through the pledge of government securities and through cash deposits, according to the National Bank of Romania's regulations on collateral limits and guarantee procedures.

The guarantee scheme is managed by TRANSFOND. It consists of unilateral, bilateral and multilateral guarantee procedures for all clearing houses. These procedures are applied on a contractual basis.

The unilateral guarantee procedure involves pledging government securities or placing interbank deposits at the disposal of the funds transfer system. The amount of this pledge depends on the dynamics of banks' net-net balances during a specified period (the previous week), which means that the amount is recalculated every week. The unilateral guarantee procedure is applied when there is insufficient liquidity on a bank account.

The bilateral guarantee procedure represents a form of risk-sharing between banks which have credit positions with the interbank clearing house. It is used to pay the net-net

debit position of a participant should the unilateral guarantee prove insufficient. The bilateral guarantee procedure is applied only to perform the net cash settlement of securities transactions and leu-denominated card transactions that have been multilaterally cleared.

The multilateral guarantee procedure involves returning a settlement report to the interbank clearing house in order for clearing to be re-performed. This occurs when there is a lack of liquidity on one or more of the participating banks' accounts with the National Bank of Romania and the unilateral and bilateral guarantee procedures fail. So far, it has never been necessary to re-perform clearing.

3.4.3.7 Pricing

The fees charged for these services take the form of a fixed amount per transaction, set with the intention of recovering all costs involved. At the end of 2001, the fee per transaction was ROL 11,000 (approximately €0.4) both for the payer and the payee.

3.5 Future developments

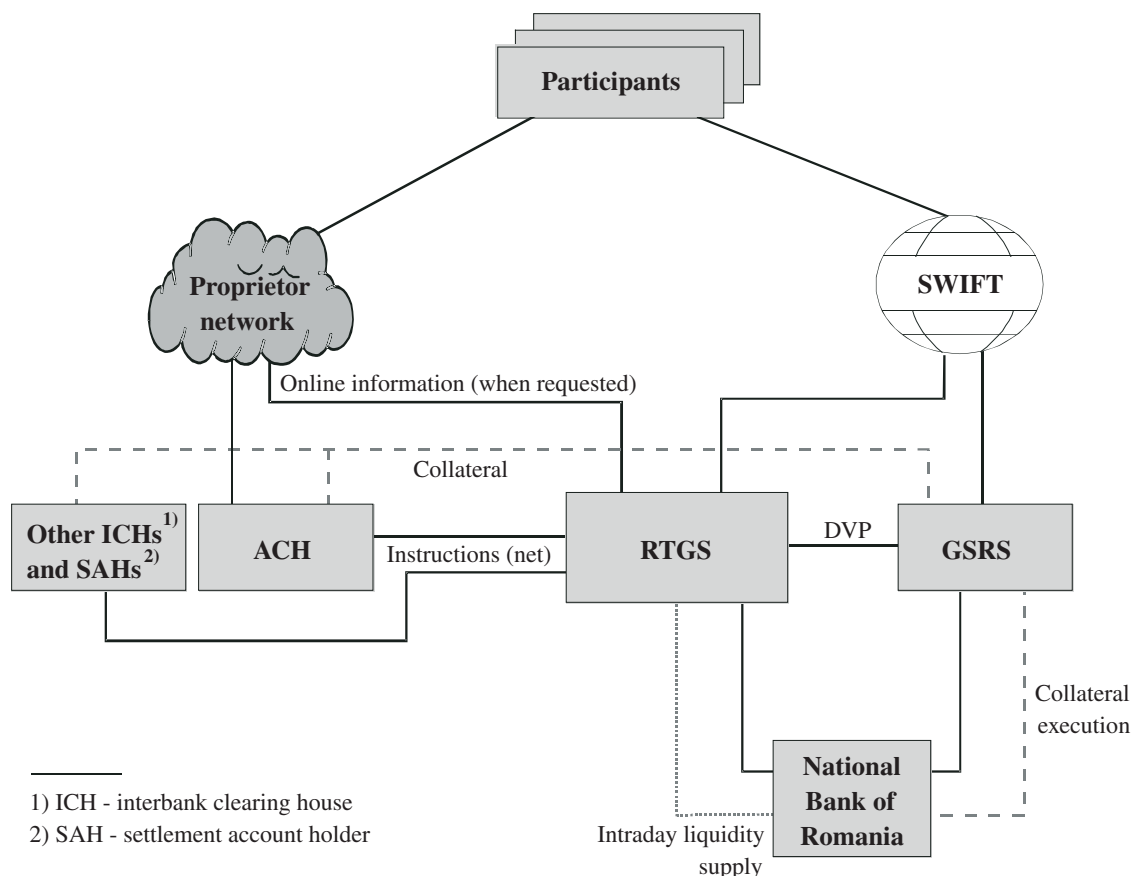
The National Bank of Romania, together with banks and TRANSFOND, envisages the implementation of a fully automated electronic payment platform (see the chart overleaf) including the following systems:

- a) an RTGS;
- b) an ACH;
- c) a government securities registration and settlement system (GSRS);
- d) a back-up and disaster recovery system.

It is intended that these systems will observe the principles set out in the report of the CPSS entitled "Core principles for systemically important payment systems", BIS, January

Chart

The functional scheme of the new electronic interbank payment system



2001, and all ECB Recommendations, standards, rules and provisions in the payment and settlement systems field. The Romanian legal framework for payment and settlement systems is presently undergoing a review process in order to adjust it to the *acquis communautaire* of the European Union.

The electronic interbank payment system will be a centralised system in which each participant will have one entry point only, preferably at the level of its headquarters.

Participants will need to develop their own networks to convey payment messages to the one entry point.

It is envisaged that the State Treasury will develop a network between its branches in order to become a participant in the ACH and the proposed RTGS system.

a) The real time gross settlement system

The National Bank of Romania, together with banks and TRANSFOND, envisages the implementation of an RTGS system by the end of 2003.

The system will process all large-value credit transfers and any other urgent credit transfers denominated in lei. It will make it easy to change to another settlement currency. TRANSFOND will be the technical operator of the system as the agent of the National Bank of Romania.

Participants in the system will be the National Bank of Romania, banks, the State Treasury, the headquarters of credit co-operatives, the GSRS, the ACH, and other interbank clearing houses and settlement account holders (TRANSFOND's paper-based interbank clearing house, the BVB, SNCDD, Visa, Europay).

In order to achieve an efficient management of liquidity during the day, the system will enable the National Bank of Romania to provide intraday liquidity automatically via repo operations in government securities.

The system will be able to settle a daily volume of at least 30,000 transactions.

For each participant in the RTGS system, the National Bank of Romania will open a settlement account. All payment operations made during the day will be carried out via settlement accounts only. At the beginning of the settlement day, the participants will transfer the amounts necessary for effecting payments from their current accounts to their settlement accounts. When payments are recorded on the settlement account¹⁰, they will become final. At the end of the day, the remaining settlement account balances will be transferred to the current accounts and will remain there until the beginning of the following settlement day.

During the operating day, based on the participants' orders, the National Bank of Romania will be able to execute liquidity transfers between current accounts and settlement accounts.

It is intended that the system will allow the sending participant to assign priorities to payment instructions.

The queue management rule will be bypass FIFO with a reordering facility, and the system will contain also an appropriate algorithm to resolve intraday payment gridlock.

The participants will be entitled to make use of SWIFT access devices to obtain information.

In order to permit the management of their payment flows during the day, it is intended that the system provide the participants with at least the following online information:

- inquiry access to their settlement account balance;
- inquiry access to their own queues;
- inquiry access to total messages sent and received.

The system should also provide the participants with the opportunity to send various text messages with no influence on the settlement.

b) The Automated Clearing House

The ACH will receive low-value credit transfer instructions and debit transfer instructions for electronic processing. Transmission of instructions will be made through a single entry point for each participant. The participants in the ACH will be the National Bank of Romania, banks, the State Treasury and the headquarters of credit co-operatives.

TRANSFOND will be the owner and the operator of the ACH system.

The system will apply a risk coverage scheme that will require the participants to provide collateral in favour of the ACH, consisting of government securities and cash deposits destined for the settlement of net amounts derived from clearing via the ACH. In each clearing cycle, the participants will be allowed to send credit transfer instructions or payment confirmations for direct debit transfers in a total amount not exceeding the collateral in the system.

The final settlement of the participants' net positions will be carried out by means of payments through the RTGS system. To reduce the liquidity (and implicitly the collateral)

¹⁰ The debiting and crediting of accounts will be made at the same time.

needed for the final settlement of net positions resulting from the clearing, there will be three settlement cycles per day. However, it will be technically possible to change the number of daily clearing cycles and the timetable for settlement of net positions through the RTGS system in each clearing cycle.

Risk management will be achieved through:

- the risk coverage scheme;
- monitoring of the system.

The ACH will be able to settle a minimum daily volume of 250,000 transactions.

c) The Government securities registration and settlement system

The system will be owned and operated by the National Bank of Romania and will:

- provide the registry function for intermediaries authorised to enter the government securities market and for any other participants in the RTGS system;
- carry out the matching and settlement of securities trades on the secondary market (based on the DVP model I (gross-gross));
- manage the collateral (freezing, unfreezing, use) provided in the form of government securities and initiate the transfer of the amount needed in the RTGS system in the case of collateral execution;
- provide information on the registered government securities;
- calculate interest/coupon and the redemption of maturing government securities issues, etc.

The participants in the GSRS will be the Ministry of Public Finance, the National Bank

of Romania, banks, the headquarters of credit co-operatives and securities companies authorised by the National Bank of Romania to act as dealers on the government securities market.

It is intended that the system will record and process at least the following operations:

- taking over and settlement of auction results on the primary market;¹¹
- sale-purchase operations;
- repo, reverse repo agreements;
- registration, cancellation and execution of pledge;
- FOP transfers;
- partial/total redemption of maturing government securities;
- interest/coupon payment.

It is to allow the registration of government securities issued in a dematerialised form.

Risk management is to be secured by the following:

- the application of the DVP principle;
- trading ceilings managed by the GSRS for participants lacking a settlement account with the RTGS;
- system monitoring by the relevant authorities.

d) The back-up and disaster recovery system

The safety of the new payments system will be ensured by back-up systems at the primary

¹¹ In the future, certain government securities issues are to be specified by the Ministry of Public Finance to be traded exclusively through the BVB.

site and by creating an alternative site to ensure business continuity.

The alternative site will be used to retrieve data in case of service disruptions. It will be located at a safe distance from the primary site to avoid being affected by, for example, the same (natural) catastrophe (e.g. an earthquake) or social unrest.

The alternative site will provide back-ups for the RTGS, ACH and GSRS systems. They will

stand ready to take over the activity of the systems at the primary site in full, and to conclude the banking day initiated at the primary site.

The links between the three systems will be ensured by specific interfaces.

Moreover, an appropriate link with the internal audit of the National Bank of Romania will be established.

4 Securities settlement systems

Trading in equities in Romania dates back to 1882, one year after the necessary legal framework had been approved. Until 1948, with the exception of the periods of the two world wars and the economic depression, there was significant growth in many sectors of the economy, including banks, oil, mining, industry, insurance and transport.

At present, two regulated capital markets operate in Romania: the BVB and RASDAQ, both mainly for equities. However, since the end of 2001, floating rate municipal bonds have also been traded on the BVB. Trades which take place on the BVB are also settled within this institution. Securities listed and traded on the BVB cannot be traded on the RASDAQ market; similarly, the shares listed on the RASDAQ market cannot be traded on the BVB.

Government securities are issued according to the provisions of the Law on public debt and the agreements signed between the Ministry of Public Finance, as issuer, and the assigned agents. At present, the National Bank of Romania is empowered to act as the state agent¹² for the sale, registration, transfer and settlement of government securities.

On both securities markets (the BVB and RASDAQ) the traded securities are issued in

dematerialised form and registered in electronic book-entry systems.

The BVB is operated by a single entity that performs trading, clearing, settlement, depository and registrar functions. The RASDAQ market operations are performed by three different entities, the RASDAQ trading system, SNCDD and ten registrars.

The BVB and the RASDAQ 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 depository functions. Applicants fulfilling the requirements of the law and of the BVB, RASDAQ and SNCDD respectively are admitted as members.

The BVB and RASDAQ are relatively new markets, dating from 1995 and 1996 respectively. At present both institutions are in the process of applying all the measures required to meet the applicable international standards.

¹² The legal framework is governed by Convention No. 16813/1998 concluded between the Ministry of Public Finance and the National Bank of Romania on 17 March 1998 and National Bank of Romania Regulation No. 2/1997 on government securities operations.

SNCDD currently has 90 direct users, of which 85 are brokers and dealers and five are banks that act as custodian agents. According to SNCDD regulations, any Romanian legal entity can become a direct user if it is licensed by the CNVM and complies with the SNCDD rules. The CNVM has authorised 13 banks to act as custodian agents. The RASDAQ transactions clearing and settlement process is performed according to the operational principles of a clearing house and is based on the participation of the settlement banks. A bank must be licensed by the National Bank of Romania to participate in the final settlement of this secondary market.

4.1 Trading

a) Trades on the Bucharest Stock Exchange

Common shares and floating rate municipal bonds (since 26 November 2001) are traded on the BVB. The BVB uses a fully automated trading system integrated in real time with the clearing, settlement, and registry systems.

There are two trading methods: order-driven (automated matching of orders, where the identity of the counterparts is not known) and quote-driven and negotiated deals (bilateral dealing between two counterparts with compulsory or indicative quotes).

The quote-driven method is used only for block trades negotiated directly between two market participants and concluded in the Deal Segment of the market, which is an auxiliary market. The BVB establishes the minimum value of the transaction, which is currently ROL 2 billion.

The trading hours for common shares are between 10 a.m. and 2.30 p.m., and for municipal bonds between 11 a.m. and 1 p.m.

b) Trades on the Romanian Association of Securities Dealers Automated Quotation System market

Common shares are traded through RASDAQ. RASDAQ is a quote-driven system giving brokers and dealers remote access from locations all over the country. It relies on market-makers that enter bid and offer quotations for given securities. The system automatically orders them by best bid and best offer quotations. According to the Rules of Fair Practice, a customer's order must be carried out at the best possible price existing in the market.

According to market regulations with regard to fixed-income securities, the negotiated item for CDs is the interest/discount rate, and for bonds the price is expressed as percentage of the face value.

Market-makers have to observe the terms of their own quotations when concluding trades. Generally speaking, trades must be closed at prices within best bid-best offer (the inside spread). Some deals can be concluded at prices outside the spread (special trades). A transaction can be qualified as "special" when:

- Equities: the amount exceeds ROL 200 million.
- CDs: the par value of the traded block exceeds ROL 1 billion.

The system uses an electronic dedicated private communication network. The operating schedule is between 10 a.m. and 2 p.m.

The main index is the RASDAQ Composite Index, which was launched on 31 July 1998 at 1000 points. It is a capitalisation-weighted price index comprising all issues traded on the RASDAQ market.

c) Trades in government securities

There is no regular secondary market for government securities.

The main method of performing secondary market transactions in government securities is direct negotiation (telephone, Reuters).

4.2 Clearing

There is no independent clearing house in Romania. The BVB and SNCDD are authorised for clearing securities by the CNVM and for netting cash payments related to securities transactions by the National Bank of Romania.

Clearing of trades in securities listed on the BVB is performed by the Clearing and Settlement Department of the BVB, while the clearing of RASDAQ trades is carried out by SNCDD (see Section 4.3).

4.3 Settlement

a) The Bucharest Stock Exchange

Clearing and settlement of trades in securities listed on the BVB and the netting of cash payments related to them are performed by the BVB. The final settlement of net cash balances is made through the National Bank of Romania. The brokerage houses must open accounts at settlement banks, approved by the National Bank of Romania and the BVB. There are currently 18 approved commercial banks involved in settlement. Since the custodian banks are also settlement banks, they have direct access to the settlement system for stocks and cash payments. On the BVB, the settlement cycle is T+3.

Settlement is effected via net settlement of funds followed by gross settlement of securities (DVP Model 2). Short selling is not allowed on the BVB, and the depository system automatically checks the existence of the securities for each buying order placed by a broker in the BVB trading system.

In the afternoon of the trading day, the depository provides securities companies and

custodians with trading reports and clearing and settlement reports. The settlement report must be confirmed by 12 noon on T+2, and any objections have to be reported to the BVB, which analyses the discrepancies along with the counterparts. The cash settlement is done through accounts with the settlement banks, based on the net amount from the clearing and settlement reports received from the depository on the trading day. Securities settlement takes place, after the confirmation of the final cash settlement at the National Bank of Romania, when the registry moves the shares from the seller's account to the buyer's account. The securities transfer occurs if and only if the final cash settlement has been carried out.

There are a number of arrangements to manage the risk of a payment failure:

- each member firm is given a trading limit according to its capital adequacy;
- in the event of a brokerage company lacking payment capacity, it can be granted a credit by its settlement bank, in accordance with contractual provisions;
- if the settlement bank cannot grant the credit or the credit does not cover the debt, the BVB uses the Guarantee Fund (the fund is managed by the BVB; the initial contribution is 3% of the share capital of the member firm);
- as a final step, if the Guarantee Fund is not sufficient, all members can be called upon to contribute to the payment.

The securities company or the custodian that forced the exchange to use Guarantee Fund resources in order to complete the settlement process has to reimburse the amounts used in 24 hours. Failure to do so carries with it a 1% penalty, applied to the amount used, for each day of delay.

In the autumn of 1997, the CNVM approved buy-in procedures proposed by the BVB. New rules and regulations regarding custodial activity at the BVB took effect in January 1998. The buy-in procedure is initiated when a securities company or custodian fails to complete the delivery of securities on the settlement date. The buy-in procedure can be initiated either by the securities company or by the BVB.

The BVB's electronic system checks the existence of securities on the seller's account and does not accept a sell order if there are not enough securities. Still, a shortage of securities can occur if the following conditions occur together:

- a broker executes incorrectly a sell order for a customer that settles through a custodian;
- the custodian does not confirm the settlement of the trade because the customer does not confirm the trade;
- the broker does not have enough securities on the house account in order to conclude the trade.

In this case, the broker must try to buy the securities before the settlement day. The broker can use the BVB's electronic messaging system in order to find the securities.

The broker is suspended from trading from the moment the shortage of securities occurs and until the situation is resolved.

If the broker finds the securities before the settlement day, the trade is reported to the BVB by both parties. The BVB records the trade and reports it to both parties. The settlement of the trade is bilateral and is not performed by the BVB. The two parties assume responsibility for settling the trade.

The broker that executed incorrectly the initial trade has to pay the BVB a penalty of 0.3% of the value of the trade.

If the securities cannot be settled on the initial settlement day, the BVB notifies the buyer that the settlement of the trade will be delayed and that the buyer is entitled to receive compensation of 2% of the value of the trade, at the time when the settlement actually occurs.

On the day following the initial settlement day, the BVB performs a buy-in of the securities, on behalf of the defaulting broker, at the maximum price allowed for the respective trading session. If the entire quantity of securities can not be bought in that trading session, the BVB repeats the buy-in procedure until all the securities have been purchased. At every trading session, the BVB sets the price to the maximum price allowed for the day.

The BVB informs the buyer when the securities have been settled.

The defaulting broker also has to pay the BVB a penalty, in an amount of 3% of the value of the trade. Both penalties (to the buyer and to the BVB) have to be paid on the day when the trade actually settles.

A broker not paying the penalty owed to the buyer on time is liable to pay additional penalties, of 1% of the value of the trade for each day of delay. Not paying the penalty owed to the BVB on time also carries additional penalties for the broker, of 1% of the value of the trade for each day of delay.

b) *National Securities Clearing, Settlement and Depository Company*

SNCCDD was licensed to act as an interbank clearing house by the National Bank of Romania in 1996 and holds a settlement account at the Bank. It provides clearing and settlement of all trades carried out on the RASDAQ market. The final settlement of net balances arising from the cash clearing performed by SNCCDD takes place through the large-value funds transfer system operated by TRANSFOND, as the National Bank of Romania's agent.

SNCDD processes trades in eligible securities only (i.e. securities authorised to be traded on the RASDAQ market). It is provided with information on the status of shares (eligible/non-eligible) by the CNVM.

Communications between SNCDD and direct users take place via a proprietary electronic network, with real-time systems available for securities transfers and cash settlement instructions.

At the close of the trading session, on day T, RASDAQ sends SNCDD an end-of-day transmission reflecting all trading activities. This transmission is completed by 2.45 p.m., at which time the end-of-day transaction reports become available through remote PC terminals to all participants. At the same time, settlement projection reports for the next settlement dates become available for all participants and for all settlement banks. On T+1 the participants must confirm all transactions or cancel any transaction, as necessary. The settlement projection reports are updated accordingly. On T+3 the participants who have to deliver securities must finalise all securities transfers needed to prepare the securities to be delivered; participants who have to make payments must credit their settlement accounts (with their settlement banks) with the necessary amounts; and settlement banks must send confirmation of the funds to be settled by them to SNCDD.

The settlement performed by SNCDD is a gross settlement for securities (trade by trade) and a net settlement for cash.

On T+3, on the basis of the payments accepted, SNCDD delivers the securities at 10.30 a.m., and at 2.30 p.m. calculates and sends to the National Bank of Romania the final settlement report, including the daily net balance of each cash settlement bank.

The final cash settlement process is performed by the National Bank of Romania according to

the same conditions as those described for the BVB. At 4 p.m. on T+3, after confirmation has been received from the National Bank of Romania of the final cash settlement, the settlement of securities transactions performed by SNCDD becomes final.

A real DVP arrangement is not yet in place because, for the time being, the securities transfer instructions are settled on a gross basis some hours before the final net settlement of the cash, which occurs in central bank money.

SNCDD's regulations stipulate that each direct user should take all the necessary measures to limit risk exposure. If a securities company does not have sufficient funds on 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/delivery obligations, SNCDD postpones these obligations to the next settlement date. It also manages a Guarantee Fund for both cash and securities. It is compulsory for each direct user to participate in the fund, contributing the money amounts or quantities of securities set by SNCDD in advance.

SNCDD is planning to introduce services for derivative markets. Other projects concern the registrar activities for the nominee accounts, the establishment of cross-border linkages, and the improvement of the buy-in and lending-borrowing procedures.

c) Settlement of trades in government securities

As far as the settlement of government securities transactions is concerned, for the time being the settlement of primary market operations (first placement, coupon/interest payments and redemption) is performed by the National Bank of Romania.

Interbank transactions on the secondary market are cleared and settled by the National

Bank of Romania. It carries out the cash settlement for these transactions through the large-value funds transfer system operated by TRANSFOND, as the Bank's agent.

Transactions between banks are notified to the Government Securities Register and the buyer makes the payment via payment order. The payments system sends the payment confirmation to the Government Securities Register, after which the transfer of ownership takes place. Banks' customers may deal in government securities solely with the custodian bank. Both parties must notify the Government Securities Register about the operation in order to record the change of ownership, whilst the payment is simultaneously performed through the interbank circuit, thus observing the DVP principle.

4.4 The use of the securities infrastructure by the National Bank of Romania

The present securities infrastructure plays an important role in the implementation of the monetary policy of the National Bank of Romania and in supplying liquidity for payment system purposes.

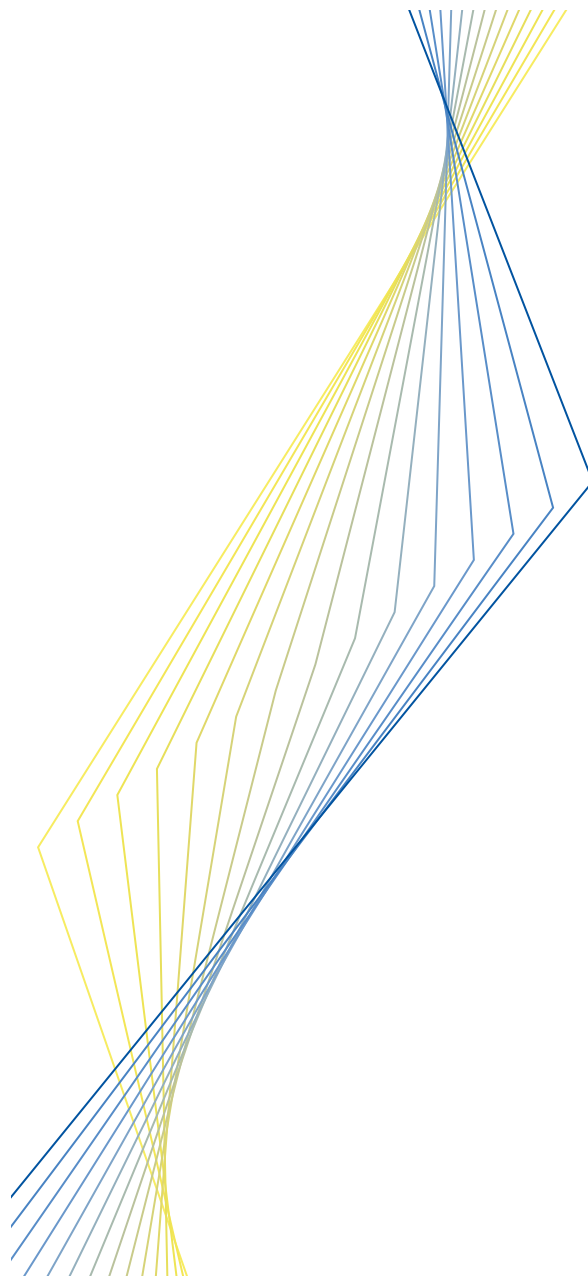
Banks may participate in repo/reverse repo auctions, which are organised by the National Bank of Romania for monetary policy purposes, using government securities as collateral. Auction results are automatically recorded in the Government Securities Register and the payment is initiated by the buyer (a payment order is required).

The National Bank of Romania also uses government securities as collateral for its lombard facility. According to Article 20 of the Law on the Statute of the National Bank of Romania, the collateral must cover both the principal and the interest owed by the debtor. In this case, government securities are blocked in the National Bank of Romania's favour in the government securities Register, and in the event of a lack of liquidity they are sold in the market on behalf of the debtor.

For final settlement of the net positions calculated by interbank clearing houses, banks provide collateral (within the risk coverage scheme) through a pledge of government securities and through cash deposits, according to the National Bank of Romania's regulations on establishing collateral limits and guarantee procedures.



EUROPEAN CENTRAL BANK



Slovakia

August 2002

Slovakia

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List of abbreviations

ABS	Association of Banks of Slovakia
ACS	Authorisation Centre of Slovakia, joint stock company
BIPS	Basic Interface for Payment Systems
BSSE	Bratislava Stock Exchange, joint stock company - <i>Burza cenných papierov, a.s.</i>
CSFR	Czech and Slovak Federal Republic
FMA	Financial Market Authority - <i>Úrad pre finančný trh</i>
MKS	Interbank Communications System - <i>Medzibankový komunikačný systém</i>
RMS	RM System Slovakia Stock Market, joint stock company
SC	Securities Centre of the Slovak Republic - <i>Stredisko cenných papierov</i>
SIPS	Slovak Interbank Payment System
SKK	Slovak koruna
SLSE	Slovak Stock Exchange, joint stock company - <i>Slovenská burza cenných papierov, a.s.</i>
SNCC	Slovak National Clearing Centre, joint stock company
ZBK	Bank Card Association of the Slovak Republic - <i>Združenie pre bankové karty Slovenskej republiky</i>

Introduction

The payment system of the Slovak Republic has undergone marked changes, especially by comparison with the period prior to 1990, when a centrally planned economy existed. These changes were associated with the banking reform. In 1990, the “mono-banking” model was replaced by a two-tier system and many new commercial banks were established. Before 1990 the only bank in existence had been the State Bank of Czechoslovakia. There are currently 21 banks (i.e. banks with a universal licence) 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 number of ATMs and EFTPOS terminals has also increased. Cheques, on the other hand, are not a common payment medium.

All interbank payment transactions are carried out electronically. The clearing of interbank payments is carried out by the Slovak National Clearing Centre (SNCC), the only clearing centre in Slovakia. All commercial banks carrying out payment services for customers are obliged to deliver their payment data

to the SNCC for processing. The processing of transactions is based on electronic data transfer. There is one payment system infrastructure – the Slovak Interbank Payment System (SIPS) – for all payment transactions (large-value and low-value payments).

The National Bank of Slovakia is competent and responsible for co-ordination of the payment system and, according to the National Bank of Slovakia Act, controls, co-ordinates and ensures payment systems and settlement of the payment transactions within the scope established by this Act, and ensures their efficient and economic performance.

Pursuant to the relevant legislation, marketable securities may only be transferred via securities market operators. There are two major institutions operating on the securities market: the Bratislava Stock Exchange, joint stock company (BSSE) and the Slovak Stock Exchange, joint stock company (SLSE). The BSSE carries out the settlement of the cash leg of the securities transaction in co-operation with the SNCC. At present, there is no independent clearing house for securities transactions in Slovakia.

I Institutional aspects

I.1 The general institutional framework

The current legal framework for payment and settlement governs the activities, rights and obligations of banks and other institutions operating in Slovakia.

The National Bank of Slovakia plays the main role in the operation and co-ordination of the payment system. Its responsibilities and powers are laid down in the National Bank of Slovakia Act 566/1992 passed by the National Council of the Slovak Republic as last amended by No. 149/2001 (National Bank of Slovakia Act).

To ensure a unified payment and settlement system, the National Bank of Slovakia issued a decree (Notice 275/1994) stipulating the principles of the interbank payment and settlement system. Apart from this decree, there is no specific legislation governing the organisational and technical aspects of payment services.

The Banking Act 483/2001 stipulates, inter alia, the legal status of banks operating in Slovakia (including savings banks), a 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, and auditing and mortgage transactions. According to Article 2 (13) of the Banking Act: "Payments and settlements between banks or branches of foreign banks in the Slovak Republic are conducted exclusively by the National Bank of Slovakia or a legal person entrusted by the National Bank of Slovakia". At present, this legal person is the SNCC (see Section 3.3).

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 513/1991 and the Civil Code 40/1964. The Commercial Code contains, inter alia, comprehensive coverage of letter-of-credit contracts, collections, current account contracts and traveller's cheques. With regard to the application of these provisions, however, it is also necessary to refer to the Civil Code as the generally applicable regulation.

The financial sector is also governed by the general anti-trust regulation (Act 136/2001 on the protection of economic competition), by the Bankruptcy Law (328/1991), by Act 191/1950 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), by the Securities and Investment Services Act (566/2001), by the Act on postal services (507/2001) and by the Protection of Bank Deposits Act (118/1996).

The relationship between a bank and its customers regarding the payment system is laid down in the General Commercial Conditions, which stipulate the principles for managing customers' accounts at banks and the principles for payment and settlement on these accounts. The General Commercial Conditions were drawn up by the National Bank of Slovakia in co-operation with commercial banks and were issued by the National Bank of Slovakia in 1993 and updated in 1995. They set

out the 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 payment media (bills of exchange, cheques, bank payment cards and letters of credit).

The General Commercial Conditions are not a series of generally binding legal regulations, but banks have undertaken to respect them by applying the given principles when dealing with customers under their commercial conditions or directly in the terms of account agreements. At present, a comprehensive legal regulation relating to the payments system in Slovakia is being prepared which comprises, inter alia, the implementation of EU legislation in the area of payment systems.

As far as securities clearing and settlement is concerned, until 1992 securities were issued in paper form, and all services associated with their custody and ownership transfers were provided by authorised banks. As a result of the first wave of privatisation, a great number of corporate share issues were launched in book-entry form in 1992. These shares were centrally registered at the Securities Centre of the Slovak Republic (SC) (see below), in accordance with Act 600/1992 on Securities, approved in the same year. This Act constitutes a basic legal framework for securities trading and settlement. It sets out the categories of securities, parties involved in securities trading, the position of public market organisers (stock exchanges), the role of the SC, etc. It has been supplemented by Act 530/1990 on Bonds as last amended by No. 96/2002, which is specifically designed to govern debt securities.

On 1 January 2002, a new Act on securities and investment services No. 566/2001, replacing Act on securities No. 600/1992 as amended, came into force with a compliance period of six months. In accordance with its transitional provisions, publicly tradable securities under

the previous law that were not accepted for trading on the listed securities market of the Stock Exchange as of the date of the effectiveness of the new law (1 January 2002) are considered as securities issued on the basis of public offer. Up to 30 June 2003, the owner of securities accepted on Stock Exchange markets can only be changed by a trade concluded on the Stock Exchange. The above provision does not govern security trades performed by the National Bank of Slovakia to control the money market under the Act on the National Bank of Slovakia and the free transfer (donation) and succession of securities.

This new Act on securities and investment services also has important implications for the SC. The new Act creates a framework for the establishment of a standard private central depository permitted to open accounts at other domestic or foreign central depositories, and to exclusively provide clearing and settlement of securities and other related services including OTC, securities safe custody and securities lending and borrowing. The SC is obliged to apply for a licence from the Financial Market Authority (FMA), which is a supervisory body on the market, by the end of 2002 at the latest.

The above-mentioned Act distinguished between securities in paper form (physical securities) and securities in book-entry form (registered securities). Many amendments to the Act preferred book-entry form, especially for publicly tradable securities. Under the current version, the Act defines which securities must be in the form of registered securities. If not defined by the Act, the form of securities is left to the issuer's discretion. However, publicly tradable securities must be issued in book-entry form and registered at the central depository, except for treasury bills issued by the Ministry of Finance of the Slovak Republic or National Bank of Slovakia bills which are registered at the Central Registry maintained by the National Bank of Slovakia. Other securities not covered by the law are

normally issued in paper form. In general, most stocks are dematerialised, but physical securities are also available on the market. This has implications for the different types of settlement which are in place for securities. Physical securities are kept in vaults, and a transfer of ownership is usually arranged by an endorsement and physical delivery. A change in the ownership of registered physical shares takes place when an entry to the list of shareholders is carried out by the SC.

All records on dematerialised (book-entry) securities are kept by the SC, except for government treasury bills (issued by the Ministry of Finance of the Slovak Republic) and National Bank of Slovakia bills, for which the registration of securities defined by law takes place at the Central Registry maintained by the National Bank of Slovakia (see Section 1.2.3).

In accordance with the Act on securities and investment services and the Act on the stock exchange, trading with securities on the Slovak capital market is organised by the stock exchange on its listed and free markets.

At present, the BSSE co-ordinates the clearing and settlement of trades in co-operation with the SC and the SNCC. All securities on securities accounts are maintained in the names of the account holders (legal entities or individuals) and are considered to be the property of the account holder. The SC registers the transfers of securities on the basis of instructions from stock exchanges and realises other procedures as set down by the law. The finality of securities settlement is given by the change of ownership in the books of the SC. The cash side of a settlement is arranged by the stock exchange via the SNCC. These services are transacted electronically online. Security transfers resulting from trades concluded on the stock exchange are executed on the final beneficiary's account without netting (TfT settlement). Until now, the cash side of security trade settlement has been undertaken by the stock exchange. Delivery of securities versus payment is also

controlled by the stock exchange (see Section 4.3).

Although the SSSs are currently operated by stock exchanges (the new Securities Act assigns this task to the SC), the finality of securities delivery is given by the registration of a securities transfer between two accounts at the SC on a settlement day. SSSs which are run by stock exchanges are subject to market regulations approved by the FMA, which was established by the Act on FMA (96/2002).

Other laws governing the securities market are: the Collective Investment Act 385/1999, the Act on Bonds, the Commercial Code, the Civil Code, the Act on transfer of state property to other persons (Act on privatisation), the Act on the National Bank of Slovakia, the Foreign Exchange Act and others.

1.2 The role of the National Bank of Slovakia

1.2.1 General responsibilities

The National Bank of Slovakia was founded on 1 January 1993 and is an independent institution (Article 56 of the Constitution of the Slovak Republic) established by the National Bank of Slovakia Act 566/1992. The primary objective of the National Bank of Slovakia is to maintain price stability. To this end, the National Bank of Slovakia:

- determines monetary policy;
- issues banknotes and coins;
- controls, co-ordinates and ensures the circulation of money, and provides payment system and settlement services between banks within the scope established by this Act and ensures the efficient and economic performance of these operations;
- supervises the safe functioning of the banking system and the conduct of

banking activities pursuant to this Act and special regulations; and

- performs other activities pursuant to this Act and special regulations.

In order to maintain price stability, the National Bank of Slovakia uses monetary policy instruments, including open market operations, the foreign exchange market, minimum reserve requirements, and the foreign exchange position of banks for monetary purposes. In using these tools, the National Bank of Slovakia indirectly influences the lending activities of commercial banks and subsequently the development of the money supply. As regards exchange rate policy, the National Bank of Slovakia applies a system of controlled floating, with the exchange rate of the Slovak koruna being determined by supply and demand on the foreign exchange market. The National Bank of Slovakia participates in the foreign exchange market through interventions.

The other instrument which influences bank liquidity is the minimum reserves that banks are obliged to maintain on reserve accounts with the National Bank of Slovakia. The fulfilment of minimum reserve requirements by banks is controlled once a month. It is calculated in terms of the average balances of commercial banks on reserve accounts held with the National Bank of Slovakia 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 permitted during the day. Commercial banks do not have free access to intraday facilities.

One of the tools used by the National Bank of Slovakia to implement its monetary policy is the conduct of open market operations. To pursue its monetary policy objectives, the National Bank of Slovakia may refinance or drain the surplus liquidity of commercial banks, which may include direct purchases and sales of securities, individual repo deals or repo tenders, deposits and issues of National Bank of Slovakia bills.

1.2.2 Payment systems oversight

The National Bank of Slovakia is competent and responsible for executing the oversight of payment systems. This competency is supported by the National Bank of Slovakia Act No. 566/1992, as amended by subsequent regulations, which state the objective of the Bank regarding oversight and co-ordination of payment systems (Articles 2 and 31). These two Articles refer to control, co-ordination and ensuring the smooth operation of the payment system and settlement between banks and other legal persons that carry out certain banking activities.

Article 31 stipulates further that, in order to direct and ensure a standardised payment and settlement system and clearing of data from the payment and settlement system between banks and selected legal persons, the National Bank of Slovakia is competent to issue regulations stipulating:

- principles of the payment and settlement system and clearing of data from the payment and settlement system; and
- details for the issue, management, and use of individual payment instruments and of requirements for technical properties and safety features for individual payment instruments.

The National Bank of Slovakia receives statistics on interbank payment systems data processed at the SNCC on a monthly basis, which enables the National Bank of Slovakia to monitor the smooth functioning of the system operated by the SNCC. Every major change to the system has to be discussed with the Bank before being implemented. The National Bank of Slovakia is competent and responsible for setting the national standard of the clearing format used for the transfer of interbank payments data.

The National Bank of Slovakia is authorised to monitor the technical accounts of all banks held at the SNCC with the aim of overseeing

liquidity in the banking sector (see Section 3.3). The National Bank of Slovakia executes the monitoring of the technical accounts via the Interbank Communications System (MKS).

The participants of the SIPS with a special position, so-called “third parties” (see Section 3.3) are partly overseen and regulated by the National Bank of Slovakia. The third parties are non-bank legal entities which operate on the capital market and have access to the SIPS on the basis of a permit issued by the National Bank of Slovakia. The National Bank of Slovakia will only grant permission to the third parties if certain conditions are met. The National Bank of Slovakia monitors fulfilment of the access conditions by these entities (e.g. operating rules, technical conditions, etc.).

The National Bank of Slovakia regularly holds meetings with the representatives of the banks in order to discuss and co-ordinate the Bank’s policy and practical procedures in the payment system area.

1.2.3 Activities in the area of securities clearing and settlement systems

Under the National Bank of Slovakia Act and the Act on securities and investment services, the National Bank of Slovakia administers a Central Registry, the activities of which are more closely specified by the Operating Rules of the Central Registry maintained by the National Bank of Slovakia.

The Bank’s Central Registry is required by law to keep records on short-term securities with a maturity of up to one year issued by the Ministry of Finance of the Slovak Republic (government treasury bills) and by the National Bank of Slovakia (National Bank of Slovakia bills). This centre, in co-operation with the SNCC, undertakes the settlement of the cash leg of the securities transactions. The Central Registry performs final settlements of the securities leg of transactions only; the cash leg is settled through the SNCC.

The National Bank of Slovakia notifies the SC of any government bond issues and/or trades and credits them to the holders' asset accounts. The National Bank of Slovakia's Financial and Property Settlements Section credits primary owners' accounts with government bonds (on the day of issue) only; it does not settle secondary market trades in such securities.

The National Bank of Slovakia carries out final settlement of the results of the processing of any interbank payments. It also carries out the results of the settlement of the cash leg of the securities transaction and payment card transactions. Final settlement is executed on the reserve accounts of banks held at the National Bank of Slovakia.

1.2.4 The operational role of the National Bank of Slovakia

Provision of settlement accounts

Banks, branches of foreign banks and financial institutions established by a special law must keep reserve accounts with the National Bank of Slovakia. Banks and branches of foreign banks are obliged to keep minimum reserves on their reserve accounts.

Financial institutions established by a special law do not have this obligation, and their accounts are used only as settlement accounts for the final settlement of interbank payments.

All banks and other financial institutions which are direct participants in the SIPS (see Section 3.3) use their reserve accounts with the National Bank of Slovakia for the final settlement of interbank payments. It is not possible to carry out interbank payments and clearing without establishing a reserve account. The National Bank of Slovakia settles the balances of these accounts on a daily basis.

Minimum reserves earn interest at a rate of 1.5% p.a. The basis for the calculation of interest

is the daily actual balance on the reserve account. This is only applied for the amount not exceeding the set level of required minimum reserves.

The National Bank of Slovakia does not provide settlement accounts for third parties in the SIPS.

Provision of credit facilities

According to the National Bank of Slovakia Act, the Bank may buy from, or sell to, banks government bonds or other securities guaranteed by the Government, which it may hold for a maximum period of one year. The National Bank of Slovakia may provide banks, for a maximum period of six months, with credits guaranteed by the above-mentioned securities, or accept from banks credits guaranteed by securities. In order to maintain bank liquidity, the National Bank of Slovakia may, in exceptional cases, provide a bank with a short-term credit for a maximum period of three months. This short-term credit is also guaranteed, but the type of guarantee is decided on by the Bank Board. While a bank is under forced administration, the National Bank of Slovakia may provide guaranteed credits in accordance with a special regulation for a maximum period of six months. The National Bank of Slovakia may provide credit to the Deposit Protection Fund.

Although the National Bank of Slovakia 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, and must adjust the monitoring and management of their liquidity levels accordingly. Within a clearing day, there is a precisely defined time-frame for the adjustment of bank liquidity (see Section 3.3.6). During this period, banks may bridge their short-term liquidity shortages on the interbank money market, or

they may obtain funds from the National Bank of Slovakia as the lender of last resort, especially through open market operations.

Under Article 24 of the National Bank of Slovakia Act, the Bank is also entitled to solve bank liquidity problems on a case-by-case basis.

Provision of foreign exchange activities and powers

Under the terms of the National Bank of Slovakia Act, the Bank is entitled to co-ordinate and regulate cross-border payments and the settlement of clearing data in the Slovak Republic, to maintain foreign currency accounts for its clients pursuant to this Act, and to conclude and conduct with banks, foreign banks and other financial institutions all types of banking operation in accordance with the provisions of this Act. In accordance with the Act's provisions, the National Bank of Slovakia maintains loro accounts held in Slovak korunas for central banks and other important international financial institutions, and performs operations on these accounts in Slovak korunas for foreign banks at the National Bank of Slovakia. This is done in accordance with the Bank's conditions for maintaining loro accounts.

Pricing

The National Bank of Slovakia maintains reserve accounts for banks and other financial institutions on the basis of contractual relations established pursuant to the provisions of the National Bank of Slovakia Act 566/1992.

The National Bank of Slovakia does not charge any fees to banks and financial institutions for maintaining their reserve accounts.

Bank code number

The National Bank of Slovakia issues a unique code to each participant in the payment system. This is part of the account number information required for domestic payment operations. The bank account number consists

of the account number and the identification code. The account number comprises a maximum of 16 digits and the identification code consists of four digits.

The National Bank of Slovakia registers and regularly updates the list of bank identification codes – the so-called register of identification codes for domestic payments – and distributes it to all participants in the interbank payment system.

1.2.5 Co-operation with other institutions

With regard to the fulfilment of objectives relating to the accession of the Slovak Republic to the European Union, the National Bank of Slovakia set up a working group for payment systems in June 1998 in order to prepare for entry into the EU. Its members are drawn from the National Bank of Slovakia, 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 National Bank of Slovakia works closely 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 this reason, the National Bank of Slovakia organises regular meetings with commercial banks to inform them of new activities in the payment and settlement system. In addition, the National Bank of Slovakia co-operates closely with the Association of Banks of Slovakia (see Section 1.3) and co-ordinates various activities within the payment system.

1.3 The role of other private and public sector bodies

1.3.1 Commercial banks

The status and function of commercial banks is specified in the Banking Act (see Section 1.1). It defines banks as legal entities – joint stock companies permanently based in the Slovak Republic – licensed to operate as banks accepting deposits and offering loans.

On 31 December 2001, the Slovak banking sector comprised 21 banking entities (19 banks and two branch offices of foreign banks) and 10 representative offices of foreign banks.

Most of the 21 commercial banks are universal banks. Aside from core banking services – accepting deposits, granting loans, processing payments and settlement – they also provide additional services, such as issuing payment instruments (payment cards, travellers' cheques, etc.), opening letters of credit, collections, issuing bank guarantees, bureau de change services and others.

A special role is performed by the three housing construction savings banks (building societies), which accept deposits from customers and grant home improvement loans under special conditions. Their activities are solely directed towards home savings. They are special banks and do not have a foreign exchange licence.

As of December 2001, commercial banks in Slovakia maintained deposit accounts for

customers totalling SKK 640.10 billion (€15.16 billion), of which SKK 110.69 billion (€2.59 billion) was in foreign currency. In terms of capital share, banks in Slovakia may be divided into three groups, as indicated in the table below.

1.3.2 Financial institutions and other bodies

The Export-Import Bank of the Slovak Republic

The Export-Import Bank of the Slovak Republic (Eximbanka) is a state-owned company established by special Act 80/97, which was passed by the National Council of the Slovak Republic, and it does not have the legal form of a joint stock company. It is not a commercial bank and there is only one financial institution of this type in the Slovak Republic. Eximbanka was established to promote the export and import activities of Slovak companies by financing and insuring export credits. Eximbanka is authorised by the Government to represent Slovakia at international institutions whose activities are connected with those of Eximbanka.

Slovak National Clearing Centre, joint stock company

The main task of the 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 3.3.

Table	
Commercial banks in Slovakia	
Type of bank	Number of banks
Without foreign capital interest	6
With foreign capital interest	13
Branches of foreign banks based in the Slovak Republic	2

Bratislava Stock Exchange, joint stock company

The BSSE is a legal entity whose primary task is to facilitate trades in stocks and shares for its members and to prepare the settlement of the cash leg of the securities transaction. For more detailed information, see Section 4.

Slovak Stock Exchange, joint stock company

The SLSE is a legal entity which organises securities trading on the capital market (demand and offer of securities) on the basis of FMA approval (licence). The SLSE started its activities in January 2002 after obtaining the FMA licence, as requested by the RM System Slovakia Stock Market (RMS), an organiser of the non-stock-exchange market.

Bank Card Association of the Slovak Republic

The Bank Card Association of the Slovak Republic (ZBK) is a professional association of currently 15 banks. The main goals of this association are to create the conditions for the development of bank payment card use within the interbank payment system of Slovakia, to support and develop a joint network of ATMs and POS terminals, to further train bank employees working in card-related businesses, to facilitate co-operation with other banking and non-banking institutions, to facilitate co-operation among banks as regards card risk management and to promote card products issued in Slovakia.

Authorisation Centre of Slovakia, joint stock company

The Authorisation Centre of Slovakia (ACS) is a joint stock company owned by the major Slovak banks. The ACS provides banks with technical services relating to bank cards – card database management, generation of card data, card personalisation, card authorisation, transaction data capture, and clearing and settlement. For more detailed information, see Section 3.4.2.

Association of Banks of Slovakia

The Association of Banks of Slovakia (ABS) is a professional association of commercial banks. The central role of the ABS is the establishment of a co-ordination centre for the protection of the common interests of its members and to create a sound economic and legal environment for effective co-operation among commercial banks and with the National Bank of Slovakia, the Ministry of Finance of the Slovak Republic 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 is a member of the European Banking Federation.

Association of Securities Dealers

The Association of Securities Dealers is an association of securities dealers that represents the interests of banks and stock brokers trading with securities and regulates their activities.

Association of Management Companies and Association of Investment Companies

The Association of Management Companies and the Association of Investment Companies were established by companies operating within the domain of collective investment in the Slovak Republic. Associations represent interests of their members vis-à-vis other entities and also provide consulting and information services.

Slovak Insurance Association

The Slovak Insurance Association represents, safeguards and advocates the interests of insurance companies vis-à-vis the bodies of state administration and other legal entities.

National Member Group of SWIFT in Slovakia

The National Member Group of SWIFT in Slovakia was established in 1993 as a legal

entity. Its primary task is to co-ordinate the activities of current and potential SWIFT members within Slovakia.

2 Payment media used by non-banks

2.1 Cash payments

To meet the demand for money, under Article 16 of the National Bank of Slovakia Act “the National Bank of Slovakia shall have the exclusive right to issue banknotes and coins as well as commemorative notes and coins which are legal tender and on which the nominal value is marked in Slovak korunas or hellers”. While the production of banknotes takes place abroad, the minting of coins takes place at the State Mint of Slovakia.

At present, the currency in circulation in Slovakia 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). Cash is mostly used as payment for goods and services by private individuals and companies. Cash withdrawals from bank accounts are made by means of cheques, at the cash desks of banks and from ATMs using payment cards.

Slovak banknotes are accepted by both legal entities and private individuals without restriction. Coins, including commemorative coins, are accepted without restriction by the National Bank of Slovakia, banks and branches of foreign banks. Other legal entities and private individuals may refuse to accept more than 20 coins of the same face value together, more than 30 coins of differing face values together, or commemorative coins.

At the end of 2001, the volume of banknotes and coins in circulation (including cash in bank vaults) totalled SKK 91.5 billion (€2.14 billion), of which banknotes accounted for SKK 89.6 billion

(€2.09 billion – 97.9%) and coins (including commemorative coins) SKK 1.9 billion (€45.1 million – 2.1%). On 31 December 2001 the volume of cash in bank vaults amounted to SKK 10.6 billion (€248 million).

2.2 Non-cash payments

Non-cash payments are effected on current accounts maintained at banks. Households usually make payments from their current accounts using payment orders submitted in written form. Companies are increasingly using electronic data processing on account of the large number of payments.

The most frequently used means of non-cash payment are credit transfers, direct debits and payment cards.

2.2.1 Credit transfers

Credit transfers, whereby payers transfer payment from their account to the account of the beneficiary, currently constitute the most widely used form of payment.

In 2001, credit transfers accounted for more than 90.7% of the total volume of non-cash payments. Credit transfers are submitted to banks by customers either in paper form or electronically. Those submitted in paper form are converted by the payer's bank into electronic (book-entry) form and then processed solely in electronic form.

Standing order credit transfers are used to make regular payments to the same payee, due on a certain date, for the regular transfer of

fixed amounts (e.g. rent payments) or amounts above a certain limit from one account to another, or for the regular transfer of the entire balance from one account to another.

2.2.2 Cheques

Cheques have never been a widely used means of payment in Slovakia. The use of cheques and the proper form of cheques are governed by the provisions of Act 191/1950 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 may be issued even without the existence of an account. (The only condition is that a sufficient amount of money be paid into an internal account of the bank.)

There is a separate guaranteed cheque system (similar to the eurocheque scheme) operated by Slovak banks. A guaranteed cheque may be issued up to a maximum of SKK 6,500 (€150) and ten guaranteed cheques (up to a maximum of SKK 65,000, i.e. €1,500) may be presented at any one time. Such cheques are used for cash withdrawals at the cash desks of banks which are members of the guaranteed cheque system. Guaranteed cheques are not checked for sufficient cover. Guaranteed cheques may also be used for payment of goods and services at specified trading places. Until now, such cheques have been used without guarantee cards. Instead, the identity of the holder is verified upon presentation of the cheque. A merchant accepting a guaranteed cheque will present this cheque to its bank together with a direct debit instruction. The merchant's bank credits the payee's account directly with the sum of all cheques. When the cheque is paid out in cash, the bank sends a direct debit instruction to the payer's bank. The paid cheque remains at the bank at which it was cashed or at the merchant's bank and is not sent back to the issuing bank (truncation).

Personal cheques are not honoured immediately on being presented to a 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 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 cheque and card payments.

Direct debits and standing orders are used for regular payments, due on certain days, on the basis of a prior agreement between a bank and a customer (such as payments for electricity supply or telephone charges). Present legislation makes possible "legal" direct debits – i.e. direct debits on the basis of legally valid and enforceable decisions of courts, court executors and administrative bodies of the state budget – as well as direct debits for the payment of interest, charges for banking services and in cases when the bank is authorised to debit a client's account according to the account agreement.

2.2.4 Payment cards

Debit cards, credit cards and travel and entertainment cards

As at 31 December 2001 more than 1.97 million payment cards had been issued by banks which are members of the ZBK (see Section 1.3.2). This means that a third of all Slovak citizens are cardholders. International payment cards (which can be used both in Slovakia and abroad) account for 80% of the total number of cards in circulation. The remaining 20% are domestic payment cards (which can only be used in Slovakia). Banks issue various types of payment card product e.g. Maestro, Eurocard/MasterCard, MasterCard Electronic, Visa and Electron. Some banks also issue American Express and Diners Club cards.

The debit card business has been growing at a faster pace than the credit card business. The majority of payment cards are “pay now” products, i.e. debit cards usually linked to current accounts (even payment cards such as Eurocard/MasterCard or Visa are essentially issued and processed according to the same method as debit cards, i.e. when a certain amount is held on the customer’s account, depending on the general terms and conditions of the particular bank). One bank issues debit chip cards (EMV standard) and some banks issue credit cards (i.e. co-branded cards and virtual cards).

Retailer cards

Retailer payment cards issued by non-bank entities may be divided into:

- payment cards issued by petrol companies (where cards are used in related retail networks). As regards the method of payment, these cards are “pay later” products (charge cards);
- pre-paid chip cards – cards used, for example, for local bus transport (cards are loaded at the cashier desk at the bus stations);
- retailer credit cards (consumer credit) issued by supermarkets or leasing companies for use in related retail networks (e.g. Carrefour cards).

ATM and POS networks

Since 31 December 2001, cardholders in Slovakia have been able to use a network of 1,182 ATMs and 9,602 EFTPOS terminals. Widespread ATM use began earlier than the development of EFTPOS terminals (typically installed at petrol stations, in shops/shopping centres, supermarkets, hotels, restaurants and in other service sector establishments). This is why cash withdrawals from ATMs (77% of total card transactions in Slovakia) prevail over card payments (23%) at retailers. The value of card

payments accounted for 15% of the aggregate value of card transactions in Slovakia, and cash withdrawals accounted for 85%.

However, the development of the EFTPOS terminal network in Slovakia has increased dramatically compared with ATMs. The following changes were recorded between 31 December 2000 and 31 December 2001: the number of ATMs increased by 9%, the number of ATM transactions by 2% and the value of ATM transactions by 12%; the number of EFTPOS terminals increased by 52%, the number of EFTPOS transactions by 63% and the value of EFTPOS transactions by 58%. These increases show that prospects for the future are good and testify to the increasing use of payment cards in Slovakia for their original purpose, i.e. non-cash payments.

2.2.5 Postal instruments

Slovenska posta, s.p. carries out payment services at Post Office branches, primarily to the general public. Slovenska posta, s.p. uses its own payment media, i.e. postal order forms for receiving and delivering cash. The connection between the account holders who send or receive payments is supplied by Postova banka, a.s, which settles cash transfers for Slovenska posta, s.p.

2.2.6 Other payment instruments

Bills of exchange

Bills of exchange are only used to a limited extent as payment instruments. Their most frequent use is to secure credit, mainly in the agricultural sector.

Several banks encourage their clients to use bills of exchange either as payment instruments (e.g. to settle their obligations to trade partners) on the basis of the transferability of bills of exchange, as a pledge or as negotiable securities with various possibilities for use.

Documentary payments

Documentary letters of credit and documentary collection are instruments mainly used in cross-border commercial payments.

Luncheon vouchers

As part of fringe benefits programmes, employers provide their employees with luncheon vouchers that may be used at an extensive network of restaurants. The most widely used are "Ticket Restaurant" luncheon vouchers. These may be used to pay for meals in restaurants and to make food purchases in some shops.

2.2.7 Online banking services

Telephone or PC-based banking applications facilitate remote access to client accounts held

at banks. Home banking, internet banking and mobile banking are provided by all major banks.

Banks provide their clients with various payment services, e.g.:

- online bank transfer via internet banking or via GSM,
- secure online card payments over the internet or using Visa virtual credit cards,
- online internet banking – the "Eliot" project run by Tatra banka, a.s.

ATMs are also frequently used not only for cash withdrawals but also for checking account balances, bank transfers from a customer's account to another account, cash deposits and pre-paid mobile phone top-ups.

3 Interbank exchange and settlement systems**3.1 General overview**

There is one payment system, the SIPS, which processes and settles all interbank payment transactions regardless of their value.

Processing and final settlement are executed separately. The final settlement of payment transactions within the interbank payment system on National Bank of Slovakia accounts does not occur in real time.

3.2 The real-time gross settlement system

An RTGS system has not yet been established in Slovakia. The main current payment systems project in preparation is the implementation of such a system. The National Bank of Slovakia recently finalised the detailed design of this system. The design has been discussed with all

the payment systems participants within the working group on payment systems mentioned in Section 1.2.5. The design is scheduled to be approved by the governing body of the National Bank of Slovakia in 2002. The RTGS system will be operated and managed by the Bank and will process and settle large-value payments. The existing SIPS system will remain in operation for small-value payments. In addition to the RTGS system, a new technical platform for both systems called the Basic Interface for Payment Systems (BIPS) is being developed. It is envisaged that the BIPS will eventually replace the MKS (see Section 3.3.5). The above-mentioned change to the payment system will be supported by an appropriate legislative framework, which is being prepared as a part of the EU accession process.

3.3 The large-value payment system: SIPS

The SIPS does not distinguish the values of the payments and processes all interbank large-value and retail payment transactions. SIPS is based on a single clearing centre, the SNCC. 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 National Bank of Slovakia. The SNCC was established in 1992 as part of the creation of the preconditions for interbank payments in the Slovak Republic after the division of the former CSFR into two independent states. The SNCC started its operations on 8 February 1993 (i.e. the day on which the Slovak koruna was introduced as the national currency) 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 National Bank of Slovakia. The other shareholders include commercial banks and the Ministry of Finance of the Slovak Republic, which owns one share.

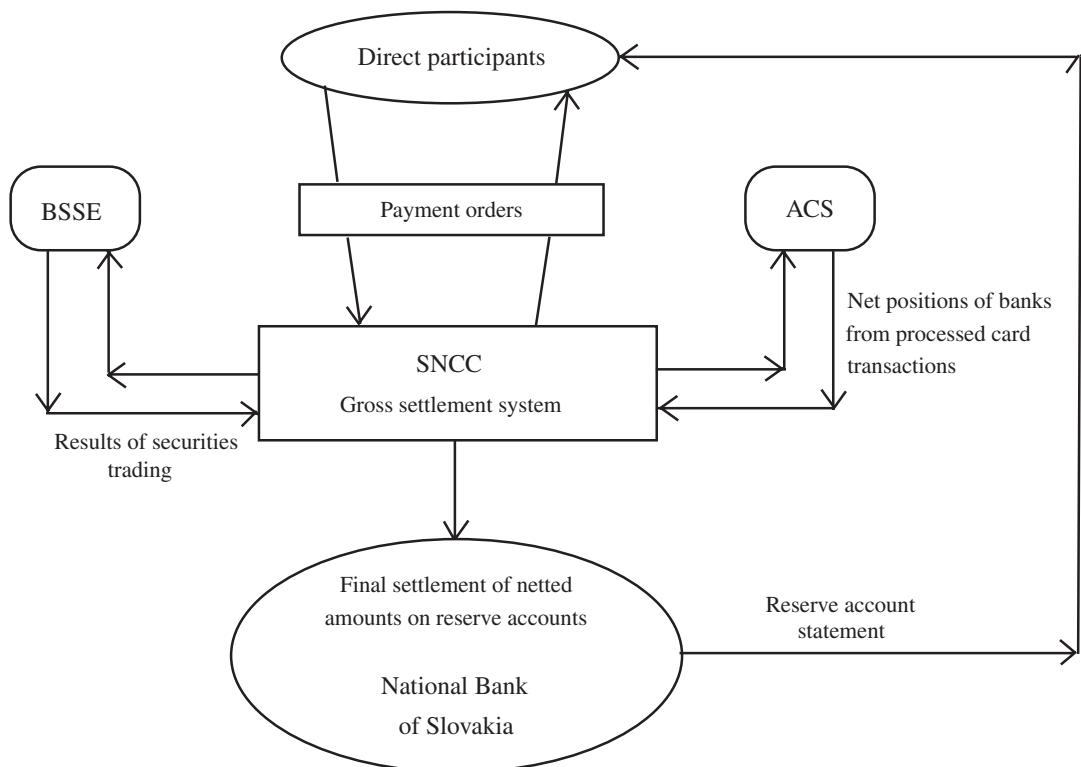
3.3.1 Operating rules

The processing and settlement of transactions are organisationally and technically separate within SIPS. The SNCC, as system operator, is responsible for processing. Banks and branches of foreign banks carry out payments and settlement operations solely via the SNCC. The final settlement of transactions falls within the jurisdiction of the National Bank of Slovakia, which operates as a settlement agent.

The legal aspects of SIPS are regulated by the Banking Act and National Bank of Slovakia

Chart 1

Interbank payment and settlement system in the Slovak Republic



Decree 275/1994 on the principles of the payment and settlement system between banks (see Section I.1).

The “zero-hour rule” is not laid down in existing legislation. In the event of bankruptcy, Act 328/1991 on bankruptcy, with subsequent amendments, will apply. The Act does not, however, recognise the concept of the zero-hour clause.

The design of SIPS has a “Y” shape (see Chart 1). Processing at the SNCC is performed during the day on a transaction-by-transaction basis, and final settlement of net positions is conducted by the National Bank of Slovakia on the reserve accounts of banks at the end of the day.

3.3.2 Participation in the system

Participation in SIPS is classified according to two criteria:

The first is the form of participation. The only form is direct participation. Only banks and other financial institutions established by special law may be direct participants. All participants keep reserve accounts with the National Bank of Slovakia. There are currently 22 direct participants in SIPS (including the National Bank of Slovakia).

Third parties do not keep reserve accounts with the National Bank of Slovakia and do not conduct payment transactions “in their own name” but are authorised to debit or credit the accounts of direct participants. These are exclusively non-bank legal entities operating on the capital market and legal entities providing additional services for banks. These entities have access to SIPS on the basis of a permit issued by the National Bank of Slovakia, which is granted after certain conditions are met. There are currently two third parties, namely the BSSE and the ACS, which undertake the clearing of bankcard transactions.

Participants are also classified as either active or passive. Each participant (bank, financial institution or third party) is given a unique identification code for domestic payments at the time of its establishment (see Section I.2.2). During the set-up period the code is marked as “passive” in the register of identification codes for domestic payments maintained by the National Bank of Slovakia. The participant is required to provide evidence of its technical and administrative readiness to execute payments prior to being marked as “active”. The register indicates to the other participants and their customers which identification codes may be used in payment instructions and which are only being tested.

3.3.3 Types of transaction handled

Most of the transactions handled by the SIPS are credit transfers and direct debits. The SIPS also processes cheque transactions and the net positions of card transactions. As regards card transactions, the ACS supplies banks which issue and accept payment cards with clearing files containing data regarding the use of payment cards on a daily basis. At the same time, the ACS prepares data for interbank settlement daily and submits these data to the SNCC for processing on the basis of a “third party entry order”. The settlement of card transactions for banks is based on the principle of net settlement.

The complete processing and settlement of a credit transfer – from the debiting of the payer’s account at one bank to the crediting of the beneficiary’s account at the other bank – takes no more than three days. For direct debits, the payment is initiated by the payee, who requests the payer to settle the obligations. This operation prolongs the processing and settlement of direct debits by up to five days.

A specific payment order is used for interbank transactions and balancing liquidity, the third party entry order. Such orders are

transmitted to the SNCC with the highest processing priority. Processing and settlement of a third party entry order takes no more than one day.

3.3.4 Operation of the system

The SNCC operates as an automated clearing house. It processes payment transactions on the clearing day on which they are received. It is not possible to submit transactions to the system several days in advance for settlement on a certain value date. The transaction processing environment is fully electronic.

Transactions are processed in the order in which they arrive (FIFO principle) in line with their respective pre-determined priority. Payment transactions between banks have a higher processing priority 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 settled on reserve accounts at the National Bank of Slovakia at 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 the submission and processing of data at the clearing centre (see Chart 2). Banks may deliver payment transaction data for processing on a given clearing day (D) from 1 p.m. on the previous day (D-1) to 11.30 a.m. on the clearing day. The period from 11.30 a.m. to 1 p.m. on a clearing day is reserved for large-value interbank fund transfers. During the period from 1 p.m. to 4 p.m. system maintenance is carried out at the SNCC. After 4 p.m. the SNCC generates and sends output files with the results of interbank payments processing to the banks. Input data sent to the SNCC after 1 p.m. on the same calendar day is processed with the value of the following clearing day (D+1).

Chart 2

Timetable for submitting and processing of interbank payments data at the Slovak National Clearing Centre

Calendar day	C - 1			C						C				+1
Clearing day	D - 1			D						D + 1				
Time	4 p.m.	9 p.m.	12 p.m.	7 a.m.	8 a.m.	9 a.m.	11:30 a.m.	1 p.m.	4 p.m.	4:15 p.m.	6:30 p.m.	9 p.m.	12 p.m.	9 a.m.
Receipt of data through MKS for the clearing day D														
Receipt of input data on diskette, magnetic tape for the clearing day D														
Receipt of third party entry orders for the clearing day D														
SNCC processes input data of the clearing day D														
Monitoring of the technical account balance														
System maintenance and opening of a new clearing day														
Generating output files from the clearing day D and sending them to banks through MKS														
Submitting output files from the clearing day D to banks on diskette, magnetic tape														
Time	4 p.m.	9 p.m.	12 p.m.	7 a.m.	8 a.m.	9 a.m.	11:30 a.m.	1 p.m.	4 p.m.	4:15 p.m.	6:30 p.m.	9 p.m.	12 p.m.	9 a.m.

Banks monitor their current balance on their technical account at the SNCC during the day, either electronically or by telephone, according to the timetable set (see Chart 2) and thus control their liquidity. The National Bank of Slovakia is authorised to monitor the technical accounts of all banks with the aim of overseeing liquidity in the banking sector.

Where a bank has insufficient liquidity, the most frequent means of arranging the necessary funds is to borrow them on the interbank money market.

3.3.5 Transaction processing environment

The transfer of data between banks and the SNCC is carried out exclusively in electronic form in a clearing format that represents a national standard (differing from the SWIFT format).

Banks send and receive data to and from the SNCC in different ways:

- *offline communication:*
 - on magnetic tapes or diskettes.
- *online communication:*
 - via modem,
 - via MKS, a telecommunications network with X.25 protocol, or
 - via a telecommunications network with X.400 protocol.

In general, data are sent to the SNCC via online telecommunications networks. The remaining methods are used for alternative data transfer in contingency situations.

3.3.6 Settlement procedures

System maintenance is carried out at the SNCC from 1 to 4 p.m. After 4 p.m., the SNCC generates and sends output files with

the results of interbank payment processing to the banks. Input data sent to the SNCC after 1 p.m. on the same calendar day are processed with the value of D+1.

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 the technical accounts on behalf of the direct participants in SIPS. All payment transactions carried out during a given day are recorded on these technical accounts in accordance with the principles of gross settlement. A payment transaction may only be processed if there are sufficient funds on the technical account. A debit balance on a bank's technical account at the SNCC is not permitted, even for a short time, during a clearing day. If a bank does not have enough funds to cover a payment transaction, the processing of all payment transactions for this bank is put in a hold queue. Intraday credit facilities are not 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 National Bank of Slovakia as the lender of last resort (see Section 1.2.2). As soon as the system detects sufficient funding, it resumes the processing in the order of incoming payment transactions (FIFO principle).

If the payer's bank does not have sufficient funds to cover the queued payment transactions at the close of the clearing day, the SNCC does not process these transactions and returns them to the bank. The SNCC generates reports for banks and computes the net positions (final balances) of banks for the National Bank of Slovakia on the basis of processed payment transactions.

In the second phase, the net positions are settled on the reserve accounts of the participating banks at the National Bank of Slovakia at approximately 4.30 p.m. Each bank is informed of the balance of the final

settlement and its current position on the reserve account in a separate statement of account.

The clearing system must balance every day. This means that at the end of the clearing day, after final settlement has occurred, the balances on the technical accounts at the SNCC must be equal to those on the reserve accounts at the National Bank of Slovakia. As a result, the initial balances on the technical accounts at the SNCC and the initial balance on the reserve accounts at the National Bank of Slovakia are equal at the beginning of the next clearing day.

3.3.7 Credit and liquidity risk

No payment transaction may be processed and settled with insufficient cover. Thus, credit and liquidity risks are reduced to a minimum.

The National Bank of Slovakia does not offer intraday credit facilities to SIPS participants.

3.3.8 Pricing

The pricing policy is aimed at full cost recovery. Prices for services provided by the SNCC are determined on the basis of contracts between the SNCC and each SIPS participant. The price of a third-party entry transaction is SKK 1,000 (€25.74). Prices per individual entry item for the other interbank transactions are set according to the time-frames within which they are sent to the SNCC, irrespective of the number of transactions, as follows: from 1 p.m. to 7 a.m. SKK 1.10 (€0.03); from 7 to 11 a.m. SKK 1.60 (€0.04); and from 11 a.m. to 11.30 a.m. SKK 2.50 (€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 (€0.03). The price for maintenance of an account at the SNCC is SKK 420.00 (€10.81) per month. The entry fee for joining

the MKS is SKK 150,000.00 (€3,861.00). The monthly flat fee for the transfer of data via the MKS to the SNCC is SKK 6,000.00 (€154.44). All participants are connected to the MKS.

3.3.9 Statistical data

In 2001, the average volume of payments per month was around 13,200,000. The average volume of daily transactions was around 630,000 with a peak volume of 1,640,156 transactions on a particular day in December. The average daily value of processed transactions was SKK 131,800 million (€3,393 million). The average value per transaction was around SKK 200,000 (€5,108).

3.3.10 Cross-border payments

Under the current legislation governing foreign exchange issues (Foreign Exchange Act No. 202/1995), all cashless payments to or from abroad may only be made via foreign exchange offices with a banking or foreign exchange licence, or via the National Bank of Slovakia. Under current legislation, a payment order must be completed for any payment abroad by the payer, giving the reasons for the payment and the appropriate numerical code of the payment pursuant to a special regulation¹. When processing payments from abroad, a bank credits payments in favour of the beneficiary's account and assigns a numerical identification to each payment pursuant to the same regulation¹. In compliance with the reporting requirement, banks and branches of foreign banks record the numerical identifications of payments for the purpose of the presentation of all related statistical reports to the National Bank of Slovakia, pursuant to a

¹) Decree of the National Bank of Slovakia No. 61/1999 on the conditions for establishing the balance of payments of the Slovak Republic (Announcement No 358/1999 Coll.)

Decree of the National Bank of Slovakia², the main goal of which is to provide foreign exchange statistics.

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 I.1.

The cross-border payments system is based on interbank correspondent links, and participants adhere to internationally recognised rules and conventions and respect the terms and conditions established in agreements acknowledged by banks operating in Slovakia. Some banks are members of international clearing associations (e.g. the Clearing Bank Association).

The most frequently used payment type is clean payment, i.e. credit transfers processed by SWIFT. By the end of 2001, SWIFT membership had been granted to 18 banks in Slovakia, and the number of messages sent in 2000 reached 1.9 million. The National Bank of Slovakia was connected to this global network in December 1993. Apart from clean payments, banks in Slovakia also carry out documentary payments, such as documentary collections and documentary letters of credit, etc. (for which SWIFT is also used).

Foreign payments in Slovak korunas are also based on correspondent links. The settlement of such payments takes place on loro accounts of non-resident banks held in Slovak korunas with resident correspondent banks. If the beneficiary's account is held in Slovak koruna with a resident bank which is different from the correspondent bank holding the loro account for the non-resident bank, then the final settlement also takes place at the clearing centre handling domestic interbank payments in Slovakia (see Section 3.2.).

3.4 Retail payment systems

3.4.1 E-money schemes

There are currently no card-based e-money schemes in Slovakia.

No network-based or software-based schemes are currently being implemented in the Slovak Republic. Two small projects are, however, already operational. Both of these allow customers to make small payments (micro payments) over the internet.

3.4.2 Card-based schemes

The ACS operates authorisation services and manages and administers payment cards and the network of EFTPOS terminals and ATMs. All ATM and EFTPOS terminals are connected online to the ACS central system. ATMs are connected to the ACS by a data line (X.25), whereas EFTPOS terminals are mainly connected via a telephone line (dial-in) or via GSM Eurotel. Authorisation is performed either by matching card data against the card database at the ACS in real time, or by checking the card account balance at the card database at the banks via a host-to-host connection or by routing the authorisation request to the authorisation centre at the particular issuing banks. ACS information on card account balances are updated daily by the banks. The ACS generates all the necessary settlement data, reports and statistics for individual ZBK members on a daily basis. The ACS daily submits the net position of each ZBK member to the SNCC on the basis of a third-party order for settlement.

All transactions are authorised and settled by the ACS, which provides all the necessary settlement data to SNCC on a daily basis in the form of a third party order.

2) Decree of the National Bank of Slovakia No. 7/1999 on the reporting by banks and branch offices of foreign banks to the National Bank of Slovakia (Announcement No. 360/1999 Coll.)

Slovenska sporitelna, a.s. operates its own network of terminals (ATM and EFTPOS). This network is connected to the ACS network to form a joint ZBK network.

3.4.3 Retail credit, debit and cheque transfer systems

There is no special clearing system for retail credit, debit and cheque transactions. All transactions are executed via SIPS (see Section 3.3).

4 Securities settlement systems

4.1 Trading

4.1.1 Bratislava Stock Exchange

a) Main regulations

The BSSE was founded in March 1991 as a joint stock company. Its legal framework is laid down in Act No. 330/2000 on the Stock Exchange. Under the provisions of this Act the BSSE issues binding rules for all its members. Any modification to BSSE rules is subject to approval by the FMA.

b) Members and ownership

There are 37 full members of the BSSE, including the National Bank of Slovakia, and two temporary members. The members are either banks or brokerage houses. Private banks hold a majority of the shares of the BSSE. The State is represented by the National Property Fund. Temporary membership is limited to one year (after one year this member leaves the stock exchange or has to apply for full membership). A temporary member does not have the right to ask the stock exchange for the listing of new securities issues, does not have the right to have representatives on stock exchange committees (trading, listing, membership), does not have a duty to pay the initial membership fee, and has to pay higher quarterly fees (the transaction fees are the same).

c) Main features

The BSSE is the only operator of the securities market in Slovakia. The following securities are

traded: securities of single issues admitted to trading on the stock exchange, e.g.: equities (ordinary and preferred) and bonds (corporate, municipal, government and mortgage).

There are, as yet, no futures and options markets in Slovakia. The BSSE is not licensed for derivatives trading.

The following types of trade may be concluded on the stock exchange:

- trade matched through electronic order book;
- negotiated stock exchange trade;
- repo trade.

According to the matching method, the electronic order book is divided into the following modules:

- auction trading;
- continuous trading;
- market-makers; and
- block trading.

In the auction trading module, all securities admitted to the stock exchange market are traded. In the continuous trading module and block trading module, all securities admitted to the stock exchange market, for which a price spread was specified on the current stock exchange day, are traded.

An issue may be admitted to trading in the market-makers module provided that the minimum number of market-makers in this issue, as set down by the stock exchange, is achieved.

4.1.2 The short-term securities market

a) Main regulations

The Short-Term Securities Market is the market for Treasury bills and National Bank of Slovakia bills, which are registered in the Central Registry. The market is organised by the National Bank of Slovakia.

The most important regulations issued by the National Bank of Slovakia include the following:

- Decision of the National Bank of Slovakia No. 4/1999 dated 27 August 1999, Rules of procedure for the Central Registry,
- Decision of the National Bank of Slovakia, No. 5/1999, dated 27 August 1999, on primary market rules for registered government securities, issued in the Slovak Republic, denominated in Slovak korunas,
- Decision of the National Bank of Slovakia, No. 6/1999, dated 28 October 1999, establishing the conditions of the National Bank of Slovakia for performance of open market operations with banks and foreign bank branches.

Repo deals are executed on the basis of “The Framework Agreement on Granting Loans with Securing Transfers of Securities”. The contractual parties agree on the conditions for a repo deal by means of telephone or the Reuters system.

b) Participation in the system

Only selected legal entities have access to the market in government Treasury bills and National Bank of Slovakia bills.

4.1.3 Slovak Stock Exchange, joint stock company

a) Main regulations

The SLSE was founded in January 2002 as a joint stock company (the former RM-System Slovakia which operated the OTC Market until 2001). In December 2001, the company obtained a Stock Exchange Licence and since then has operated the market under Act No. 330/2000 on the Stock Exchange. The main regulations governing trading in securities on the market operated by the SLSE are the Stock Exchange Rules. It is accompanied by less exacting standards, the so-called implementing regulations.

b) Members and ownership

The SLSE has 26 full members – two banks and 24 brokerage houses. The shareholders of the SLSE are also its members.

c) Position on the market

The SLSE market is operated on the basis of membership principles. All securities traded on the SLSE have to be booked in electronic form in the securities centre, which enables the SLSE to perform settlement in real time. Pre-trade validation eliminates liquidity risk.

The SLSE operates both the secondary market and the primary market. Other activities of the SLSE include the execution of takeover bids, legal counselling, training of its customers and information dissemination. The SLSE is the only institution in Slovakia which regularly publishes business data from issuers in its Fact Book.

4.2 Clearing

The clearing services that are performed as an integral part of the settlement process (and not as a separate facility provided by a clearing entity) are described in Section 4.3.

4.3 Settlement

4.3.1 Settlement of trades on the Bratislava Stock Exchange

a) Settlement procedures and types of transaction

All transactions concluded on the BSSE either as trades matched through the electronic order book, negotiated trades or repo trades in bonds and equities are settled by the BSSE. There is direct electronic access to the SC, which enables the BSSE to send instructions for the transfer of ownership. The SC is not responsible for the cash settlement leg. The BSSE acts for this purpose as a third party within the interbank clearing system and is entitled to send instructions for cash payments to the SNCC.

At present, trades matched through the electronic order book are settled with payment; negotiated and repo trades which are reported on the BSSE may be made bilaterally between the members of the BSSE. In any case, securities settlement may only be concluded through the BSSE.

b) Transfer of ownership of securities

Changes in ownership arising from individual trades are settled via a TtT system. Transfer of ownership of securities is carried out on T+3 on the securities accounts held at the SC in accordance with the instructions of the BSSE. Securities are transferred directly to the stock exchange members' accounts or the accounts of their customers according to the specifications given to the BSSE by members on T+2.

c) Transfer of payment

Payments to settle trades are made via the SIPS in which the BSSE acts as a third party. On T+2, the BSSE debits the accounts of debtors and collects the funds on its accounts at the settlement bank. On T+3, the BSSE credits the accounts of creditors. All payment instructions are irrevocable.

d) DVP arrangements

The so-called "rolling settlement principle" is used for securities settlement at the BSSE, with DVP settlement on T+3. On T+2, the BSSE blocks securities held on the accounts of selling members in the SC and sends instructions to transfer funds to the SNCC for the amounts of payables from members. These funds are transferred to the BSSE account maintained at the settlement bank. At the end of T+2, the BSSE compares the number of successfully blocked securities with debit payments collected on the account of the BSSE at the settlement bank. 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.

e) Credit and liquidity risk control measures

Securities to be traded on the BSSE are registered on the accounts of customers at the SC. According to a written agreement with customers, members of the BSSE block the required number of securities on the customers' accounts 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 which were sold on T+0 on the accounts of members and their customers. These blocking instructions allow only the BSSE to execute transfers of ownership of securities from the seller's account to the buyer's account.

f) Same-day finality settlement

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.

The transfer of the ownership of securities at the SC is executed online from 8 a.m. until late afternoon. Payment instructions may be sent to the SNCC until 11.30 a.m. for batch processing. In the afternoon, the BSSE obtains data on the payment processing. Payment instructions initiated in the afternoon are processed the next day at the SNCC. As a result, it is not possible to debit accounts, to make comparisons with the number of securities available or to credit accounts within one day.

4.3.2 Settlement of trades on the short-term securities market

Trades on the short-term securities market are settled by the Central Registry, which is maintained by the National Bank of Slovakia.

a) Participation in the system

The Central Registry divides legal entities into the following:

- direct participants; and
- indirect participants.

Only commercial banks, insurance companies, Eximbanka, the Deposit Protection Fund or other securities dealers may be a direct participant. An indirect participant may be a resident or non-resident legal entity.

The Central Registry may establish only one securities account for each direct and indirect participant. The Central Registry communicates only with a direct participant. Indirect participants communicate only with the Central Registry via their direct participant. As regards an investment company, it may establish a separate securities account for each equity fund established by such an investment company.

b) Types of transaction handled

The Central Registry is legally required to maintain a register of short-term securities

denominated in Slovak currency with a maturity of up to one year, issued by the Ministry of Finance of the Slovak Republic and the National Bank of Slovakia, which are used to cover the state budget deficit and regulate the money market.

The Central Registry performs the following operations related to securities:

- records the issue of Treasury bills and National Bank of Slovakia bills on the basis of an issuer application;
- records the purchase and sale of securities up to their maturity;
- records the sale of securities by a repurchase;
- records the granting or acceptance of a loan with a securing transfer of securities;
- records the expiry of mature securities on the date of maturity of the issue; and
- records the registration of the establishment, change and expiry of the contractual collateral right to securities, and the suspension of the exercise of the right to handle pledged securities.

c) Operation of the transfer system and transaction processing environment

The system was set up and is operated by the National Bank of Slovakia, which also has the only direct, electronic connection to the system. Communication with the Central Registry is carried out by fax. The Department of Informatics and Automation of the National Bank of Slovakia is currently responsible for the technical and software operation of the Central Registry system. The application software system TCP is currently in use.

d) Settlement procedures

On working days, the Central Registry accepts documents from issuers, direct participants or

other persons from 7.30 a.m. to 1.30 p.m. The time of arrival, i.e. the delivery of the document to the Central Registry, is decisive for its acceptance for processing.

An application for the registration of an ordinary issue must be delivered to the Central Registry no later than one day prior to an auction or the date of an out-of-auction sale. An application for the registration of an extraordinary issue must be delivered to the Central Registry no later than the day of the auction or the date of the out-of-auction sale. Securities may be traded on the secondary market from the first business day following the date of the issue until the end of the second business day prior to the maturity date.

The documents of purchase and sale must be delivered to the Central Registry no later than the day on which the trade is concluded, and for repo transactions no later than the day of the ready transaction.

The settlement of the cash leg of the securities transaction is effected by the SNCC on T+0.

A confirmation of payment must be delivered to the Central Registry no later than the next business day following the day on which the trade is concluded, and for extraordinary payment events no later than the second business day following the day on which the trade is concluded. "Extraordinary payment event" refers to a case where a buyer's liability to pay the settlement amount to the seller has not been fulfilled. What this means in practice is that the security leg of a transaction is settled on day T+0 and the cash leg on day T+1, and that the seller is entitled to claim delay interest. The repurchase of mature securities is made on the maturity date at the opening of the Central Registry.

e) *DVP arrangements*

The DVP requirement is ensured for every trade realised at the Central Registry.

f) *Pricing*

Participation in and trading on the short-term securities market is free of charge.

g) *Credit and liquidity risk control measures*

Risk control is applied at two levels:

- The Central Registry checks the number of securities owned by a seller. A trade will only be booked if the participant in question owns sufficient securities. Booked securities cannot be traded during the booking period.
- The buyer is obliged to remit payments for booked securities to a specified account within a set period. Subsequently, the Central Registry sends both the seller and the buyer a confirmation of the executed trade and transfers the booked securities to the buyer's asset account.

4.3.3 *Settlement of trades on the Slovak Stock Exchange*

a) *Settlement procedures and types of transaction*

The SLSE was designed as an open market. This is why, in principle, the clearing and settlement is made on each client's account, despite the fact that in January 2002 the SLSE was changed to a Stock Exchange with membership principles. All transactions are processed in electronic form.

The basic criterion for proper settlement and clearing in an open-system environment is the security of settlement, where 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 financial account, and the respective funds are blocked exclusively to execute the said

order. The same will apply to a selling order, 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.

b) Transfer of ownership of securities

The transfer of ownership of securities is carried out online on the securities accounts held at the SC in accordance with the instructions of the SLSE. Securities are transferred directly to the Stock Exchange members' accounts or the accounts of their customers according to the specifications given in the details of the order.

c) Transfer of payment

A separate financial account is maintained on behalf of every seller or buyer. It forms a part of a uniform bank account, or "jumbo account". The jumbo account is a current account held with the bank for the purpose of clearing 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 other banks.

The following transactions are executed via the clearing system:

- fund deposits to cover trades;
- debiting amounts due on executed trades;
- crediting amounts due on executed trades;
- paying off funds accrued due to the exercise of trades; and
- blocking funds to cover a trade, i.e. "pre-trade validation".

In addition to these basic transactions, other operations to inform market participants of

the effective balances credited to their accounts are carried out. The funds transfer system is operated online. The individual transactions are performed in the order of incoming requests for clearing. The transactions consisting of fund deposits on the jumbo account and the payments on other bank accounts are performed as the banks' position allows. At present, this is done once a day.

d) DVP arrangements

The DVP system is strictly observed. Clearing the trades in real time is made possible by pre-trade validation of instructions, where securities and/or funds are blocked as early as prior to the matching of each instruction with its counter-instruction. This provides 100% certainty that the trade will be completed. Notwithstanding this, DVP is also ensured through an arrangement under which, at the time of a successful transfer in the Securities Centre of the Slovak Republic (SC), the funds are credited to the seller's account and debited from the buyer's account.

e) Credit and liquidity risk control measures

The SLSE system of pre-trade validation excludes liquidity risk, i.e. all market participants are required to give prior proof of the availability of the funds needed to cover a trade. This is why the SLSE does not apply any other special methods as safeguards against liquidity and credit risks.

f) Pricing policies

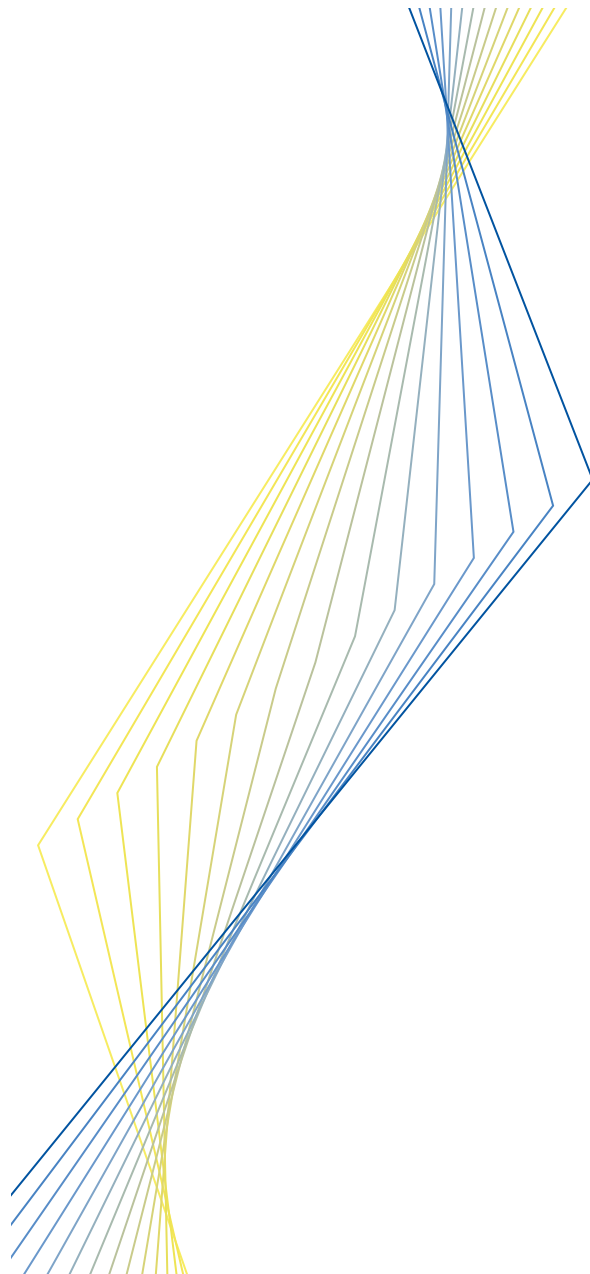
Prices charged by the SLSE for clearing and settlements are a part of the price for exercising a trade (the trading and clearing systems are practically interconnected). From the money collected in this way, the SLSE subsequently covers the cost incurred by operations conducted by the SC.

The prices charged on the execution of trades depend on their value.

Slovakia



EUROPEAN CENTRAL BANK



Slovenia

August 2002

Slovenia

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List of abbreviations

APP	Agency for Payments – <i>Agencija za plačilni promet</i>
BTS	Ljubljana Stock Exchange Trading System – <i>Borzni trgovalni sistem</i>
ISVPS	Integrated Small-Value Payment System
KDD	Central Securities Clearing and Depository Institution – <i>Klirinško depotna družba</i>
KIS	KDD Information System
LSE	Ljubljana Stock Exchange
MBOT	International Options and Futures Exchange – <i>Mednarodna borza opcijskih in terminskih poslov</i>
SIBPS	Slovenian Interbank Payment System
SMA	Securities Market Agency

Introduction

The reform of payment systems in Slovenia began in 1994. This reform, led by the Bank of Slovenia (the Bank), started out with the goal of establishing a completely new national payments infrastructure and allowing competition in the area of payment services.

During the reform process, in 1998 the Bank implemented an RTGS system (SIBPS – the Slovenian Interbank Payment System) and a designated-time multilateral net settlement system called Giro Clearing. At the end of 2001, 25 institutions – 20 banks, two savings banks, the Agency for Payments (Agencija za plačilni promet: APP), the Central Securities Clearing and Depository Institution and the Bank – participated in these systems. The RTGS system is used mainly for interbank transactions while the Giro Clearing system processes batches of low-value credit payments. At the current time, the Bank operates both systems and also acts as a clearing and settlement agent for Giro Clearing.

These two systems were implemented alongside the APP's system which had exclusively provided all legal entities with payment services before the reform and on which all accounts had had to be kept. The main purpose of the reform was to gradually migrate all accounts from the APP system to the banking environment and thus replace the APP system with the SIBPS and Giro Clearing systems. The accounts migration process started in September 2000 and should be completed by the end of June 2002.

I Institutional aspects

I.1 The general institutional framework

The current reform process has seen the implementation of two systemically important payment systems, the RTGS and the Giro Clearing system. Once all the accounts of legal

The Payment Operations Act was drafted to facilitate this change in the payment systems landscape. The draft of the Act (scheduled for adoption in March 2002) sets minimum standards for the provision of payment services and thereby regulates the operation of domestic payment systems. It also defines the supervision and oversight competencies of the Bank, which will be detailed in legally binding decrees passed by the Bank's Governing Board.

The Bank has launched an Integrated Low-Value Payment Systems project which seeks to build an interbank decision-making structure in the area of payment systems. In this way it hopes to promote efficient payment operations, develop new payment services and payment instruments, provide risk management, ensure the system's integration with other European payment systems and ensure standardisation. Indeed, standardisation is considered to be a very important element of the reform project because one major objective is to achieve the highest STP rate possible.

Where securities clearing and settlement is concerned, the Securities Market Agency (SMA) is the regulatory authority of the Ljubljana Stock Exchange (LSE) and of the Central Securities Clearing and Depository Institution (KDD). Trades concluded on the LSE are cleared and net settled via the KDD system, using the DVP procedure.

entities have been migrated across to the banking sector (by the end of June 2002), these two systems will finally supersede the old APP system.

Current domestic payment operations are regulated by the Agency for Payments Act

(Official Gazette of the Republic of Slovenia, Nos. 48/94 and 58/95). Other relevant laws are 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 Securities Market Act (Official Gazette of the Republic of Slovenia, No. 56/99) and the new Payment Operations Act that has yet to be adopted. Payment operations are also covered by related rules, regulations, and decrees of the Bank, the Ministry of Finance and the APP.

All of the steps taken during the reform, including the establishment of the RTGS and Giro Clearing systems, were based on Article 73 of the Agency for Payments Act which enabled the banks to provide payment services for legal entities and which set out the requirements for the transfer of legal entities' accounts to the banking sector. In April 2000 the Ministry of Finance and the Bank adopted a set of criteria for transferring accounts from the APP to the banks. Once all of these criteria had been met, the banks were licensed to take over the accounts of legal entities.

The role of the Bank is described in detail in Section 1.2, so only basic information is provided in this section. According to Article 2 of the Law on the Bank of Slovenia, the Bank can independently carry out all of its allotted tasks, although some of its decisions have to be approved by parliament. Since the Bank is a self-governing institution, most of the legislation relating to the various phases of the payment systems reform process already implemented takes the form of decrees passed by the Bank's Governing Board. These decrees specify the operation and access criteria for the reformed payment systems. The decrees passed by the Bank of Slovenia's Governing Board are legally binding instruments for the enforcement of Bank policy. The most important decrees concern the transfer from the APP to the Bank of mandatory reserves and any accounts held by banks, savings banks and savings co-operatives (Official Gazette of

the Republic of Slovenia, Nos. 10/97 and 13/98). They also include 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).

Apart from the Bank, another key player in the payment systems reform programme is the Ministry of Finance, which governs the APP. The Ministry of Finance has retained its responsibility for the preparation and adoption of the relevant legislation, especially the rules governing the transfer of the accounts of legal entities to the banks and the definition of the single treasury account functionality with the Bank.

A further division of the competencies of the Ministry of Finance and the Bank will be defined in the new Payment Operations Act. The draft Act made it through a second reading in parliament in November 2001 and is now being prepared for a final reading and adoption. Parliament is expected to approve the Act in February or March 2002.

The issues covered by the draft legislation in its third reading can be divided up into two basic conceptual parts. Firstly, the bill details the institutional, conceptual and operational provisions that form the basis of the new payment operations infrastructure. Secondly, it outlines how the existing APP will be reorganised and defines its new mandate.

The Act will regulate the following issues related to payment operations:

- the general terms and conditions applying to the provision of payment services;
- the relationships between the institutions performing payment operations and the legal entities or private individuals holding accounts with these institutions, by defining the minimal obligatory elements of the contractual relationship between them;

- the minimum standards for the provision of payment services, i.e. the time allowed for payment execution, payment irrevocability, customer notification and the payment services providers' liability for damages;
- the conditions for carrying out settlement functions. Payment systems can be managed by the Bank, clearing house or any participant of the payment system holding a licence issued by the Bank. According to the Act, the Bank has to manage the payment system for large-value payments settlement, as is the case with the RTGS system;
- electronic money. Standards set out in the proposal are currently being revised in order to comply with the relevant EC Directive (Directive 2000/46/EC);
- the Bank's oversight of payment systems and supervision of the institutions providing payment services, in accordance with the Law on banking and with the Law on the Bank of Slovenia;
- the gathering of information and statistical data from the institutions providing payment services and the distribution of this information to the Bank and other authorised institutions.

The draft legislation also addresses issues related to the abolition of payment operations performed by the APP in accordance with agreed procedures and methods for transferring accounts from the APP to the banks and other institutions performing payment services. It also deals with the reorganisation of the APP into two new institutions – the Agency for Public Records and Services and the Bureau for Governmental Payments – which will take over those current tasks of the APP not related to the provision of payment services.

With regard to securities markets, the Securities Market Act of March 1999 provides

a legal basis for the functioning of the capital market in Slovenia. It contains provisions regarding the issuing and trading of securities and the roles of the stock exchange, the SMA as a supervisory authority, the KDD as the local CSD, and other market participants. The roles of the SMA and the KDD, as well as the LSE, are governed not only by the Securities Market Act but also by the Company Law (Official Gazette of the Republic of Slovenia, No. 30/93), the Dematerialised Securities Act, the Law on the Bank of Slovenia, the Management Companies and Investment Funds Act (Official Gazette of the Republic of Slovenia, No. 6/94) and the Takeovers Act.

Within the framework of the Securities Market Act, the LSE and the KDD are empowered to define their own rules and regulations which become effective once they have been approved by the SMA. The SMA has issued implementing regulations that were adopted by the SMA's Expert Council on the basis of the mandate given by the Act. The SMA reports to the parliament on an annual basis.

1.2 The role of the Bank of Slovenia

The Bank was established as the national central bank by the Law on the Bank of Slovenia adopted on 25 June 1991. Article 152 of the Slovenian Constitution defines the Bank's role in this capacity. The Constitution also stipulates that the Bank shall be independent and directly answerable to parliament.

The Bank is a self-governing body, independent in terms of both its decision-making and the implementation of monetary policy, as well as for the implementation of the other tasks set out in the Law on the Bank of Slovenia and related legislation.

According to the Law on the Bank of Slovenia, the Bank's main responsibility is to maintain the stability of the national currency and ensure general liquidity in payment operations,

both within Slovenia and vis-à-vis foreign countries. In order to perform this task, the Bank: regulates the money supply; ensures the general liquidity of banks and savings banks; ensures general liquidity in relation to cross-border payments (requiring banks to have minimum reserves 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.

The Bank also performs the tasks imposed by the Law on banking and the Foreign Exchange Transactions Act. The Bank issues direct regulations (e.g. decrees and rules), performs on-site inspections and can impose sanctions where necessary. The Bank's Banking Supervision Department supervises banks and savings banks from the perspective of their participation in the country's payment systems.

The Law on the Bank of Slovenia is currently being revised as part of the process of Slovenia's accession to the EU and EMU, and in order to meet the criteria regarding the role of the Bank in the payment system at national and European level as set out in the Treaty establishing the European Community and the Statute of the European System of Central Banks and of the European Central Bank. The new law will, among other things, define the role of the Bank in the area of payment systems operations. The revised legislation has already passed its second reading in parliament.

The draft revised Law on the Bank of Slovenia sets out the basis for the Bank's supervisory and oversight role in the national payment systems infrastructure. With the aim of reducing credit and liquidity risk in the financial markets, the changes incorporated into the new law will allow the financial institutions (banks, saving banks and other financial institutions) to hold an account with the Bank and to settle their financial obligations in real time. However, for the

time being, this issue is covered by a decree of the Bank of Slovenia's Governing Board.

The draft law also stresses the principle of the Bank's independence from political and other state influence. The Bank will, however, administer financial and fiscal matters for the State through the Single Treasury Account which will be held with the Bank but kept separate from the financial assets of the Bank itself.

Currently, settlement can only be carried out by the Bank, whereas clearing can be undertaken by other institutions as well. The new Payment Operations Act will change this situation so that low-value payments settlement may also be done outside the Bank.

1.2.1 Payment systems oversight

The Bank is also involved in overseeing payment systems. This function is currently defined in the Agency for Payments Act (Article 10) which states that the Bank shall oversee the legality and regularity of payment operations in Slovenia. Article 73 concerning the reform process gives the Bank certain powers in this field as well. With regard to the future abolition of payment operations within the APP and the concomitant law, the Bank's role will be set out in detail in the new Payment Operations Act. With the adoption of this Act, the Bank will become formally responsible for the oversight of payment systems (although it was generally responsible for the operation of payment systems in the past, its role was not specified in detail in any legislation).

In exercising the oversight function, the Bank seeks to ensure the systemic stability of the payment systems by containing the exposure to systemic risk and promoting the efficient operation of these systems and the security of payment instruments used by the public.

The new Payment Operations Act will give the Bank full oversight authority. More specifically, the act allows the Bank:

- to define the criteria and conditions which must be fulfilled by any entity wishing to offer payment services;
- to set standards for payment systems;
- to lay down the rules applicable to interbank settlement, and specifying:
 - the organisational, personnel and technical requirements which must be fulfilled in order to perform settlement operations;
 - the principles of risk management in payment systems;
 - the reporting duties of entities offering payment services;
 - the requirements which must be met by entities managing payment systems;
 - the requirements for clearing house operations.
- to define detailed organisational, personnel and technical requirements to be met by any entity issuing electronic money, as well as the risk management and risk management reporting regimes for such companies.

The Act gives the Bank wide-ranging responsibilities in this area and, on the basis of the Act's provisions, the Bank will be able to issue its own decrees, thereby providing a further level of definition of the above-mentioned issues in line with its payment systems policy.

The Bank has, however, already achieved much in the area of payment systems oversight, having played a leading role in payment systems reform for eight years. Since the Bank manages both systems (RTGS and Giro

Clearing) and since both are considered to be systemically important, it was the Bank's task to align its operations with the Core Principles for Systemically Important Payment Systems published by the Bank for International Settlements in January 2001.

1.2.2 Activities in the area of securities clearing and settlement systems

As the lead actor in the payment systems reform programme, the Bank of Slovenia has launched a project aimed at providing settlement for securities transactions using central bank money. It is co-operating closely in this regard with both the KDD and the SMA.

Since the supervisor of the securities market is the SMA, the Bank has no competencies in this field other than the supervision of those banks that hold the Bank's licence for securities trading. However, prompted by its concern for the payment and settlement systems, the Bank has sought to establish the DVP mechanism for off-market trades (see Section 4).

The KDD keeps an account in the RTGS system, which enables it to act as a settlement agent for the Stock Exchange and for off-market trades. According to the provisions of the Securities Market Act, which require customer funds to be kept separate from securities market participants' own funds, certain cash accounts of market participants will also be held with the Bank.

The new Payment Operations Act contains provisions that will be used to further refine the Bank's role in securities clearing and settlement systems. This law will give the Bank the authority to grant licences and oversee the system.

1.2.3 The operational role of the Bank

The Bank established the RTGS system and the Giro Clearing system in 1998. Both systems are operated by the Bank and are located on its premises. The Bank is a direct participant in both systems, and acts as a clearing and settlement agent for Giro Clearing.

As part of the reform process, a single treasury account was implemented in 1999. This is the account that the State (the Treasury of the Ministry of Finance) holds at the Bank. For the time being, only certain budgetary payment transactions are performed using this account, but the plan is that in the future all budgetary payments will be effected through it once the APP has closed. Since late 2001 the Bank has also held local municipalities' accounts, as stipulated in the Public Finance Act (Official Gazette of the Republic of Slovenia, Nos. 79/99, 124/00 and 79/01).

1.2.4 Co-operation with other institutions

The Bank co-operates closely with the Bank Association of Slovenia (whose role is described in Section 1.3.2), especially with regard to the organisational and technical procedures related to payment instruments. The Bank is also intensifying its co-operation with the SMA, the securities market supervisory and oversight authority.

Within the context of payment systems reform, an important part of the Bank's co-operative work concerns relations with the Ministry of Finance and in particular with the APP, the Government Tax Office and the Government Statistics Office. Relations with these two offices are especially important from the point of view of transferring the APP's non payment-related tasks to the banks along with legal entities' accounts.

1.2.4.1 The ISVPS

In order to formalise interbank co-operation in the area of payment systems, the Bank has launched the Integrated Small-Value Payment Systems (ISVPS) project, which aims to continue interbank co-operation once the reform process has been completed (in June 2002) by handing over leadership of all future activities to the commercial sector.

The objectives of the ISVPS project are:

- to ensure efficient payment operations;
- to achieve the development of new payment services and payment instruments;
- to promote standardisation in payment systems;
- risk management for payment systems;
- compliance with the Core Principles for Systemically Important Payment Systems;
- integration into other European low-value payment systems, when possible.

The two cornerstones of the ISVPS – which is in fact just a general term describing a common policy for small-value payment systems – are i) the establishment of a proper organisational and decision-making structure for national payment systems, the Payment Services Committee (chaired by a representative of the Bank, thereby ensuring that it gains an insight into the activities of the banking sector and is in a position to influence the decision-making process); and ii) the setting-up of a national Automated Clearing House as a technical infrastructure prerequisite for the implementation of the ISVPS model.

1.2.4.2 Co-operation in the field of standardisation

Within its oversight function and its role in the ISVPS project the Bank also co-ordinates the activities for the standardisation of payment instruments with the ultimate goal of achieving STP.

Since the SWIFT 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 SWIFT messages and standards. The structure of the messages is the same, regardless of whether the message is processed in the RTGS or Giro Clearing system (see Section 3). On the basis of the above-mentioned standards, a paper-based document has also been designed to facilitate optical processing.

The Bank has adopted minimum standards enabling the automated processing of payment instructions in banks, but these standards may be developed further in order to meet banks' internal requirements. To this end, a 16-digit TRN (transaction reference number) has been developed as a way of standardising book-entry inputs in banks. At the same time, part of the TRN is used for the generation of statistics on payment operations in Slovenia.

In the course of the accounts migration process, the Bank established a database of all transactions accounts kept by banks, savings banks and savings co-operatives. The Bank maintains this database (the Registry of Transactions Accounts) but it is the banks holding the accounts that are responsible for the data. The Registry contains data on account numbers and account holders and serves several purposes as defined in the Decree on the establishment of the registry of transactions accounts and in the draft Payment Operations Act. The Registry was established with the aim of controlling the beneficiary account and providing account holder data to legally entitled users.

Much has been done in the field of standardisation with the introduction of a 19-digit IBAN account number. Designed to allow the automatic processing of bank account identifiers and the easier routing of payment transactions, a 15-digit bank account number (BBAN) is used for all domestic payments. This is composed of the five digits uniquely identifying a financial institution and its organisational unit (2+3), eight digits identifying the customer at the financial institution, and two check digits calculated according to the ISO 6704 standard (MOD 97-10). The financial institution identifiers are determined by the Bank of Slovenia, while customer identifiers are determined by the financial institutions themselves. IBAN, the expanded version of BBAN (with the addition of the country code (SI) and 2 check digits) was introduced in Slovenia two years ago. All bank account numbers in the Registry also include the IBAN.

Payment orders have also been standardised in electronic and paper form. Electronic payment orders in the RTGS and Giro Clearing systems are standard SWIFT message types, while a paper form has been designed to incorporate all of the data from the electronic form.

One important additional step was taken under the auspices of the Bank Association of Slovenia when a special protocol on procedures for the use of new payment instruments was prepared in 2001. This protocol deals with special payment orders, special credit orders, direct debits, direct credits and standing orders. The purpose of this document and these activities is to standardise the use and issuance of all such payment instruments and to align their use with certain legal and risk management requirements.

1.3 The role of other private and public sector bodies

1.3.1 Securities Market Agency

The Slovenian Securities Market Agency (SMA) is the authority empowered by the Securities Market Act (see Section 1.1 above) to issue licences to investment firms (brokerage companies and banks performing investment services in the securities field), investment funds and management companies, the LSE and the KDD. It also authorises securities issuers for public offers of securities and, under the Takeovers Act, authorises participants other than securities issuers to buy the securities offered. The SMA supervises securities market operations and market participants.

1.3.2 Bank Association of Slovenia

The Bank Association of Slovenia was established to make the banking business more efficient by standardising payment procedures and information systems, exchanging information on credit-takers, training bank staff and providing a voluntary deposit insurance scheme. The Association co-ordinates the activities of all the banks involved in the payment systems reform project.

1.3.3 Bankart

Bankart is an important payments processing centre. It was founded in December 1997 and is owned by nearly all the banks, although their individual shareholdings differ significantly. These holdings are directly related to the banks' market share in retail transactions, the number of ATMs they own and the number of cards (debit and credit) they issue.

Bankart's functions are agreed upon among the banks, in areas where a common interest prevails over competition. It also provides commercial services to any bank that is not a shareholder.

Bankart commenced operation in April 1998 and currently performs the following services (see also Section 3.4.2):

- ATM processing;
- card payments processing;
- the processing of other payments.

This last category includes, among other things, the processing of special payment orders introduced for the utilities (e.g. electricity, gas, municipal services). The banks accept the orders submitted by the debtors and pass payment information to Bankart. It then matches the payment and information flow of bulk payments and sends this information to the companies that issued the original order.

Where the above-mentioned functions are concerned, Bankart is already performing a type of clearing operation. In the context of the ISVPS, Bankart is therefore viewed as a potential clearing house that could capture all existing clearings in a single institution.

1.3.4 Ljubljana Stock Exchange

The Ljubljana Stock Exchange (LSE) was established in 1989. It is a self-regulating organisation licensed to operate by the SMA, providing an organised market-place for securities (shares, bonds and government securities) together with an efficient technological platform and the other conditions required for the smooth and fair operation of the securities market. The LSE's operations are described in detail in Section 4.1.

1.3.5 Central Securities Clearing and Depository Institution

The Central Securities Clearing and Depository Institution (KDD) was established in January 1995 by the Securities Market Act to provide facilities for the clearing of

securities transactions. The KDD is licensed to operate by the SMA, which approves its statute and operating rules as well as its by-laws and fees. The KDD is a self-regulating corporation operating on a non-profit making basis. It aims to recover its costs in full by imposing fees and other charges on its members. Its shareholders include brokerage firms, banks, companies established in accordance with the Investment Companies Act, the government of the Republic of Slovenia, the Bank and other legal entities authorised by the SMA.

The KDD operates according to the Securities Market Act and Slovenian company law. The rules and procedures governing the rights and obligations of the 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 various procedures governing separate fields of operation.

The KDD's Board of Directors is composed of representatives of the shareholders, the Bank, the Slovenian government and KDD employees. Its role is to supervise the conduct of KDD business, to which end it may audit and/or control the KDD's procedures (reporting functions, accounts, book entries, etc.). Furthermore, the Board of Directors has to approve all of the system's rules and procedures, and these also have to be agreed by the SMA. The KDD's operations are described in detail in Section 4.2.

2 Payment media used by non-banks

2.1 Cash payments

The Slovenian currency, the tolar (SIT), has been in circulation since the autumn of 1991 following the creation of the Republic of Slovenia. The tolar is divided into 100 stotins. However, stotin coins (10, 20 and 50 stotins) are no longer minted and the number in circulation is decreasing. All cash payments are thus rounded up to the nearest tolar. Cash consists of banknotes in the denominations of SIT 10, 20, 50, 100, 200, 500, 1,000, 5,000 and 10,000, and coins worth SIT 1, 2, 5, 10 and 100. The SIT 100 coin was minted only in one year, 2001, as a commemorative issue.

Demand for cash by the non-banking sector (legal entities and private individuals), i.e. the value of cash in circulation in Slovenia, is constantly increasing in nominal terms, but there has been very little change in the demand for cash over the last few years in real terms. However, seasonal effects are such that cash use fluctuates considerably over the course of a year. In particular, cash holdings can vary substantially within any given month

(they increase on days that pensions, wages, salaries, etc. are paid) and within any one year (more cash is used during the summer holiday period and at the end of the year, while there is less in circulation at the beginning of the year and in the autumn). In particular, in view of the enormous increase in the amount of cash in circulation at the end of the month (when pensions pay out) we can conclude that cash usage is closely linked to the population structure (older people use more cash).

The payment habits of the population and the use of cash have been influenced by financial and technological developments. On the one hand, a wider ATM network makes it easier to access cash, but, on the other hand, the more frequent use of payment cards tends to reduce the need for it. The use of cash has fallen and is expected to fall still further in the future.

Cash payments are carried out mainly by private individuals for retail payments. At the end of 2001, the total value of banknotes and coins in use by non-banks amounted to SIT 142.11 billion (€0.65 billion). Although in

recent years non-cash payments have been increasing (especially through the use of payment cards), it is estimated that the vast majority of payments (in volume terms) are still made using cash.

2.2 Non-cash payments

2.2.1 Credit transfers

Credit transfers have traditionally dominated non-cash payments in Slovenia, since all legal entities were obliged not to use cash except for very low-value payments. Payment orders are given by customers making payments in paper or electronic form to banks, savings banks or savings co-operatives or (for legal entities, which still hold an account there) to the APP. Credit institutions encourage the use of electronic payments by charging lower fees and, in the majority of cases, help their customers with the installation of the hardware and software needed to make electronic payment orders.

A standing order is a form of credit transfer created to make recurring payments more efficient since there is no need for the payer to initiate the payment each time the liability occurs.

2.2.2 Cheques

In recent years cheques have all but disappeared. They were almost exclusively used by private individuals, but they are largely refused since the procedure for their encashment changed in 2000 (they are no longer guaranteed, so the bank will not pay the retailer if the issuer does not have sufficient funds on his account).

2.2.3 Direct debit

The current legislation provides for the use of a direct debit mechanism that is technically

somewhere between a standing order and a standard direct debit. However, no clear relationship between the three parties – the bank, the customer and the payee – has yet been defined.

The implementation of a direct debit payment mechanism will be one of the priority development objectives of the ISVPS project in order to rationalise recurring payments. This is especially necessary in that standing orders cannot currently be used for paying amounts which change each time.

2.2.4 Payment cards

Card payments are becoming increasingly popular with the development of the domestic ATM and POS networks. Given that the cheque guarantee card or account identification card may in most cases also be used as a debit card, most people who have a bank account also hold at least one payment card.

Debit and credit card use has risen steadily and significantly in recent years. Last year (from the end of third quarter of 2000) the number of debit cards increased by 31.07% to total 1,477,001 at the end of the third quarter of 2001, while in the same period the number of credit cards increased by 10.81% to 779,503. Also during the same period the number of ATMs increased by 13.72% and the number of POS terminals by 23.47%. Non-cash payments, and card payments in particular, are expected to increase further in popularity.

Debit cards

Debit cards issued by credit institutions can be used at ATMs and POS terminals. There are two major types of debit card: standard debit cards and delayed debit cards.

Standard debit cards (in most cases cheque guarantee cards or account identification cards) can also be used for ATM withdrawals.

Delayed payment cards can be used for withdrawals, but a commission is charged.

Credit cards

The number of credit cards issued by the major card organisations (Eurocard, MasterCard, Visa, American Express, Diners Club) has also grown significantly in recent years. These cards are issued by many credit institutions as contractors to the principal and are widely accepted in Slovenia; in addition, some major Slovenian banks are issuing their own brand credit cards.

Retailer cards

These are cards issued by non-credit institutions (mostly petrol and retail companies) and are generally used for making payments on the premises of the issuer.

Prepaid cards

To date only single-purpose prepaid cards have been issued in Slovenia, such as telephone cards and toll cards. Initiatives to issue multi-purpose prepaid cards have not yet met with any success.

2.2.5 Other payment instruments

Other payment instruments include travellers' cheques. Most banks issue travellers' cheques in co-operation with foreign companies, the most common being Thomas Cook and American Express.

2.3 Recent developments

2.3.1 Network/software-based products

The rapid growth in the use of the internet at home and by traders and financial institutions has led to a huge increase in the number of

payments made over computer networks. This fact could also help promote the development of electronic money schemes.

Almost every bank has introduced internet banking, which enables customers to make payments via the internet (i.e. electronic banking), consult their account balance, view the status of payments and access other products offered by the banks (e.g. information on services offered, and various calculations such as annuities and interest on deposits and loans). Other kinds of home banking (e.g. telephone banking) have been losing their market share since the introduction of electronic banking.

No e-money schemes have been introduced so far.

2.3.2 Policy approach

Slovenia was one of the first ten European countries to regulate electronic commerce in accordance with the new EC Directives, guidelines and practices. The Electronic Commerce and Electronic Signature Act, that came into force in 2000, regulates this new area for companies, individuals and state institutions.

Where e-money schemes are concerned, the Bank is reviewing these projects in other countries and other directives applying to this field. Competence in this field will be transferred to the Bank by the new Payment Operations Act. Despite the current absence of e-money schemes, the Bank is establishing a legal basis for the issuing of e-money. The Payment Operations Act will also cover e-money as a means of making payments. The proposal as it stands includes provisions relating to e-money that take into consideration the EC Directive on the Taking up, Pursuit of and the Prudential Supervision of the Business of Electronic Money Institutions (Directive 2000/46/EC).

3 Interbank exchange and settlement systems

3.1 General overview

As at 31 December 2001, the interbank payment systems consisted of the three major domestic systems: the RTGS system and the Giro Clearing system (both established during the payment systems reform project) and the APP system.

The RTGS system has been in place since April 1998. It settles large-value and urgent interbank payments. In the RTGS system, payments are processed in accordance with SWIFT message standards and via the SWIFT network, while the SWIFT FIN Copy network service provides the network capability and standards for participants.

The same message standards are used in the Giro Clearing system. This was introduced in October 1998, prompted by the need to introduce a bulk payment system which could process the same volume of payments that was being processed by the APP. The APP

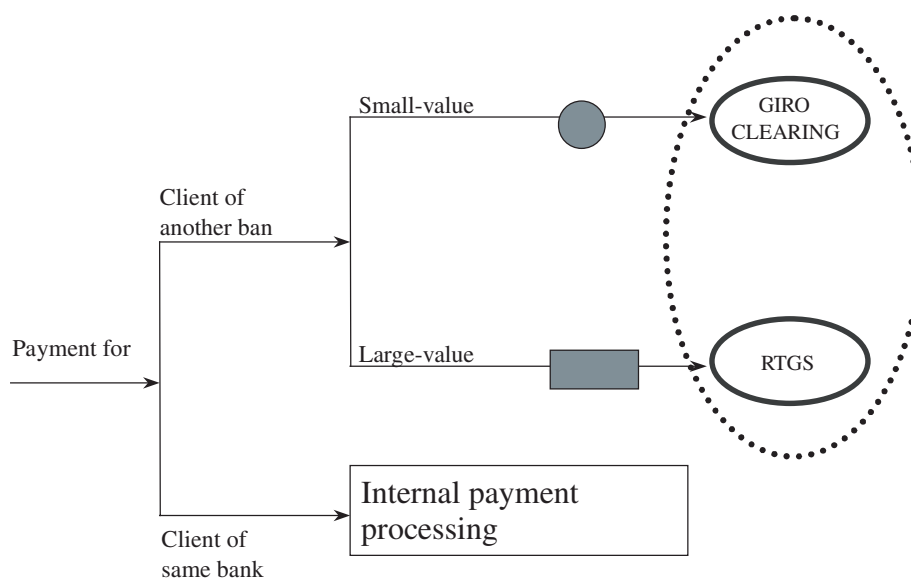
system has made no distinction between large-value and low-value payments, and this has had implications for risk handling/management. The multilateral net Giro Clearing system now settles up to 400,000 transactions daily in several clearing cycles. Net positions arising from these clearing cycles are then settled via the RTGS system.

The APP system has remained largely unchanged since it was established in the early 1960s, and is now totally incompatible with the new economic situation. The APP system will therefore, in accordance with the draft Payment Operations Act, be abolished in mid-2002.

Chart I shows the role of each of the systems in the overall framework of the national payment system. A legal distinction has been made between the RTGS and Giro Clearing systems as regards the value of individual payments which may be processed and settled

Chart I

The new payment systems infrastructure



within each one. Since October 2000, the minimum threshold for large-value payments has been SIT 2 million (€9,200). Low-value payments may also be settled via the RTGS. The threshold may be modified subsequently in accordance with needs and policy decisions.

Low-value payments are processed in the Giro Clearing system and are deemed to be final after the net positions are settled through the RTGS system.

When a payment is made to a customer of the same bank (i.e. when the payer and payee both hold accounts with the same bank), it is not processed in the RTGS or Giro Clearing systems and only needs to be handled internally within that bank's own systems.

Currently, all payments where one party holds an account with the APP are processed within that system. If the other party holds an account with a bank, then the payment is also processed in one of the interbank payment systems in which the APP participates.

It is felt that the distortion of domestic payment operations caused by some customers having accounts with the APP will cease once the migration is complete. The volume of payments in the RTGS system and the Giro Clearing system is expected to eventually decrease with the demise of APP, since it is estimated that more than 50% of all payments within the APP are between customers of the same bank. These will become intrabank payments and will not therefore be subject to processing and/or settlement in the new payment systems infrastructure.

3.2 The real-time gross settlement system (Slovenian Interbank Payment System)

Within the RTGS system, payments between participants are processed and settled individually immediately upon receipt of valid instructions by the system. The payments are

settled as debit and credit entries in participants' settlement accounts with the Bank, national central bank money being used as the settlement medium. After settlement, all payments are final and irrevocable, with the effect that the main financial risks are effectively reduced. This contrasts with the APP's system, where payments are processed throughout the day on a gross basis but the final settlement only occurs at the end of the day, thereby giving rise to a potentially significant settlement risk.

3.2.1 Operating rules

The Governing Board of the Bank of Slovenia has adopted the rules of operation of the RTGS system, which are legally binding on all participants. These rules include a daily timetable for the system's operations, the responsibilities of participants, the responsibilities of the Bank, the technical requirements which the participants have to meet, and the definition of finality and irrevocability of payments. The message standards and contingency procedures have also been prepared and are legally binding on all direct participants in the RTGS system.

3.2.2 Participation in the system

The operating rules also define the access criteria. These criteria state that direct participants in the system may only be banks and savings banks licensed by the Bank and holding settlement accounts with it. The Bank maintains the settlement accounts of all banks and some savings banks (direct participants). Settlement accounts (which also serve as the mandatory reserve accounts) are kept as part of the RTGS system, so every settlement bank also has to meet all the requirements for participation in the RTGS system. According to the Decree on the establishment of the RTGS system, the direct participation of the banks in the system is not obligatory, but for competitive reasons all banks have opted to be direct participants. Possible exceptions are newly-established banks, which may act as indirect participants for a while.

There were 25 direct participants in the RTGS system as at 31 December 2001 (20 banks, two savings banks, the Bank, the APP and the KDD). Other credit institutions (the remaining savings banks and all savings co-operatives) are indirect participants in the system and hold so-called transactions accounts with direct participants (settlement banks), which act as their agents.

3.2.3 The types of transaction handled

Currently, three kinds of SWIFT message are handled as payment transactions in the RTGS system: MT 202 (General Financial Institution Transfer), MT 205 (Financial Institution Transfer Execution) and MT 100 (Customer Transfer). MT 103 is already technically supported and the current plan is for it to replace MT 100 on 1 July 2002 in a "big bang" type changeover scenario.

3.2.4 System operation

The system opens for business at 7.30 a.m.¹ every working day (Monday to Friday), except on bank holidays. The system settles interbank and customer payments until 4 p.m. (except where the receiving participant is the APP, when the deadline is 2 p.m.). The end-of-day interbank money market runs from 4 p.m. to 5 p.m., whereupon overnight deposits of surpluses can be made with the Bank (from 5 p.m. to 5.15 p.m.). The system then closes for the day.

3.2.5 Transaction processing environment

The RTGS system has two major components: the system software, which provides the settlement and accounting facility for payment instructions; and the SWIFT FIN Copy service, which enables RTGS members and the system software to communicate.

Direct participants in the RTGS system submit their payment orders via the SWIFT network. Each message is intercepted by the SWIFT FIN Copy service and is held pending information on the settlement by the RTGS system. For this purpose, the SWIFT FIN Copy service copies the payment message data relevant to settlement to the Bank, where the CBT (computer-based terminal) interface receives them and sends them on to the RTGS system.

Provided there are sufficient funds available in the settlement account of the sending participant, the payment is settled immediately (i.e. the funds are transferred between participants' settlement accounts). Then the RTGS system informs the SWIFT FIN Copy service of the settlement of the transaction, whereupon the original payment message is forwarded to the receiving participant. When it receives this message the receiving participant can consider the payment to be settled and final. After settlement, the sending participant is also notified via the appropriate SWIFT message (MT 102). If there is a shortage of funds in the settlement account, the payment is queued until either the necessary funds become available or a cancellation notification is received; if neither of these eventualities occur, the payment is rejected by the system at the end of the day.

If a direct participant has problems with its connection to the SWIFT network, the Bank, at the request of that participant, can manually enter an account transfer or a file account transfer between two settlement accounts from the Bank's user interface.

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. The direct participants

¹ All times are CET.

may have only one settlement account with no overdraft permitted. Only the Bank and the APP have unlimited overdrafts.

Overdrafts (even if collateralised) are not permitted due to the high level of mandatory reserves and the relatively easy availability of collateralised loans, which the Bank offers to RTGS participants against pledged Bank of Slovenia bills or Treasury bills.

Queuing

Technically, there is only one queue possible per settlement account. In the event of the system being very busy or, more usually, if there is a lack of funds in a settlement account, then the queue is blocked. All payments received by the system after the queue has been blocked are queued according to their priority; within the same priority, payments are queued according to the FIFO principle.

There are 100 different priorities in the system. Priorities from 0 to 10 are reserved for the monetary transactions of the Bank; priorities from 11 to 20 are for the settlement of the net positions resulting from clearings in other systems; and priorities from 21 to 99 may be used freely by the participants (the default priority being 40).

Participants may influence the settlement of queued payments by injecting liquidity into their account, by cancelling the payment that is blocking settlement or by changing the business priority of any payment in the queue.

Accounting process

Each settled payment results in a single debit or credit transaction occurring simultaneously on both of the affected settlement accounts. When settled, a payment is final, as defined in the rules of operation of the RTGS system.

Gridlock

This situation can be resolved either by the injection of liquidity into the system or, in some cases, by the use of a gridlock resolution mechanism. A gridlock resolution may be configured as an automatic procedure or may be initiated on demand by the system operator.

The system can resolve a gridlock by using its own algorithm to identify all those payments that can be settled simultaneously.

Enquiries and monitoring

Participants may submit enquiries concerning their own outgoing queued payments and outgoing or incoming settled payments using SWIFT enquiry messages. The system responds automatically. It is not possible for participants to view incoming queued payments.

Within the Bank, the system operator may also submit enquiries about any participant or payment and may also monitor the balances on all settlement accounts in real time.

3.2.7 Credit and liquidity risk

Settlement risk has been significantly reduced with the implementation of the RTGS system. Since there is no settlement lag (i.e. no delay between the payment being submitted to the system and the actual settlement) and given that no payment can be processed if there is a shortage of funds in the settlement account being debited, certain risks have been effectively eliminated.

In view of the fact that different banks have different balances that need to be monitored (i.e. their settlement accounts with the Bank and their "positions" with the APP), some liquidity risk is bound to be introduced into the system. These arise because the balances in the banks' accounts held with the APP reflect not only their own activities, but also the activities

of their corporate customers. An information system has been established in conjunction with the RTGS system, which provides the banks with cumulative information on the balance of all these accounts. This system helps them to better manage their liquidity and also enables the Bank to monitor the overall liquidity situation in the banking system. The information system is based on the closed private network of the Bank (BSNet) (see Section 3.4.3) which connects it to the banks, savings banks and the APP.

3.2.8 Pricing

Unlike the APP system, where the fees are calculated in two parts (one being fixed and the other being a certain percentage of the payment amount), the fees in the RTGS and Giro Clearing systems are fixed.

All SWIFT costs have to be paid by the participants themselves, while the Bank charges a fee of SIT 260 (€1.20) for each transaction settled through the RTGS system. This fee was lowered from SIT 300 (€1.39) in October 2000, reflecting an increase in the volume of payments settled through the system and in line with the Banks' aim to introduce a full cost-recovery principle without any element of profit.

Penalty fees are incurred if certain exceptional activities are required (e.g. manual interventions), starting from SIT 5,000 (€23.0) for a common account transfer entered from the Bank's user interface.

3.2.9 Statistical data

In 2001 almost 1.45 million transactions, with a value of SIT 29,153.01 billion (€134.2 billion) were settled through the RTGS system. Both figures represent an increase of approximately 33% compared with 2000.

On average, almost 5,800 payments, totalling SIT 117 billion (€540 million), were settled

daily, although volume and value figures could be three times the average on peak days. Although the average value of a payment in 2001 was SIT 20.2 million (€93,000), it is worth noting that approximately 40% of all payments settled were low-value payments (i.e. below the threshold of SIT 2 million (€9,200)).

3.3 Agency for Payments

Since the APP is being abolished, its system will not be described in detail here. A full description of APP's operations can be found in the previous edition of the Blue Book.

As at 31 December 2001 the APP continued to provide payment services for legal entities through its network of 35 branch offices. Owing to the reduction in the number of accounts held with the APP as a result of ongoing reforms, the number of branch offices has significantly decreased since the accounts migration process commenced in September 2000 (at which time there were 62 branch offices).

3.4 Retail payment systems

3.4.1 E-money schemes

There are no hardware or software-based e-money schemes currently operating in Slovenia. However, while banks are not particularly pro-active with regard to e-money, other companies (such as mobile phone operators) have shown more interest in offering this type of service. One such company already offers mobile phone owners the option to buy a limited range of products and services using special identification and transaction confirmation procedures. The mobile operator then periodically charges its customers for the goods and services purchased as part of their bill for phone services. It is expected that this service will be developed into a real e-money scheme in the near future.

3.4.2 Card-based schemes

There are three card processing centres in Slovenia: Bankart, Plasis and Activa.

The Plasis and Activa schemes are each run by individual banks and perform only card payment processing. Bankart, on the other hand, is an independent company founded in 1998 and owned by practically all Slovenian banks.

In addition to the functions mentioned in Section 1.3.3., payments made by foreign debit and credit cards at ATMs, EFTPOS terminals or in any other way are pre-processed by Bankart and then sent to Europay International which acts as a clearing agent.

Bankart acts as a clearing agent for each of the services mentioned above. Settlement is always carried out on a bilateral basis by transferring funds between the banks' settlement accounts held at the Bank.

Processing is currently done once daily, with settlement usually taking place the following morning. Clearings differ in terms of their cut-off times and the institutions involved, and these factors determine the way in which payments are authorised.

The processing of other payments includes a special payment order (see Section 1.3.3). Currently at the end of the day the banks collect all the payments that were made using this special payment order. After daily processing is completed, Bankart receives these data and sorts payments according to the receiving (corporate) party and then sends payment data to them. In this way cash flow and information flow are kept separate: cash is transferred as a single payment by the paying bank, while Bankart provides a detailed list of individual payments for each receiving party. The main purpose of this is to clear the information, while all payments are settled on a gross basis.

As mentioned in Section 1.2.1, one of the Bank's future goals is to rearrange the existing small-value payment systems. It is currently envisaged that a single clearing house (which may be built into the present Bankart infrastructure) would handle all clearing, with the Bank acting as settlement agent.

3.4.3 Retail credit, debit and cheque transfer systems

Giro Clearing system

In October 1998 the Giro Clearing system was implemented for the processing of low-value payments. It is a multilateral net payment system and represents the second pillar of the new domestic payment infrastructure. Its legal framework is directly established in the Decree of the Governing Board of the Bank of Slovenia on the establishment of the Giro Clearing system, which also specifies the Bank as the clearing and settlement agent.

The participants in the system are the same as in the RTGS system with the exception of the KDD, which only participates in the RTGS system. To participate in the Giro Clearing system the participants must sign a risk disclosure statement outlining the extent of the Bank's limited liability as a clearing and settlement agent.

The Giro Clearing system processes only credit payments, and these may not exceed the limit set by the Bank. Currently this limit stands at SIT 2 million (€9,200). This means that every interbank/customer payment of SIT 2 million and above has to be settled via the RTGS system, although the opposite is not true since (urgent) low-value payments may also be settled via the RTGS system.

For the purposes of interbank communication within the Giro Clearing system, the Bank has established a private network, BSNet, which is

wholly maintained and upgraded by the Bank. This network connects all banks and some savings banks to the Bank of Slovenia. The banks all have NT servers which (among other things) are used for Giro Clearing. The banks submit batches of low-value credit payment orders to pre-defined folders on these servers in a SWIFT format. These batches are then transmitted to the clearing centre at the Bank on an hourly basis.

The decision to use a standard SWIFT format was motivated by the need for compatibility with the RTGS system, i.e. the message format is the same, meaning that the payments for both systems are prepared in the same way and then submitted to the appropriate system depending on their value and/or urgency. As at the end of 2001 the Giro Clearing system supported SWIFT MT 100 (SWIFT MT 202 and MT 205 may be supported, but are not yet used in live operation), while plans are afoot to also support MT 103 messages.

A business day in the Giro Clearing system consists of six clearing cycles², after which settlement takes place. The system collects batches of low-value credit payments from the banks every hour (8 a.m.³, 9 a.m., 10 a.m., 11 a.m., 12 noon, 1 p.m., 2.15 p.m., 3.15 p.m. and at the end of APP processing) and transfers them to the Bank. Each collection is followed by payments processing, i.e. net positions are calculated and sent to participants. This is described as an informative cut-off, which helps participants manage their liquidity exposure to ensure that they can settle their net positions in the following settlement cut-off. Settlement cut-offs occur six times per day (9 a.m., 11 a.m., 1 p.m., 2.15 p.m., 3.15 p.m. and at the end of the APP's processing period, for which there is no fixed time). At these times, participants receive information on their net positions as well as payment orders crediting their account.

Once the clearing process is complete, settlement can begin. Participants with a multilateral net debit position have to settle it

by sending an appropriate SWIFT payment order to the RTGS system, crediting the Bank as the settlement agent. When the Bank has received all payments from debtors, it credits the settlement accounts of all those participants with a net credit position. Owing to the requirement to settle net positions via the RTGS settlement accounts, every Giro Clearing participant must also be a participant in the RTGS system.

As with the RTGS system, the implementation of the Giro Clearing system was completely financed by the Bank. Participants are only charged for the cost of maintaining the BSNet network. There is no membership and/or annual fee, but a charge of SIT 8 (€0.04) is charged per payment order processed. This charge was lowered from SIT 10 (€0.05) in October 2000, since the Bank is only seeking full cost recovery, with no profit element. The fees charged will therefore be periodically reviewed in this context.

In 2001 the Giro Clearing system processed more than 48 million transactions with a total value of almost SIT 3,800 billion (€17.5 billion), which represents an increase of approximately 30% compared to 2000. The average value of the payments processed amounted to approximately SIT 79,000 (€365). The net liquidity required to settle these 48 million payments was around SIT 1,430 billion (€6.6 billion), thus amounting to 37.7 % of the total gross value. This was 8.5% down on the figures for 2000.

There are two important ongoing issues related to the operation of this system. Owing to the large number of daily clearing cycles, there is a need to automate the settlement process. Therefore, direct debiting of net debtors' settlement accounts and direct crediting of net creditors' settlement accounts will be introduced. This is necessary to

² It is envisaged that the number of clearing cycles will be reduced once the APP system has been phased out.

³ All times are CET.

shorten the period of time needed to complete each individual clearing cycle and reduce manual procedures.

The second issue concerns the financial risks inherent in the system, especially systemic risk and the need to ensure the timely completion of daily settlements in the event of an inability to settle by the participant having the largest single settlement obligation. A settlement guarantee scheme will be implemented on two levels, the first being a loss-sharing agreement and the second setting positive limits on the settlement accounts of the system participants. These limits are not meant to completely cover the potential exposure of participants with net debit positions, but are intended to act more as a support mechanism to ensure the survivors' participation in the loss-sharing agreement. Since the defaulting participant would also have to hold some liquidity in the system, this settlement guarantee scheme may be interpreted as a combination of the "survivors pay" and the "defaulters pay" approach.

3.5 Future developments

With the completion of the payment systems reform process, further efforts will be devoted to the development of the national payment systems. As described in Section 1.2, the ISVPS project is under way and there is the

possibility that a national clearing house (which does not exist at the moment) will be established. However Bankart, which is owned by the banks, already provides them with certain services, such as the processing of information gathered from payment instruments. As such, Bankart could be a good basis for the establishment of a national clearing house.

If and when a national automated clearing house is established, it is envisaged that the Giro Clearing system could move from the Bank to the newly established institution, with the Bank remaining as settlement agent but passing the role of clearing agent to the clearing house.

In addition, possible changes to the communications infrastructure of Giro Clearing are being examined, i.e. the use of new SWIFT services (SWIFT Net and SWIFT FileAct). This could facilitate potential connections to foreign systems in the future, but would be even more likely if SWIFT were able to adapt its new services to the requirements of small-value payment systems.

Emphasis will also be given to the promotion of STP in payment systems. For this reason, considerable efforts are being devoted to standardisation. In terms of electronic payments, the Electronic Commerce and Electronic Signature Act (see Section 2.3.3.) is also of great importance.

4 Securities settlement systems

4.1 Trading

Securities may be issued in physical form or in book-entry form (dematerialised securities). Securities issued with a physical certificate are bearer securities, while all book-entry securities can be issued as either registered or bearer securities, and are recorded at the central registry of securities in the name of the legal owner. In 1999, the Dematerialised

Securities Act (Official Gazette of the Republic of Slovenia No. 23/99), which requires all publicly offered securities to become dematerialised, was adopted. Rights relating to book-entry securities originate with the entry of the securities on the account of the legal owner in the central registry; transactions are recorded on securities accounts in the central registry. In addition to publicly offered securities, shares in banks, insurance

companies, brokerage companies and management companies must also be issued in book-entry form regardless of the fact that they have not been publicly offered.⁴

These securities can be traded on or off the organised market. Securities are traded on the only stock exchange currently in operation in Slovenia, namely the Ljubljana Stock Exchange.⁵ Trades which by-pass the organised market are considered to be off-market or OTC trades (one example of which is trading with Treasury bills).

4.1.1 Ljubljana Stock Exchange

The LSE currently organises trading in the following financial instruments:

- shares (ordinary and preferred);
- bonds (government, municipal and corporate);
- closed-end investment fund shares;
- certain short-term financial instruments.

The organised market on which listed instruments are traded comprises two lists: the official market and the free market, i.e. the open market quotation.

Official market quotation

The official market list contains equity instruments (shares) and debt instruments (bonds). Only securities which have had successful public offerings or whose further public sale has been approved by the SMA and which have been accepted for trading by the LSE can be listed on this market segment. Listing requirements consider the issuer's operations in recent years, the size of its capital base, its audited financial statements, the size of the class of securities for which a listing is being sought, the number of shareholders and the extent to which its

securities are dispersed among the general public. There is also a daily maximum price movement limit of 10%.

Free market quotation

The free market quotation also lists equity instruments (shares) and debt instruments (bonds). Currently, all of the shares of certified investment funds which were established as part of the privatisation process are also listed in the free market quotation. Securities which have been successfully offered to the public or whose future public sale has been approved by the SMA but are not yet listed on the official market are also traded on this segment of the organised market. The simple admission procedure and the fact that the trading of shares can start as soon as they are registered at the KDD means that most shares from companies that have been privatised are currently traded on this market. There is no limitation on price movements in the free market quotation.

Clearing and settlement for both market segments are carried out in exactly the same way. The securities traded on the LSE are cleared and settled through the KDD.

Operational aspects

Since October 1993, trading has been automated in an electronic trading system. In 1999 the LSE started business operations

4 There are also material securities that were issued in the past. Currently, securities may be issued in this form in private placement issues. The difference between bearer and registered securities concerns the possibility of access to the register of all securities owners. In the case of securities issued in book-entry form, the data entered in a register of dematerialised securities (shares and debt securities) run by the KDD in the name and on the account of the securities issuer are made public, with the exception of the individual identification number of the securities holder. Where bearer securities are concerned, access to securities holders' data is limited.

5 There used to be an International Options and Futures Exchange (MBOT). Since it failed to submit a report on compliance with the new Securities Market Act before the end of January 2001, it could no longer operate. Thus, at the current time, there is no exchange for standardised financial instruments in Slovenia under the conditions defined by law.

using this new trading system (BTS) which replaced the trading component of the previous BIS trading and information system.

The only direct participants in the BTS are brokerage firms and some banks. They input daily bids and offers either in their own names or on the basis of their customers' instructions. All LSE members are connected to the BTS, with workstations on their premises, thereby enabling them to enter bids and offers in the system. LSE members may enter either a market order or a limit order into the BTS. Electronic trading on the BTS takes place every day from 9.30 a.m. to 1 p.m. C.E.T. on the basis of continuous automated trading; a trade is concluded when an offer order matches a bid order, and trades are concluded in the order in which they are entered into the system.

The electronic trading system includes an automated monitoring system which checks for unusual price and volume movements and enables an audit trail of all member trading actions. Short selling is not allowed but can be performed within a settlement period of two days (although securities lending is not organised).

Approximately one hour after the system is closed, a number of indices are published, the most important being the SBI 20. This tracks the shares of the 20 biggest corporations listed on the LSE, using market capitalisation as the weighting device.

Financial intermediaries operating in the organised securities market

As at 31 December 2001 there were 34 entities entitled to operate in the securities market, of which 11 were banks.

4.1.2 Off-market (OTC) trades

OTC trades are agreed bilaterally outside the LSE's organised market. These trades, which

are usually large-value trades, are thus not matched within the BTS system. As a consequence, they are not subject to the clearing and settlement procedures of the LSE that apply to official and free market trades. Investors in OTC trades are obliged to report them to the authorised market participants (i.e. the members of the KDD) so that the traded securities can be transmitted to the proper securities accounts (i.e. to record transfer of ownership) in the central registry.

Because clearing and settlement procedures are left to both parties in the trade, this process has given rise to large risk exposures (especially credit and liquidity risk). As of July 2001 a new service (described in Section 4.3.) has been provided to parties to OTC trades which gives them the opportunity to eliminate major risks.

4.2 Clearing

There is no independent clearing house in Slovenia. Post-trade and pre-settlement clearing services that are performed in connection with the settlement are described in the following section.

4.3 Settlement

4.3.1 Institutional aspects

Central Securities Clearing and Depository Institution

The KDD is in charge of the securities clearing and settlement system and acts as the CSD. The KDD has been settling securities transactions executed on the LSE since December 1995, along with so-called OTC transactions performed directly between investors.

The KDD offers the following services to its participants:

- automatic clearing and settlement of transactions concluded on the LSE;
- settlement of all off-market securities transactions;
- maintenance of the central registry for dematerialised and immobilised securities;
- maintenance of securities accounts for all legal owners;
- a central depository;
- technical and operational support to enable members to offer custody services; and
- corporate action services (e.g. a change in the class of a security, a stock split, a change in the initial capital, etc.).

The following instruments are eligible for transfer within (and deposit at) the KDD:

- book-entry securities issued on the domestic market;
- securities which have already been issued as physical certificates and are listed on the Ljubljana Stock Exchange's official markets or traded off the organised market.

The latter type of securities have to be immobilised in order to allow them to be traded through the KDD Information System (KIS). Prior to the dematerialization of securities (i.e. before 1995), securities traded on the LSE were deposited at AURUM (the depository institution at that time), from which they were physically transferred. 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 handles:

- secondary market transactions concluded on the LSE;
- off-market transactions;
- transactions in securities between the accounts of the same holder (including inheritance securities transactions); and
- corporate actions.

Participation in the KDD system

KDD members, regardless of the type of membership they apply for, have to be authorised securities market participants licensed by the SMA, i.e. banks, brokerage firms, investment companies and management companies, the government of the Republic of Slovenia, the Bank and other clearing or depository organisations, institutional investors, custodian banks, etc. In principle, all of these must be domiciled in Slovenia. There is no other restriction on KDD membership as long as the applicant meets all of the legal criteria set out in the Securities Market Act.

All members of the LSE are members of the KDD system together with certain other institutions; as at 31 December 2001 there were 65 member institutions in all.

The KDD offers five types of membership, which are not mutually exclusive. They are as follows:

Membership of the transfer system, which provides the following KDD services:

- online transfer of ownership of securities related to legal transactions, for the account of a KDD member or its customer, by book entry across securities accounts;
- online access to the balances of members' own accounts and/or their customers' accounts.

Membership of the transfer and settlement system, in which the KDD offers, in addition to the services listed above:

- calculation of a KDD member's total gross amounts receivable or payable resulting from trades concluded on the stock market;
- calculation of a KDD member's total net amounts receivable or payable after the offset of mutual obligations;
- settlement of payment obligations and execution of appropriate transfers in the ownership of securities;
- online access to a KDD member's account balances.

Membership of the KDD's loans system, in which the KDD:

- records the balances of securities in loan accounts;
- provides online access to these balances.

Membership of the KDD's pledge system, in which the KDD:

- records the balances of pledged securities;
- provides online access to these balances.

Custodian banks membership, in which the KDD:

- records the balances of securities in custodian accounts operated by non-resident securities holders with their registered office abroad;
- provides online access to these balances.

Membership of pledge and loans systems is not yet operational.

4.3.2 Operational aspects

4.3.2.1 LSE trades clearing and settlement

All trades carried out on the LSE are subject to the clearing and settlement of liabilities through the KDD. Data on these transactions are sent to the KDD daily (after 1.30 p.m. on T+0), directly by the LSE through a computer connection between both entities. As described above, transactions are concluded through the LSE BTS system and cleared and settled through the KDD KIS system. Under the 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's KIS system.

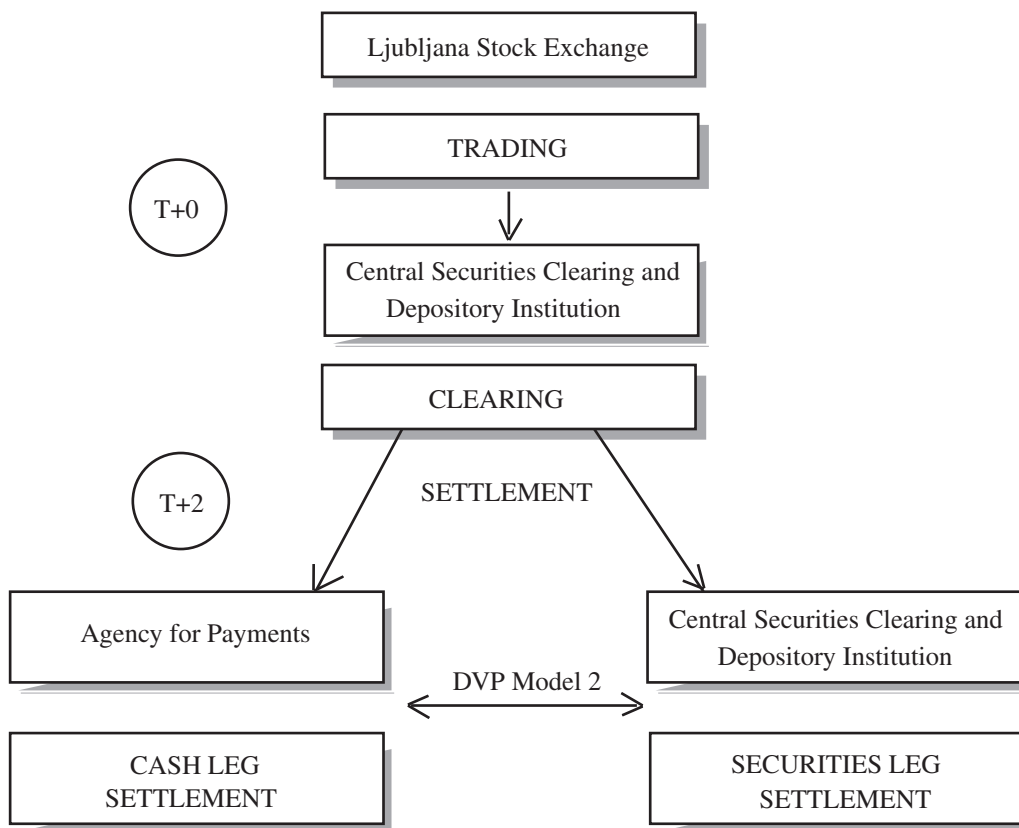
After the KDD has received information on successfully concluded trades from the LSE, it calculates the multilateral net cash claims and liabilities of its members irrespective of whether they have been trading for their own or for their customers' accounts. The result of these procedures are net positions which must be settled on T+2. These positions are communicated to the KDD members after 1.30 p.m. on T+0 for two reasons: first, to provide the information on the level of liquidity which will be required in two days' time; and second, to flag any possible obligations to pay additional funds to the Liquidity Reserve Fund (described in detail below). Additional funds have to be paid by members whose net position after the current trading day exceeds 25% of the Liquidity Reserve Fund. These payments have to be made on T+1.

The securities leg

The KDD, in accordance with the terms of legally binding membership agreements, is liable to its members for the clearing and settlement of their positions and also acts as a central counterparty. The KDD operates a rolling T+2 settlement system for all stock exchange transactions on all business days.

Chart 2

Trading, clearing and settlement phases of trades concluded on the LSE capital market



Securities transfers within the KDD are processed directly as debits and credits to the securities accounts of participants or their customers. Customers' accounts (which are not sub-accounts but direct accounts called "final customer accounts") and assets are kept completely separate, both technically and legally, from members' accounts and assets. The KDD thus maintains two types of account: house accounts belonging to its own members, and customer accounts belonging to the legal owners of securities. All securities are registered in the name of the legal owner. In the case of pledged securities, a distinction is made between the owner of the pledged securities (or pledgor), and the entity in whose possession the pledge remains pending repayment of the debt (the pledgee), although

the securities remain registered in the name of their legal owner.

For LSE transactions, participants are expected to have their securities accounts "cleared" by 11 a.m. on T+2. If they fail to clear, they receive a reminder requesting that they do so by 12 noon. Final settlement takes place at 1 p.m. on T+2.

The cash leg

The APP is still the entity responsible for keeping the cash accounts of KDD participants and the KDD itself. Settlement of the cash leg is therefore carried out across cash accounts with the APP (the KDD being the settlement agent). In future, the KDD, which will have its

own settlement account with the Bank of Slovenia (see below), will continue to act as settlement agent for the cash leg of LSE trades.

Securities transfers occur at the end of day T+2 (1 p.m.) in continuous batches. They are processed within the KIS system, while the related transfers of funds are made by debits and credits to the cash accounts held with the APP by participants in the system and by the KDD itself. Since the KDD and APP systems 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.

LSE trades risk management

All members of the KDD must contribute to both the Liquidity Reserve Fund, which acts as a guarantee that cash transactions will take place, and the KDD's Guarantee Fund, which serves as a guarantee to cover liabilities arising from securities transactions concluded on the LSE market.

The KDD calculates the liquidity reserves required by each individual member on the basis of its daily operations. If a member's daily net obligation exceeds 25% of the Guarantee Fund as a whole, it must pay the difference into the Liquidity Reserve Fund.

The KDD notifies the APP at 1.30 p.m. on T+0 of the net cash positions of its members, thus enabling it to monitor the subsequent fulfilment of their obligations. If the funds in a member's account with the APP are insufficient to meet their net obligation arising from T+0 trading by 10 a.m. on T+2, the APP notifies the KDD, which then asks the member to supply sufficient funds.

Any failure by the participants to meet their obligations to deliver securities is dealt with in two stages as follows:

- when a participant does not have sufficient securities in its account by 11 a.m. on T+2,

it receives notification to this effect and has until 12 noon to obtain the necessary securities (i.e. usually by means of borrowing securities);

- if the member still does not have sufficient securities by 12 noon, the KDD commences buy-in procedures. The KDD intervenes and buys the missing securities against the non-performing participant. In addition, the non-performing participant is charged with all costs arising from this procedure and incurs a fine. The KDD performs these procedures because substitution by novation is, by law, not possible in Slovenia. The KDD does not offer any credit extensions or advances of funds to its participants and thereby does not expose 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. All of these procedures apply only to transactions on the organised market.

If members are unable to meet their obligations to the KDD or other members in respect of the cash leg of securities transactions, 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 prove insufficient. If the Guarantee Fund is activated, the KDD may exercise its right to put a lien on the securities which have not been paid for; these can later be sold to replenish the Guarantee Fund. The KDD member which 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 APP an acceptance payment order in relation to that member (a special instrument which allows a creditor to obtain a payment from the debtor's account), authorising the KDD to cash the order, debit the member's account and credit the KDD Guarantee Fund account.

If the Fund is still not replenished, the KDD sells pledged securities (i.e. the securities subject to the failed 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.

While a DVP arrangement is in place, there is no counterparty (credit) risk. Funds are not available to the selling member until the securities transfer is executed. In a sense, the KDD guarantees the transfer of funds since it acts as a central counterparty and takes over all payment obligations and claims from its members, thus becoming a party to each and every stock exchange transaction. The KDD does not guarantee the transfer of securities. However, in the event of the non-delivery of securities, the KDD initiates the buy-in procedure outlined above.

Therefore, all of the KDD's risk exposure is concentrated in the payment area, within which the Guarantee Fund and Liquidity Reserve Fund are established to deal precisely with this type of risk.

4.3.2.2 The settlement of OTC trades

OTC (or off-market) transactions are agreed bilaterally between the two parties to the trade, and neither the KDD nor the APP are interested or directly involved in the cash settlement. The parties to the trade must settle their cash obligations individually and then report the trade to the KDD. The KDD executes and settles the securities leg of such requests as they are received. OTC transactions are approved and executed continuously throughout the KDD's operating hours, i.e. from 8 a.m. until 4 p.m. daily.

The KDD, together with the Bank, introduced a new service for members in July 2001, called OTC-DVP. This service allows parties to OTC trades to settle these in real time, using the DVP mechanism. This mechanism was developed primarily for the settlement of

OTC trades in Treasury bills, with the aim of eliminating the principal risk from the settlement of OTC trades.

The principle of the OTC-DVP mechanism is basically the same as that of all other OTC trades. The parties to a trade agree the details and report these (via their banks or brokerage houses) to the KDD. The KDD assigns each reported OTC-DVP trade a unique ID and blocks the securities concerned by the trade. It then communicates the assigned ID to both the seller and the buyer, who use it in the payment order when paying for the securities. The intermediate receiver of the funds is the KDD (i.e. the KDD's settlement account with the Bank), and it in turn transfers the securities from the seller's to the buyer's account. At the same time, it initiates an RTGS payment order crediting the seller of the securities. This process ensures both speed (through the use of RTGS) and the absence of principal risk (DVP mechanism).

The use of the OTC-DVP mechanism is not obligatory, but it allows the effective real-time and principal risk-free settlement of OTC trades.

4.3.2.3 DVP mechanism

The KDD operates a DVP system to settle all LSE trades and offers a way of settling off-market (OTC) trades in the same way. The DVP settlement of organised market trades is also required by Article 267 of the Securities Market Act.

The model operated by the KDD for LSE transactions is an example of Model 2, as 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" (BIS, September 1992). According to this model, transfer instructions for securities are settled on a gross basis at the end of the clearing cycle (i.e. on T+2) in the securities

accounts with the KDD, which acts as settlement agent. Funds are settled on a net basis, with final transfers in cash accounts held with the APP.

For OTC trades, the DVP mechanism is available but is not obligatory. As described above, the KDD offers a service called "OTC-DVP" in which securities and cash are settled on T+0 (in real-time) according to the principles of DVP Model I (gross-gross), as described in the above-mentioned report. In this mechanism, the KDD acts as a settlement agent for the cash leg of a transaction (via its settlement account with the Bank).

4.3.3 The main projects and policies being implemented

The main projects currently under way in the area of securities clearing and settlement systems concern the implementation of the cash-leg settlement in central bank money and risk reduction in general. In 1999, an inter-institutional project was launched, involving the Bank, the KDD and the SMA, with two main objectives. The first of these is the transfer of the cash accounts of the securities market participants (used in the cash-leg settlement of LSE transactions) from the APP to banks and to the Bank, thereby using central bank money as the settlement medium. The second objective involves the implementation of a real-time DVP mechanism for large-value off-market trades in order to eliminate principal risk.

The second part of the project was implemented in July 2001 with the introduction of the OTC-DVP service of the KDD, while the implementation of the accounts migration process will be completed by the end of June 2002. At that point, the APP will cease to offer payment services to legal entities. In this segment of the project, the Bank will only allow the use of its infrastructure and will keep certain cash accounts, but it will not take on the role of settlement agent. This role will be

performed by the KDD (as is already the case for OTC-DVP trades), which will have its settlement account in the RTGS system of the Bank.

Given the legal requirements for the separation and deposit of customer funds, the Bank will keep certain accounts of securities market participants, i.e. the customer funds accounts and the so-called clearing (or "zero balance") accounts. The accounts of securities market participants (so-called house accounts) will be held with commercial banks since there is no legal obligation for the Bank to keep these as well. In this way, LSE trades will be settled in central bank money instead of in APP money, which bears a certain amount of risk. The clearing procedures will remain unchanged.

The KDD has currently no established cross-border links, but plans for establishing them and/or building them into other cross-border services are under way.

4.4 The use of the securities infrastructure by the Bank of Slovenia

The Bank is an important player in the securities field. It issues its own bills (Bank of Slovenia bills), which are used in monetary policy transactions. These bills have been very important since the beginning of the 1990s, when there were no government securities which could be used for refinancing. Bank bills are still the predominant monetary policy instrument as a consequence of the structural surplus position of the money market.

The Bank's bills may only be held by the country's banks. Since these bills are not registered in the KDD, the Bank also maintains the register of legal owners, and all changes of ownership must be recorded by the Bank.

There is no organised secondary market established for these bills. All trades are agreed

bilaterally between banks; a bank selling bills has to notify the Bank, which enters the change of ownership in its books. The Bank is not involved in cash settlements. Cash transfers must be performed bilaterally between the banks involved in the trade in their settlement accounts with the Bank.

The secondary market for T-bills is divided into the wholesale and retail markets. While retail transactions are subject to trading in the organised market of the LSE (and the clearing and settlement procedures of the KDD), the wholesale market is not organised. The segment of the wholesale market was established by an agreement between the Bank

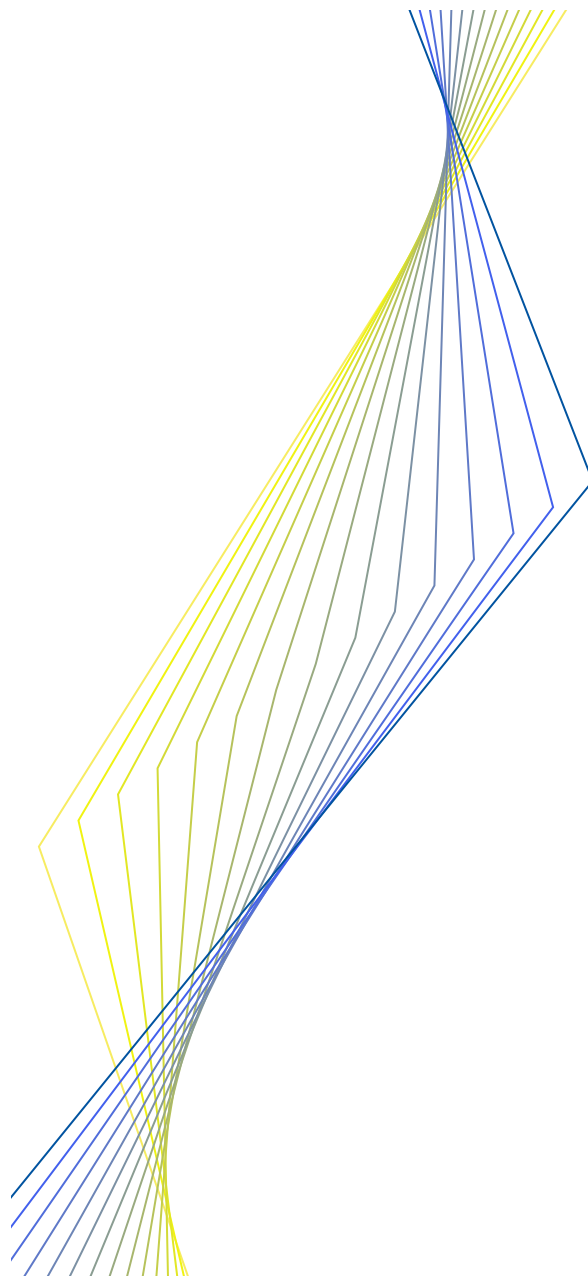
and six banks as market-makers, and this segment is quote driven.

Trades on the wholesale market are agreed bilaterally and may be settled using the KDD's OTC-DVP service.

The Bank's bills and T-bills are accepted as collateral for the loans granted by the Bank. The bank has its own pledging system for these bills, while for the treasury's T-bills the Bank uses the KDD. The Bank of Slovenia maintains securities accounts for the banks and, when a bank needs to obtain a loan, the Bank pledges the corresponding amount of securities.



EUROPEAN CENTRAL BANK



Annex I

Comparative tables

August 2002

Table I
Banknotes and coins in circulation outside credit institutions

(end of year)

	Total (EUR millions)						Value per inhabitant (EUR)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	516	794	1,117	1,005	1,210	1,581	62	96	135	122	148	193
Cyprus	452	477	500	544	581	620	694	728	756	818	868	920
Czech Republic	3,479	3,091	3,610	4,374	4,902	5,645	337	300	351	425	477	551
Estonia	275	290	290	365	396	444	187	199	200	253	276	310
Hungary ¹⁾	2,431	2,512	2,628	3,358	3,335	4,233	239	247	259	334	333	424
Latvia	379	511	512	642	742	872	152	207	209	269	313	369
Lithuania	379	574	600	681	715	830	102	155	162	184	194	225
Malta	805	846	837	916	967	1,036	2,117	2,210	2,171	2,365	2,484	2,624
Poland	6,595	6,955	7,398	9,157	8,861	10,933	171	180	191	237	229	283
Romania	1,075	1,038	901	948	1,067	1,278	48	46	40	42	48	57
Slovakia	1,102	1,269	1,173	1,356	1,525	1,893	205	236	218	251	282	351
Slovenia	379	419	498	628	561	649	190	211	251	317	282	327

	As a percentage of GDP (%)						As a percentage of narrow money (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	18.0	9.1	10.1	8.7	9.3	10.9	129.7	64.0	73.5	59.7	59.6	62.8
Cyprus	6.4	6.3	6.2	6.3	6.1	6.1	40.6	38.8	39.4	30.2	30.8	32.8
Czech Republic	7.6	7.1	6.9	8.4	8.8	8.5	25.0	26.8	29.3	32.9	31.7	28.5
Estonia	8.1	7.2	6.2	7.5	7.3	7.3	34.5	28.8	30.6	29.6	26.5	24.2
Hungary ¹⁾	7.2	6.6	6.6	8.5	6.8	7.0	40.2	36.8	37.3	40.0	37.2	37.4
Latvia	9.3	10.2	9.5	9.7	9.9	10.4	62.1	59.5	50.3	55.7	54.4	56.2
Lithuania	6.0	6.6	6.5	6.4	5.9	6.1	52.6	49.6	50.3	51.9	46.9	43.3
Malta	30.2	28.0	26.3	25.6	24.8	25.9	79.7	75.8	70.6	66.3	66.6	65.2
Poland	6.1	7.0	5.5	6.2	4.9	5.0	38.6	37.8	37.1	38.3	36.4	36.7
Romania	4.9	3.6	3.1	3.2	3.2	3.2	48.2	49.1	52.1	58.6	55.6	55.4
Slovakia	7.2	7.1	6.6	7.1	7.6	8.3	25.0	29.3	33.8	37.4	35.8	35.4
Slovenia	2.6	2.7	2.9	3.4	3.0	3.1	28.4	28.9	28.1	31.3	28.3	28.3

1) Includes the value of banknotes and coins that are being withdrawn from circulation and the value of the commemorative banknotes and coins.

Table 2
Transferable deposits held by non-banks

(end of year)

	Value per inhabitant (EUR)						As a percentage of GDP (%)						As a percentage of narrow money (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	23	69	76	83	100	115	6.7	6.5	5.6	5.9	6.3	6.5	47.9	45.9	41.1	40.7	40.3	37.3
Cyprus	1,014	1,146	1,162	1,893	1,948	1,884	9.3	10.0	9.5	14.7	13.7	12.6	59.4	61.2	60.6	69.8	69.2	67.2
Czech Republic	1,011	819	844	867	1,030	1,384	22.7	19.4	16.7	17.1	18.9	21.4	75.0	73.2	70.7	67.1	68.3	71.5
Estonia	355	493	454	603	765	972	15.4	17.7	14.0	17.8	20.1	23.0	65.5	71.2	69.4	70.4	73.5	75.8
Hungary	354	425	435	499	563	708	10.7	11.3	11.1	11.2	11.4	11.7	59.8	63.2	62.7	60.0	62.8	62.6
Latvia	93	141	206	214	262	288	5.7	6.9	9.4	7.7	18.4	8.1	37.9	40.5	49.7	44.3	45.6	43.8
Lithuania	92	157	160	171	219	294	5.4	6.7	6.4	5.9	6.7	8.0	47.4	50.4	49.7	48.1	53.1	56.7
Malta	538	706	902	1,200	1,243	1,402	7.7	8.9	10.9	13.0	12.4	13.8	20.3	24.2	29.4	33.7	33.4	34.8
Poland	272	296	324	381	401	487	9.7	9.5	9.3	10.0	8.6	8.6	61.4	62.2	62.9	61.7	63.6	63.3
Romania	51	48	37	30	38	46	5.3	3.8	2.9	2.3	2.6	2.5	51.8	50.9	47.9	41.4	44.4	44.6
Slovakia	615	568	426	421	507	639	21.5	17.1	13.0	11.8	13.6	15.1	75.0	72.9	66.2	62.6	64.2	64.6
Slovenia	479	520	641	696	716	828	6.6	6.6	7.3	7.5	7.5	8.0	71.6	71.1	71.9	68.7	71.7	71.7

Table 3
Settlement media used by banks

(end of year)

	Banks' reserves at central bank (EUR billions)						Banks' reserves at central bank as a percentage of narrow money (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	0.2	0.3	0.2	0.2	0.2	0.2	44.8	25.6	12.8	14.0	9.1	9.3
Cyprus	0.6	0.6	0.7	0.9	1.0	0.9	51.2	45.2	52.5	51.5	51.8	47.9
Czech Republic	4.1	5.2	7.3	7.4	8.1	9.7	29.2	44.8	59.0	55.5	52.6	48.8
Estonia	0.1	0.2	0.2	0.3	0.4	0.2	9.7	19.0	24.6	25.0	24.4	13.2
Hungary	1.6	1.8	1.8	2.1	2.2	1.5	25.7	26.3	25.5	24.7	24.4	13.5
Latvia	0.1	0.1	0.1	0.1	0.1	0.2	10.1	11.5	9.0	11.2	9.9	11.6
Lithuania	0.1	0.1	0.2	0.1	0.2	0.2	11.0	7.6	15.6	8.4	10.9	8.7
Malta	0.2	0.2	0.3	0.3	0.3	0.3	15.9	20.9	22.1	21.5	23.8	19.8
Poland	1.9	2.7	4.7	2.3	2.9	3.4	11.4	14.6	23.6	9.7	12.1	11.3
Romania	0.3	0.3	0.5	0.9	1.0	1.0	14.2	14.9	29.7	57.4	51.6	43.9
Slovakia	0.7	0.9	0.9	0.9	0.9	0.7	14.7	21.7	26.4	25.6	20.7	13.5
Slovenia	0.2	0.3	0.3	0.3	0.3	0.4	18.3	20.4	18.9	15.3	15.8	15.6

	Transferable deposits at other banks (EUR billions)						Transferable deposits at other banks as a percentage of narrow money (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	0.04	0.05	0.04	0.02	0.01	0.02	11.0	3.8	2.3	1.2	0.6	0.8
Cyprus	0.02	0.1	0.03	0.2	0.2	0.2	1.4	4.3	2.1	8.4	12.8	8.6
Czech Republic	8.5	10.5	11.7	11.9	11.7	14.8	60.9	90.6	94.8	89.2	75.7	74.5
Estonia	0.1	0.1	0.1	0.1	0.1	0.2	11.5	10.4	14.1	7.8	9.6	8.4
Hungary	0.1	0.1	0.1	0.1	0.2	0.1	1.1	1.7	1.7	1.8	1.8	1.1
Latvia	0.01	0.03	0.01	0.01	0.01	0.01	2.4	3.8	1.0	0.5	0.6	0.6
Lithuania	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg	neg
Malta	0.01	0.02	0.01	0.01	0.02	0.004	0.6	1.6	0.6	1.0	1.1	0.3
Poland	0.4	0.5	0.7	0.5	0.4	0.4	2.3	2.5	3.4	1.9	1.7	1.5
Romania	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Slovakia	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Slovenia	nav	nav	neg	neg	neg	neg	nav	nav	0.3	0.2	0.4	0.2

Table 4
Institutional framework

(end of year)

	Number of institutions offering payment services (per 1,000,000 inhabitants)		Number of central bank branches (per 1,000,000 inhabitants)		Number of bank branches (per 1,000,000 inhabitants)		Number of post office branches (per 1,000,000 inhabitants)		Others (per 1,000,000 inhabitants)		Total number of branches offering payment services (per 1,000,000 inhabitants)		Number of accounts on which payments can be made (per inhabitant)	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
Bulgaria	nav	5	nav	1	nav	192	nav	375	nav	nav	nav	569	nav	nav
Cyprus	562	558	1	1	nav	685	nav	nav	nav	697	nav	1,384	nav	2.20
Czech Republic	4	4	1	1	188	172	331	332	nav	nav	520	504	0.66	0.69
Estonia	11	13	1	1	nav	142	nav	391	6	7	nav	534	nav	nav
Hungary	24	23	0.5	1	280	289	325	327	nav	nav	606	616	0.76	0.70
Latvia	17	19	3	3	267	270	409	410	nav	nav	678	683	0.61	0.72
Lithuania	3	3	1	1	46	45	nav	nav	nav	nav	46	45	nav	nav
Malta	41	41	3	3	285	281	69	68	nav	nav	357	352	nav	1.58
Poland	20	18	1	1	343	330	209	213	nav	nav	553	544	0.37	0.45
Romania	2	2	1	1	nav	124	nav	319	nav	nav	nav	444	0.36	0.44
Slovakia	4	4	3	3	192	187	301	302	nav	nav	496	492	nav	0.49
Slovenia	51	42	1	1	542	354	269	276	23	21	565	651	nav	1.06

Table 5
Cards with a cash function and ATMs

	Number of ATMs per 1,000,000 inhabitants (end of year)						Number of transactions per inhabitant					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	8	14	20	34	51	79	0.03	0.2	0.2	0.4	0.8	2
Cyprus	229	241	283	332	392	464	2	3	3	4	5	7
Czech Republic	113	128	142	146	156	188	4	5	6	7	8	10
Estonia	144	270	299	367	393	419	8	15	14	20	26	30
Hungary	107	153	204	234	243	255	2	4	6	7	8	9
Latvia	10	40	97	157	271	335	0.02	0.3	1	2	4	6
Lithuania	8	34	76	92	128	187	0.03	0.1	1	1	1	3
Malta	237	277	314	320	349	352	10	12	13	15	19	34
Poland	14	37	54	102	136	168	0.2	1	1	2	6	7
Romania	1	4	8	21	33	57	nav	0.01	0.1	0.2	1	2
Slovakia	146	162	179	187	201	219	5	7	9	10	9	10
Slovenia ¹⁾	204	252	309	385	435	480	8	10	14	17	21	18

	Average value per transaction (EUR)						Change in the number of ATMs (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	17	16	31	38	41	41	200.0	71.0	37.3	72.2	50.5	52.9
Cyprus	86	90	114	99	99	103	23.1	6.0	18.4	18.2	18.6	19.5
Czech Republic	37	38	43	50	57	68	10.0	13.1	10.7	2.5	6.9	20.0
Estonia	20	27	47	48	49	51	51.4	85.8	9.9	22.4	6.4	6.4
Hungary	54	49	69	88	96	106	64.0	42.6	33.3	13.9	3.3	4.5
Latvia	79	47	68	78	81	75	242.9	312.5	140.4	57.1	71.9	23.0
Lithuania	67	69	41	56	65	69	nav	334.5	122.2	21.8	38.7	45.7
Malta	67	72	74	78	71	45	nav	17.8	14.2	2.5	9.7	2.2
Poland	35	47	36	51	60	65	144.4	160.4	45.8	88.1	33.4	23.0
Romania	nav	23	29	17	32	36	nav	192.6	135.4	153.8	58.3	71.8
Slovakia	26	27	30	30	39	43	22.0	12.0	11.0	5.0	7.0	9.0
Slovenia ¹⁾	45	58	78	107	147	114	43.8	23.1	22.2	25.0	13.1	10.2

	Change in the number of transactions (%)						Change in the value of transactions (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	3,082.0	357.9	49.2	75.2	102.5	110.9	1,477.0	3,596.0	195.6	109.9	121.8	110.2
Cyprus	nav	18.8	10.5	23.8	38.5	36.1	nav	23.0	39.2	6.8	37.6	42.6
Czech Republic	53.5	28.0	19.6	18.4	22.6	17.4	78.1	37.6	35.7	40.2	37.1	32.6
Estonia	nav	84.2	-7.3	46.8	28.5	15.8	nav	157.4	60.4	48.2	33.2	19.2
Hungary	143.0	76.3	52.4	24.3	10.4	11.7	879.0	77.3	142.1	66.9	23.5	21.6
Latvia	1,450.0	1,313.1	194.3	90.7	89.7	78.9	3,000.0	693.5	322.8	107.5	77.5	65.5
Lithuania	nav	449.9	359.1	-11.6	90.7	166.1	nav	405.7	173.4	14.2	91.5	170.9
Malta	nav	20.1	12.0	20.2	24.6	82.9	nav	22.4	14.4	25.1	5.8	16.2
Poland	646.7	219.5	107.7	80.7	132.4	30.0	989.8	367.7	66.6	177.3	159.3	29.1
Romania	nav	nav	524.1	187.8	205.4	119.1	nav	nav	878.9	174.3	617.2	220.3
Slovakia	60.0	46.0	25.0	8.0	-6.5	5.0	54.0	50.0	45.0	20.0	20.0	16.0
Slovenia ¹⁾	18.7	24.2	34.0	23.6	18.9	-11.7	31.1	29.9	33.2	37.4	38.1	-2.0

1) 2001 figures include only the first three quarters (balance on 30 September 2001).

Table 6
Cards with a debit function and POS terminals

	Number of POS terminals per 1,000,000 inhabitants (end of year)						Number of transactions per inhabitant					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	3	9	43	61	133	241	neg	neg	0.01	0.01	0.03	0.10
Cyprus	3,794	5,852	7,834	9,450	11,465	14,334	1	1	2	3	4	5
Czech Republic	107	290	644	871	1,284	1,751	0.1	0.1	0.3	1	1	3
Estonia ¹⁾	817	1,498	1,783	2,264	2,844	3,673	0.2	1	3	6	10	16
Hungary	534	1,172	1,499	1,663	1,746	1,875	3	5	7	10	11	13
Latvia	650	1,158	1,384	1,868	2,268	2,922	nav	nav	nav	nav	nav	nav
Lithuania	61	230	710	1,429	1,652	2,508	0.1	0.1	0.4	1	1	3
Malta	6,624	8,851	9,341	11,364	13,600	15,287	3	4	5	7	6	5
Poland	67	119	229	543	1,158	1,698	0.04	0.1	0.1	0.3	1	2
Romania	nav	2	9	20	58	108	0.001	0.002	0.01	0.01	0.01	0.02
Slovakia ¹⁾	72	203	557	857	1,171	1,778	0.03	0.1	0.2	0.4	1.05	1.96
Slovenia ²⁾	2,289	4,063	5,730	7,699	10,915	12,933	0	neg	1	3	7	9

	Average value per transaction (EUR)						Change in the number of POS terminals (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	4	166	41	49	59	66	2,600.0	166.7	388.9	41.2	118.7	81.0
Cyprus	96	90	96	84	88	89	37.4	54.9	35.1	21.4	22.1	26.0
Czech Republic	77	78	83	63	52	49	64.7	171.4	122.0	35.2	47.1	36.0
Estonia ¹⁾	16	20	29	28	27	24	380.0	82.0	18.4	26.3	25.0	28.8
Hungary	56	58	62	73	80	86	72.0	118.8	27.8	10.1	4.6	7.0
Latvia	nav	nav	nav	nav	nav	nav	67.4	76.5	18.5	31.6	20.6	28.4
Lithuania	101	101	93	50	58	41	nap	276.2	208.0	101.0	15.4	51.7
Malta	61	63	61	67	62	53	nav	34.6	6.2	22.3	20.3	14.0
Poland	86	75	52	38	43	43	110.3	77.6	93.3	137.1	113.1	46.6
Romania	nav	201	140	114	96	64	nav	nav	293.9	133.7	190.9	84.6
Slovakia ¹⁾	33	30	33	31	25	26	267.0	181.0	175.0	54.0	37.0	52.0
Slovenia ²⁾	nav	nav	30	29	32	28	460.0	77.1	40.7	34.6	42.1	15.4

	Change in the number of transactions (%)						Change in the value of transactions (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	165.0	-49.9	3,454.9	107.7	132.2	193.2	221.0	17,022.6	802.0	149.0	178.2	227.7
Cyprus	nav	80.0	44.4	38.5	33.3	41.7	nav	66.5	53.5	20.5	38.4	43.7
Czech Republic	181.3	55.6	100.0	114.3	141.7	83.4	37.9	62.5	115.4	66.7	92.9	65.6
Estonia ¹⁾	nav	364.1	223.0	80.3	59.2	66.7	nav	501.5	356.4	73.9	52.7	49.2
Hungary	828.0	105.3	37.8	28.9	16.7	13.4	1,522.0	133.1	66.5	59.9	32.0	19.5
Latvia	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Lithuania	nav	118.2	192.5	160.3	22.6	125.5	nav	94.3	165.2	33.6	22.8	55.2
Malta	nav	37.0	34.5	32.9	-5.8	-16.9	nav	33.4	31.8	41.8	-19.5	-28.3
Poland	nav	30.8	129.7	117.0	186.6	87.0	nav	24.3	67.0	72.5	204.7	74.1
Romania	nav	60.1	202.3	22.6	49.5	102.3	nav	nav	160.9	62.5	53.8	77.0
Slovakia ¹⁾	120.0	207.0	164.0	98.0	146.0	88.0	120.0	171.0	198.0	109.0	120.0	72.0
Slovenia ²⁾	nav	nav	nav	332.9	164.7	34.1	nav	nav	nav	335.9	209.6	24.2

1) Transactions by debit and credit cards.

2) 2001 figures include only the first three quarters (balance on 30 September 2001).

Table 7
Cards with a credit function and accepting terminals

	Number of accepting terminals per 1,000,000 inhabitants (end of year)						Number of transactions per inhabitant					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	neg	neg	neg	neg	0.01	0.02
Cyprus	3,794	5,852	7,834	9,450	11,465	14,334	3	4	6	8	10	12
Czech Republic	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Estonia	817	1,498	1,783	2,264	2,844	3,673	nav	nav	nav	nav	nav	nav
Hungary	534	1,172	1,499	1,663	1,746	1,875	nap	0	neg	0.1	0.2	0.4
Latvia	650	1,158	1,384	1,868	2,268	2,922	nav	nav	nav	nav	nav	nav
Lithuania	61	230	710	1,429	1,652	2,508	nav	nav	nav	nav	nav	nav
Malta	6,861	9,127	9,655	11,684	13,949	15,640	nav	nav	nav	nav	nav	nav
Poland	722	1,001	1,301	1,870	2,282	2,921	0.01	0.01	0.1	0.2	0.3	0.5
Romania	nav	2	9	20	58	108	nap	nap	nap	neg	0.0	0.01
Slovakia	72	203	557	857	1,171	1,778	nav	nav	nav	nav	nav	nav
Slovenia ¹⁾	2,289	4,063	5,730	7,699	10,915	12,933	12	16	19	22	26	21

	Average value per transaction (EUR)						Change in the number of accepting terminals (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	neg	181	293	243	183	136	nav	nav	nav	nav	nav	nav
Cyprus	72	78	78	80	81	81	37.4	54.9	35.1	21.4	22.1	26.0
Czech Republic	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Estonia	nav	nav	nav	nav	nav	nav	380.0	82.0	18.4	26.3	25.0	28.8
Hungary	nav	0	neg	61	57	57	nav	118.8	27.8	10.1	4.6	7.0
Latvia	nav	nav	nav	nav	nav	nav	67.4	76.5	18.5	31.6	20.6	28.4
Lithuania	nav	nav	nav	nav	nav	nav	nap	276.2	208.0	101.0	15.4	51.7
Malta	nav	nav	nav	nav	nav	nav	nav	34.0	6.5	21.6	20.0	13.7
Poland	41	53	75	79	66	55	44.1	38.8	30.0	43.6	22.0	28.0
Romania	nav	nav	nav	31	80	60	nav	nav	293.9	133.7	190.9	84.6
Slovakia	nav	nav	nav	nav	nav	nav	267.0	181.0	175.0	54.0	37.0	52.0
Slovenia ¹⁾	25	26	26	26	30	29	460.0	77.1	40.7	34.6	42.1	15.4

	Change in the number of transactions (%)						Change in the value of transactions (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	3,885.1	411.3	158.4	195.5	nav	nav	6,565.4	322.9	94.6	117.8
Cyprus	nav	61.1	41.4	26.8	23.1	21.9	nav	72.1	40.8	28.6	23.8	22.4
Czech Republic	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Estonia	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Hungary	nav	nav	neg	7,788.0	180.3	70.9	nav	nav	neg	4,634.8	170.4	68.6
Latvia	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Lithuania	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Malta	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Poland	nav	51.3	377.5	217.0	102.5	39.7	nav	92.7	585.4	231.6	70.5	15.1
Romania	nav	nav	nav	nav	772.8	575.0	nav	nav	nav	nav	2,623.6	558.1
Slovakia	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Slovenia ¹⁾	nav	27.8	23.4	15.6	17.5	-20.5	nav	34.9	29.0	21.7	43.2	-19.0

1) 2001 figures include only the first three quarters (balance on 30 September 2001).

Table 8
Cards with an e-money function and accepting terminals

	Electronic money cards (thousands)						Average value per reloading (EUR)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cyprus	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Czech Republic	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Estonia	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Hungary	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Latvia	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Lithuania	7	24	53	52	94	129	nav	nav	nav	nav	nav	nav
Malta	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Poland	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Romania	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Slovakia	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Slovenia	0	0	0	0	0	0	nap	nap	nap	nap	nap	nap

	Number of purchase terminals						Average value per transaction (EUR)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Cyprus	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Czech Republic	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Estonia	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Hungary	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Latvia	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Lithuania	79	168	969	1,000	1,127	1,643	4.2	5.5	34.3	23.9	26.2	28.5
Malta	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Poland	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Romania	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Slovakia	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Slovenia	0	0	0	0	0	0	nap	nap	nap	nap	nap	nap

Table 9**Number of cards¹⁾***(end of year, per 1,000 inhabitants)*

	Cards with a cash function		Cards with a debit function		Cards with a credit function		Cards with a debit function issued by retailers		Cards with an e-money function		Cards with a cheque guarantee function	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
Bulgaria	69	121	68	120	0.4	1	nap	nap	nap	nap	nap	nap
Cyprus	888	1,000	274	334	572	607	nap	nap	nap	nap	nap	nap
Czech Republic	387	445	386	441	4	5	nav	nav	nav	nav	1	0
Estonia	598	689	568	612	30	77	nav	nav	nap	nap	nap	nap
Hungary	443	501	446	503	27	45	28	39	nap	nap	nap	nap
Latvia	268	378	236	310	126	187	12	12	nap	nap	nap	nap
Lithuania	137	220	109	182	2	4	nav	nav	25	35	nap	nap
Malta	842	874	617	631	221	238	nap	nap	nap	nap	nap	nap
Poland ²⁾	291	371	256	330	13	23	nap	nap	nap	nap	69	80
Romania	48	101	46	93	2	7	nap	nap	nap	nap	nap	nap
Slovakia	318	366	317	362	1	3	nav	nav	nap	nap	nap	nap
Slovenia ³⁾	1,692	1,772	699	743	373	392	0	0	0	0	742	771

1) A card which has several functions is counted in each relevant column (e.g. a eurocheque card which can be used to withdraw cash, to make payments and to guarantee cheques is counted under each of these three items). For this reason, the figures should not be added together.

2) Retailer cards in Poland are usually credit cards or charge cards.

3) 2001 figures are the balance on 30 September 2001.

Table 10**Use of cards***(end of year)*

	Average number of							
	Cash withdrawals per card with a cash function		Payments per card with a debit function		Payments per card with a credit function		Payments per card with an e-money function	
	2000	2001	2000	2001	2000	2001	2000	2001
Bulgaria	12.1	14.5	0.5	0.8	16.0	14.4	nap	nap
Cyprus	6.1	7.3	13.1	15.1	16.7	19.1	nap	nap
Czech Republic	21.6	22.1	3.7	5.9	nav	nav	nav	nav
Estonia	43.3	43.6	17.2 ¹⁾	26.7 ¹⁾	nav	nav	nap	nap
Hungary	18.6	18.5	25.1	25.4	8.4	8.7	nap	nap
Latvia	13.2	16.8	nav	nav	nav	nav	nap	nap
Lithuania	8.2	13.6	10.3	11.5	19.9	22.4	6.8	6.7
Malta	22.7	39.4	10.1	8.1	nav	nav	nap	nap
Poland	19.8	20.2	3.2	4.7	26.7	21.2	nap	nap
Romania	14.7	15.4	0.3	0.3	0.4	0.8	nap	nap
Slovakia	29.0	26.0	3.3	5.4	nav	nav	nap	nap
Slovenia ²⁾	12.2	10.3	10.0	12.6	70.0	53.0	nap	nap

1) *Payments by debit and credit cards.*

2) *2001 figures include only the first three quarters (balance on 30 September 2001).*

Table I I
Use of cashless payment instruments

(total number of transactions, millions)

	Cheques						Payments by credit/debit cards						Credit transfers					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	19	20	21	22	23	23	2	4	5	7	9	11	nav	nav	2	2	3	3
Czech Republic	14	14	6	3	3	2	1	1	3	6	15	27	308	382	399	415	423	691
Estonia	nav	nav	0.02	0.01	0.02	0.02	0.3	2	5	9	14	23	nav	nav	24	26	31	39
Hungary	1	1	0.01	0.05	0.1	0.1	1	11	10	24	32	40	38	50	78	103	125	134
Latvia	0.04	0.1	0.1	0.1	0.1	0.1	0.4	2	4	4	8	11	51	51	40	45	54	57
Lithuania	0.2	0.1	0.01	nav	nav	nav	0.3	1	1	3	4	8	8	12	14	15	20	30
Malta	10	11	9	9	10	10	nav	nav	nav	nav	nav	14	nav	nav	nav	1	1	2
Poland ¹⁾	5	6	7	7	8	5	3	5	12	27	59	95	119	196	250	328	428	512
Romania	4	5	6	5	8	13	0.03	0.1	0.1	0.2	0.3	1	22	20	21	31	36	47
Slovakia	0.3	0.3	0.2	0.2	0.2	0.1	0.3	1	1	2	6	11	89	109	116	123	133	149
Slovenia	34	31	27	23	13	4 ²⁾	24	31	39	49	66	58 ²⁾	nav	nav	nav	nav	14	23

	Direct debits						Card-based e-money						Total					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	2	3	4	5	6	7	nav	nav	nav	nav	nav	nav	24	27	33	37	41	43
Czech Republic	17	18	22	79	124	200	nav	nav	nav	nav	nav	nav	341	415	430	503	564	920
Estonia	nav	nav	0.1	1	3	5	nav	nav	nav	nav	nav	nav	nav	nav	29	36	48	67
Hungary	31	34	34	39	43	47	nav	nav	nav	nav	nav	nav	72	95	122	166	200	221
Latvia	nav	nav	0.01	0.01	0.02	0.05	nav	nav	nav	nav	nav	nav	51	53	43	49	61	68
Lithuania	nav	neg	neg	1	1	1	0.01	0.1	0.3	0.4	1	1	9	13	16	19	26	39
Malta	neg	neg	neg	neg	neg	neg	nav	nav	nav	nav	nav	nav	10	11	9	10	11	26
Poland ¹⁾	0	0	0.0	0.04	0.3	1	nav	nav	nav	nav	nav	nav	127	208	269	362	495	613
Romania	nav	nav	nav	0.1	0.1	0.2	nav	nav	nav	nav	nav	nav	26	25	27	36	44	61
Slovakia	nav	nav	3	4	4	4	nav	nav	nav	nav	nav	nav	89	110	120	129	143	164
Slovenia	nav	nav	nav	nav	6	10	0	0	0	0	0	0	58	62	66	72	99	97

1) For this table, data related to postal instruments have not been included.

2) 2001 figure includes only the first three quarters.

Table 12
Use of cashless payment instruments

(number of transactions per inhabitant)

	Cheques						Payments by credit/debit cards						Direct debits					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	30	31	32	34	34	34	4	6	8	11	13	17	3	4	6	8	9	10
Czech Republic	1	1	1	0.3	0.2	0.2	0.1	0.1	0.3	1	1	3	2	2	2	8	12	20
Estonia	nav	nav	0.01	0.01	0.01	0.02	0.2	1	3	6	10	16	nav	nav	0.1	1	2	3
Hungary	0.1	0.1	0.001	0.004	0.01	0.01	0.1	1	1	2	3	4	3	3	3	4	4	5
Latvia	0.02	0.02	0.02	0.03	0.04	0.04	0.1	1	1	2	3	5	nav	nav	0.004	0.004	0.01	0.02
Lithuania	0.04	0.04	neg	nav	nav	nav	0.1	0.2	0.4	1	1	2	nap	neg	neg	0.3	0.2	0.2
Malta	27	29	23	23	25	25	nav	nav	nav	nav	nav	36	neg	neg	neg	neg	neg	neg
Poland ¹⁾	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.3	1	1	2	nap	nap	neg	0.001	0.01	0.02
Romania	0.2	0.2	0.3	0.2	0.3	1	0.001	0.002	0.01	0.01	0.01	0.03	nav	nav	nav	0	0.01	0.01
Slovakia	0.1	0.1	0.04	0.03	0.03	0.03	0.1	0.1	0.2	0.4	1	2	nav	nav	1	1	1	1
Slovenia	17	16	13	12	7	2 ²⁾	12	16	20	25	33	30 ²⁾	nav	nav	nav	nav	3	5

	Credit transfers						Card-based e-money						Total					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	nav	nav	4	4	4	4	nap	nap	nap	nap	nap	nap	36	41	50	55	61	64
Czech Republic	30	37	39	40	41	67	nav	nav	nav	nav	nav	nav	33	40	42	49	55	90
Estonia	nav	nav	17	18	22	27	nap	nap	nap	nap	nap	nap	nav	nav	20	25	33	47
Hungary	4	5	8	10	13	13	nap	nap	nap	nap	nap	nap	7	9	12	16	20	22
Latvia	20	21	38	19	23	24	nap	nap	nap	nap	nap	nap	21	21	18	21	26	29
Lithuania	2	3	4	4	5	8	neg	neg	0.1	0.1	0.2	0.2	2	3	4	5	7	11
Malta	nav	nav	nav	3	3	5	nap	nap	nap	nap	nap	nap	27	29	23	26	28	66
Poland ¹⁾	3	5	6	8	11	13	nap	nap	nap	nap	nap	nap	3	5	7	9	13	16
Romania	1	1	1	1	2	2	nap	nap	nap	nap	nap	nap	1	1	1	2	2	3
Slovakia	16	20	21	23	25	27	nap	nap	nap	nap	nap	nap	17	20	22	24	26	30
Slovenia	nav	nav	nav	nav	7	11	0	0	0	0	0	0	29	31	33	36	50	49

1) For this table, data related to postal instruments have not been included.

2) 2001 figure includes only the first three quarters.

Table 13
Relative importance of cashless payment instruments

(percentage of total volume of cashless transactions)

	Cheques (%)						Payments by credit/debit cards (%)						Credit transfers (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	82	75	64	61	57	52	10	14	16	19	22	26	nav	nav	7	7	7	7
Czech Republic	4	3	1	1	0.4	0.2	0.3	0.3	1	1	3	3	90	92	93	83	75	75
Estonia	nav	nav	0.1	0.04	0.04	0.04	nav	nav	17	25	29	35	nav	nav	83	73	65	58
Hungary	2	1	0.01	0.03	0.1	0.03	2	11	8	14	16	18	53	52	64	62	63	61
Latvia	0.1	0.1	0.1	0.2	0.2	0.1	1	3	8	9	12	16	99	97	92	91	88	84
Lithuania	2	1	0.1	nav	nav	nav	4	5	9	14	17	20	94	93	89	79	78	76
Malta	100	100	100	89	88	38	nav	nav	nav	nav	nav	55	nav	nav	nav	11	12	7
Poland ¹⁾	4	3	3	2	2	1	2	2	4	8	12	16	94	95	93	91	86	83
Romania	16	22	22	15	17	21	0.1	0.2	1	0.5	1	1	84	78	78	84	82	77
Slovakia	0.3	0.3	0.2	0.1	0.1	0.1	0.3	1	1	2	4	7	99	99	96	95	93	91
Slovenia	58	50	40	32	13	5 ²⁾	42	50	60	68	66	62 ²⁾	nav	nav	nav	nav	14	23

	Direct debits (%)						Card-based e-money (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	8	10	12	14	15	15	nav	nav	nav	nav	nav	nav
Czech Republic	5	4	5	16	22	22	nav	nav	nav	nav	nav	nav
Estonia	nav	nav	0	2	6	7	nav	nav	nav	nav	nav	nav
Hungary	44	36	28	23	21	21	nav	nav	nav	nav	nav	nav
Latvia	nav	nav	0.0	0.0	0.0	0.1	nav	nav	nav	nav	nav	nav
Lithuania	nav	neg	neg	5	3	2	0.2	1	2	2	2	2
Malta	neg	neg	neg	neg	neg	neg	nav	nav	nav	nav	nav	nav
Poland ¹⁾	0	0	0.001	0.01	0.1	0.2	nav	nav	nav	nav	nav	nav
Romania	nav	nav	nav	0.3	0.3	0.3	nav	nav	nav	nav	nav	nav
Slovakia	nav	nav	2	3	3	3	nav	nav	nav	nav	nav	nav
Slovenia	nav	nav	nav	nav	6	10	0	0	0	0	0	0

1) For this table, data related to postal instruments have not been included.

2) 2001 figure includes only the first three quarters.

Table 14
Relative importance of cashless payment instruments

(percentage of total value of cashless transactions)

	Cheques (%)						Payments by credit/debit cards (%)						Credit transfers (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	98.1	97.3	31.6	37.9	16.2	20.2	1.0	1.5	0.6	0.8	0.4	0.7	nav	nav	67.1	60.5	83.1	78.6
Czech Republic	3.6	2.9	1.2	0.6	0.5	0.2	0.01	0.02	0.02	0.04	0.1	0.1	93.8	95.5	98.0	98.7	98.5	96.8
Estonia	nav	nav	0.0	0.02	0.02	0.0	nav	nav	0.2	0.4	0.3	0.5	nav	nav	97.3	99.6	99.6	98.9
Hungary	0.1	0.02	nav	0.02	0.1	0.02	0.1	0.2	0.1	0.2	0.2	0.2	99.6	99.7	99.8	99.7	99.6	99.7
Latvia	0.02	0.02	0.02	0.02	0.01	0.01	0.03	0.1	0.1	0.1	0.1	0.1	99.9	99.9	99.9	99.9	99.9	99.9
Lithuania	0.2	0.1	0.01	nav	nav	nav	0.1	0.1	0.2	0.1	0.2	0.2	99.7	99.8	99.8	98.2	98.2	98.8
Malta	nav	nav	nav	51.4	62.3	48.2	nav	nav	nav	nav	nav	9.6	nav	nav	nav	48.6	37.7	42.2
Poland ¹⁾	1.8	1.2	1.0	0.8	0.5	0.4	0.1	0.1	0.1	0.2	0.3	0.3	98.1	98.7	98.9	99.0	99.1	99.2
Romania	3.8	4.5	4.6	5.6	6.1	5.9	nav	0.01	0.01	0.02	0.02	0.03	96.2	95.4	95.4	94.4	93.9	94.1
Slovakia	nav	nav	0.01	0.01	0.01	0.01	nav	nav	0.01	0.02	0.03	0.04	nav	nav	99.8	99.7	99.8	99.8
Slovenia	73.5	66.9	58.2	49.5	27.7	2.1 ²⁾	26.5	33.1	41.8	50.5	72.3	10.3 ²⁾	nav	nav	nav	nav	nav	79.8

	Direct debits (%)						Card-based e-money (%)					
	1996	1997	1998	1999	2000	2001	1996	1997	1998	1999	2000	2001
Bulgaria	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Cyprus	0.9	1.2	0.6	0.8	0.3	0.5	nav	nav	nav	nav	nav	nav
Czech Republic	2.6	1.5	0.8	0.7	1.0	2.9	nav	nav	nav	nav	nav	nav
Estonia	nav	nav	0.1	0.0	0.0	0.1	nav	nav	nav	nav	nav	nav
Hungary	0.2	0.1	0.1	0.1	0.2	0.1	nav	nav	nav	nav	nav	nav
Latvia	nav	nav	0.0	0.0	0.0	0.0	nav	nav	nav	nav	nav	nav
Lithuania	nav	neg	neg	1.7	1.6	1.0	neg	neg	0.02	0.02	0.03	0.03
Malta	neg	neg	neg	neg	neg	neg	nav	nav	nav	nav	nav	nav
Poland ¹⁾	0.0	0.0	0.001	0.01	0.05	0.1	nav	nav	nav	nav	nav	nav
Romania	nav	nav	nav	neg	neg	neg	nav	nav	nav	nav	nav	nav
Slovakia	nav	nav	0.2	0.3	0.2	0.1	nav	nav	nav	nav	nav	nav
Slovenia	nav	nav	nav	nav	nav	7.8	0.0	0.0	0.0	0.0	0.0	0.0

1) For this table, data related to postal instruments have not been included.

2) 2001 figure includes only the first three quarters.

Table 15**Features of selected interbank funds transfer systems***(end of year)*

System	Type	Owner/manager	No. of participants		Processing	Settlement	Membership
				<i>of which direct</i>			
Bulgaria BISERA	L	Bankservice Ltd. ¹⁾	805	737	ACH	GS	O
Cyprus Large-value credit transfer system	L	CB	40	40	RTT	GS	O
Cyprus Clearing House	R	CB	11	10	ACH	N	O
JCC Multipack	R	B	9	9	ACH	N	O
JCCTransfer ²⁾	R	B	5	5	ACH	N	O
Czech Republic CERTIS	L	CB	39	39	RTT	RTGS	O
Estonia EPNAS	L	CB	27	11	ACH	GS	O
Hungary VIBER	L	CB	280	40	RTT	RTGS	O
ICS	R	CB, B	280	57	ACH	GS	O
Latvia SAMS	L	CB	22	22	RTT	RTGS	O
EKS	R	CB	22	22	ACH	N	O
Lithuania TARPBANK	L/R	CB	128 ³⁾	31	ACH	N	O
Malta Interbank real-time gross payment arrangement	L, R	CB	5	5	RTT	RTGS	RM
Poland SYBIR	R	B/KIR	62	62	manual/partly electronic	N	O
ELIXIR	R	B/KIR	62	62	ACH	N	O
SORBNET	L	CB/CB	65	65	RTT	RTGS	RM
Romania National Payment System Gross settlement subsystem	L	CB/CB+AS	44	44	M	GS	O
Net settlement subsystem	R	CB+AS/CB+AS	47	47	M	N/BN	O
Slovakia SIPS	L, R	B, CB	25	23	ACH	N	O
Slovenia Agency for Payments ⁴⁾	L, R	AS	38,841	38,841	RTT	N	O
SIBPS	L	CB	85	25	RTT	RTGS	RM
Giro Clearing system	R	CB	84	24	ACH	N	RM

Type: L = large value; R = retail.

Owner/manager: B = banks; CB = central bank; AS = payment association.

Processing method: M = manual; ACH = automated clearing house (offline); RTT = real-time transmission.

Settlement: N = multilateral netting; BN = bilateral netting; RTGS = real-time gross settlement; GS = other gross settlement; SOS = single obligation structure.

Membership: O = open membership (any bank can apply) or RM = restricted membership (subject to criteria).

1) Bankservice is a company owned by the central bank and the commercial banks.

2) Operations began on 9 November 2001.

3) Of which 97 are branches of direct participants (Lithuanian credit institutions).

4) The Agency for Payments is not a pure interbank payment system with the usual hierarchical structure of accounts (central bank – commercial banks – banks' customers) but a system where all owners of accounts are involved in payment transactions on an equal level.

Table 15 (cont.)
Features of selected interbank funds transfer systems

(end of year)

System	Degree of centralisation	Pricing	Closing time for same-day transactions (local time)	Number of transactions (thousands)		Value of transactions (EUR billions)		Ratio of transactions value to GDP (at annual rate)	
				2000	2001	2000	2001	2000	2001
Bulgaria									
BISERA	C	F	21.30	19,394	23,785	28	33	2.2	2.3
Cyprus									
Large-value credit transfer system	C	N	14.30	50	55	141	74	14.8	7.4
Cyprus Clearing House	C	N	nap	17,904	17,707	31	21	3.3	2.1
JCC Multipack	C	F	nap	11,777	14,385	1	1	0.1	0.1
JCCTransfer ¹⁾	C	V	11.00	nap	12	nap	neg	nap	neg
Czech Republic									
CERTIS	C	F	16.00	226,400	259,600	2,742	3,234	49.0	48.8
Estonia									
EPNAS	C	S	14.00	10,919	12,703	18	21	3.3	3.4
Hungary									
VIBER	C	F	16.30 ²⁾	159	240	316	545	6.3	9.5
ICS	C	F	02.00 ³⁾	125,775	139,573	161	160	3.2	2.9
Latvia									
SAMS	C	S	15.30	77	85	27	47	3.5	5.6
EKS	C	F	10.30	12,469	14,462	12	13	1.5	1.5
Lithuania									
TARPBANK	C	F	15.00	8,950	9,910	28	33	2.3	2.5
Malta									
Interbank real-time gross payment arrangement	C	N	14.30	18	22	9	9	2.2	2.3
Poland									
SYBIR	D	F	NO – 18.00 (for settlement next day)	246,583	246,083	120	83	0.7	0.4
ELIXIR	C	F	3 sessions per day	189,375	271,290	838	1,159	4.9	5.6
SORBNET	C	V	18.00	520	540	2,446	3,675	14.2	17.6
Romania									
National Payment System									
Gross settlement subsystem	D	V	16.00	253	296	60	84	1.8	2.9
Net settlement subsystem	D	V	12.30	13,925	16,209	28	33	0.9	1.2
Slovakia									
SIPS	C	F	13.00	141,800	158,225	604	731	29.0	32.4
Slovenia									
Agency for Payments	D	F	15:00	82,340	72,370	204	199	10.5	9.6
SIBPS	C	F	17:00	1,040	1,440	108	134	5.5	6.4
Giro Clearing system	C	F	15.15 ⁴⁾	34,840	48,180	14	17	0.7	0.8

Geographical access to the system: C = centralised (one processing centre only) or D = decentralised

Fees charged to participants: F = full costs (including investments); V = variable costs; S = symbolic (below variable cost); N = no costs.

Closing time for same-day transactions (NO = no same-day transactions).

1) Operations began on 9 November 2001.

2) 14:30 for third-party payments.

3) An overnight system.

4) Closing time for outgoing payment orders. Closing time for receiving payment orders is not defined and depends on the closing time for processing in the Agency for Payments.

Table 16
Operating hours of selected large-value interbank funds transfer systems

System	Gross (G) or net (N)	Opening/closing time for same-day value (local time)	Settlement finality (local time)	Cut-off for all third-party payment orders (local time)	Cut-off for international correspondents' payment orders (local time)	Memo item: standard money market hours (local time)
Bulgaria BISERA	G	07.00 / 21.30	next day ¹⁾	21.30	nap	nap
Cyprus Large-value credit transfer system	G	07.30 / 14.30	nap	12.30	12:30	7.55 / 13.35
Czech Republic CERTIS	G	16.30 (D-1) / 16.00	RTGS	16.00	No	8.00 / 16.00
Estonia EPNAS	G	8.00 / 14.00	17.00	17.00	17.00	8.00 / 17.00
Hungary VIBER	G	8.00 / 16.30	RTGS	14.30	14.30	8.00 / 16.30
Latvia SAMS	G	8.30 / 16.00	RTGS	15.30	nap	10.00 / 15.00
Lithuania TARPBANK	N	8.00 / 15.00	11.00; 15.00	nap	nap	8.00 / 15.00
Malta Interbank real-time gross payment arrangement	G	8.00 / 14.30	RTGS	13.30	13.30	nap
Poland SORBNET	G	7.30 / 18.00	RTGS	16.00	17.00 ²⁾	7.30 / 18.00
Romania National Payment System Gross settlement subsystem	G	8.00 / 16.00	end of processing (same day)	14.30	nap	9.00 / 17.00
Slovakia SIPS	G ³⁾	16.00 (D-1) / 13.00	16.00	13.00	nap	11.30 / 13.00
Slovenia Agency for Payments	N	8.00 / end of processing (not defined)	end of processing (not defined)	15.00	nav	7.30 / 17.00 ⁴⁾
SIBPS	G	7.30 / 17.00	RTGS	16.00	nav	7.30 / 17.00 ⁴⁾

Some systems do not make an explicit distinction between large-value and retail transactions and may be used to settle interbank transfers relating to a variety of underlying transactions. Some systems may also accept payment orders for a number of value days. Settlement finality (local time): for net settlement systems.

Memo item: standard money market hours (local time): money market hours indicated refer to the period in which domestic interbank transactions are normally carried out. They therefore do not relate to particular interbank funds transfer systems.

- 1) Designated-time gross settlement during the night.
- 2) Customers' payment orders resulting from the implementation of the "Interbank Agreement on the Rules of Co-operation between Correspondent Banks".
- 3) Transactions are entered into the SNCC system and processed on technical accounts, transaction by transaction, throughout the day. At the end of the day, the balances of the technical accounts are forwarded to the central bank and the net positions are booked on the reserve accounts there. This constitutes the final settlement.
- 4) Money market transactions can be arranged throughout the day. There is an evening money market from 16:15 to 17:00, when systems are closed for all transactions except money market transactions. Evening money market can be prolonged in the case of reasonable demand from a bank or banks.

Table 17
Features of selected securities settlement systems

	Bulgaria		Cyprus	Czech Republic			Estonia	Hungary	Latvia		Lithuania
Name of system	GSD (CBSRTGS) ¹⁾	CDAD	CSE ³⁾	TKD	RM-system	UNIVYC	ECSD	KELER	VNS	DENOS	LCVPD
Type of securities	G	E, B, C	G, E, B	B, G, O	B, G, S, O	B, G, S	B, G, E, O	B, E, G, O	B, G	B, C, G, S, O	B, G, S
Owner/manager	CB	O	SE	CB	O	SE	SE	CB, SE, O	CB	B, SE, O	CB, SE, O
Number of participants	25	97	42	188	115	33	9	144	22	28	33
of which direct participants	25	97	42	188	115	33	8	144	22	28	33
Settlement of cash leg	GS	G	G,N	RTGS	N	N	N	RTGS	RTGS	N, RTGS	GS, N
Securities settlement (delivery)	G	G	G	Y	RTGS	G	G	G (RTGS)	RTGS	N, RTGS	G, N
Delivery lag (T+n)	T	T+3	T+2	T (15 min)	T	T ⁵⁾	T+3	T+5, T+2, T+0	T	From T to T+360	From T+1 to T+30
DVP mechanism	DVP1	DVP1	DVP1+2	DVP1	DVP1	DVP2	DVP2	DVP1, DVP3	DVP1	DVP1, DVP3	DVP1, DVP3
Intraday finality	Y ²⁾	N	N	Y	Y	Y	N	Y	Y	Y	Y
Central securities depository	CBSRTGS	CDAD	CDRCS ⁴⁾	TKD	SCP	SCP	ECSD	KELER	CB	LCD	LCVPD
Cash settlement agent	CB	CB	B	B	B	CB	CB	CB, O	CB	CB	CB
Number of transactions (thousands)	8.60	70,927	1,429	22	88,000	287	61.52	1,257	6.71	23.50	41
Value of transactions (EUR billions)	4.16	0.01	3.85	715.43	0.03	136.45	0.90	83.99	18.71	1.27	1.30
Ratio of transactions value to GDP (at annual rate)	0.29	0.01	0.38	10.81	0.01	2.06	0.15	1.46	2.24	0.15	0.10

Type: G = government securities; E = equities; B = bonds; C = CDs (certificates of deposit); O = other.

Owner/manager: B = banks; CB = central bank; SE = stock exchange; O = other.

Settlement of cash leg: G = gross; N = net; RTGS = real-time gross settlement.

DVP mechanism: DVP schemes as defined by the G10 Group:

DVP1: In model 1, transfer instructions for both securities and funds are settled on a trade-by-trade basis, with final transfer of 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).

DVP2: In model 2, securities transfer instructions are settled on a gross basis with final transfers 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.

DVP3: In model 3, transfer instructions for both securities and funds are settled on a net basis, with final transfer of both securities and funds occurring at the end of the processing cycle.

Intraday finality: Y = yes; N = no.

Cash settlement agent: B = banks; CB = central bank; SE = stock exchange; O = other.

1) Computerised Book-Entry System for Registration of and Trade in Government Securities.

2) Four times per day.

3) Cyprus Stock Exchange.

4) Central Depository Registry and Clearing and Settlement system.

5) SPAD (System for support of trades with shares and bonds): (T+5)

Automatic trade: (T+3)

Block Trade: from (T+1) to (T+15)

Table 17 (cont.)
Features of selected securities settlement systems

Malta	Poland			Romania			Slovakia			Slovenia	
Malta Stock Exchange	KDPW	SKARBNET	SEBOP	BVB	SNCDD	National Bank of Romania government securities system	BSSE	RM-System	Central Registry	KDD	Name of system
E, B SE	G, B, S, O (KDPW)	G CB	O CB	E, B SE	E O	G CB	B, S, G, O B, O/SE	B, S, O SE	G, O CB	B, G, E, O B, O	Type of securities Owner/manager
19	72	63	38	112	89	39	40	26	133	65	Number of participants
19	72	63	38	112	89	39	40	26	45	65	<i>of which direct participants</i>
N	N, GS	RTGS	RTGS	N	N	G	GS	RTGS	GS	N	Settlement of cash leg
G T+0	G T+2 ⁶⁾ , T+3 ⁷⁾	RTGS T+2 ⁸⁾ , T+0 ⁹⁾	RTGS T+2 ¹⁰⁾ , T+0 ¹¹⁾	G T+3	G T+3	G T+0	G T+3 (possible also T+1, T+2)	RTGS real-time	G T+0	G T+2	Securities settlement (delivery) Delivery lag (T+n)
N	DVP2	DVP1	DVP1	DVP2	DVP2	DVP1	DVP2	DVP1	DVP1	DVP2	DVP mechanism
N	Y	Y	Y	N	N	N	N	Y	N	N	Intraday finality
Y CB	KDPW CB	CRBS CB	RBP CB	Y Y	Y Y	Y Y	SC O	SC B	CB O	Y KDD	Central securities depository Cash settlement agent
9	5,050	78	5	349	43	28	20	123	2,456	471,136	Number of transactions (thousands)
0.37	160.91	163.84	149.16	0.15	0.06	16.66	9.09	0.18	56.18	nav	Value of transactions (EUR billions)
0.22	0.77	0.79	0.72	0.003	0.001	0.38	0.44	0.01	2.50	nav	Ratio of transactions value to GDP (at annual rate)

6) Bonds.

7) Other.

8) Primary.

9) Secondary.

10) Primary.

11) Secondary.

Table 18
Direct participants in RTGS systems

	CZ	HU	LV	MT	PL	SI
Name of system	CERTIS	VIBER	SAMS	Interbank real-time gross payment arrangement	SORBNET	SIBPS
Direct participants	39	40	22	5	65	25
Credit institutions	38	36	21	4	62	22
Central bank	1	1	1	1	1	1
Non-banks	0	3	nap	nap	2	2
<i>of which:</i>						
<i>public authorities</i>	0	1	nap	nap	0	1
<i>postal administration</i>	0	1	nap	nap	0	0
<i>supervised financial institutions</i>	0	1	nap	nap	2 ¹⁾	1

1) National Clearing House (KIR) and National Depository for Securities (KDPW).

Table 19
Direct participants in large-value payment systems

	BG	CY	EE	LT	RO	SK	SI
Name of system	BISERA	Large-value credit transfer system	EPNAS	TARPBANK	National Payment System, Gross settlement subsystem	SIPS	Agency for Payments
Direct participants	38	40	11	31	44	23	38,841
Credit institutions	35	12	7	13	42	21	22
Central bank	1	1	1	1	1	1	1
Non-banks	2	27 ¹⁾	3	17	1	1	38,818 ²⁾
<i>of which:</i>							
<i>public authorities</i>		15	3	0	1	0	<i>nav</i>
<i>postal administration</i>		4	<i>nap</i>	0	<i>nap</i>	0	<i>nav</i>
<i>supervised financial institutions</i>	2	0	<i>nap</i>	17	<i>nap</i>	1	<i>nav</i>

1) Includes international organisations and another central bank.

2) Owners of accounts at the Agency for Payments are characterised as direct participants.

Table 20
Direct participants in retail IFTSs

Name of system	CY			HU	LV
	Cyprus Clearing House	JCC Multipack	JCC Transfer	ICS	EKS
Direct participants	10	9	5	57	22
Credit institutions	9	9	5	54	21
Central bank	1	0	0	1	1
Non-banks	0	0	0	2	nap
<i>of which:</i>					
<i>public authorities</i>	0	0	0	1	nap
<i>postal administration</i>	0	0	0	0	nap
<i>supervised financial institutions</i>	0	0	0	1	nap

Name of system	PL		RO	SI	
	SYBIR	ELIXIR	National Payment System, Net settlement subsystem	Giro Clearing system	Agency for Payments
Direct participants	62	62	47	24	38,840
Credit institutions	61	61	45	22	22
Central bank	1	1	1	1	0
Non-banks	0	0	1	1	38,818 ¹⁾
<i>of which:</i>					
<i>public authorities</i>	0	0	1	1	nav
<i>postal administration</i>	0	0	nap	0	nav
<i>supervised financial institutions</i>	0	0	nap	0	nav

1) Owners of accounts at the Agency for Payments are characterised as direct participants.

Table 2 I
Access criteria of RTGS systems

	CZ	HU	LV	MT	PL	SI
Name of system	CERTIS	VIBER	SAMS	Interbank real-time gross payment arrangement	SORBNET	SIBPS
Access criteria		+	+	+	+	+
Written rules	+	+	+	+	+	+
Minimum level of data or ratios representative of financial strength	+ ¹⁾	-	-	-	+	+
Minimum number of transactions	-	-	-	+	-	-
Payment of an entry fee	-	-	-	+	+	-
Approval from the owner/manager or the direct participants	-	+	+ ²⁾	+	+	+
Approval from the local central bank	- ¹⁾	+	+	+	+	+
Technical requirements	+ ¹⁾	+	+	+	+	+
Removal rules	-	+	+	+	+	+

Key: + = yes, - = no

1) All banks licensed in the Czech Republic can be direct participants. Participants have to enter into an agreement with the central bank which also contains rules and technical requirements. Rules will be modified by the new Act on Payment Systems (in force from 1 January 2003).

2) The owner/manager is the central bank.

Table 22
Access criteria of other large-value payment systems

	BG	CY	EE	LT	RO	SK	SI
Name of system	BISERA	Large-value credit transfer system	EPNAS	TARPBANK	National Payment System, Gross settlement subsystem	SIPS	Agency for Payments
Access criteria	+		+	+	+		-
Written rules	+	- ¹⁾	+	+	+	+	+
Minimum level of data or ratios representative of financial strength	-	-	-	-	-	-	+
Minimum number of transactions	-	-	-	-	-	-	-
Payment of an entry fee	+	-	-	-	-	+	+
Approval from the owner/manager or the direct participants	+	+	+	+ ²⁾	-	+	+
Approval from the local central bank	+	+	+	+	-	+	-
Technical requirements	+	-	+	+	+	+	-
Removal rules	+	-	-	+	-	+	+

Key: + = yes, - = no

1) Prepared, not adopted.

2) The owner/manager is the central bank.

Table 23
Risk control measures in large-value net settlement systems

Name of system	EE	LT	SI ¹⁾	
	EPNAS	TARPBANK	Giro Clearing system ²⁾	Agency for Payments
1. Settlement in central banks' accounts	+	+	+	+
2. Same-day settlement	+	+	+	+
3. Compliance with Lamfalussy standards	+			
1. Legal framework				
<i>contractual (+) or advisory (-) netting</i>	+	+	+	-
<i>if contractual: legally enforceable (+) or not (-)</i>	+	+	+	
2. Participants' awareness	+	+	+	-
3. Risk management	+	+	+	+
<i>monitoring of intraday balance</i>	-	-	+	+
<i>multilateral limits</i>	-	+	-	-
<i>collateral requirements</i>	-	-	+	-
<i>intraday closures</i>	-	+	+	-
4. Timely settlement completion		+	+	-
<i>risk-sharing agreements</i>	-	-	+	-
<i>full collateralisation of largest net debit position</i>	-	+	+	-
5. Fair open access	+	+	+	+
6. Technical reliability	+	+	+	+

Key : + = yes, - = no.

1) Project to introduce collateral requirements and risk-sharing agreements will be finished by the end of June 2002.

2) Note that the Giro Clearing system is a small-value net settlement system.

Table 24a**SWIFT traffic: message flows among accession countries in 2001***(in 2001, thousands of messages)*

From/to	Bulgaria	Cyprus	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Malta	Poland	Romania	Slovakia	Slovenia	Total (world- wide)
Bulgaria	195.9	2.0	3.1	0.1	3.3	0.3	0.2	0.1	2.3	2.1	0.9	0.7	873.6
Cyprus	4.5	179.6	3.2	0.9	7.7	3.1	0.1	0.8	17.5	4.6	0.9	1.3	1,804.0
Czech Republic	2.9	3.8	556.0	1.8	35.9	4.3	3.1	0.5	96.4	3.4	307.4	8.0	5,164.3
Estonia	0.2	1.1	3.1	22.1	2.0	49.6	35.9	0.0	10.3	0.1	0.5	0.3	935.8
Hungary	3.6	7.1	60.6	1.4	531.7	1.7	1.6	0.7	38.8	39.1	64.6	16.4	5,103.6
Latvia	0.2	1.4	3.9	43.6	0.9	320.7	58.4	0.0	10.4	0.1	0.6	0.2	2,461.2
Lithuania	0.2	0.2	4.8	42.4	1.9	56.3	38.2	0.0	40.9	0.1	0.8	0.3	745.7
Malta	0.5	1.1	0.4	0.0	0.4	0.0	0.0	71.3	3.4	0.2	0.1	0.2	547.9
Poland	2.5	10.8	126.1	5.9	24.9	13.1	27.3	0.3	1,182.4	2.8	30.1	5.2	8,172.4
Romania	2.4	8.2	5.8	0.1	44.2	0.1	0.1	0.1	5.4	476.5	2.4	1.8	1,920.1
Slovakia	1.0	1.8	466.2	0.5	42.7	1.2	0.6	0.1	37.5	1.8	221.3	5.0	2,124.1
Slovenia	1.2	1.5	14.3	0.2	18.0	0.3	0.2	0.2	5.9	1.5	5.0	1,660.0	3,112.6
Total (world- wide)	1,328.5	1,630.0	4,406.1	945.4	3,915.8	2,752.5	969.5	575.1	6,792.1	2,431.2	1,785.2	4,438.5	1,644,469.1

Table 24b
Geographical breakdown of SWIFT message flows
(in 2001)

	Messages sent			Messages received		
	Total	To domestic users (% of total)	To other accession countries (% of total)	Total	From domestic users (% of total)	From other accession countries (% of total)
Bulgaria	873,611	22.42%	1.74%	1,328,540	14.74%	1.44%
Cyprus	1,803,969	0.25%	12.19%	1,629,992	0.27%	2.40%
Czech Republic	5,164,273	0.06%	19.76%	4,406,051	0.07%	15.69%
Estonia	935,825	0.02%	13.37%	945,414	0.02%	10.24%
Hungary	5,103,577	0.07%	14.97%	3,915,783	0.09%	4.65%
Latvia	2,461,200	0.01%	17.89%	2,752,547	0.01%	4.73%
Lithuania	745,677	0.03%	24.92%	969,529	0.02%	13.16%
Malta	547,929	0.10%	14.06%	575,128	0.09%	0.52%
Poland	8,172,400	0.03%	17.49%	6,792,126	0.04%	3.96%
Romania	1,920,116	0.13%	28.36%	2,431,208	0.10%	2.29%
Slovakia	2,124,122	0.05%	36.66%	1,785,247	0.05%	23.15%
Slovenia	3,112,621	0.04%	54.84%	4,438,523	0.03%	0.89%
Total (all countries)	32,965,320	0.65%	22.17%	31,970,088	0.67%	6.46%

Table 24c**SWIFT members, sub-members and participants in accession countries***(in 2001)*

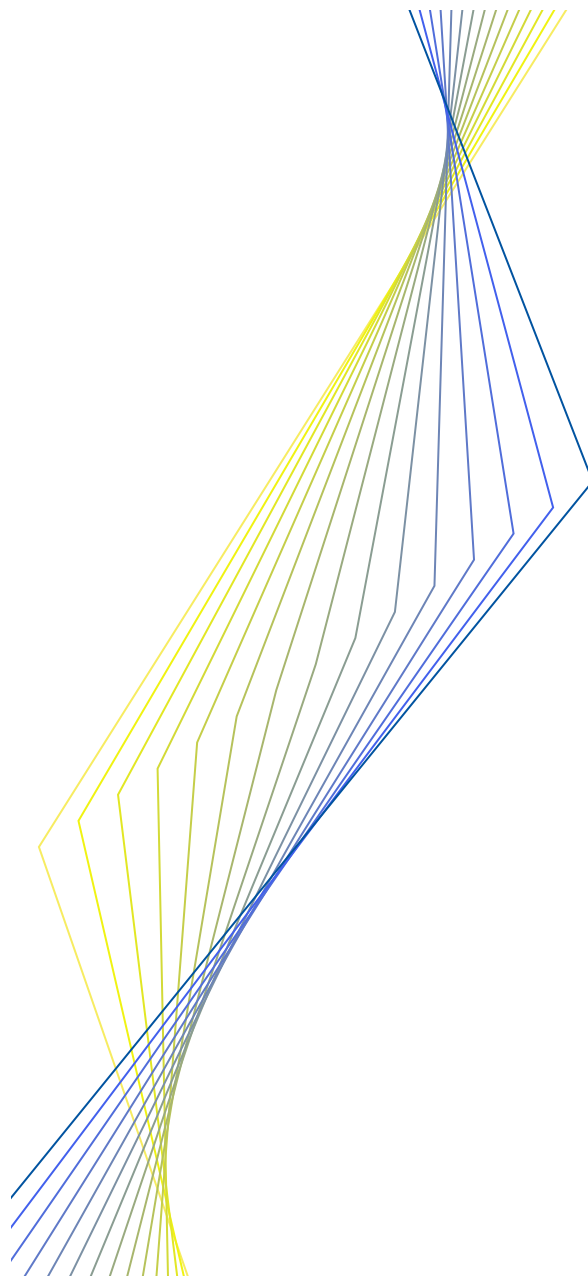
	Number of users of the SWIFT network			Total number of users
	Members	Sub-members	Participants	
Bulgaria	15	7	10	32
Cyprus	9	17	1	27
Czech Republic	9	13	7	29
Estonia	3	1	4	8
Hungary	13	12	16	41
Latvia	11	4	9	24
Lithuania	2	5	7	14
Malta	7	8	0	15
Poland	24	14	13	51
Romania	19	16	9	44
Slovakia	10	6	2	18
Slovenia	14	0	9	23
Total (worldwide)	2,265	3,143	2,049	7,457

Table 24d
Shares of accession countries in SWIFT traffic, membership and equity holding
(in 2001)

	Share of messages		Share of total members/users		Share of equity holding	
	sent (%)	received (%)	members (%)	users (%)	quantity	percentage
Bulgaria	0.1%	0.1%	0.7%	0.4%	50	0.06%
Cyprus	0.1%	0.1%	0.4%	0.4%	199	0.23%
Czech Republic	0.3%	0.3%	0.4%	0.4%	248	0.4%
Estonia	0.1%	0.1%	0.1%	0.1%	128	0.15%
Hungary	0.3%	0.2%	0.6%	0.5%	248	0.29%
Latvia	0.1%	0.2%	0.5%	0.3%	151	0.17%
Lithuania	0.0%	0.1%	0.1%	0.2%	42	0.05%
Malta	0.0%	0.0%	0.3%	0.2%	63	0.07%
Poland	0.5%	0.4%	1.1%	0.7%	492	0.57%
Romania	0.1%	0.1%	0.8%	0.6%	121	0.14%
Slovakia	0.1%	0.1%	0.4%	0.2%	151	0.17%
Slovenia	0.2%	0.3%	0.6%	0.3%	279	0.32%
Total (worldwide)	100.0%	100.0%	100.0%	100.0%	86,691	100.00%



EUROPEAN CENTRAL BANK



Annex 2

Country tables

August 2002

Annex 2 – Country tables

Bulgaria

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	8,362.00	8,312.00	8,257.00	8,211.00	8,170.00	8,174.10
GDP (BGL millions, current prices)	1,748.70	17,055.20	21,577.00	22,776.40	25,453.70	28,183.40
GDP per capita (BGL)	209.12	2,051.88	2,613.18	2,773.89	3,115.51	3,447.89
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>0.61</i>	<i>1.96</i>	<i>1.95</i>	<i>1.96</i>	<i>1.96</i>	<i>1.95</i>
<i>average</i>	<i>0.23</i>	<i>1.91</i>	<i>1.97</i>	<i>1.96</i>	<i>1.96</i>	<i>1.95</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, BGN millions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	315.02	1,556.61	2,177.24	1,970.62	2,370.76	3,083.35
Transferable deposits	116.48	1,116.83	1,217.71	1,343.57	1,601.90	1,832.19
Narrow money supply (M1) ¹⁾	242.94	2,433.08	2,960.72	3,301.98	3,976.01	4,906.41
<i>Memorandum items:</i>						
Broad money supply ²⁾	1,330.58	6,124.94	6,800.92	7,646.78	10,037.06	12,568.36
Transferable deposits in foreign currencies	254.37	820.83	745.24	733.02	821.18	1,149.83
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
<i>of which:</i>						
<i>on card-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>on network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

1) The M1 monetary aggregate comprises currency outside banks and demand deposits in levs (current accounts).

2) The broad money monetary aggregate comprises M1, quasi money (comprising time deposits, savings deposits and foreign currency deposits) and money market instruments, debt securities, instruments issued by commercial banks, loans and restricted deposits.

Table 3
Settlement media used by banks

(end of year, BGN billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	0.109	0.622	0.380	0.463	0.361	0.457
<i>of which:</i>						
<i>required reserves</i> ¹⁾	<i>0.110</i>	<i>0.319</i>	<i>0.310</i>	<i>0.388</i>	<i>0.341</i>	<i>0.284</i>
<i>free reserves</i> ²⁾	<i>-0.002</i>	<i>0.303</i>	<i>0.070</i>	<i>0.076</i>	<i>0.020</i>	<i>0.173</i>
Transferable balances held at other banks	0.027	0.093	0.069	0.039	0.024	0.041
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	0.239	0.335	0.256	0.229	0.125	0.071

1) Lev-denominated component only.

2) Lev and foreign-currency-denominated components.

Table 4
Banknotes and coins¹⁾

(BGN thousands)

	1996	1997	1998	1999	2000	2001
Total banknotes issued	137,305	1,418,195	1,839,445	2,060,820	2,475,320	3,228,171
<i>of which:</i>						
<i>old denominations</i>						
BGL 50,000	nap	711,927	1,052,138	29,946	4,604	3,678
BGL 10,000	4,437	254,971	407,566	11,548	3,450	3,059
BGL 5,000	15,632	183,298	174,466	3,905	2,021	1,849
BGL 2,000	28,424	98,869	88,961	2,974	1,780	1,696
BGL 1,000	16,784	70,060	72,841	2,605	1,530	1,454
BGL 500	43,785	59,595	27,702	2,560	1,427	1,377
BGL 200	17,176	27,125	10,402	1,979	1,192	1,169
BGL 100	7,405	8,231	3,943	1,267	954	945
BGL 50	2,005	2,181	665	616	neg	neg
BGL 20	1,065	1,424	762	726	neg	neg
BGL 10	302	226	neg	neg	neg	neg
BGL 5	154	152	neg	neg	neg	neg
BGL 2	65	64	neg	neg	neg	neg
BGL 1	71	71	neg	neg	neg	neg
<i>new denominations</i>						
BGN 50	nap	nap	nap	1,003,724	1,176,485	1,764,983
BGN 20	nap	nap	nap	484,094	672,829	819,038
BGN 10	nap	nap	nap	285,178	391,690	460,167
BGN 5	nap	nap	nap	152,327	134,535	87,831
BGN 2	nap	nap	nap	40,148	48,676	45,918
BGN 1	nap	nap	nap	37,223	34,147	35,007
Total coins issued	189,410	234,776	442,551	22,098	29,373	34,710
<i>of which:</i>						
<i>old denominations</i>						
BGL 50	9	106	2,145	1,753	1,437	1,430
BGL 20	3	51	1,220	1,079	939	934
BGL 10	175	574	1,074	929	845	841
BGL 5	141	276	320	263	254	253
BGL 2	96	130	145	129	125	125
BGL 1	116	135	135	125	109	109
BGL 0.5	40	39	39	38	5	5
BGL 0.2	40	40	40	39	2	2
BGL 0.1	31	31	31	31	2	2
BGL 0.05	12	neg	neg	neg	neg	neg
BGL 0.02	11	neg	neg	neg	neg	neg
BGL 0.01	9	neg	neg	neg	neg	neg
<i>new denominations</i>						
BGN 0.5	nap	nap	nap	7,057	9,100	10,434
BGN 0.2	nap	nap	nap	4,806	7,550	8,448
BGN 0.1	nap	nap	nap	2,980	4,890	6,371
BGN 0.05	nap	nap	nap	1,047	1,887	2,483
BGN 0.02	nap	nap	nap	534	904	1,390
BGN 0.01	nap	nap	nap	272	568	837
<i>commemorative coins</i>	188,728	233,394	437,403	1,016	756	1,046
Total banknotes and coins issued	326,714	1,652,970	2,281,996	2,082,918	2,504,693	3,262,881
Banknotes and coins held by credit institutions	11,690	96,363	104,752	112,297	133,929	179,527
Banknotes and coins in circulation outside credit institutions	315,024	1,556,607	2,177,244	1,970,621	2,370,764	3,083,354

1) A redenomination took place in 1999. BGL 1,000 = BGN 1.

Table 5
Institutional framework

(end of 2001)

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (BGN billions)
Central bank	1	9	nav	nav	nav
Credit institutions	35	1,572	nav	nav	nav
Post Office	1	3,067	nav	nav	nav
Total	37	4,648	nav	nav	nav
<i>of which:</i>					
<i>virtual institutions</i>	0	1	nav	nav	nav
Branches of foreign banks	7	7	nav	nav	nav
<i>of which:</i>					
<i>EU-based</i>	5	5	nav	nav	nav

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function	19,362	62,792	106,186	270,929	560,934	990,414
Number of networks	1	1	1	1	1	1
Number of ATMs with a cash dispensing function	69	118	162	279	420	642
<i>of which:</i>						
<i>open access</i>	69	118	162	279	420	642
<i>limited access</i>	nav	nav	nav	nav	nav	nav
Volume of transactions (thousands)	281	1,287	1,920	3,364	6,812	14,363
<i>of which:</i>						
<i>at ATMs with open access</i>	281	1,287	1,920	3,364	6,812	14,363
<i>at ATMs with limited access</i>	nav	nav	nav	nav	nav	nav
Value of transactions (BGN millions)	1.08	40.06	118.42	248.53	551.22	1,158.40
<i>of which:</i>						
<i>at ATMs with open access</i>	1.08	40.06	118.42	248.53	551.22	1,158.40
<i>at ATMs with limited access</i>	nav	nav	nav	nav	nav	nav
Number of ATMs with a giro transfer function	nav	nav	nav	nav	nav	nav
<i>volume of transactions (millions)</i>	nav	nav	nav	nav	nav	nav
<i>value of transactions (BGN billions)</i>	nav	nav	nav	nav	nav	nav
Debit function						
Cards with a debit function	19,362	62,773	105,706	269,512	557,602	979,546
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nav	nav	nav	nav	nav	nav
Number of networks	1	1	1	1	1	1
Number of terminals	27	72	352	497	1087	1968
Volume of transactions (thousands)	3.278	1.6411	58.339	121.186	281.432	825.218
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nav	nav	nav	nav	nav	nav
Value of transactions (BGN millions)	0.003	0.520	4.691	11.680	32.490	106.460
<i>of which:</i>						
<i>transactions with retailer cards (BGN billions)</i>	nav	nav	nav	nav	nav	nav

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Credit function						
Cards with a credit function	neg	19	437	1,417	3,332	10,886
<i>of which:</i>						
retailer cards (thousands)	nap	nap	nap	nap	nap	nap
Number of networks	1	1	1	1	1	1
Number of terminals	nav	nav	nav	nav	nav	nav
Volume of transactions (thousands)	neg	0.10	4.03	20.58	53.17	157.09
<i>of which:</i>						
transactions with retailer cards (millions)	nap	nap	nap	nap	nap	nap
Value of transactions (BGN millions)	neg	0.03	2.32	9.82	19.11	41.62
<i>of which:</i>						
transactions with retailer cards (BGN billions)	nap	nap	nap	nap	nap	nap
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (BGN billions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (BGN billions)	nap	nap	nap	nap	nap	nap
Float (BGN billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nap	nap	nap	nap	nap	nap
Number of terminals	nap	nap	nap	nap	nap	nap
Volume of transactions (millions)	nap	nap	nap	nap	nap	nap
Value of transactions (BGN billions)	nap	nap	nap	nap	nap	nap
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	19,362	62,792	106,143	270,929	560,934	990,432
<i>of which:</i>						
cards with a combined debit, cash and e-money function (thousands)	nap	nap	nap	nap	nap	nap
cards with a cheque guarantee function (thousands)	nap	nap	nap	nap	nap	nap

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(thousands)

	1996	1997	1998	1999	2000	2001
BISERA	10,342	10,182	11,951	15,037	19,394	23,785
Paperless credit transfers	9,136	8,783	10,509	13,779	18,083	22,227
Direct debits	1,175	1,093	1,275	1,211	1,247	1,468
Card payments	29	304	154	34	56	82
Cheques	1	neg	neg	neg	0	neg
Letters of credit	1	neg	neg	neg	neg	neg
DVP	nap	nap	13	13	8	7
Concentration ratio	0.56	0.68	0.63	0.63	0.63	0.61

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(BGN millions)*

	1996	1997	1998	1999	2000	2001
BISERA	3,209.65	26,467.73	38,527.46	45,054.31	55,490.28	64,265.34
Paperless credit transfers	3,140.82	25,928.88	37,765.41	44,250.71	54,557.10	62,573.22
Direct debits	66.42	512.79	639.57	650.39	622.72	938.47
Card payments	0.18	12.07	50.26	115.39	285.63	716.48
Cheques	0.27	0.54	0.28	neg	0.00	neg
Letters of credit	1.96	13.46	9.19	7.12	5.90	8.76
DVP	nap	nap	62.75	30.54	18.93	28.40
Concentration ratio	0.59	0.64	0.60	0.63	0.63	0.55

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by debit card	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by credit card	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Credit transfers	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Direct debits	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Card-based e-money	nav	nav	nav	nav	nav	nav
Network-based e-money	nav	nav	nav	nav	nav	nav
Total	nav	nav	nav	nav	nav	nav

Table 10
Indicators of the use of various cashless payment instruments: value of transactions
 (BGN billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Payments by debit card	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Payments by credit card	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Credit transfers	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Direct debits	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Card-based e-money	nav	nav	nav	nav	nav	nav
Network-based e-money	nav	nav	nav	nav	nav	nav
Total	nav	nav	nav	nav	nav	nav

Table I Ia**Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
Trading platform						
CDAD	nap	0.007	19.8	21.2	42.9	70.9
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
CDAD	nap	0.007	64.8	116.5	117.5	124.2
GSD						
Government securities	23,321	8,288	9,240	9,721	9,284	8,599
<i>of which:</i>						
<i>bills</i>	9,206	4,379	5,537	4,088	1,805	1,214
<i>notes</i>	5,612	1,254	1,098	3,863	6,044	5,845
<i>bonds</i>	8,503	2,655	2,605	1,770	1,435	1,540

Table I Ib**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions***(BGN millions)*

	1996	1997	1998	1999	2000	2001
Trading platform						
CDAD	nap	0.075	160.7	1,000.0	133.0	160.0
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
CDAD	nap	0.079	205.7	2,900.0	158.0	192.0
GSD ¹⁾						
Government securities	5,377.0	12,135.5	7,912.0	10,368.3	9,502.2	8,097.7
<i>of which:</i>						
<i>bills</i>	737.3	3,826.8	3,618.7	4,473.4	1,083.1	820.0
<i>notes</i>	978.7	1,202.9	575.6	3,231.4	5,832.0	5,446.8
<i>bonds</i>	3,661.1	7,105.8	3,717.7	2,663.5	2,587.0	1,830.9

1) Nominal value.

Table I I c
Number of participants in trading platforms, clearing houses and securities settlement systems

	1996	1997	1998	1999	2000	2001
Trading platforms	nap	nav	nav	nav	nav	nav
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
CDAD	nap	42	75	90	93	97
GSD	47	28	18	22	25	25
<i>of which:</i>						
<i>banks</i>	40	20	16	19	21	21
<i>saving banks</i>	1	1	0	0	0	0
<i>stockbrokers</i>	5	6	2	2	3	3
<i>insurance companies</i>	1	1	0	1	1	1

Table I I d
Outstanding securities

(end of year)

	1996	1997	1998	1999	2000	2001
CDAD						
Value of securities issued (BGN billions)	nap	nap	nap	nap	nap	nap
Volume of securities issued	nap	nap	nap	nap	nap	nap
Value of securities registered (BGN millions)	nap	239.5	388.4	478.0	684.0	1,190.0
Volume of securities registered	nap	247,947,688	404,191,128	462,993,957	575,806,062	833,428,017
GSD¹⁾						
Value of government securities issued (BGN millions)	946.5	2,821.9	2,297.3	2,073.7	1,772.3	1,861.3
Number of government securities issued	241	221	192	211	136	100

1) Nominal value.

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
CDAD						
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap
GSD						
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	25	25	25	14	15	15
<i>of which live</i>	25	24	22	14	15	15
Sub-members	3	5	5	6	6	7
<i>of which live</i>	3	5	5	6	5	6
Participants	0	0	2	11	9	10
<i>of which live</i>	0	0	2	10	9	10
Total users	28	30	32	31	30	32
<i>of which live</i>	28	29	29	30	29	31
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	468,317	469,733	583,897	663,125	811,132	873,611
<i>of which:</i>						
<i>category I</i>	234,024	233,126	288,437	338,017	415,219	442,363
<i>category II</i>	95,907	90,692	113,797	118,602	157,924	189,344
Total messages received	631,194	646,241	728,103	849,099	1,021,763	1,129,032
<i>of which:</i>						
<i>category I</i>	256,392	289,748	328,476	379,477	484,918	529,696
<i>category II</i>	25,906	19,525	18,990	20,192	25,111	39,839
Domestic traffic	165,653	111,174	134,806	165,653	207,625	195,862
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Cyprus

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	652.0	655.0	661.0	665.0	669.0	674.0
GDP (CYP millions, current prices)	4,157.4	4,365.6	4,679.6	4,942.6	5,457.7	5,798.4
GDP per capita (CYP)	6,376	6,665	7,080	7,432	8,158	8,603
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>0.59</i>	<i>0.58</i>	<i>0.58</i>	<i>0.58</i>	<i>0.57</i>	<i>0.58</i>
<i>average</i>	<i>0.59</i>	<i>0.58</i>	<i>0.58</i>	<i>0.58</i>	<i>0.57</i>	<i>0.58</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, CYP millions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	265.6	276.2	289.9	313.6	333.3	356.5
Transferable deposits	388.1	434.9	445.7	726.1	747.6	730.2
Narrow money supply (M1)	653.7	711.1	735.6	1,039.7	1,080.9	1,086.7
<i>Memorandum items:</i>						
Broad money supply	4,247.7	4,701.1	5,113.9	5,885.2	6,368.7	7,202.2
Transferable deposits in foreign currencies	69.5	72.2	73.1	76.3	104.3	159.7
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
<i>of which:</i>						
<i>on card-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>on network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 3
Settlement media used by banks

(end of year, CYP millions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank ¹⁾	334.6	321.4	386.0	535.6	559.7	520.7
<i>of which:</i>						
<i>required reserves</i> ²⁾	<i>277.5</i>	<i>314.0</i>	<i>342.1</i>	<i>410.7</i>	<i>501.3</i>	<i>465.7</i>
<i>free reserves</i> ³⁾	<i>57.1</i>	<i>7.4</i>	<i>43.9</i>	<i>124.9</i>	<i>58.4</i>	<i>55.0</i>
Transferable balances held at other banks ^{3), 4)}	9.3	30.3	15.6	87.4	137.9	93.6
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	6.4	neg	5.6	neg	3.1	neg

1) As from 2001 the reserve requirement was reduced from 7% to 6.5% of average deposit liabilities.

2) The whole balance can be used for payment purposes.

3) Excludes balances in foreign currencies.

4) Includes some time deposits (up to 3 months).

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

	1996	1997	1998	1999	2000	2001
Total banknotes issued	272.3	282.8	299.7	326.2	347.2	377.7
<i>of which:</i>						
<i>CYP 20</i>	104.9	100.9	104.5	105.5	114.6	145.0
<i>CYP 10</i>	139.6	153.3	165.0	188.2	198.1	196.4
<i>CYP 5</i>	14.6	14.7	15.5	16.6	16.8	17.7
<i>CYP 1</i>	13.2	13.9	14.7	15.9	17.7	18.6
Total coins issued	21.7	23.1	24.5	26.5	29.2	31.5
<i>of which:</i>						
<i>CYP 0.5</i>	7.8	8.4	9.3	10.2	11.4	12.6
<i>CYP 0.2</i>	6.3	6.7	6.9	7.5	8.2	8.8
<i>CYP 0.1</i>	3.4	3.6	3.7	3.9	4.3	4.6
<i>CYP 0.05</i>	2.5	2.7	2.8	3.0	3.2	3.4
<i>CYP 0.02</i>	1.1	1.1	1.1	1.2	1.3	1.3
<i>CYP 0.01</i>	0.6	0.6	0.7	0.7	0.8	0.8
Total banknotes and coins issued	294.0	305.9	324.2	352.7	376.4	409.2
Banknotes and coins held by credit institutions	28.4	29.7	34.3	39.1	43.1	52.7
Banknotes and coins in circulation outside credit institutions	265.6	276.2	289.9	313.6	333.3	356.5

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (CYP millions)
Central bank	1	1	0.1	nap	38.7
Banks	12	462	1,481.7	193.3	3,358.0 ¹⁾
Co-operative Credit Institutions	363	470	nav	nav	nav ²⁾
Total	376	933	1,481.8	193.3	3,396.7
<i>of which:</i>					
<i>virtual institutions</i>	nap	nap	nap	nap	nap
Branches of foreign banks	1	10	nav	nav	nav
<i>of which:</i>					
<i>EU-based</i>	0	nap	nap	nap	nap

1) The number and corresponding value of accounts from which cashless payments can be executed include some time deposits and are thus comparable to "Broad money supply" in Table 2.

2) The clearing and settlement of cheques and execution of credit transfers for customers of CCIs take place at a bank. Thus the transferable balances the CCIs hold with this bank are included under "Banks".

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	466	498	530	564	594	674
Number of networks	6	6	7	8	9	9
Number of ATMs with a cash dispensing function	149	158	187	221	262	313
<i>of which:</i>						
<i>open access</i>	148	157	183	209	245	292
<i>limited access</i>	1	1	4	12	17	21
Volume of transactions (millions)	1.6	1.9	2.1	2.6	3.6	4.9
<i>of which:</i>						
<i>at ATMs with open access</i> ¹⁾	1.6	1.9	2.1	2.6	3.6	4.9
<i>at ATMs with limited access</i>	neg	neg	neg	neg	neg	neg
Value of transactions (CYP millions)	81.3	100.0	139.2	148.6	204.4	291.4
<i>of which:</i>						
<i>at ATMs with open access</i> ¹⁾	81.3	100.0	138.8	147.1	202.7	289.1
<i>at ATMs with limited access</i>	neg	neg	0.4	1.5	1.7	2.3
Number of ATMs with a giro transfer function	100	105	123	136	157	214
<i>volume of transactions (millions)</i> ²⁾	nav	nav	nav	nav	nav	nav
<i>value of transactions (CYP millions)</i> ²⁾	nav	nav	nav	nav	nav	nav
Debit function						
Cards with a debit function (thousands)	133	145	155	172	183	225
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nap	nap	nap	nap	nap	nap
Number of networks	1	1	1	1	1	1
Number of terminals	2,474	3,833	5,178	6,284	7,670	9,661
Volume of transactions (millions)	0.5	0.9	1.3	1.8	2.4	3.4
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nap	nap	nap	nap	nap	nap
Value of transactions (CYP millions)	28.4	47.3	72.6	87.5	121.1	174.0
<i>of which:</i>						
<i>transactions with retailer cards (CYP millions)</i>	nap	nap	nap	nap	nap	nap
Credit function						
Cards with a credit function (thousands)	352	354	361	366	383	409
<i>of which:</i>						
<i>retailer cards (thousands)</i>	29	28	28	20	22	24
Number of networks	1	1	1	1	1	1
Number of terminals	2,474	3,833	5,178	6,284	7,670	9,661
Volume of transactions (millions)	1.8	2.9	4.1	5.2	6.4	7.8
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	0.1	0.1	0.1	neg	neg	0.1
Value of transactions (CYP millions)	76.8	132.2	186.2	239.5	296.6	362.9
<i>of which:</i>						
<i>transactions with retailer cards (CYP millions)</i>	5.2	6.5	7.9	5.9	6.5	4.8

1) Includes cash withdrawals by visitors to Cyprus.

2) Included in cash dispensing statistics.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (CYP millions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (CYP millions)	nap	nap	nap	nap	nap	nap
Float (CYP millions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	6	6	5	6	5	5
Number of terminals	nav	nav	nav	nav	nav	nav
Volume of transactions (millions)	neg	neg	neg	neg	neg	neg
Value of transactions (CYP millions)	1.1	2.4	3.9	6.0	8.0	6.8
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	524	541	563	590	621	703
<i>of which:</i>						
<i>cards with a combined debit and cash function (thousands)</i>	133	145	155	172	183	225
<i>cards with a combined credit and cash function (thousands)</i>	320	326	334	345	362	397

Table 7**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions***(thousands)*

	1996	1997	1998	1999	2000	2001
Large-value credit transfer system	22	27	33	41	50	55
Cyprus Clearing House	16,876	16,962	16,824	17,232	17,904	17,707
<i>of which:</i>						
<i>cheques</i>	15,785	15,821	15,679	16,072	16,722	16,461
<i>postal drafts</i>	1,091	1,141	1,145	1,160	1,182	1,246
JCC Multipack	3,397	4,924	7,071	9,267	11,777	14,385
<i>of which:</i>						
<i>payments</i>	2,952	4,372	6,352	8,327	10,550	12,818
<i>cash withdrawals</i>	445	552	719	940	1,227	1,567
JCCTransfer ¹⁾	nap	nap	nap	nap	nap	12
Concentration ratio	nav	nav	nav	nav	nav	nav

1) Operations began on 9 November 2001.

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(CYP millions)*

	1996	1997	1998	1999	2000	2001
Large-value credit transfer system	17,069	16,435	16,426	34,266	80,940	42,824
Cyprus Clearing House	8,342	8,315	8,562	13,642	17,780	12,206
<i>of which:</i>						
<i>cheques</i>	8,145	8,101	8,336	13,394	17,507	11,916
<i>postal drafts</i>	197	214	226	248	273	290
JCC Multipack	190	256	346	443	578	721
<i>of which:</i>						
<i>payments</i>	152	209	285	364	473	582
<i>cash withdrawals</i>	38	47	61	79	105	139
JCCTransfer ¹⁾	nap	nap	nap	nap	nap	5
Concentration ratio	nav	nav	nav	nav	nav	nav

1) Operations began on 9 November 2001.

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions ¹⁾***(millions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques ²⁾	19.4	20.3	21.0	22.3	23.0	22.6
<i>of which:</i>						
<i>face-to-face</i>	19.4	20.3	21.0	22.3	23.0	22.6
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	neg
<i>telebanking</i>	nap	nap	nap	nap	nap	neg
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit card	0.5	0.9	1.3	1.8	2.4	3.4
<i>of which:</i>						
<i>face-to-face</i>	0.5	0.9	1.3	1.8	2.4	3.4
<i>via PC or other terminal</i>	nap	nap	nap	neg	neg	neg
<i>telebanking</i>	nap	nap	nap	nap	nap	neg
<i>via mobile phone</i>	nap	nap	nap	nap	nap	neg
Payments by credit card ³⁾	1.8	2.9	4.1	5.2	6.4	7.8
<i>of which:</i>						
<i>face-to-face</i>	1.8	2.9	4.1	5.2	6.4	7.8
<i>via PC or other terminal</i>	nap	nap	nap	neg	neg	neg
<i>telebanking</i>	nap	nap	nap	nap	nap	neg
<i>via mobile phone</i>	nap	nap	nap	nap	nap	neg
Credit transfers ⁴⁾	nav	nav	2.4	2.4	2.7	2.9
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	2.4	2.4	2.7	2.9
<i>via PC or other terminal</i>	neg	neg	neg	neg	neg	neg
<i>telebanking</i>	nap	nap	nap	nap	nap	neg
<i>via mobile phone</i>	nap	nap	nap	nap	nap	neg
Direct debits	2.0	2.8	4.1	5.1	6.0	6.5
<i>of which:</i>						
<i>face-to-face</i>	2.0	2.8	4.1	5.1	6.0	6.5
<i>via PC or other terminal</i>	nap	nap	nap	neg	neg	neg
<i>telebanking</i>	nap	nap	nap	nap	nap	neg
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	23.7	26.9	32.9	36.8	40.5	43.2

1) Includes items initiated by banks.

2) Includes government cheques but excludes postal drafts (see Table 7 for statistics).

3) Includes delayed debit cards (although these are negligible in volume terms).

4) Includes transfers for servicing public debt.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions ¹⁾
(CYP millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques ²⁾	10,722.1	11,847.7	12,878.6	16,005.5	19,128.3	15,410.2
of which:						
face-to-face	10,722.1	11,847.7	12,878.6	16,005.5	19,128.3	15,395.9
via PC or other terminal	nap	nap	nap	nap	nap	6.3
telebanking	nap	nap	nap	nap	nap	8.0
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by debit card	28.4	47.3	72.6	87.5	121.1	174.0
of which:						
face-to-face	28.4	47.3	72.6	87.5	121.1	174.0
via PC or other terminal	nap	nap	nap	neg	neg	neg
telebanking	nap	nap	nap	nap	nap	neg
via mobile phone	nap	nap	nap	nap	nap	neg
Payments by credit card ³⁾	77.9	134.6	190.1	245.5	304.6	369.7
of which:						
face-to-face	77.9	134.6	190.1	245.5	304.6	369.7
via PC or other terminal	nap	nap	nap	neg	neg	neg
telebanking	nap	nap	nap	nap	nap	neg
via mobile phone	nap	nap	nap	nap	nap	neg
Credit transfers ⁴⁾	nav	nav	27,319.8	25,541.8	98,377.1	60,106.8
of which:						
face-to-face	nav	nav	nav	nav	40,935.4	31,600.3
via PC or other terminal ⁵⁾	nav	nav	nav	nav	57,441.7	28,505.7
telebanking	nap	nap	nap	nap	nap	0.8
via mobile phone	nap	nap	nap	nap	nap	neg
Direct debits	100.2	150.9	250.4	317.5	391.8	412.6
of which:						
face-to-face	100.2	150.9	250.4	317.5	391.8	412.6
via PC or other terminal	nap	nap	nap	neg	neg	neg
telebanking	nap	nap	nap	nap	nap	neg
via mobile phone	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	10,928.6	12,180.5	40,711.5	42,197.8	118,322.9	76,473.3

1) Includes items initiated by banks.

2) Includes government cheques but excludes postal drafts (see Table 8 for statistics).

3) Includes delayed debit cards.

4) Includes transfers for servicing public debt.

5) Includes transfers via SWIFT through the large-value credit transfer system (see Table 8 for statistics).

Table I Ia**Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions***(thousands)*

	1996	1997	1998	1999	2000	2001
Trading platform						
Cyprus Stock Exchange	33	43	74	522	1,761	1,429
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
Cyprus Stock Exchange ¹⁾	33	43	74	522	1,761	1,429

1) Same data as under "Trading platform".

Table I Ib**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions***(CYP millions)*

	1996	1997	1998	1999	2000	2001
Trading platform						
Cyprus Stock Exchange	231	171	347	3,858	6,266	2,220
<i>of which:</i>						
<i>shares</i>	<i>nav</i>	<i>123</i>	<i>290</i>	<i>3,201</i>	<i>5,846</i>	<i>2,092</i>
<i>warrants</i>	<i>nav</i>	<i>18</i>	<i>45</i>	<i>633</i>	<i>411</i>	<i>123</i>
<i>corporate bonds</i>	<i>nav</i>	<i>13</i>	<i>7</i>	<i>16</i>	<i>5</i>	<i>1</i>
<i>government securities</i>	<i>nap</i>	<i>17</i>	<i>5</i>	<i>8</i>	<i>4</i>	<i>4</i>
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
Cyprus Stock Exchange ¹⁾	231	171	347	3,858	6,266	2,220

1) Same data as under "Trading platform".

Table I I c
Number of participants in trading platforms, clearing houses and securities settlement systems

	1996	1997	1998	1999	2000	2001
Trading system						
Cyprus Stock Exchange	16	20	20	23	46	42
<i>of which:</i>						
Central Bank of Cyprus	<i>nap</i>	1	1	1	1	1
brokerage firms	16	19	19	22	45	41
Clearing systems	nap	nap	nap	nap	nap	nap
Securities settlement system						
Cyprus Stock Exchange ¹⁾	16	20	20	23	46	42

1) Same data as under "Trading platform".

Table I I d
Outstanding securities

(end of year)

	1996	1997	1998	1999	2000	2001
Cyprus Stock Exchange						
Value of securities listed (CYP millions)	1,135	1,422	2,000	14,676	8,296	5,578
<i>of which:</i>						
shares	<i>nav</i>	1,091	1,340	12,741	7,116	3,998
warrants	<i>nav</i>	22	34	728	217	84
corporate bonds	<i>nav</i>	86	90	343	131	109
government securities	<i>nav</i>	223	536	864	832	1,387
Number of securities listed	67	94	116	150	240	276
<i>of which:</i>						
shares	42	53	57	66	120	153
warrants	14	19	26	37	86	79
corporate bonds	11	13	13	16	13	5
government securities	<i>nav</i>	9	20	31	21	39
Funds raised during the year (CYP millions)	78	324	466	447	1,045	1,392
<i>of which:</i>						
new share issues	15	10	17	29	471	774
rights issues and partly-paid shares	47	59	8	77	335	<i>nav</i>
conversion of warrants and bonds	0	13	3	0	0	<i>nav</i>
corporate bonds	16	30	0	72	0	7
government securities	<i>nav</i>	212	438	269	239	611
Number of securities issued	6	17	37	59	89	46

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
Name of system						
Netting ratio for cash over year	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Netting ratio for securities over year	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	6	7	7	9	9	9
<i>of which live</i>	6	7	7	9	9	9
Sub-members	13	15	16	15	18	17
<i>of which live</i>	12	15	15	15	17	17
Participants	0	1	1	1	1	1
<i>of which live</i>	0	1	1	1	0	0
Total users	19	23	24	25	28	27
<i>of which live</i>	18	23	23	25	26	26
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	1,032,157	1,190,421	1,367,906	1,447,863	1,614,489	1,803,969
<i>of which:</i>						
<i>category I</i>	443,766	535,721	643,370	704,503	820,312	946,152
<i>category II</i>	243,055	274,381	307,681	342,631	379,993	425,892
Total messages received	814,722	962,264	1,090,133	1,167,452	1,316,805	1,456,524
<i>of which:</i>						
<i>category I</i>	318,955	378,818	434,178	483,361	537,175	592,972
<i>category II</i>	78,225	93,647	108,713	145,750	165,262	176,682
Domestic traffic	85,905	97,089	110,077	165,653	162,339	179,599
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Annex 2 – Cyprus

Czech Republic

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	10,315.3	10,303.0	10,293.6	10,285.0	10,272.1	10,242.0
GDP (CZK billions)	1,567.0	1,679.9	1,837.1	1,887.3	1,959.5	2,115.8
GDP per capita (CZK)	151,914.7	163,049.6	178,470.1	183,500.2	190,759.4	206,580.7
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>34.18</i>	<i>38.60</i>	<i>35.24</i>	<i>36.10</i>	<i>35.05</i>	<i>31.96</i>
<i>average</i>	<i>34.46</i>	<i>35.88</i>	<i>36.10</i>	<i>36.88</i>	<i>35.60</i>	<i>34.07</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, CZK billions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	118.9	119.3	127.2	157.9	171.8	180.4
Transferable deposits	356.4	325.8	306.2	321.9	370.7	453.1
Other	neg	neg	neg	neg	neg	neg
Narrow money supply (M1)	475.3	445.1	433.4	479.8	542.5	633.5
<i>Memorandum items:</i>						
Broad money supply (L)	1,138.9	1,241.8	1,329.9	1,443.9	1,546.3	1712.4
Transferable deposits in foreign currencies	85.7	138.5	142.5	147.9	157.5	157.1
Outstanding value on e-money schemes	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>on card-based products</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>on network-based products</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>

Table 3
Settlement media used by banks

(end of year, CZK billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	138.8	199.2	255.9	266.5	285.4	309.3
<i>of which:</i>						
<i>required reserves</i>	<i>115.64</i>	<i>101.29</i>	<i>84.47</i>	<i>25.47</i>	<i>26.99</i>	<i>28.42</i>
<i>free reserves</i>	<i>-2.53</i>	<i>-11.46</i>	<i>2.14</i>	<i>0.81</i>	<i>-0.41</i>	<i>1.85</i>
Transferable balances held at other banks	289.5	403.4	410.9	428.2	410.9	472.1
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	neg	neg	neg	neg	1.5	0.5

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

	1996	1997	1998	1999	2000	2001
Total banknotes issued	134,854	135,304	141,575	178,963	191,584	201,793
<i>of which:</i>						
<i>CZK 5,000</i>	37,841	39,372	42,633	57,120	61,103	58,958
<i>CZK 2,000</i>	5,715	10,839	11,857	18,102	20,370	22,708
<i>CZK 1,000</i>	68,757	61,886	63,307	75,153	88,365	98,416
<i>CZK 500</i>	11,918	12,803	13,591	17,955	9,689	9,225
<i>CZK 200</i>	4,711	4,728	4,786	4,984	6,667	7,095
<i>CZK 100</i>	3,711	3,787	3,723	3,964	3,629	3,594
<i>CZK 50</i>	1,340	1,401	1,436	1,522	1,625	1,674
<i>CZK 20</i>	861	488	242	163	136	123
Total coins issued	3,000	3,842	4,485	4,976	5,416	5,781
<i>of which:</i>						
<i>CZK 50</i>	127	127	122	138	158	168
<i>CZK 20</i>	395	996	1,481	1,756	1,978	2,140
<i>CZK 10</i>	917	998	1,014	1,067	1,144	1,200
<i>CZK 5</i>	490	534	557	587	621	656
<i>CZK 2</i>	278	314	340	364	392	419
<i>CZK 1</i>	187	201	212	229	244	258
<i>CZK 0.5</i>	77	88	97	107	116	127
<i>CZK 0.2</i>	60	70	80	90	98	107
<i>CZK 0.1</i>	35	41	46	51	56	63
<i>commemorative coins</i>	434	473	536	587	609	643
Total banknotes and coins issued	137,854	139,146	146,060	183,939	197,000	207,574
Banknotes and coins held by credit institutions	18,934	19,846	18,860	26,029	25,200	27,174
Banknotes and coins in circulation outside credit institutions	118,920	119,300	127,200	157,910	171,800	180,400

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (CZK billions)
Central bank	1	7	23	0	82.5
Credit institutions	38	1,758	6,844	128.9	370.6
Post Office	1	3,401	nap	nap	nap
Total	40	5,166	6,887	128.9	453.1
<i>of which:</i>					
<i>virtual institutions</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>
Branches of foreign banks	10	17	26	nav	18.3
<i>of which:</i>					
<i>EU-based</i>	8	16	23	<i>nav</i>	13.7

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	569.9	408.9	1,590.2	2,784.5	3,976.6	4,556.3
Number of networks	4	4	5	4	4	4
Number of ATMs with a cash dispensing function	1,169	1,322	1,463	1,499	1,602	1,923
<i>of which:</i>						
<i>open access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	1,919
<i>limited access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	4
Volume of transactions (millions)	38.6	49.4	59.1	70.0	85.8	100.7
<i>of which:</i>						
<i>at ATMs with open access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	100.7
<i>at ATMs with limited access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	0.04
Value of transactions (CZK billions)	48.9	67.3	91.3	128.0	175.5	232.7
<i>of which:</i>						
<i>at ATMs with open access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	232.5
<i>at ATMs with limited access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	0.2
Number of ATMs with a giro transfer function	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>volume of transactions (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>value of transactions (CZK billions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Debit function						
Cards with a debit function (thousands)	1,288.3	1,478.7	1,881.8	2,790.0	3,960.4	4,516.3
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	2	2	4	<i>nav</i>	5	5
Number of terminals	1,100	2,985	6,628	8,962	13,187	17,931
Volume of transactions (millions)	0.9	1.4	2.8	6.0	14.5	26.6
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (CZK billions)	2.4	3.9	8.4	14.0	27.0	44.7
<i>of which:</i>						
<i>transactions with retailer cards (CZK billions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Credit function						
Cards with a credit function (thousands)	<i>nav</i>	1.7	3.6	5.6	38.7	53.2
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of terminals	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Volume of transactions (millions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (CZK billions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (CZK billions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nav	nav	nav	nav	nav	nav
Number of accepting terminals	nav	nav	nav	nav	nav	nav
Number of networks	nav	nav	nav	nav	nav	nav
Number of purchase transactions (millions)	nav	nav	nav	nav	nav	nav
Value of purchase transactions (CZK billions)	nav	nav	nav	nav	nav	nav
Number of loading transactions (millions)	nav	nav	nav	nav	nav	nav
Number of loading terminals	nav	nav	nav	nav	nav	nav
Value of money loaded (CZK billions)	nav	nav	nav	nav	nav	nav
Float (CZK billions)	nav	nav	nav	nav	nav	nav
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nav	nav	nav	nav	nav	nav
Number of terminals	nav	nav	nav	nav	nav	nav
Volume of transactions (millions)	nav	nav	nav	nav	nav	nav
Value of transactions (CZK billions)	nav	nav	nav	nav	nav	nav
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	1,301.5	1,500.9	1,913.4	2,834.7	4,007.0	4,569.9
<i>of which:</i>						
<i>cards with a combined debit, cash and e-money function (thousands)</i>	nav	nav	nav	nav	nav	nav
<i>cards with a cheque guarantee function (thousands)</i>	13.2	20.5	28.0	39.1	7.9	0.4

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
CERTIS	156.3	171.7	183.6	202.6	226.4	259.6
Concentration ratio	nav	nav	nav	nav	nav	nav

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(CZK billions)*

	1996	1997	1998	1999	2000	2001
CERTIS	32,996	48,897	78,084	93,046	96,103	103,349
Concentration ratio	nav	nav	nav	nav	nav	nav

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	14.4	13.9	6.3	2.7	2.5	2.0
<i>of which:</i>						
<i>face-to-face</i>	14.4	13.9	6.3	2.7	2.5	2.0
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by debit card	0.9	1.4	2.8	6.0	14.5	26.6
<i>of which:</i>						
<i>face-to-face</i>	0.9	1.4	2.8	6.0	14.5	26.6
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by credit card	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Credit transfers	308.4	382.2	398.6	415.2	423.1	691.2
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	629.2
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	14.9
<i>telebanking</i>	nav	nav	nav	nav	nav	46.3
<i>via mobile phone</i>	nav	nav	nav	nav	nav	0.8
Direct debits	17.3	17.6	22.4	79.1	124.2	200.3
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	193.9
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	0.8
<i>telebanking</i>	nav	nav	nav	nav	nav	2.4
<i>via mobile phone</i>	nav	nav	nav	nav	nav	3.2
Card-based e-money	nav	nav	nav	nav	nav	nav
Network-based e-money	nav	nav	nav	nav	nav	nav
Total	341.0	415.1	430.1	503.0	564.3	920.1

Table 10
Indicators of the use of various cashless payment instruments: value of transactions
 (CZK billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	688.6	735.0	543.9	219.2	231.3	194.0
of which:						
face-to-face	688.6	735.0	543.9	219.2	231.3	194.0
via PC or other terminal	nap	nap	nap	nap	nap	nap
telebanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by debit card	2.4	3.9	8.4	14.0	27.0	44.7
of which:						
face-to-face	2.4	3.9	8.4	14.0	27.0	44.7
via PC or other terminal	nap	nap	nap	nap	nap	nap
telebanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by credit card	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Credit transfers	18,028.7	23,863.3	45,330.8	37,184.3	47,724.4	81,918.8
of which:						
face-to-face	nav	nav	nav	nav	nav	64,839.7
via PC or other terminal	nav	nav	nav	nav	nav	4,956.1
telebanking	nav	nav	nav	nav	nav	12,120.5
via mobile phone	nav	nav	nav	nav	nav	2.5
Direct debits	501.5	385.7	372.2	267.7	465.4	2,476.0
of which:						
face-to-face	nav	nav	nav	nav	nav	2,414.7
via PC or other terminal	nav	nav	nav	nav	nav	1.3
telebanking	nav	nav	nav	nav	nav	60.0
via mobile phone	nav	nav	nav	nav	nav	0.0
Card-based e-money	nav	nav	nav	nav	nav	nav
Network-based e-money	nav	nav	nav	nav	nav	nav
Total	19,221.20	24,987.90	46,255.30	37,685.20	48,448.10	84,633.50

Table I Ia**Instructions handled by securities settlement systems ¹⁾: volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
RM-SYSTEM	203.9	373.6	469.2	367	158	88
UNIVYC	neg	1.1	0.533	0.341	0.317	0.287
TKD	0.016	0.019	0.026	0.025	0.027	0.022

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

Table I Ib**Instructions handled by securities settlement systems ¹⁾: market value of transactions***(CZK billions)*

	1996	1997	1998	1999	2000	2001
RM-SYSTEM	100.7	158.7	214.6	181	61	19.4
UNIVYC	534.1	901.3	1,404	1,758	2,245	4,361
TKD	6,059.2	7,735.0	12,271.6	16,161.0	23,258.0	22,865.0

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

Table I I c**Number of participants in securities settlement systems**

	1996	1997	1998	1999	2000	2001
RM-SYSTEM						
Banks	nav	12	17	13	9	6
Stockbrokers	nav	120	133	81	68	61
Other (Treasury bodies)	nav	93	102	66	51	48
UNIVYC						
Banks	nav	21	26	22	21	13
Stockbrokers	nav	58	51	38	30	20
TKD						
Banks	nav	37	34	30	40	42
Securities houses	nav	55	22	17	27	31
Insurance companies	nav	32	32	27	20	23
Foreign central banks	nav	1	1	1	1	1
Other (Treasury bodies)	nav	113	146	139	97	91

Table I I d**Outstanding securities***(end of year)*

	1996	1997	1998	1999	2000	2001
Value of securities registered (CZK billions)						
SCP	1,161	1,097	1,141	1,184	1,217	1,313
TKD	209	231	789	1,174	1,283	1,433
Volume of securities registered (millions)						
SCP	nav	nav	nav	2,604	2,747	2,986
TKD	nav	nav	nav	nav	0.6	0.6

Table I I e**Netting ratio in clearing systems**

	1996	1997	1998	1999	2000	2001
Name of system						
Netting ratio for cash over year	nav	nav	nav	nav	nav	nav
Netting ratio for securities over year	nav	nav	nav	nav	nav	nav

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	20	19	17	12	10	9
<i>of which live</i>	18	19	16	12	10	9
Sub-members	13	13	13	12	12	13
<i>of which live</i>	13	13	13	12	12	13
Participants	3	5	5	7	7	7
<i>of which live</i>	3	4	3	6	6	6
Total users	36	37	35	31	29	29
<i>of which live</i>	34	36	32	30	28	28
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	3,116,290	3,464,523	4,131,189	4,864,520	5,215,151	5,164,273
<i>of which:</i>						
<i>category I</i>	1,595,658	1,664,430	1,811,632	1,994,717	2,170,866	2,217,716
<i>category II</i>	759,085	808,240	955,048	1,017,645	1,105,586	1,085,525
Total messages received	2,900,459	3,272,438	3,691,956	3,866,700	4,121,021	4,242,245
<i>of which:</i>						
<i>category I</i>	1,437,325	1,526,589	1,674,804	1,797,941	2,008,208	2,165,171
<i>category II</i>	213,880	383,004	497,443	528,322	482,294	473,043
Domestic traffic	407,761	413,627	110,077	165,653	162,339	179,599
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Annex 2 – Czech Republic

Estonia

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	1,469.0	1,458.0	1,450.0	1,443.0	1,436.0	1,432.0
GDP (EEK billions)	52.4	64.0	73.5	76.3	85.4	94.6
GDP per capita (EEK)	35,686.0	43,926.4	50,715.8	52,894.7	59,496.0	66,092.1
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	15.52	15.81	15.64	15.65	15.65	15.65
<i>average</i>	15.27	15.73	15.75	15.65	15.65	15.65

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, EEK billions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	4.27	4.59	4.54	5.71	6.20	6.95
Transferable deposits ¹⁾	8.10	11.35	10.31	13.61	17.20	21.79
Narrow money supply (M1) ²⁾	12.36	15.94	14.84	19.32	23.40	28.74
<i>Memorandum items:</i>						
Broad money supply (M2) ³⁾	14.85	20.47	21.33	26.34	32.95	40.78
Transferable deposits in foreign currencies	1.07	1.94	1.73	2.01	2.74	3.82
Outstanding value on e-money schemes	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>on card-based products</i>	nav	nav	nav	nav	nav	nav
<i>on network-based products</i>	nav	nav	nav	nav	nav	nav

1) Includes Estonian kroon and foreign currency demand deposits (excluding deposits of non-residents and central government).

2) In January 2002, the Bank of Estonia changed the definition of monetary aggregates. The earlier time series were recalculated according to the new definitions.

3) M2=M1+time, savings and other deposits in Estonian krooni and foreign currency held by residents with credit institutions, loan and savings co-operatives and the Bank of Estonia.

Table 3
Settlement media used by banks

(end of year, EEK billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	1.20	3.04	3.66	4.82	5.71	3.78
<i>of which:</i>						
<i>required reserves</i>	0.25	1.83	2.59	2.36	2.21	1.31
<i>free reserves</i>	0.96	1.20	1.07	2.47	3.51	2.48
Transferable balances held at other banks	1.42	1.65	2.09	1.51	2.25	2.43
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	neg	nav	nav	nav	nav	nav

Table 4**Banknotes and coins***(end of year, total value, EEK billions)*

	1996	1997	1998	1999	2000	2001
Total banknotes issued	4.93	5.38	5.35	6.59	7.21	7.99
<i>of which:</i>						
EEK 500	3.25	3.84	3.97	5.19	5.82	6.58
EEK 100	1.35	1.21	1.06	1.08	1.06	1.07
EEK 50	0.09	0.09	0.07	0.06	0.06	0.05
EEK 25	0.13	0.13	0.13	0.14	0.15	0.16
EEK 10	0.07	0.07	0.06	0.06	0.06	0.06
EEK 5	0.03	0.03	0.03	0.03	0.03	0.03
EEK 2	0.01	0.01	0.01	0.02	0.02	0.02
EEK 1	0.01	0.01	0.01	0.01	0.01	0.01
Total coins issued	0.05	0.06	0.04	0.06	0.07	0.08
<i>of which:</i>						
EEK 5	0.01	0.01	0.01	0.01	0.01	0.01
EEK 1	0.02	0.02	neg	0.01	0.03	0.03
EEK 0.5	0.01	0.01	0.01	0.01	0.01	0.01
EEK 0.2	0.01	0.01	0.01	0.01	0.01	0.01
EEK 0.1	0.01	0.01	0.01	0.01	0.01	0.01
EEK 0.05	neg	neg	neg	neg	neg	neg
<i>Commemorative coins</i>						
EEK 500	neg	neg	neg	neg	neg	neg
EEK 100	neg	neg	neg	neg	neg	neg
EEK 10	neg	neg	neg	neg	neg	neg
EEK 1	neg	neg	neg	neg	neg	neg
EEK 15.65	neg	neg	neg	neg	neg	neg
Total banknotes and coins issued	4.99	5.44	5.39	6.65	7.28	8.07
Banknotes and coins held by credit institutions	0.72	0.85	0.85	0.94	1.08	1.11
Banknotes and coins in circulation outside credit institutions	4.27	4.59	4.54	5.71	6.20	6.95

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts	Number of internet-linked accounts	Value of accounts (EEK billions)
Central bank	1	1	26	nap	3.74
Credit institutions	6	204	nav	nav	26.09
Loan and savings co-operatives	10	nap	nav	nav	0.01
Post Office	1	560	nap	nap	nap
Total ¹⁾	18	765	26	nap	29.84
<i>of which:</i>					
virtual institutions	nap	nap	nap	nap	nap
Branches of foreign banks	1	7	nav	nav	0.67
<i>of which:</i>					
EU-based	1	7	nav	nav	0.67

1) The total under "Value of accounts" differs from that under "Transferable deposits" in Table 2 because the central bank figures and non-resident and central government demand deposits are not included in the figures in Table 2.

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	434	618	698	771	858	987
Number of networks	2	2	1	1	1	1
Number of ATMs with a cash dispensing function	212	394	433	530	564	600
<i>of which:</i>						
<i>open access</i>	<i>nav</i>	336	433	530	564	600
<i>limited access</i>	<i>nav</i>	58	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Volume of transactions (millions)	11.54	21.25	19.70	28.92	37.15	43.00
<i>of which:</i>						
<i>at ATMs with open access</i>	<i>nav</i>	<i>nav</i>	19.7	28.92	37.15	43.00
<i>at ATMs with limited access</i>	<i>nav</i>	<i>nav</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Value of transactions (EEK billions)	3.52	9.07	14.55	21.57	28.73	34.26
<i>of which:</i>						
<i>at ATMs with open access</i>	<i>nav</i>	<i>nav</i>	14.55	21.57	28.73	34.26
<i>at ATMs with limited access</i>	<i>nav</i>	<i>nav</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Number of ATMs with a giro transfer function	<i>nav</i>	148	183	388	427	470
Volume of transactions (millions)	<i>nav</i>	<i>neg</i>	0.51	1.13	2.26	3.48
Value of transactions (EEK billions)	<i>nav</i>	0.10	0.50	1.31	2.25	2.92
Debit function						
Cards with a debit function (thousands)	424	603	678	749	815	877
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	2	2	1	1	2	2
Number of terminals	1,200	2,184	2,586	3,267	4,084	5,260
Volume of transactions (millions) ¹⁾	0.33	1.51	4.89	8.81	14.02	23.38
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (EEK billions) ²⁾	0.08	0.49	2.23	3.87	5.91	8.82
<i>of which:</i>						
<i>transactions with retailer cards (EEK billions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Credit function						
Cards with a credit function (thousands)	10	16	19	21	43	110
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	2	2	1	1	2	2
Number of terminals	1,200	2,184	2,586	3,267	4,084	5,260
Volume of transactions (millions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (EEK billions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (EEK billions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>

1) Transactions by debit and credit cards.

2) Transactions by debit and credit cards.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (EEK billions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (EEK billions)	nap	nap	nap	nap	nap	nap
Float (EEK billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nap	nap	nap	nap	nap	nap
Number of terminals	nap	nap	nap	nap	nap	nap
Volume of transactions (millions)	nap	nap	nap	nap	nap	nap
Value of transactions (EEK billions)	nap	nap	nap	nap	nap	nap
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	434	618	698	771	858	987
<i>of which:</i>						
<i>cards with a combined debit and cash function (thousands)</i>	424	603	678	749	815	877
<i>cards with a cheque guarantee function (thousands)</i>	nap	nap	nap	nap	nap	nap
1) <i>Transactions by debit and credit cards.</i>						
2) <i>Transactions by debit and credit cards.</i>						

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
EPNAS	8.76	10.90	11.10	10.34	10.92	12.70
Credit transfers	8.75	10.89	11.10	10.33	10.92	12.70
Cheques	neg	neg	neg	neg	neg	neg
Concentration ratio	nav	nav	90.0%	99.0%	99.0%	99.2%

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(EEK billions)*

	1996	1997	1998	1999	2000	2001
EPNAS	212.4	323.9	331.2	235.0	279.2	322.2
Credit transfers	212.3	323.8	331.2	235.0	279.2	322.2
Cheques	0.1	0.1	neg	neg	neg	neg
Concentration ratio	nav	nav	83.5%	98.1%	97.9%	97.8%

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	nav	nav	0.02	0.01	0.02	0.02
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	0.02	0.01	0.02	0.02
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit/credit cards ¹⁾	0.33	1.51	4.89	8.81	14.02	23.38
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	4.37	7.67	11.76	19.90
<i>via PC or other terminal</i>	nav	nav	0.51	1.13	2.26	3.48
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Credit transfers ²⁾	nav	nav	23.94	26.28	31.27	38.79
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	10.11	7.12	5.24	4.51
<i>via PC or other terminal</i>	nav	nav	1.16	3.91	7.66	13.12
<i>telebanking</i>	nav	nav	11.68	14.85	18.08	20.42
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Direct debits	nav	nav	0.10	0.85	2.78	4.94
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	nav	nav	28.95	35.95	48.10	67.13

1) *Payments by debit and credit cards.*2) *Includes items initiated by banks (figures in millions): 1.0 in 1998, 0.4 in 1999, 0.3 in 2000, 0.7 in 2001.*

Table 10
Indicators of the use of various cashless payment instruments: value of transactions
(EEK billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	nav	nav	0.47	0.19	0.26	0.25
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	0.47	0.19	0.26	0.25
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit/credit cards ¹⁾	0.08	0.49	2.23	3.87	5.91	8.82
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	1.73	2.56	3.66	5.89
<i>via PC or other terminal</i>	nav	nav	0.50	1.31	2.25	2.92
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Credit transfers ²⁾	nav	nav	927.72	1,046.03	1,698.32	1,924.80
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	232.47	137.56	179.15	117.98
<i>via PC or other terminal</i>	nav	nav	6.37	23.13	44.62	93.27
<i>telebanking</i>	nav	nav	317.36	300.76	387.25	444.76
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Direct debits	nav	nav	0.97	0.23	0.68	1.31
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Other ³⁾	nav	nav	21.70	neg	0.36	11.04
Total	nav	nav	953.09	1,050.32	1,705.53	1,946.22

1) Payments by debit and credit cards.

2) Includes items initiated by banks (figures in EEK billions): 371.5 in 1998, 584.6 in 1999, 1,087.3 in 2000, 1,268.8 in 2001.

3) Includes items initiated by banks (figures in EEK billions): 21.7 in 1998, neg in 1999, 0.4 in 2000, neg in 2001.

Table I I a
Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions

(thousands)

	1996	1997	1998	1999	2000	2001
Trading platform						
TSE	19.87	125.24	94.17	44.66	36.69	30.08
Government securities	nav	1.78	1.89	3.50	3.03	1.88
Bonds and notes	0.55	1.24	1.34	1.75	1.61	0.78
Shares	19.11	121.04	90.61	39.41	32.06	27.42
Fund units	0.20	0.76	0.33	nap	nap	nap
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
ECSD	41.03	178.27	145.10	77.89	76.69	61.52
Government securities	nav	10.74	14.98	17.58	21.04	17.11
Bonds and notes	1.58	2.49	6.49	3.77	3.11	2.11
Shares	37.20	149.22	115.48	54.34	48.06	36.39
Fund units	2.26	15.17	8.14	2.06	4.45	5.92

Table I I b
Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions

(EEK billions)

	1996	1997	1998	1999	2000	2001
Trading platform						
TSE	2.29	21.84	13.35	4.47	5.54	4.11
Government securities	nav	0.45	0.16	0.22	0.35	0.18
Bonds and notes	0.01	0.01	0.02	0.10	0.08	0.07
Shares	2.27	21.33	13.15	4.16	5.10	3.87
Fund units	0.01	0.04	0.02	nap	nap	nap
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
ECSD	4.09	34.14	33.78	17.28	14.74	14.10
Government securities	nav	0.49	0.16	0.23	0.42	0.19
Bonds and notes	0.48	7.05	16.67	9.07	3.21	3.45
Shares	3.48	23.36	14.45	7.23	9.75	8.02
Fund units	0.14	3.23	2.50	0.72	1.36	2.44

Table I I c**Number of participants in trading platforms, clearing houses and securities settlement systems**

	1996	1997	1998	1999	2000	2001
Trading platform						
TSE	18	25	20	12	11	9
Banks	nav	10	6	5	5	5
Stockbrokers	nav	15	14	7	6	4
Others	nap	nap	nap	nap	nap	nap
Clearing systems	nap	nap	nap	nap	nap	nap
Securities settlement system						
ECSD	12	12	6	6	7	8
Banks	10	10	4	4	5	5
Stockbrokers	nap	nap	nap	nap	nap	1
Others	2	2	2	2	2	2

Table I I d**Outstanding securities***(end of year)*

	1996	1997	1998	1999	2000	2001
Estonian CSD						
Value of securities issued (EEK millions)	722.40	1,182.41	1,510.89	388.71	48.53	0.85
Number of securities issued	19	19	2	6	1	1
Value of securities registered (EEK millions)	12,858.61	22,415.40	15,581.80	30,648.26	37,326.22	34,254.29
Number of securities registered	205	472	710	309	254	824

Table I I e**Netting ratio in clearing systems**

	1996	1997	1998	1999	2000	2001
Name of system						
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	10	11	6	3	3	3
<i>of which live</i>	10	10	6	3	3	3
Sub-members	2	2	1	1	1	1
<i>of which live</i>	1	1	1	1	1	1
Participants	0	0	0	2	4	4
<i>of which live</i>	0	0	0	2	4	4
Total users	12	13	7	6	8	8
<i>of which live</i>	11	11	7	6	8	8
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	466,803	640,650	693,683	676,626	816,750	935,825
<i>of which:</i>						
<i>category I</i>	268,081	362,859	383,676	385,591	450,277	511,647
<i>category II</i>	109,003	150,578	159,120	155,551	188,645	217,005
Total messages received	433,491	594,812	641,690	614,466	776,303	904,129
<i>of which:</i>						
<i>category I</i>	203,607	277,956	314,722	333,904	425,160	479,174
<i>category II</i>	18,425	29,231	39,521	42,441	51,541	46,097
Domestic traffic	27,212	27,752	21,539	19,746	15,797	22,125
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Hungary

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	10,193.0	10,155.0	10,144.0	10,067.0	10,024.0	9,989.0
GDP (HUF billions)	6,893.9	8,540.7	10,087.4	11,393.5	13,075.2	14,763.9
GDP per capita (HUF thousands)	676.3	841.0	997.7	1,131.8	1,304.4	1,478.0
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>204.72</i>	<i>223.95</i>	<i>254.50</i>	<i>254.70</i>	<i>265.00</i>	<i>245.18</i>
<i>average</i>	<i>193.73</i>	<i>211.54</i>	<i>240.32</i>	<i>252.77</i>	<i>260.04</i>	<i>256.59</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, HUF billions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins ¹⁾	497.7	562.6	668.9	855.3	883.9	1,037.9
Transferable deposits ²⁾	739.5	965.8	1,122.2	1,280.3	1,494.4	1,733.6
Narrow money supply (M1) ³⁾	1,237.2	1,528.4	1,791.1	2,135.6	2,378.3	2,771.5
<i>Memorandum items:</i>						
Broad money supply ⁴⁾	3,351.1	4,014.6	4,625.0	5,370.5	6,052.2	7,092.2
Transferable deposits in foreign currencies	144.6	181.9	196.8	222.5	272.6	337.6
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
<i>of which:</i>						
<i>on card-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>on network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

1) Includes the value of banknotes and coins that are being withdrawn from circulation and the value of commemorative banknotes and coins.

2) Includes overnight deposits because transferable deposits and other sight deposits are not available separately.

3) M1 consists of banknotes and coins outside monetary institutions plus sight (transferable and other sight) HUF deposits.

4) M3 consists of M1 (narrow money) and sight and time foreign currency deposits plus sale and repurchase agreements and debt securities issued by other monetary financial institutions.

Table 3
Settlement media used by banks

(end of year, HUF billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank ¹⁾	318.5	401.6	457.1	527.8	580.5	375.2
<i>of which:</i>						
<i>required reserves</i>	<i>318.5</i>	<i>397.8</i>	<i>452.0</i>	<i>521.0</i>	<i>578.4</i>	<i>370.8</i>
<i>free reserves</i>	<i>0.0</i>	<i>3.8</i>	<i>5.1</i>	<i>6.8</i>	<i>2.1</i>	<i>4.4</i>
Transferable balances held at other banks ¹⁾	13.0	25.9	31.2	37.5	42.8	30.2
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	2.7	0.8	22.0	2.5	2.0	7.4

1) Average balances for December.

Table 4**Banknotes and coins***(end of year, total value, HUF billions)*

	1996	1997	1998	1999	2000	2001
Total banknotes issued	541.1	600.5	717.1	931.1	940.8	1,105.8
<i>of which:</i>						
HUF 20,000	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	185.6
HUF 10,000	<i>nap</i>	212.3	437.5	674.6	709.0	685.1
HUF 5,000 (old type)	452.8	311.4	189.5	<i>nap</i>	<i>nap</i>	<i>nap</i>
HUF 5,000	<i>nap</i>	<i>nap</i>	<i>nap</i>	170.2	146.7	146.4
HUF 2,000	<i>nap</i>	<i>nap</i>	21.5	27.3	27.7	29.5
HUF 1,000 (old type)	68.7	62.8	17.6	<i>nap</i>	<i>nap</i>	<i>nap</i>
HUF 1,000	<i>nap</i>	<i>nap</i>	35.0	45.3	42.4	42.8
HUF 500 (old type)	12.1	11.2	7.3	<i>nap</i>	<i>nap</i>	<i>nap</i>
HUF 500	<i>nap</i>	<i>nap</i>	3.3	9.1	9.5	10.2
HUF 200	<i>nap</i>	<i>nap</i>	3.4	4.6	5.5	6.2
HUF 100 (old type)	7.0	2.8	2.0	<i>nap</i>	<i>nap</i>	<i>nap</i>
HUF 50 (old type)	0.5	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total coins issued	14.2	19.5	17.7	17.9	19.6	21.1
<i>of which:</i>						
HUF 200	2.19	2.23	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
HUF 100	5.44	10.55	10.32	9.94	10.75	11.50
HUF 50	2.09	1.96	2.17	2.46	2.76	3.04
HUF 20	2.02	1.96	2.10	2.18	2.34	2.51
HUF 10	0.99	1.11	1.22	1.33	1.43	1.54
HUF 5	0.54	0.60	0.69	0.77	0.87	0.95
HUF 2	0.51	0.59	0.69	0.79	0.89	1.00
HUF 1	0.27	0.33	0.40	0.46	0.53	0.60
HUF 0.50	0.14	0.15	0.15	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total banknotes and coins issued	555.30	620.00	734.80	949.00	960.40	1,126.90
Banknotes and coins held by credit institutions	58.8	58.7	69.0	109.7	90.2	100.5
Banknotes and coins in circulation outside credit institutions ¹⁾	496.5	561.3	665.8	839.3	870.2	1,026.4

1) Does not include the value of banknotes and coins that are being withdrawn from circulation or the value of commemorative banknotes and coins. The total values outstanding of these items at the end of each year were the following: 1996: HUF 1.2 billion; 1997: HUF 1.3 billion; 1998: HUF 3.1 billion; 1999: HUF 16 billion; 2000: HUF 13.7 billion; 2001: HUF 11.5 billion.

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts (thousands)	Value of accounts (HUF billions)
Central bank	1	5	0.013	<i>nap</i>	<i>neg</i>
Credit institutions	232	2,888	7,036.6	180.3	2,071.2
Post Office	1	3,265	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total ¹⁾	234	6,158	7,036.6	180.3	2,071.2
<i>of which:</i>					
virtual institutions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Branches of foreign banks	0	0	0	0	0
<i>of which:</i>					
EU-based	0	0	0	0	0

1) The value of accounts is equal to the sum of transferable deposits and transferable deposits in foreign currencies in Table 2.

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	1,661	2,409	2,826	3,732	4,441	5,000
Number of networks	7	4	6	6	6	6
Number of ATMs with a cash dispensing function	1,089	1,553	2,070	2,358	2,435	2,544
<i>of which:</i>						
<i>open access</i>	1,089	1,553	2,070	2,358	2,435	2,544
<i>limited access</i>	0	0	0	0	0	0
Number of POS terminals with a cash dispensing function only (at bank branches and post offices)	nav	1,706	6,794	7,764	7,875	8,068
Volume of transactions at ATMs (millions) ¹⁾	nav	nav	nav	nav	76.4	85.8
Volume of transactions at POS terminals with a cash dispensing function (millions) ¹⁾	nav	nav	nav	nav	6.2	6.5
Total volume of cash withdrawals (millions)	22.4	39.5	60.2	74.8	82.6	92.3
<i>of which:</i>						
<i>at ATMs with open access</i>	nav	nav	nav	nav	76.4	85.8
<i>at ATMs with limited access</i>	0	0	0	0	0	0
Value of transactions at ATMs (HUF billions)	nav	nav	nav	nav	1,389.5	1,760.9
Value of transactions at POS terminals with a cash dispensing function (HUF billions)	nav	nav	nav	nav	671.2	743.9
Total value of cash withdrawals (HUF billions)	232.9	413.0	1,000.0	1,669.0	2,060.7	2,504.8
<i>of which:</i>						
<i>at ATMs with open access</i>	nav	nav	nav	nav	1,389.5	1,760.9
<i>at ATMs with limited access</i>	0	0	0	0	0	0
Number of ATMs with a giro transfer function	nap	nap	nap	nap	nav	nav
<i>volume of transactions (millions)</i>	nap	nap	nap	nap	nav	nav
<i>value of transactions (HUF billions)</i>	nap	nap	nap	nap	nav	nav
Debit function						
Cards with a debit function (thousands)	1,433	2,198	3,131	3,982	4,475	5,026
<i>of which:</i>						
<i>retailer cards (thousands)</i>	84.6	146.0	199.0	286.8	282.8	393.5
Number of networks	5	6	6	6	6	6
Number of terminals	5,438	11,898	15,201	16,740	17,502	18,734
Volume of transactions (millions)	26.4	54.2	74.7	96.3	112.4	127.5
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nav	5.1	7.3	10.2	11.2	11.3
Value of transactions (HUF billions)	286.4	667.6	1,111.3	1,777.5	2,346.8	2,804.3
<i>of which:</i>						
<i>transactions with retailer cards (HUF billions)</i>	20.1	38.3	64.5	102.2	152.2	146.3
Credit function						
Cards with a credit function (thousands) ²⁾	nap	neg	neg	141.6	269.9	447.4
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nap	nap	nap	nap	nap	nap
Number of networks	5	6	6	6	6	6
Number of terminals	5,438	11,898	15,201	16,740	17,502	18,734
Volume of transactions (millions)	nap	0	neg	0.8	2.3	3.9
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nap	nap	nap	nap	nap	nap
Value of transactions (HUF billions)	nap	0	neg	12.5	33.8	57.0
<i>of which:</i>						
<i>transactions with retailer cards (HUF billions)</i>	nap	nap	nap	nap	nap	nap

1) Figures for ATMs and POS terminals have been separated since 2000.

2) In 2000 and 2001 half of the cards were linked to credit accounts, but there was no interest-free period.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (HUF billions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (HUF billions)	nap	nap	nap	nap	nap	nap
Float (HUF billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nap	neg	3.1	6.0	6.4	6.2
Number of terminals for American Express cards	nav	nav	3,097	3,844	4,876	5,712
Number of terminals for Diners Club cards ³⁾	nav	nav	4,050	4,206	6,232	7,512
Volume of transactions (millions)	nav	nav	neg	0.08	0.10	0.10
Value of transactions (HUF billions)	nav	nav	0.4	2.2	3.0	3.0
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	1,433.2	2,198.5	3,134.3	4,129.8	4,751.2	5,479.3
<i>of which:</i>						
<i>cards with a combined debit and cash function (thousands)</i>	1,433.2	2,198.5	3,134.3	4,129.8	4,751.2	5,479.3
<i>cards with a cheque guarantee function (thousands)</i>	7	3	neg	nap	nap	nap

3) *Estimated data.*

Table 7**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions***(thousands)*

	1996	1997	1998	1999	2000	2001
Interbank Clearing System (ICS)	40,660.0	49,697.0	63,940.2	102,787.8	125,775.4	139,573.2
Customer-initiated credit transfers	40,657.6	49,606.5	62,489.2	75,323.5	85,906.9	92,522.0
Bank-to-bank transfers	2.4	1.7	0.5	0.8	0.2	0.1
Direct credits	0.0	1.0	877.9	13,223.7	21,410.1	26,391.5
Direct debits	0.0	0.0	479.0	14,132.6	17,964.4	19,960.5
Rejected payments	nav	87.8	93.6	107.2	166.4	150.9
Other transactions ¹⁾	nav	nav	nav	nav	327.4	548.2
National Bank of Hungary (NBH) systems	58.0	81.0	88.2	98.0	201.7	289.8
VIBER (RTGS) ²⁾	nap	nap	nap	48.5	158.8	239.8
Bank-to-bank transfers	nap	nap	nap	24.5	70.8	121.4
DVP transactions	nap	nap	nap	11.2	46.0	59.1
Customer transfers	nap	nap	nap	0.1	9.0	35.2
NBH and other transactions	nap	nap	nap	6.3	33.0	24.1
NBH accounting system ³⁾	58.0	81.0	88.2	49.5	42.9	50.0
Concentration ratio						
ICS	nav	nav	nav	nav	59.26%	64.84%
VIBER	nap	nap	nap	nav	47.08%	46.86%

1) These transactions comprise: collection orders, cheques, bills of exchange.

2) VIBER was implemented in September 1999.

3) Although it is not considered a payment system as such, the turnover of the accounting system gives a realistic picture of interbank transactions.

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(HUF billions)*

	1996	1997	1998	1999	2000	2001
Interbank Clearing System (ICS)	18,278.5	25,535.0	33,589.0	37,213.8	41,904.7	42,985.2
Customer-initiated credit transfers	17,764.5	24,886.7	33,229.1	36,259.9	40,499.8	41,130.7
Bank-to-bank transfers	514.0	481.5	224.1	294.1	47.9	29.3
Direct credits	0	0.1	40.5	572.9	1,103.6	1,499.2
Direct debits	0	0	1.7	47.9	70.6	87.7
Rejected payments	nav	87.8	93.6	39.0	19.8	17.9
Other transactions ¹⁾	nav	nav	nav	nav	163.0	220.4
National Bank of Hungary (NBH) systems	18,831.4	29,847.5	37,087.4	47,786.4	83,514.5	142,345.6
VIBER (RTGS) ²⁾	nap	nap	nap	24,427.3	82,130.5	139,757.5
Bank-to-bank transfers	nap	nap	nap	13,362.2	43,756.7	90,357.2
DVP transactions	nap	nap	nap	3,899.9	14,626.7	19,895.8
Customer transfers	nap	nap	nap	4.2	1,788.8	13,699.6
NBH and other transactions	nap	nap	nap	4,393.0	21,958.2	15,804.9
NBH accounting system ³⁾	18,831.4	29,847.5	37,087.4	23,359.1	1,384.0	2,588.1
Concentration ratio						
ICS	nav	nav	nav	nav	44.10%	63.36%
VIBER	nap	nap	nap	nav	43.36%	58.20%

1) These transactions comprise: collection orders, cheques, bills of exchange.

2) VIBER was implemented in September 1999.

3) Although it is not considered a payment system as such, the turnover of the accounting system gives a realistic picture of interbank transactions.

Table 9
Indicators of the use of various cashless payment instruments:
volume of transactions

(millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques ¹⁾	1.2	1.0	0.012	0.045	0.120	0.077
of which:						
face-to-face	<i>nav</i>	<i>nav</i>	0.012	0.045	0.120	0.077
via PC or other terminal	<i>nap</i>	<i>nap</i>	0.0	0.0	0.0	0.0
telebanking	<i>nap</i>	<i>nap</i>	0.0	0.0	0.0	0.0
via mobile phone	<i>nap</i>	<i>nap</i>	0.0	0.0	0.0	0.0
Payments by debit card ²⁾	1.3	10.7	10.0	23.3	30.5	37.8
of which:						
face-to-face	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
via PC or other terminal	<i>nap</i>	<i>nap</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
telebanking	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
via mobile phone	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Payments by credit card ³⁾	0.0	0.0	0.0	0.5	1.3	2.1
of which:						
face-to-face	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
via PC or other terminal	<i>nap</i>	<i>nap</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
telebanking	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
via mobile phone	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Credit transfers ⁴⁾	38.1	49.5	77.8	103.4	125.4	134.2
of which:						
face-to-face	<i>nav</i>	<i>nav</i>	34.0	27.8	51.2	45.9
via PC or other terminal	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
telebanking	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
via mobile phone	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Direct debits ⁵⁾	31.3	33.98	34	38.8	42.8	46.5
of which:						
face-to-face	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
via PC or other terminal	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
telebanking	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
via mobile phone	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Card-based e-money	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Network-based e-money	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total	71.9	95.1	121.8	166.1	200.1	220.7

1) Estimated data.

2) Payments with debit and retailer cards within Hungary and abroad – for 1996 there is no figure for retailer card transactions.

3) Payments with credit and charge cards within Hungary and abroad.

4) Includes items initiated by banks (figures in thousands): 15.4 in 1996, 25.7 in 1997, 30 in 1998, 47.7 in 1999, 71 in 2000, 121.5 in 2001.

5) In 1996 and 1997 direct credit payments were carried out by means of bilateral data exchange between the creditor and debtor banks. Direct debits were introduced in the ICS at the end of 1997.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions
 (HUF billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques ¹⁾	18.3	17.6	nav	27.8	77.8	39.8
of which:						
face-to-face	nav	nav	nav	27.8	77.8	39.8
via PC or other terminal	nap	nap	nap	0.0	0.0	0.0
teleshopping	nap	nap	nap	0.0	0.0	0.0
via mobile phone	nap	nap	nap	0.0	0.0	0.0
Payments by debit card ²⁾	34.6	122.5	88.6	218.7	325.1	374.3
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nap	nap	nav	nav	nav	nav
teleshopping	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by credit card ³⁾	0	0	0.2	6.3	15.0	24.0
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nap	nap	nav	nav	nav	nav
teleshopping	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Credit transfers ⁴⁾	27,565.0	79,544.0	123,958.4	124,249.0	145,418.0	222,836.1
of which:						
face-to-face	nav	nav	63,754.5	63,177.8	52,884.0	67,004.2
via PC or other terminal	nav	nav	nav	nav	nav	nav
teleshopping	nav	nav	nav	nav	nav	nav
via mobile phone	nap	nap	nap	nap	nap	nap
Direct debits ⁵⁾	69.2	99.1	118.9	152.7	235.2	284.1
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
teleshopping	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	27,687.1	79,783.2	124,166.2	124,654.5	146,071.1	223,558.3

1) Estimated data.

2) Payments with debit and retailer cards within Hungary and abroad – for 1996 there is no figure for retailer card transactions.

3) Payments with credit and charge cards within Hungary and abroad.

4) Includes items initiated by banks (figures in HUF billions): 10,148.5 in 1996, 12,681.5 in 1997, 19,002.5 in 1998, 30,155.6 in 1999, 43,804.6 in 2000, 90,386.5 in 2001.

5) In 1996 and 1997 direct credit payments were carried out by means of bilateral data exchange between the creditor and debtor banks. Direct debits were introduced in the ICS at the end of 1997.

Table 1a
Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions

	1996	1997	1998	1999	2000	2001
Trading platforms						
Budapest Stock Exchange	190,400	591,890	1,174,659	1,642,092	1,819,323	1,038,302
Spot	170,956	504,879	1,026,646	1,474,083	1,627,033	911,697
<i>of which:</i>						
<i>equities</i>	153,937	478,236	1,011,514	1,461,482	1,612,482	902,381
<i>government bonds</i>	910	2,210	3,946	3,158	2,358	632
<i>corporate bonds</i>	3	192	200	650	765	1,166
<i>bonds of international institutions</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	28	17	42
<i>mortgage bonds</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	80
<i>T-bills</i>	1,022	3,031	2,522	1,873	547	89
<i>investment funds</i>	2,128	1,597	790	1,106	2,855	4,694
<i>compensation notes</i>	12,956	19,613	7,674	5,786	7,982	2,613
Derivatives	19,444	87,011	148,013	168,009	192,290	126,605
Budapest Commodity Exchange						
Derivatives	8,536	13,645	9,352	3,200	3,559	3,548
Clearing houses						
KELER	198,936	605,535	1,184,011	1,645,292	1,822,882	1,041,850
<i>of which:</i>						
<i>BSE spot</i>	170,956	504,879	1,026,646	1,474,083	1,627,033	911,697
<i>BSE derivatives</i>	19,444	87,011	148,013	168,009	192,290	126,605
<i>BCE derivatives</i>	8,536	13,645	9,352	3,200	3,559	3,548
Securities settlement systems						
KELER	95,904	178,918	347,189	329,462	350,345	345,367
<i>of which:</i>						
<i>FOP transfers</i>	73,093	145,034	299,597	270,693	278,136	257,965
<i>DVP transfers</i>	15,884	21,276	28,934	41,891	51,867	65,173
<i>securities blockings/releases</i>	6,927	12,608	18,658	16,878	20,342	22,229

Table I I b**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions**

(HUF billions)

	1996	1997	1998	1999	2000	2001
Trading platforms						
Budapest Stock Exchange	763.66	4,784.13	9,858.14	9,292.22	5,610.35	2,377.45
Spot	572.72	3,368.16	6,923.67	8,002.92	4,256.64	1,627.19
<i>of which:</i>						
<i>equities</i>	245.27	1,436.36	3,460.36	3,254.30	3,417.04	1,385.68
<i>government bonds</i>	209.10	979.72	2,400.08	3,254.30	634.07	158.86
<i>corporate bonds</i>	0.29	19.56	17.89	32.03	47.67	35.86
<i>bonds of international institutions</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	3.23	1.02	5.55
<i>mortgage bonds</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	2.79
<i>T-bills</i>	103.16	908.87	1,035.35	1,279.28	153.26	37.38
<i>investment funds</i>	4.44	1.17	0.82	0.46	0.57	0.75
<i>compensation notes</i>	10.47	22.49	9.18	2.28	3.01	0.32
Derivatives	190.94	1,415.97	2,934.47	1,289.30	1,353.71	750.26
Budapest Commodity Exchange						
Derivatives	855.17	1,076.36	1,305.19	341.05	578.05	682.88
Clearing houses						
KELER	1,618.83	5,860.49	11,163.33	9,292.22	5,610.35	1,627.19
<i>of which:</i>						
<i>BSE spot</i>	572.72	3,368.16	6,923.67	8,002.92	4,256.64	1,627.19
<i>BSE derivatives</i>	190.94	1,415.97	2,934.47	1,289.30	1,353.71	750.26
<i>BCE derivatives</i>	855.17	1,076.36	1,305.19	341.05	578.05	682.88
Securities settlement systems						
KELER	6,370.87	8,704.17	9,203.85	12,435.43	14,926.51	19,924.39
<i>of which:</i>						
<i>FOP transfers</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>DVP transfers</i>	6,370.87	8,704.17	9,203.85	12,435.43	14,926.51	19,924.39
<i>securities blockings/releases</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table I I c**Number of participants in trading platforms, clearing houses and securities settlement systems**

	1996	1997	1998	1999	2000	2001
Trading systems						
Budapest Stock Exchange	57	63	60	52	42	34
<i>of which:</i>						
<i>brokerage firms</i>	56	62	59	51	36	26
<i>banks</i>	1	1	1	1	6	8
Budapest Commodity Exchange ¹⁾	<i>nav</i>	45	42	34	28	22
Clearing systems						
Budapest Stock Exchange	57	63	60	52	42	34
<i>of which:</i>						
<i>brokerage firms</i>	56	62	59	51	36	26
<i>banks</i>	1	1	1	1	6	8
Budapest Commodity Exchange	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	38	33
Securities settlement systems						
KELER	121	137	168	165	152	144
Investment firms	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	83
Banks and specialised financial institutions	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	42
Foreign institutions	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	3
Other	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	11

1) Partly estimated.

Table I I d
Outstanding securities

(end of year)

	1996	1997	1998	1999	2000	2001
KELER						
Value of securities issued (HUF billions)	2,415.2	3,725.7	4,531.7	5,225.1	6,720.3	9,219.0
<i>of which:</i>						
<i>government securities</i>						
<i>(incl. National Bank of Hungary bonds)</i>	2,215.9	3,339.8	3,944.5	4,348.1	5,193.9	6,095.7
<i>shares</i>	157.5	312.4	430.2	474.0	524.1	558.2
<i>investment funds</i>	12.5	15.7	73.7	303.6	891.7	2,411.0
<i>other securities</i>	29.4	57.7	83.3	99.5	110.6	154.1
Number of securities issued	3,558,884	4,842,488	5,255,683	5,858,434	5,853,746	5,031,765
<i>of which:</i>						
<i>government securities</i>						
<i>(incl. National Bank of Hungary bonds)</i>	224,730	114,899	80,730	79,625	19,013	9,449
<i>shares</i>	3,180,766	4,635,474	5,087,008	5,705,908	5,762,000	4,891,515
<i>investment funds</i>	135,168	90,670	86,796	71,962	72,733	72,205
<i>other securities</i>	18,220	1,445	1,149	939	0	58,596
Value of securities registered (HUF billions)	nap	nap	nap	nap	nap	nap
Number of securities registered	nap	nap	nap	nap	nap	nap

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
KELER						
T+5 settlement cycle/equities						
Netting ratio for cash over year	nav	nav	nav	nav	nav	72%
Netting ratio for securities over year	nav	nav	nav	nav	nav	55%
T+2 settlement cycle/bonds						
Netting ratio for cash over year	nav	nav	nav	nav	nav	36%
Netting ratio for securities over year	nav	nav	nav	nav	nav	27%

Table I 2
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	25	25	23	14	13	13
<i>of which live</i>	25	25	23	14	13	13
Sub-members	9	9	11	12	14	12
<i>of which live</i>	9	9	11	12	14	12
Participants	4	4	3	18	16	16
<i>of which live</i>	3	3	3	18	16	16
Total users	38	38	37	44	43	41
<i>of which live</i>	37	37	37	44	43	41
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	3,243,657	3,658,652	4,177,971	4,366,342	4,692,316	5,103,577
<i>of which:</i>						
<i>category I</i>	1,211,653	1,384,793	1,510,797	1,610,598	1,775,698	1,929,763
<i>category II</i>	1,060,614	1,167,810	1,256,010	1,217,411	1,301,941	1,364,264
Total messages received	2,526,768	2,756,924	2,847,555	2,996,876	3,378,651	3,737,914
<i>of which:</i>						
<i>category I</i>	952,972	1,066,023	1,155,454	1,219,919	1,374,210	1,525,200
<i>category II</i>	172,432	169,761	152,491	160,444	203,182	335,620
Domestic traffic	714,415	667,873	530,309	479,088	465,624	531,674
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Annex 2 – Hungary

Latvia

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	2,490.8	2,469.2	2,448.9	2,388.8	2,373.0	2,364.2
GDP (LVL millions)	2,829.1	3,275.5	3,589.5	3,897.0	4,333.0	4,685.9
GDP per capita (LVL)	1,136	1,327	1,466	1,631	1,826	1,982
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>0.70</i>	<i>0.65</i>	<i>0.66</i>	<i>0.59</i>	<i>0.58</i>	<i>0.56</i>
<i>average</i>	<i>0.70</i>	<i>0.66</i>	<i>0.66</i>	<i>0.62</i>	<i>0.56</i>	<i>0.56</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, LVL millions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	264.0	332.7	340.2	377.4	427.7	485.2
Transferable deposits	161.4	226.1	335.7	300.4	357.8	378.8
Narrow money supply (M1)	425.4	558.8	675.9	677.8	785.5	864.0
<i>Memorandum items:</i>						
Transferable deposits in foreign currencies	430.2	616.9	570.1	627.0	799.3	1,152.8
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
<i>of which:</i>						
<i>on card-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>on network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 3
Settlement media used by banks

(end of year, LVL millions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	42.8	64.1	61.1	75.9	78.0	100.3
<i>of which:</i>						
<i>required reserves</i>	<i>34.1</i>	<i>48.8</i>	<i>46.6</i>	<i>52.8</i>	<i>77.8</i>	<i>93.0</i>
<i>free reserves</i>	<i>8.7</i>	<i>15.3</i>	<i>14.5</i>	<i>23.1</i>	<i>0.2</i>	<i>7.3</i>
Transferable balances held at domestic banks	10.4	21.5	6.5	3.5	5.0	5.2
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	4.3	6.9	54.9	63.2	42.5	18.8

Table 4
Banknotes and coins ¹⁾

(end of year, total value, LVL millions)

	1996	1997	1998	1999	2000	2001
Total banknotes issued	264.9	339.9	353.5	403.6	458.0	529.7
<i>of which:</i>						
LVL 500	<i>nap</i>	<i>nap</i>	6.3	20.3	34.4	54.2
LVL 100	19.8	35.8	47.4	60.5	79.5	99.7
LVL 50	27.4	53.8	57.0	55.5	56.2	58.6
LVL 20	73.4	97.2	108.1	132.3	157.7	183.9
LVL 10	84.8	98.1	86.9	86.6	82.1	81.4
LVL 5	59.5	54.9	47.8	48.4	48.1	51.9
Total coins issued	17.7	19.5	21.0	22.5	24.3	26.3
<i>of which:</i>						
LVL 100 ²⁾	0.3	0.3	0.3	0.3	0.3	0.3
LVL 10 ²⁾	0.1	0.2	0.1	0.1	0.1	0.1
LVL 2	5.0	5.3	5.8	6.2	6.7	6.5
LVL 1	5.5	6.1	6.4	7.1	7.9	8.9
LVL 0.50	3.1	3.4	3.6	3.7	3.8	4.3
LVL 0.20	1.3	1.6	1.7	1.8	1.9	2.2
LVL 0.10	0.9	1.0	1.1	1.2	1.2	1.4
LVL 0.05	0.6	0.7	0.8	0.9	0.9	1.0
LVL 0.02	0.4	0.5	0.6	0.7	0.7	0.8
LVL 0.01	0.4	0.5	0.5	0.6	0.6	0.7
Total banknotes and coins issued	282.6	359.4	374.4	426.1	482.3	556.0
Banknotes and coins held by credit institutions	18.6	26.7	34.3	48.7	54.7	70.8
Banknotes and coins in circulation outside credit institutions	264.0	332.7	340.2	377.4	427.7	485.2

1) Differences between totals and the sum of their components are due to rounding.

2) Commemorative coins.

Table 5
Institutional framework

(end of 2001)

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (LVL millions)
Central bank	1	6	0.1	<i>nap</i>	15.5
Credit institutions	22	617	1,651.1	<i>nav</i>	1,513.8
Credit unions	22	22	<i>nav</i>	<i>nav</i>	0.3
Post Office	1	969	56.3	<i>nav</i>	2.0
Total	46	1,614	1,707.5	<i>nav</i>	1,531.6
<i>of which:</i>					
virtual institutions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nav</i>	<i>nav</i>
Branches of foreign banks	1	6	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>					
EU-based	1	6	<i>nav</i>	<i>nav</i>	<i>nav</i>

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Payment cards (thousands) ¹⁾	25.2	138.7	234.4	376.5	685.3	951.8
<i>of which:</i>						
<i>retailer cards (thousands)</i>	3.0	23.8	27.8	48.9	50.4	58.6
Volume of transactions (thousands) ²⁾	350.8	1,721.5	5,960.2	8,887.9	16,071.7	26,233.2
<i>of which:</i>						
<i>transactions with retailer cards (thousands)</i>	nav	nav	1,578.1	1,860.5	2,234.8	2,720.1
Value of transactions (LVL millions)	17.3	62.4	169.9	341.0	584.7	850.9
<i>of which:</i>						
<i>transactions with retailer cards (LVL millions)</i>	nav	nav	9.1	25.3	39.8	41.8
Cash function						
Cards with a cash function (thousands)	22.2	114.9	206.7	327.5	634.9	893.2
Number of networks	4	4	6	5	6	6
Number of ATMs with a cash dispensing function	24	99	238	374	643	791
<i>of which:</i>						
<i>open access</i>	24	99	238	374	643	791
<i>limited access</i>	nav	nav	nav	nav	nav	nav
Volume of transactions (thousands) ²⁾	55.8	788.5	2,320.3	4,425.4	8,394.2	15,014.4
<i>of which:</i>						
<i>at ATMs with open access</i>	55.8	788.5	2,320.3	4,425.4	8,394.2	15,014.4
<i>at ATMs with limited access</i>	nav	nav	nav	nav	nav	nav
Value of transactions (LVL millions)	3.1	24.6	104.0	215.8	383.0	633.7
<i>of which:</i>						
<i>at ATMs with open access</i>	3.1	24.6	104.0	215.8	383.0	633.7
<i>at ATMs with limited access</i>	nav	nav	nav	nav	nav	nav
Number of ATMs with a giro transfer function	nav	nav	99	133	395	573
<i>volume of transactions (thousands) ²⁾</i>	nav	nav	16.6	56.9	143.4	253.1
<i>value of transactions (LVL millions)</i>	nav	nav	0.3	1.1	2.4	4.0
Debit function						
Cards with a debit function (thousands)	17.3	99.2	186.2	287.0	560.4	731.8
<i>of which:</i>						
<i>retailer cards (thousands)</i>	2.9	23.2	24.6	26.9	27.8	28.9
Number of networks	4	4	6	5	6	6
Number of terminals	1,620	2,860	3,390	4,462	5,381	6,908
Volume of transactions (thousands)	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>transactions with retailer cards (thousands)</i>	nav	nav	nav	nav	nav	nav
Value of transactions (LVL millions)	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>transactions with retailer cards (LVL millions)</i>	nav	nav	nav	nav	nav	nav
Credit function						
Cards with a credit function (thousands)	7.7	34.0	118.9	158.0	299.7	441.4
<i>of which:</i>						
<i>retailer cards (thousands)</i>	0.1	0.6	3.2	22.0	23.8	32.1
Number of networks	4	4	6	5	6	6
Number of terminals	1,620	2,860	3,390	4,462	5,381	6,908
Volume of transactions (thousands)	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>transactions with retailer cards (thousands)</i>	nav	nav	nav	nav	nav	nav
Value of transactions (LVL millions)	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>transactions with retailer cards (LVL millions)</i>	nav	nav	nav	nav	nav	nav

1) A breakdown of transactions per card type is not available.

2) Excludes balance enquiries which do not affect account balances.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (thousands)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (LVL millions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (thousands)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (LVL millions)	nap	nap	nap	nap	nap	nap
Float (LVL millions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nap	nap	nap	nap	nap	nap
Number of terminals	nap	nap	nap	nap	nap	nap
Volume of transactions (thousands)	nap	nap	nap	nap	nap	nap
Value of transactions (LVL millions)	nap	nap	nap	nap	nap	nap
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	25.2	138.7	234.4	376.5	685.3	951.8
<i>of which:</i>						
<i>cards with a combined debit, cash and e-money function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>cards with a cheque guarantee function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(thousands)

	1996	1997	1998	1999	2000	2001
SAMS ¹⁾	nap	nap	nap	nap	26.7	85.2
EFTS	5.9	18.8	38.6	88.8	50.0	nap
IGSS ²⁾	53.9	41.0	40.9	nap	nap	nap
EKS	3,433.0	4,272.2	5,418.7	6,930.8	12,468.7	14,461.8
Concentration ratio						
SAMS	nap	nap	nap	nap	66.4%	65.8%
EFTS	85.2%	72.5%	73.4%	70.3%	65.0%	nap
IGSS	51.3%	55.6%	56.1%	nap	nap	nap
EKS	72.3%	72.3%	71.6%	74.0%	68.1%	71.2%

1) SAMS was introduced on 8 September 2000, replacing EFTS.

2) IGSS was incorporated into EFTS on 1 April 1999.

Table 8
Payment instructions handled by selected interbank funds transfer systems:
value of transactions

(LVL millions)

	1996	1997	1998	1999	2000	2001
SAMS ¹⁾	nap	nap	nap	nap	5,233.0	26,270.6
EFTS	1,407.9	4,254.0	6,672.2	13,488.7	9,991.0	nap
IGSS ²⁾	4,010.2	3,951.2	4,914.8	nap	nap	nap
EKS	3,059.3	3,887.0	4,455.9	4,602.1	6,674.9	7,255.1
Concentration ratio						
SAMS	nap	nap	nap	nap	75.3%	75.5%
EFTS	90.5%	80.2%	76.0%	71.6%	70.5%	nap
IGSS	62.9%	68.2%	71.2%	nap	nap	nap
EKS	72.5%	71.2%	72.5%	74.0%	77.5%	78.2%

1) SAMS was introduced on 8 September 2000, replacing EFTS.

2) IGSS was incorporated into EFTS on 1 April 1999.

Table 9
Indicators of the use of various cashless payment instruments:
volume of transactions

(thousands)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	39.3	50.0	50.9	76.7	99.3	100.3
<i>of which:</i>						
<i>face-to-face</i>	39.3	50.0	50.9	76.7	99.3	100.3
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by payment cards	350.8	1,721.5	3,623.3	4,405.6	7,534.1	10,965.7
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit card	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by credit card	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Credit transfers ¹⁾	50,726.5	50,979.2	39,758.7	44,549.3	53,703.1	56,762.5
<i>of which:</i>						
<i>face-to-face</i>	49,914.8	49,652.1	38,026.5	41,418.6	46,548.2	46,943.8
<i>via PC or other terminal</i>	552.9	952.1	1,570.5	2,927.2	6,922.3	9,555.0
<i>telebanking</i>	nap	nap	1.8	2.9	21.7	61.5
<i>via mobile phone</i>	nap	nap	nap	nap	nap	0.3
Direct debits	nav	nav	8.6	10.7	20.0	49.7
<i>of which:</i>						
<i>face-to-face</i>	nap	nap	nap	nap	nap	nap
<i>via PC or other terminal</i>	nav	nav	8.6	10.7	20.0	49.7
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	51,116.6	52,750.7	43,441.5	49,042.3	61,356.5	67,878.2

1) Includes items initiated by banks (figures in thousands): 258.8 in 1996, 375.0 in 1997, 159.9 in 1998, 200.6 in 1999, 210.9 in 2000, 201.9 in 2001.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions
(LVL millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	12.4	18.7	20.6	24.3	27.5	36.3
of which:						
face-to-face	12.4	18.7	20.6	24.3	27.5	36.3
via PC or other terminal	nap	nap	nap	nap	nap	nap
televanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by payment cards	17.3	62.4	65.6	124.1	199.3	213.2
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
televanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by debit card	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
televanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by credit card	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
televanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Credit transfers ¹⁾	57,879.1	89,341.5	93,782.8	119,073.2	194,151.3	265,480.0
of which:						
face-to-face	44,185.3	67,645.6	30,216.7	44,941.4	70,803.8	78,533.1
via PC or other terminal	6,066.7	8,582.6	15,812.5	15,932.5	40,546.1	62,513.9
televanking	nap	nap	1.3	1.6	16.1	64.2
via mobile phone	nap	nap	nap	nap	nap	neg
Direct debits	nav	nav	0.7	3.0	0.7	1.3
of which:						
face-to-face	nap	nap	nap	nap	nap	nap
via PC or other terminal	nav	nav	0.7	3.0	0.7	1.3
televanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	57,908.8	89,422.6	93,869.7	119,224.6	194,378.8	265,730.8

1) Includes items initiated by banks (figures in LVL millions): 7,627.1 in 1996, 13,113.3 in 1997, 47,752.3 in 1998, 58,197.7 in 1999, 82,785.3 in 2000, 124,368.8 in 2001.

Table I I a
Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions

	1996	1997	1998	1999	2000	2001
Trading platforms						
Riga Stock Exchange	2,347	19,406	56,641	23,233	23,583	13,039
<i>of which:</i>						
<i>Treasury bills and bonds</i>	56	14	nap	32	694	827
<i>bonds</i>	nap	nap	nap	nap	110	43
<i>shares</i>	2,276	19,392	56,641	23,173	22,660	11,969
<i>mortgage securities</i>	15	nap	nap	28	119	200
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
VNS	6,276	4,717	4,092	4,444	3,206	6,705
<i>of which:</i>						
<i>Treasury bills</i>	6,276	4,463	3,110	3,078	1,620	1,212
<i>Treasury bonds</i>	nap	254	982	1,366	1,559	5,159
<i>bonds</i>	nap	nap	nap	nap	17	334
DENOS	14,206	66,082	60,114	25,802	24,306	23,501
<i>of which:</i>						
<i>Treasury bills and bonds</i>	1,053	668	130	449	970	1,165
<i>bonds</i>	42	62	134	158	361	167
<i>shares</i>	12,665	65,340	59,844	25,182	22,838	21,723
<i>CDs</i>	nap	0	6	7	0	6
<i>warrants</i>	446	nap	nap	nap	nap	nap
<i>investment fund units</i>	nap	12	0	2	24	110
<i>mortgage securities</i>	nap	nap	nap	4	113	330

Table I I b
Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions¹⁾

(LVL millions)

	1996	1997	1998	1999	2000	2001
Trading platforms						
Riga Stock Exchange	6.8	54.5	50.4	29.2	555.7	531.4
<i>of which:</i>						
<i>Treasury bills and bonds</i>	0.1	neg	nap	4.1	351.1	406.2
<i>bonds</i>	nap	nap	nap	nap	30.2	13.3
<i>shares</i>	6.4	54.5	50.4	24.5	168.5	103.3
<i>mortgage securities</i>	0.3	nap	nap	0.6	5.9	8.6
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
VNS	1,268.0	1,554.0	2,215.0	2,491.1	2,273.6	10,479.5
<i>of which:</i>						
<i>Treasury bills</i>	1,268.0	1,370.0	1,395.5	1,405.6	864.7	1,223.4
<i>Treasury bonds</i>	nap	184.0	819.5	1,085.5	1,397.1	8,723.1
<i>bonds</i>	nap	nap	nap	nap	11.8	533.0
DENOS	822.7	1,062.4	256.5	262.3	821.2	713.2
<i>of which:</i>						
<i>Treasury bills and bonds</i>	634.7	586.0	48.3	115.6	420.8	506.4
<i>bonds</i>	3.1	70.0	54.9	52.6	149.9	63.1
<i>shares</i>	177.4	405.9	151.9	91.6	234.0	118.5
<i>CDs</i>	nap	0	1.4	1.4	0	1.8
<i>warrants</i>	7.5	nap	nap	nap	nap	nap
<i>investment fund units</i>	nap	0.5	0	0.2	9.8	14.8
<i>mortgage securities</i>	nap	nap	nap	0.9	6.7	8.6

1) Shares are given at market value and other securities at nominal value.

Table I Ic**Number of participants in trading platforms, clearing houses and securities settlement systems**

	1996	1997	1998	1999	2000	2001
Trading platforms						
Riga Stock Exchange	17	24	22	16	15	14
<i>of which:</i>						
commercial banks	16	18	15	14	13	12
stockbrokers	1	6	7	2	2	2
Clearing systems	nap	nap	nap	nap	nap	nap
Securities settlement systems						
VNS	31	33	19	19	27	22
<i>of which:</i>						
commercial banks	28	29	16	16	21	16
Bank of Latvia	1	1	1	1	1	1
Latvian CSD	1	1	1	1	1	1
Ministry of Finance	1	1	1	1	1	1
special budget funds	nap	nap	nap	nap	3	3
foreign banks, international securities houses	nap	1	nap	nap	nap	nap
DENOS	21	30	27	25	23	21
<i>of which:</i>						
commercial banks	19	20	17	16	14	14
stockbrokers	1	8	8	7	6	4
Estonian CSD	nap	1	1	1	1	1
Lithuanian CSD	nap	nap	nap	nap	1	1
Bank of Latvia	1	1	1	1	1	1

Table I I d**Outstanding securities¹⁾***(end of year)*

	1996	1997	1998	1999	2000	2001
Riga Stock Exchange						
Value of Treasury bills and bonds (LVL millions)	3.8	0	nap	132.7	255.0	250.1
Value of bonds (LVL millions)	nap	nap	nap	nap	25.0	10.0
Value of shares (LVL millions)	67.0	273.7	183.7	232.8	360.2	438.6
Value of mortgage securities (LVL millions)	0.5	nap	nap	0.5	3.6	8.0
Number of Treasury bills and bonds listed	2	0	nap	28	14	10
Number of bonds listed	nap	nap	nap	nap	2	1
Number of shares listed	34	40	51	64	63	63
Number of mortgage securities listed	1	nap	nap	1	3	5
VNS						
Value of Treasury bills (LVL millions)	133.0	122.0	59.0	79.5	60.0	28.5
Value of Treasury bonds (LVL millions)	nap	34.0	68.0	68.0	142.5	166.8
Value of bonds (LVL millions)	nap	nap	nap	nap	2.6	13.5
Number of Treasury bills listed	79	38	26	28	8	9
Number of Treasury bonds listed	nap	2	4	4	6	5
Number of bonds listed	nap	nap	nap	nap	2	3
DENOS						
Value of Treasury bills and bonds (LVL millions)	132.6	155.6	127.0	147.5	225.9	257.9
Value of bonds (LVL millions)	0.8	18.6	47.7	33.3	32.8	32.2
Value of shares (LVL millions)	97.8	257.1	209.9	201.9	311.2	404.6
Value of CDs (LVL millions)	nap	5.1	1.0	0	6.3	0
Value of warrants (LVL millions)	14.6	nap	nap	nap	nap	nap
Value of investment fund units (LVL millions)	nap	0.5	0.5	0.1	4.9	6.9
Value of mortgage securities (LVL millions)	nap	nap	nap	1.0	8.0	16.0
Number of Treasury bills and bonds listed	79	40	30	32	14	14
Number of bonds listed	2	4	5	4	6	6
Number of shares listed	45	64	88	110	127	136
Number of CDs listed	nap	1	1	0	3	0
Number of warrants listed	1	nap	nap	nap	nap	nap
Number of investment fund units listed	nap	1	1	1	3	4
Number of mortgage securities listed	nap	nap	nap	1	4	6

1) Shares are given at market value and other securities at nominal value.

Table I I e**Netting ratio in clearing systems**

	1996	1997	1998	1999	2000	2001
Name of system	nap	nap	nap	nap	nap	nap
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	23	23	24	12	12	11
<i>of which live</i>	22	23	24	12	12	11
Sub-members	1	2	3	3	3	4
<i>of which live</i>	1	2	3	3	3	3
Participants	nap	2	2	9	9	9
<i>of which live</i>	nap	2	2	9	9	9
Total users	24	27	29	24	24	24
<i>of which live</i>	23	27	29	24	24	23
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	833,639	1,424,956	2,087,308	1,867,982	2,077,407	2,461,200
<i>of which:</i>						
<i>category I</i>	554,710	935,452	1,419,049	1,224,538	1,430,485	1,797,677
<i>category II</i>	142,238	253,664	333,338	300,621	309,322	364,190
Total messages received	750,332	1,319,393	2,083,989	1,902,096	2,046,154	2,282,543
<i>of which:</i>						
<i>category I</i>	371,627	661,474	1,212,085	1,015,559	1,049,433	1,205,829
<i>category II</i>	29,867	53,500	80,577	80,761	86,125	89,972
Domestic traffic	137,102	315,839	796,802	590,146	385,909	320,707
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Lithuania

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	3,709.5	3,705.6	3,702.6	3,699.7	3,692.8	3,691.8
GDP (LTL billions)	31.6	38.3	43.0	42.7	45.3	47.6
GDP per capita (LTL)	8,518.7	10,335.7	11,613.5	11,541.5	12,267.1	12,893.4
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	5.01	4.42	4.67	4.02	3.72	3.52
<i>average</i>	5.08	4.54	4.48	4.26	3.69	3.58

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, LTL millions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	1,899.3	2,535.5	2,800.4	2,738.7	2,658.3	2,919.9
Transferable deposits	1,711.6	2,574.4	2,770.3	2,536.1	3,014.2	3,824.5
Narrow money supply (M1)	3,610.9	5,109.9	5,570.7	5,274.8	5,672.5	6,744.4
<i>Memorandum items:</i>						
Broad money supply ¹⁾	5,424.1	7,271.8	8,327.1	8,971.9	10,455.4	12,690.6
Transferable deposits in foreign currencies	533.9	647.2	763.0	725.7	806.8	1,075.3
Outstanding value on e-money schemes	0.9	7.6	14.5	13.8	38.0	63.1
<i>of which:</i>						
<i>on card-based products</i>	0.9	7.6	14.5	13.8	38.0	63.1
<i>on network-based products</i>	nap	nap	nap	nap	nap	nap

1) Broad money consists of M1 and quasi-money (time and savings deposits and foreign currency deposits). M1 consists of currency in circulation (banknotes and coins) and transferable deposits held in domestic currency.

Table 3
Settlement media used by banks

(end of year, LTL millions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	396.8	390.0	867.8	444.6	620.6	583.5
<i>of which:</i>						
<i>required reserves</i>	192.9	370.6	389.9	386.7	372.4	422.6
<i>free reserves</i>	203.9	19.4	477.9	57.9	248.2	160.9
Transferable balances held at other banks	neg	neg	neg	neg	neg	neg
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	nap	neg	neg	neg	neg	neg

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

	1996	1997	1998	1999	2000	2001
Total banknotes issued	1,975.1	2,701.8	3,027.1	2,906.6	2,822.1	3,172.1
<i>of which:</i>						
<i>LTL 500</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	42.2	245.0
<i>LTL 200</i>	<i>nap</i>	212.1	929.6	908.9	842.1	862.8
<i>LTL 100</i>	1,286.7	1,773.6	1,455.2	1,350.3	1,320.8	1,393.2
<i>LTL 50</i>	396.4	442.5	306.8	370.4	367.2	421.2
<i>LTL 20</i>	147.0	120.5	172.9	147.4	141.4	147.6
<i>LTL 10</i>	86.1	68.3	103.9	98.9	95.4	93.5
<i>LTL 5</i>	31.4	49.8	23.3	7.6	3.7	2.8
<i>LTL 2</i>	17.2	22.1	21.8	10.1	4.2	3.0
<i>LTL 1</i>	10.3	12.9	13.5	13.0	5.3	3.0
Total coins issued	23.4	27.8	33.0	65.2	82.2	90.7
<i>of which:</i>						
<i>LTL 5</i>	1.1	1.0	1.9	21.9	25.4	26.5
<i>LTL 2</i>	1.1	1.1	1.3	11.0	17.3	20.2
<i>LTL 1</i>	1.4	1.5	1.7	5.4	13.5	17.1
<i>LTL 0.5</i>	5.3	6.0	7.1	6.6	6.0	6.0
<i>LTL 0.2</i>	5.7	7.1	8.5	7.8	7.3	7.5
<i>LTL 0.1</i>	6.3	8.1	9.1	8.8	8.7	9.0
<i>LTL 0.05</i>	1.1	1.3	1.4	1.5	1.6	1.7
<i>LTL 0.02</i>	0.8	0.9	1.1	1.2	1.3	1.4
<i>LTL 0.01</i>	0.6	0.8	0.9	1.0	1.2	1.3
Total banknotes and coins issued	1,998.5	2,729.6	3,060.0	2,971.7	2,904.2	3,262.8
Banknotes and coins held by credit institutions	99.2	194.1	259.6	233.0	245.9	342.9
Banknotes and coins in circulation outside credit institutions	1,899.3	2,535.5	2,800.4	2,738.7	2,658.3	2,919.9

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (LTL millions)
Central bank	1	2	nav	nav	16.6
Credit institutions	9	165	nav	nav	3,807.9 ¹⁾
Total	10	167	nav	nav	3,824.5
<i>of which:</i>					
<i>virtual institutions</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Branches of foreign banks	4	4	nav	nav	nav
<i>of which:</i>					
<i>EU-based</i>	3	3	nav	nav	nav

1) Includes accounts held with branches of foreign banks.

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	18.9	78.9	210.2	312.1	505.3	812.6
Number of networks	3	3	4	4	5	5
Number of ATMs with a cash dispensing function	29	126	280	341	473	689
<i>of which:</i>						
<i>open access</i>	10	57	280	341	473	689
<i>limited access</i>	19	69	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Volume of transactions (thousands)	97.8	537.8	2,469.3	2,182.3	4,160.9	11,070.8
<i>of which:</i>						
<i>at ATMs with open access</i>	53.1	219.1	2,469.3	2,182.3	4,160.9	11,070.8
<i>at ATMs with limited access</i>	44.7	318.7	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Value of transactions (LTL millions)	33.2	167.9	459.0	524.0	1,003.3	2,718.1
<i>of which:</i>						
<i>at ATMs with open access</i>	21.1	69.2	459.0	524.0	1,003.3	2,718.1
<i>at ATMs with limited access</i>	12.1	98.7	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Number of ATMs with a giro transfer function	<i>nap</i>	<i>nap</i>	<i>nap</i>	179	194	220
volume of transactions (thousands)	<i>nap</i>	<i>nap</i>	<i>nap</i>	1.7	24.1	38.2
value of transactions (LTL millions)	<i>nap</i>	<i>nap</i>	<i>nap</i>	0.6	10.6	18.8
Debit function						
Cards with a debit function (thousands)	9.3	38.2	122.0	254.6	402.5	670.8
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	2	2	3	3	4	4
Number of terminals	227	854	2,630	5,286	6,101	9,258
Volume of transactions (thousands)	214.2	467.3	1,366.8	3,558.0	4,361.0	9,832.0
<i>of which:</i>						
<i>transactions with retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (LTL millions)	110.1	213.9	567.3	757.9	930.6	1,444.6
<i>of which:</i>						
<i>transactions with retailer cards (LTL millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Credit function						
Cards with a credit function (thousands)	2.2	16.5	35.5	5.8	9.2	13.0
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	2	2	3	3	4	4
Number of terminals	227	854	2,630	5,286	6,101	9,258
Volume of transactions (millions) ¹⁾	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (LTL millions) ²⁾	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (LTL millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>

1) Included in volume of transactions with cards with a debit function.

2) Included in value of transactions with cards with a debit function.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	7.4	24.2	52.7	51.7	93.6	128.9
Number of accepting terminals	79	168	969	1,000	1,127	1,643
Number of networks	1	1	1	1	1	1
Number of purchase transactions (thousands)	14.1	115.2	283.2	371.0	636.0	866.0
Value of purchase transactions (LTL millions)	0.3	2.9	43.5	37.8	61.5	88.5
Number of loading transactions (millions)	nav	nav	nav	nav	nav	nav
Number of loading terminals	19	69	172	386	419	456
Value of money loaded (LTL millions)	12.2	98.7	275.5	350.0	516.3	702.7
Float (LTL millions)	0.9	7.6	14.5	13.8	38.0	63.1
Delayed debit cards (charge cards)³⁾						
Cards with a delayed debit function (thousands)	nav	nav	nav	nav	nav	nav
Number of terminals	nav	nav	nav	nav	nav	nav
Volume of transactions (thousands)	nav	nav	nav	nav	nav	nav
Value of transactions (LTL millions)	nav	nav	nav	nav	nav	nav
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	18.9	78.9	210.2	312.1	505.3	812.6
<i>of which:</i>						
<i>cards with a combined debit, cash and e-money function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>1.08</i>	<i>3.94</i>	<i>3.64</i>
<i>cards with a cheque guarantee function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

3) Included in "Cards with a debit function".

Table 7

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

	1996	1997	1998	1999	2000	2001
TARPBANK	7.49	9.02	9.96	9.85	8.95	9.91
Concentration ratio	86.73%	85.55%	84.26%	88.44%	87.49%	88.95%

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions**

(LTL billions)

	1996	1997	1998	1999	2000	2001
TARPBANK	81.56	109.82	127.53	116.13	104.03	116.75
Concentration ratio	80.88%	81.29%	79.64%	87.31%	82.62%	82.68%

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions¹⁾**

(thousands)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques ²⁾	164.2	141.5	10.6	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	164.2	141.5	10.6	nav	nav	nav
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit card ³⁾	333.0	613.6	1,453.1	2,637.2	4,160.0	7,740.0
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by credit card	nav	nav	nav	nav	183.0	291.0
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	224.0
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	67.0
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Credit transfers	8,428.0	11,748.3	14,402.0	14,972.7	20,174.0	29,816.0
<i>of which:</i>						
<i>face-to-face</i>	8,428.0	11,748.3	nav	13,777.7	18,079.0	26,557.0
<i>via PC or other terminal</i>	nap	nap	nap	nap	144.0	635.0
<i>telebanking</i>	nap	nap	nav	1,195.0	1,951.0	2,624.0
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Direct debits	nav	0.1	2.4	971.6	869.0	752.0
<i>of which:</i>						
<i>face-to-face</i>	nav	0.1	2.4	968.0	860.3	729.6
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	neg	3.6	8.7	22.4
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Card-based e-money	14.1	115.2	283.2	371.0	636.0	866.0
Network-based e-money	nav	nav	nav	nav	nav	nav
Total	8,939.3	12,618.7	16,151.3	18,952.5	26,022.0	39,465.0

1) Includes items initiated by banks.

2) From 1999, payments by cheque are included in "Direct debits".

3) Includes payments by delayed debit card and, until 2000, payments by credit card.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions¹⁾
(LTL millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques ²⁾	185.7	225.2	32.4	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	185.7	225.2	32.4	nav	nav	nav
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit card ³⁾	129.2	235.5	366.5	202.9	333.5	625.7
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by credit card	nav	nav	nav	nav	48.4	74.8
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	64.9
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	9.9
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Credit transfers	108,698.3	195,946.5	222,656.6	192,145.4	220,629.3	332,911.4
<i>of which:</i>						
<i>face-to-face</i>	108,698.3	195,946.5	nav	174,793.1	190,552.1	274,435.4
<i>via PC or other terminal</i>	nap	nap	nap	nap	1,036.9	19,836.4
<i>telebanking</i>	nap	nap	nav	17,352.3	29,040.3	38,639.6
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Direct debits	nav	0.1	1.4	3,308.0	3,601.5	3,358.9
<i>of which:</i>						
<i>face-to-face</i>	nap	0.1	1.4	3,279.4	3,545.3	3,204.0
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	neg	28.6	56.2	154.9
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Card-based e-money	0.3	2.9	43.5	37.8	61.5	88.5
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	109,013.5	196,410.2	223,100.4	195,694.1	224,674.2	337,059.3

1) Includes items initiated by banks.

2) From 1999, payments by cheque are included in "Direct debits".

3) Includes payments by delayed debit card and, until 2000, payments by credit card.

Table I Ia
Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions

	1996	1997	1998	1999	2000	2001
Trading platform						
National Stock Exchange of Lithuania	12,094	70,970	60,784	39,975	32,914	33,575
<i>of which:</i>						
<i>shares</i>	10,172	70,419	59,787	38,366	31,743	32,184
<i>government securities</i> ¹⁾	1,922	551	997	1,609	1,171	1,391
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
LCVPD						
DVP transactions	5,530	34,673	45,261	41,587	30,996	31,554
<i>of which:</i>						
<i>shares</i>	4,362	34,328	44,108	38,831	28,376	28,913
<i>government securities</i> ¹⁾	1,168	345	1,153	2,756	2,620	2,641
FOP transactions	3,719	14,049	11,909	10,220	8,532	9,299
<i>of which:</i>						
<i>shares</i>	2,692	13,338	10,995	8,821	7,100	7,385
<i>government securities</i> ¹⁾	1,027	711	914	1,399	1,432	1,914

1) Includes corporate bonds, which represent a negligible volume of transactions.

Table I Ib
Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions

(LTL millions)

	1996	1997	1998	1999	2000	2001
Trading platform						
National Stock Exchange of Lithuania	509.6	1,463.4	1,487.7	2,302.3	1,758.7	1,841.3
<i>of which:</i>						
<i>shares</i>	188.9	959.1	891.1	1,236.1	808.8	840.2
<i>government securities</i> ¹⁾	320.7	504.3	596.6	1,066.2	949.9	1,001.1
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
LCVPD						
DVP transactions	494.4	1,436.2	2,368.5	2,541.2	1,882.3	1,689.8
<i>of which:</i>						
<i>shares</i>	170.6	897.7	809.7	1,092.2	721.6	356.9
<i>government securities</i> ¹⁾	323.8	538.5	1,558.8	1,449.0	1,160.7	1,332.9
FOP transactions ²⁾	4,514.5	3,163.2	3,834.6	5,125.7	3,560.7	2,972.0
<i>of which:</i>						
<i>shares</i>	3,585.8	1,972.2	2,099.9	2,599.0	2,048.4	2,071.2
<i>government securities</i> ¹⁾	928.7	1,191.0	1,734.7	2,526.7	1,512.3	900.8

1) Includes corporate bonds, which represent a negligible transaction amount.

2) Nominal value.

Table I I c
Number of participants in trading platforms, clearing houses and securities settlement systems

	1996	1997	1998	1999	2000	2001
Trading platform						
National Stock Exchange of Lithuania						
Banks	11	11	9	9	9	8
Brokers	42	38	28	20	15	12
Clearing systems	nap	nap	nap	nap	nap	nap
Securities settlement system						
LCVPD						
Banks	11	12	11	11	11	10
Brokers	53	47	42	29	19	18
Others	5	7	8	7	7	5

Table I I d
Outstanding securities
(end of year)

	1996	1997	1998	1999	2000	2001
National Stock Exchange of Lithuania						
Value of securities listed (LTL millions)	5,913.0	10,591.8	13,765.9	14,368.7	13,889.5	12,555.0
<i>of which:</i>						
<i>shares (LTL millions)</i>	4,815.7	8,942.7	12,073.9	13,164.4	12,360.3	10,576.4
<i>other securities (LTL millions)</i>	1,097.3	1,649.1	1,692.0	1,204.3	1,529.2	1,978.6
Number of securities listed	538	703	1,442	1,374	1,276	1,176
<i>of which:</i>						
<i>shares</i>	515	668	1,399	1,337	1,240	1,141
<i>other securities</i>	23	35	43	37	36	35
LCVPD						
Value of securities registered (LTL millions)	10,464.6	16,561.7	16,134.7	17,082.3	17,593.4	16,172.1
<i>of which:</i>						
<i>shares (LTL millions)</i>	9,165.9	13,951.1	13,164.9	14,485.0	14,964.4	13,245.4
<i>other securities (LTL millions)</i>	1,298.7	2,610.6	2,969.8	2,597.3	2,629.0	2,926.7
Number of securities registered	1,756	1,952	1,901	1,856	1,744	1,595
<i>of which:</i>						
<i>shares</i>	1,729	1,908	1,847	1,796	1,681	1,538
<i>other securities</i>	27	44	54	60	63	57

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
LCVPD						
Netting ratio for cash over year ¹⁾	nap	nap	nap	nap	0.23	0.31
Netting ratio for securities over year ²⁾	nap	nap	nap	nap	nap	nap

1) LCVPD has handled stock exchange transactions (cash settlements side) since 1 May 2000.

2) Some stock exchange central market transactions are delivered to LCVPD already netted (securities side).

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	11	10	8	4	3	2
<i>of which live</i>	11	9	8	4	3	2
Sub-members	0	1	3	4	3	5
<i>of which live</i>	0	1	3	4	3	4
Participants	0	1	1	4	6	7
<i>of which live</i>	0	1	1	4	6	7
Total users	11	12	12	12	12	14
<i>of which live</i>	11	11	12	12	12	13
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	311,383	417,430	487,917	495,666	588,183	745,677
<i>of which:</i>						
<i>category I</i>	207,400	272,584	306,686	304,398	341,519	423,029
<i>category II</i>	38,666	54,840	67,813	90,775	136,761	183,637
Total messages received	353,255	515,019	582,590	619,137	718,186	870,095
<i>of which:</i>						
<i>category I</i>	161,793	249,770	278,200	280,767	345,692	433,012
<i>category II</i>	8,551	9,580	13,867	18,080	23,579	29,251
Domestic traffic	16,934	17,532	33,128	32,734	32,466	38,176
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Malta

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	380.00	382.80	385.30	387.20	389.20	394.64
GDP (MTL billions, current prices)	1.20	1.30	1.40	1.50	1.60	1.60
GDP per capita (MTL)	3,157.89	3,396.03	3,633.53	3,873.97	4,111.00	4,054.32
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>0.45</i>	<i>0.43</i>	<i>0.44</i>	<i>0.42</i>	<i>0.41</i>	<i>0.40</i>
<i>average</i>	<i>0.46</i>	<i>0.44</i>	<i>0.44</i>	<i>0.43</i>	<i>0.40</i>	<i>0.40</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, MTL millions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	362.07	363.77	368.09	384.59	396.30	414.24
Transferable deposits	92.03	116.13	152.91	195.11	198.36	221.26
Other	nap	nap	nap	nap	nap	nap
Narrow money supply (M1)	454.10	479.90	521.00	579.70	594.66	635.50
<i>Memorandum items:</i>						
Broad money supply	1,868.30	2,046.99	2,222.59	2,441.80	2,538.88	2,752.90
Transferable deposits in foreign currencies	nav	nav	nav	309.15	177.56	225.10
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
<i>of which:</i>						
<i>on card-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>on network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 3
Settlement media used by banks

(end of year, MTL millions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	72.03	100.51	115.20	124.79	141.27	125.80
<i>of which:</i>						
<i>required reserves</i> ¹⁾	<i>89.00</i>	<i>99.97</i>	<i>107.21</i>	<i>122.25</i>	<i>132.57</i>	<i>115.92</i>
<i>free reserves</i>	<i>-16.97</i>	<i>0.54</i>	<i>7.99</i>	<i>2.54</i>	<i>8.70</i>	<i>9.88</i>
Transferable balances held at other banks	2.60	7.50	3.20	6.00	6.35	1.69
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	neg	15	6	neg	113.40	23.80

1) Reserves held with the central bank are calculated as the average holdings between the 15th of the month and the 14th of the next month.

Table 4
Banknotes and coins

(end of year, total value, MTL millions)

	1996	1997	1998	1999	2000	2001
Total banknotes issued	366.30	369.83	373.80	402.00	405.71	423.84
<i>of which:</i>						
<i>MTL 20</i>	123.24	118.14	109.72	108.63	107.90	108.83
<i>MTL 10</i>	210.99	219.74	234.12	259.37	264.17	280.70
<i>MTL 5</i>	26.21	25.85	24.17	27.74	27.17	27.65
<i>MTL 2</i>	5.86	6.10	5.79	6.27	6.47	6.66
Total coins issued	13.95	14.83	15.70	16.49	17.47	17.99
<i>of which:</i>						
<i>MTL 1</i>	4.46	4.63	4.84	4.98	5.35	5.40
<i>MTL 0.5</i>	3.26	3.50	3.75	4.00	4.25	4.44
<i>MTL 0.25</i>	2.06	2.24	2.34	2.49	2.61	2.72
<i>MTL 0.1</i>	2.00	2.12	2.33	2.45	2.56	2.64
<i>MTL 0.05</i>	0.97	1.06	1.12	1.18	1.26	1.31
<i>MTL 0.02</i>	0.74	0.77	0.80	0.83	0.86	0.87
<i>MTL 0.01</i>	0.39	0.43	0.45	0.48	0.51	0.54
<i>MTL 0.01</i> ¹⁾	0.08	0.08	0.08	0.08	0.08	0.08
Total banknotes and coins issued	380.25	384.66	389.50	418.49	423.18	441.83
Banknotes and coins held by credit institutions	18.18	20.89	21.42	33.89	26.89	27.59
Banknotes and coins in circulation outside credit institutions	362.07	363.77	368.09	384.59	396.30	414.24

1) *MTL 0.01 consists of MTL 0.005, MTL 0.003 and MTL 0.002.*

Table 5
Institutional framework

(end of 2001)

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (MTL billions)
Central bank	1	1	nap	nap	nap
Credit institutions ¹⁾	14	111	618	5,895	0.221
Post Office	1	27	nap	nap	nap
Total	16	139	618	5,895	0.221
<i>of which:</i>					
<i>virtual institutions</i>	nap	nap	nap	nap	nap
Branches of foreign banks	3	3	nav	nav	nav
<i>of which:</i>					
<i>EU-based</i>	nap	nap	nap	nap	nap

1) *Eight institutions provide services only to non-residents in foreign currencies.*

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	192.00	215.00	234.00	293.13	327.73	344.80
Number of networks	3	3	3	4	4	4
Number of ATMs with a cash dispensing function	90	106	121	124	136	139
<i>of which:</i>						
<i>open access</i>	90	106	121	124	136	139
<i>limited access</i>	nap	nap	nap	nap	nap	nap
Volume of transactions (millions)	3.69	4.430	4.96	5.96	7.429	13.59
<i>of which:</i>						
<i>at ATMs with open access</i>	3.69	4.43	4.96	5.96	7.43	13.59
<i>at ATMs with limited access</i>	nap	nap	nap	nap	nap	nap
Value of transactions (MTL millions)	114.56	140.26	160.48	200.74	212.40	246.84
<i>of which:</i>						
<i>at ATMs with open access</i>	114.56	140.26	160.48	200.74	212.40	246.84
<i>at ATMs with limited access</i>	nap	nap	nap	nap	nap	nap
Number of ATMs with a giro transfer function	nap	nap	nap	nap	nap	nap
<i>volume of transactions (millions)</i>	nap	nap	nap	nap	nap	nap
<i>value of transactions (MTL billions)</i>	nap	nap	nap	nap	nap	nap
Debit function						
Cards with a debit function (thousands)	131.30	148.40	173.10	213.51	240.00	249.00
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nap	nap	nap	nap	nap	nap
Number of networks	2	2	2	2	2	2
Number of terminals	2,517	3,388	3,599	4,400	5,293	6,033
Volume of transactions (millions)	1.05	1.44	1.93	2.57	2.42	2.01
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nap	nap	nap	nap	nap	nap
Value of transactions (MTL millions)	29.69	39.61	52.21	74.01	59.59	42.75
<i>of which:</i>						
<i>transactions with retailer cards (MTL billions)</i>	nap	nap	nap	nap	nap	nap
Credit function						
Cards with a credit function (thousands)	67.00	79.00	73.00	79.62	85.83	93.99
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nap	nap	nap	nap	nap	nap
Number of networks	3	3	3	4	4	4
Number of terminals	2,607	3,494	3,720	4,524	5,429	6,172
Volume of transactions (millions)	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nap	nap	nap	nap	nap	nap
Value of transactions (MTL millions)	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>transactions with retailer cards (MTL billions)</i>	nap	nap	nap	nap	nap	nap

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (MTL billions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (MTL billions)	nap	nap	nap	nap	nap	nap
Float (MTL billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nap	nap	nap	nap	nap	nap
Number of terminals	nap	nap	nap	nap	nap	nap
Volume of transactions (millions)	nap	nap	nap	nap	nap	nap
Value of transactions (MTL billions)	nap	nap	nap	nap	nap	nap
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	192.00	215.00	234.00	293.13	327.73	344.80
<i>of which:</i>						
<i>cards with a combined debit, cash and e-money function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>cards with a cheque guarantee function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
Interbank real-time gross payment arrangement	nav	nav	nav	0.013	0.018	0.022
Malta Clearing House						
Cheques	6.330	6.860	6.843	7.071	7.378	7.263
Concentration ratio	100%	100%	100%	100%	100%	100%

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(MTL billions)*

	1996	1997	1998	1999	2000	2001
Interbank real-time gross payment arrangement	nav	nav	nav	3.054	3.497	3.653
Malta Clearing House						
Cheques	1.936	2.132	2.194	2.389	2.685	2.487
Concentration ratio	100%	100%	100%	100%	100%	100%

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	10.24	10.96	9.03	9.10	9.71	9.87
<i>of which:</i>						
<i>face-to-face</i>	10.24	10.96	9.03	9.10	9.71	9.87
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by debit card	nav	nav	nav	nav	nav	9.38
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	9.38
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by credit card	nav	nav	nav	nav	nav	4.99
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Credit transfers ¹⁾	nav	nav	nav	1.07	1.28	1.86
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Direct debits	neg	neg	neg	neg	neg	neg
<i>of which:</i>						
<i>face-to-face</i>	nav	neg	neg	neg	neg	neg
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Card-based e-money	nav	nav	nav	nav	nav	nav
Network-based e-money	nav	nav	nav	nav	nav	nav
Total	10.24	10.96	9.03	10.17	10.99	26.10

1) Includes items initiated by banks.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions

(MTL millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	nav	nav	nav	2,094.91	2,709.92	2,586.29
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	2,094.91	2,709.92	2,586.29
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by debit card	nav	nav	nav	nav	nav	407.72
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Payments by credit card	nav	nav	nav	nav	nav	107.47
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Credit transfers ¹⁾	nav	nav	nav	1,978.49	1,637.58	2,263.03
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Direct debits	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	nav	nav	nav	4,073	4,348	5,365

1) Includes items initiated by banks.

Table I Ia**Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions***(thousands)*

	1996	1997	1998	1999	2000	2001
Trading platform						
Malta Stock Exchange						
Private listed securities	2.31	3.14	4.59	13.83	14.19	7.10
Government securities (bonds)	1.48	2.97	3.92	3.01	2.87	2.43
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
Malta Stock Exchange						
Private listed securities	2.31	3.14	4.59	13.83	14.19	7.10
Government securities (bonds)	1.48	2.97	3.92	3.01	2.87	2.43

Table I Ib**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions***(MTL millions)*

	1996	1997	1998	1999	2000	2001
Trading platform						
Malta Stock Exchange						
Private listed securities ¹⁾	4.70	9.40	22.70	139.60	85.90	35.90
Government securities (bonds)	20.50	104.80	112.10	50.90	63.10	133.50
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement system						
Malta Stock Exchange						
Private listed securities	4.70	9.40	22.70	139.60	85.90	35.90
Government securities (bonds)	20.50	104.80	112.10	50.90	63.10	133.50

1) The figure for 1999 includes the transfer of Mid-Med Bank from the Government to HSBC Bank for MTL 74.1 million.

Table I I c
Number of participants in trading platforms, clearing houses and securities settlement systems

	1996	1997	1998	1999	2000	2001
Trading systems						
Malta Stock Exchange						
Stockbrokers	11	11	11	12	19	19
Clearing systems	nap	nap	nap	nap	nap	nap
Securities settlement systems						
Malta Stock Exchange	11	11	11	12	19	19

Table I I d
Outstanding securities
(end of year)

	1996	1997	1998	1999	2000	2001
Malta Stock Exchange						
Value of securities issued (MTL millions)	148	166	296	794	882	611
Number of securities issued	123	133	234	346	412	493
Value of securities registered (MTL millions)	148	166	296	794	882	611
Number of securities registered	123	133	234	346	412	493

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
Malta Stock Exchange						
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	7	7	7	7	7	7
<i>of which live</i>	6	7	7	7	7	7
Sub-members	4	5	6	9	8	8
<i>of which live</i>	3	5	6	9	8	8
Participants	0	0	0	0	0	0
<i>of which live</i>	0	0	0	0	0	0
Total users	11	12	13	16	15	15
<i>of which live</i>	9	12	13	16	15	15
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	306,944	347,566	399,735	453,863	531,422	547,929
<i>of which:</i>						
<i>category I</i>	125,892	144,132	170,665	210,037	249,042	270,799
<i>category II</i>	74,974	76,415	87,438	97,670	109,367	115,849
Total messages received	257,969	289,098	328,924	381,808	433,061	481,207
<i>of which:</i>						
<i>category I</i>	98,369	107,657	119,470	132,946	151,603	168,124
<i>category II</i>	22,467	25,790	30,480	39,718	40,211	47,708
Domestic traffic	20,806	26,542	34,500	50,118	58,457	71,264
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Poland

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	38,618	38,650	38,666	38,654	38,647	38,647
GDP (PLN billions, current prices)	387.8	472.4	553.6	615.1	690.4	765.9
GDP per capita (PLN thousands)	10.0	12.2	14.3	15.9	17.9	19.8
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	<i>3.57</i>	<i>3.92</i>	<i>4.09</i>	<i>4.16</i>	<i>3.85</i>	<i>3.50</i>
<i>average</i>	<i>3.42</i>	<i>3.71</i>	<i>3.89</i>	<i>4.23</i>	<i>4.01</i>	<i>3.67</i>

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, PLN billions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	23.56	27.26	30.23	38.08	34.11	38.21
Transferable deposits	37.49	44.86	51.26	61.30	59.65	65.82
Other						
Narrow money supply (M1)	61.06	72.12	81.48	99.38	93.76	104.03
Memorandum items:						
Broad money supply ¹⁾	136.66	176.39	220.78	263.45	294.39	334.75
Transferable deposits in foreign currencies	nap	nap	nap	nap	nap	nap
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
of which:						
on card-based products	nap	nap	nap	nap	nap	nap
on network-based products	nap	nap	nap	nap	nap	nap

1) Broad money supply (M2) consists of: M1 plus time deposits in PLN and foreign currencies, repurchase transactions and loans received.

Table 3
Settlement media used by banks

(end of year, PLN billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	6.96	10.54	19.27	9.68	11.33	11.78
of which:						
required reserves	6.54	9.58	18.87	9.07	11.03	11.54
free reserves	0.42	0.96	0.40	0.61	0.30	0.24
Transferable balances held at other banks	1.40	1.82	2.73	1.91	1.57	1.54
Memorandum item:						
Institutions' borrowing from central bank ¹⁾	0.26	0.61	0.01	0.00	0.47	0.00

1) Lombard facility, against pledges of Treasury securities – end of year.

Table 4**Banknotes and coins***(end of year, total value, PLN millions)¹⁾*

	1996	1997	1998	1999	2000	2001
Total banknotes issued	26,255.9	31,669.2	35,136.0	42,031.5	37,140.1	41,643.5
<i>of which:</i>						
<i>PLN 200</i>	5,105.4	8,365.1	9,971.5	13,305.4	11,311.4	11,602.9
<i>PLN 100</i>	11,727.7	15,524.3	17,349.4	20,019.7	18,917.8	22,988.6
<i>PLN 50</i>	7,199.6	5,700.3	5,747.1	6,739.9	5,009.0	5,145.5
<i>PLN 20</i>	1,211.5	1,068.1	1,091.8	1,034.4	993.5	982.7
<i>PLN 10</i>	1,011.7	1,011.2	976.2	932.1	908.4	923.8
Total coins issued	815.6	927.1	1,015.6	1,144.0	1,229.5	1,298.2
<i>of which:</i>						
<i>silver²⁾</i>	4.2	6.4	9.1	12.3	15.7	21.5
<i>gold³⁾</i>	4.1	6.3	8.4	11.2	14.8	19.8
<i>PLN 5</i>	338.1	365.9	377.6	409.1	419.8	418.1
<i>PLN 2</i>	177.5	205.5	233.4	271.9	301.4	329.1
<i>PLN 1</i>	127.3	143.9	156.7	175.7	186.3	193.9
<i>PLN 0.5</i>	66.6	76.4	85.7	93.1	98.7	103.4
<i>PLN 0.2</i>	41.4	50.3	58.3	68.1	75.8	82.2
<i>PLN 0.1</i>	33.3	40.9	47.0	54.3	60.6	65.6
<i>PLN 0.05</i>	13.1	17.2	20.8	25.2	28.8	32.4
<i>PLN 0.02</i>	5.4	7.4	9.6	11.8	14.0	16.2
<i>PLN 0.01</i>	4.7	7.0	9.0	11.3	13.6	16.0
Total banknotes and coins issued	27,071.4	32,596.2	36,151.6	43,175.5	38,369.6	42,941.7
Banknotes and coins held by credit institutions	3,680.6	3,819.3	3,768.2	5,292.5	4,451.4	4,917.7
Banknotes and coins in circulation outside credit institutions	23,563.9	27,255.9	30,225.3	38,082.7	34,112.7	38,212.6

1) Since January 1995 the National Bank of Poland has issued new zloty (10,000 old = 1 new). Old and new zloty circulated in parallel for two years. In January 1997 old zloty were withdrawn from circulation. They can be exchanged for new zloty until 31 December 2010.

2) Silver commemorative coins.

3) Gold commemorative coins.

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (PLN billions)
Central bank	1	50	8.4	0	18.88
Credit institutions	69	10,509	17,198.7	357.6	47.54
Co-operative banks	643	2,231	nav	nav	nav
Post Office ¹⁾	1	8,223	nav	nav	nav
Total	714	21,013	17,207.1	357.6	66.41
<i>of which:</i>					
<i>virtual institutions</i>	3	nav	308.7	308.7	1.38
<i>Branches of foreign banks²⁾</i>	1	1	nav	nav	nav
<i>of which:</i>					
<i>EU-based</i>	1	1	nav	nav	nav

1) The Post Office does not hold deposits for customers.

2) Other foreign banks are established and act as independent banks.

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	713.16	1,668.39	3,856.79	8,264.01	11,264.54	14,356.36
Number of networks	12	14	14	17	18	21
Number of ATMs with a cash dispensing function	553	1,440	2,009	3,949	5,266	6,476
<i>of which:</i>						
<i>open access</i>	<i>nav</i>	<i>nav</i>	<i>1,510</i>	<i>3,845</i>	<i>5,260</i>	<i>6,459</i>
<i>limited access</i>	<i>nav</i>	<i>nav</i>	<i>499</i>	<i>104</i>	<i>6</i>	<i>17</i>
Volume of transactions (millions)	7.99	25.53	53.01	95.78	222.61	289.40
<i>of which:</i>						
<i>at ATMs with open access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>at ATMs with limited access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (PLN billions)	0.96	4.50	7.49	20.78	53.87	69.53
<i>of which:</i>						
<i>at ATMs with open access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>at ATMs with limited access</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of ATMs with a giro transfer function	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	1,207
Volume of transactions (millions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	0.44
Value of transactions (PLN billions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	0.08
Debit function						
Cards with a debit function (thousands)	280.36	704.04	3,341.56	7,280.50	9,905.66	12,740.63
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Number of networks	2	2	2	3	4	4
Number of terminals	2,580	4,581	8,855	20,993	44,745	65,609
Volume of transactions (millions)	1.70	2.22	5.09	11.06	31.69	59.26
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Value of transactions (PLN billions)	0.50	0.62	1.03	1.78	5.42	9.44
<i>of which:</i>						
<i>transactions with retailer cards (PLN billions)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Credit function						
Cards with a credit function (thousands)	19.76	44.45	100.16	223.94	504.41	889.44
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	8.8	43.62	128.75	288.35
Number of networks	2	2	2	3	4	4
Number of terminals	27,884	38,702	50,313	72,265	88,175	112,897
Volume of transactions (millions)	0.29	0.44	2.10	6.65	13.47	18.82
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	0.10	1.35	4.10	6.98
Value of transactions (PLN billions)	0.04	0.08	0.54	1.79	3.06	3.52
<i>of which:</i>						
<i>transactions with retailer cards (PLN billions)</i>	<i>nav</i>	<i>nav</i>	0.02	0.47	1.21	1.48

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (PLN billions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (PLN billions)	nap	nap	nap	nap	nap	nap
Float (PLN billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	125.35	317.97	442.72	829.22	1,009.81	1,047.09
Number of terminals	27,884	38,702	50,313	72,265	88,175	112,897
Volume of transactions (millions)	0.54	2.43	4.67	9.60	13.40	17.38
Value of transactions (PLN billions)	0.21	0.66	1.08	2.12	2.47	2.36
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	713.16	1,668.39	3,884.43	8,333.66	11,419.86	14,677.15
<i>of which:</i>						
<i>cards with a combined debit and cash function (thousands)</i>	280.36	704.04	3,341.56	7,280.50	9,905.66	12,740.63
<i>cards with a cheque guarantee function (thousands)</i>	153.05	378.08	665.90	2,101.28	2,672.61	3,104.21

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
SORBNET (RTGS)						
Credit transfers	0.37	0.45	0.49	0.46	0.52	0.54
Systems of KIR:	124.31	202.60	257.39	334.66	435.96	517.37
ELIXIR	6.82	13.73	39.99	130.35	189.37	271.29
Credit transfers	6.82	13.73	39.98	130.31	189.37	269.51
Debit instruments	nap	nap	0.00	0.04	0.25	1.78
<i>of which:</i>						
<i>direct debits</i>	<i>nap</i>	<i>nap</i>	<i>0.00</i>	<i>0.04</i>	<i>0.25</i>	<i>0.96</i>
<i>cheques</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>0.82</i>
SYBIR	117.49	188.87	217.40	204.31	246.58	246.08
Credit transfers	112.50	182.59	210.11	197.32	238.53	242.06
Cheques	4.99	6.28	7.29	6.99	8.06	4.02
Concentration ratio						
SORBNET (RTGS)	23.0%	25.7%	24.3%	25.5%	28.5%	30.5%
ELIXIR	68.6%	65.5%	53.1%	52.6%	51.4%	49.2%
SYBIR	41.6%	41.3%	41.5%	50.1%	54.5%	63.5%

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(PLN billions)*

	1996	1997	1998	1999	2000	2001
SORBNET (RTGS)						
Credit transfers	1,926.94	3,014.45	4,895.65	6,551.37	9,805.93	13,496.92
Systems of KIR:	954.29	1,380.63	2,015.69	3,022.68	3,839.09	4,561.07
ELIXIR	124.07	413.19	1,177.61	2,398.04	3,359.31	4,256.45
Credit transfers	124.07	413.19	1,177.58	2,397.69	3,357.47	4,253.17
Debit instruments	nap	nap	0.03	0.35	1.84	3.28
<i>of which:</i>						
<i>direct debits</i>	<i>nap</i>	<i>nap</i>	<i>0.03</i>	<i>0.35</i>	<i>1.84</i>	<i>nav</i>
<i>cheques</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nav</i>
SYBIR	830.22	967.44	838.09	624.64	479.78	304.62
Credit transfers	812.64	950.45	818.65	599.36	459.34	284.66
Cheques	17.59	16.98	19.44	25.28	20.44	19.96
Concentration ratio						
SORBNET (RTGS)	32.4%	30.8%	35.5%	34.1%	40.9%	47.0%
ELIXIR	36.6%	52.1%	47.0%	53.0%	54.2%	56.8%
SYBIR	39.9%	42.4%	46.3%	55.3%	59.0%	67.8%

Table 9
Indicators of the use of various cashless payment instruments:
volume of transactions ¹⁾

(millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	4.99	6.28	7.29	6.99	8.06	4.84
<i>of which:</i>						
<i>face-to-face</i>	4.99	6.28	7.29	6.99	8.06	4.84
<i>via PC or other terminal</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>telebanking</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>via mobile phone</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Payments by debit card	1.70	2.22	5.09	11.06	31.69	59.26
<i>of which:</i>						
<i>face-to-face</i>	1.70	2.22	5.09	11.06	31.69	59.26
<i>via PC or other terminal</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>telebanking</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>via mobile phone</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Payments by credit card ²⁾	0.83	2.87	6.77	16.25	26.87	36.20
<i>of which:</i>						
<i>face-to-face</i>	0.83	2.87	6.77	16.25	26.87	36.16
<i>via PC or other terminal</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	0.04
<i>telebanking</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>via mobile phone</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Credit transfers	119.32	196.32	250.09	327.63	427.90	511.57
<i>of which:</i>						
<i>face-to-face</i>	119.12	195.31	224.35	272.18	348.11	443.94
<i>via PC or other terminal</i>	0.20	1.01	25.70	55.38	79.65	67.18
<i>telebanking</i>	<i>neg</i>	0.01	0.04	0.07	0.14	0.46
<i>via mobile phone</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>neg</i>	0.02
Direct debits	0	0	<i>neg</i>	0.04	0.25	0.96
<i>of which:</i>						
<i>face-to-face</i>	<i>nap</i>	<i>nap</i>	<i>nav</i>	<i>neg</i>	0.01	0.01
<i>via PC or other terminal</i>	<i>nap</i>	<i>nap</i>	<i>nav</i>	0.04	0.25	0.95
<i>telebanking</i>	<i>nap</i>	<i>nap</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>via mobile phone</i>	<i>nap</i>	<i>nap</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Card-based e-money	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Network-based e-money	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Other ³⁾	137.20	130.50	126.79	121.40	112.68	107.11
Total	264.04	338.20	396.04	483.37	607.44	719.94

1) Includes items initiated by banks in the SYBIR and ELIXIR systems (retail). SORBNET (RTGS) is not included.

2) Also includes charge cards.

3) Postal instruments: postal transfers (between individuals who do not have bank accounts) and pension and disability allowance payments.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions¹⁾

(PLN billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	17.59	16.98	19.44	25.28	20.44	20.20
of which:						
face-to-face	17.59	16.98	19.44	25.28	20.44	20.20
via PC or other terminal	nap	nap	nap	nap	nap	nap
telebanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by debit card	0.50	0.62	1.03	1.78	5.42	9.44
of which:						
face-to-face	0.50	0.62	1.03	1.78	5.42	9.44
via PC or other terminal	nap	nap	nap	nap	nap	nap
telebanking	nap	nap	nap	nap	nap	nap
via mobile phone	nap	nap	nap	nap	nap	nap
Payments by credit card ²⁾	0.25	0.74	1.62	3.92	5.53	5.89
of which:						
face-to-face	0.25	0.74	1.62	3.92	5.53	5.88
via PC or other terminal	nav	nav	nav	nav	nav	0.01
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Credit transfers	936.71	1,363.64	1,996.26	2,997.40	3,816.81	4,537.83
of which:						
face-to-face	933.46	1,344.29	1,951.61	2,699.47	3,203.24	3,827.44
via PC or other terminal	3.24	19.21	43.76	295.17	609.80	706.67
telebanking	neg	0.14	0.89	2.76	3.77	3.69
via mobile phone	nap	nap	nap	nap	neg	0.03
Direct debits	0.00	0.00	0.03	0.35	1.84	3.04
of which:						
face-to-face	nap	nap	nav	0.01	0.08	0.10
via PC or other terminal	nap	nap	nav	0.34	1.77	2.94
telebanking	nap	nap	nav	nav	nav	neg
via mobile phone	nap	nap	nav	nav	nav	nav
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Other ³⁾	nav	nav	63.92	67.33	66.94	70.30
Total	955.04	1,381.98	2,082.29	3,096.05	3,916.99	4,646.70

1) Includes items initiated by banks in the SYBIR and ELIXIR systems (retail). SORBNET (RTGS) is not included.

2) Also includes charge cards.

3) Postal instruments: postal transfers (between individuals who do not have bank accounts) and pension and disability allowance payments.

Table 1a
Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions

(thousands)

	1996	1997	1998	1999	2000	2001
Trading platforms						
Stock exchange transactions	2,613	4,109	3,580	3,226	4,434	4,519
<i>of which:</i>						
<i>shares</i>	2,264	3,512	3,233	2,980	3,736	3,128
<i>Treasury bonds</i>	262	309	151	136	134	131
<i>mass privatisation programme certificates</i>	87	284	175	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>futures contracts</i>	<i>nap</i>	<i>nap</i>	16	90	541	1,238
<i>warrants</i>	<i>nap</i>	<i>nap</i>	1	5	19	7
<i>other</i>	<i>neg</i>	4	4	15	4	15
OTC market transactions	0.24	1.69	18.80	37.47	28.54	4.30
<i>of which:</i>						
<i>shares</i>	0.24	1.64	12.08	18.94	23.40	4.25
<i>Treasury bonds</i>	<i>nap</i>	<i>nap</i>	5.84	9.53	2.56	<i>nap</i>
<i>warrants</i>	<i>nap</i>	<i>nap</i>	0.86	8.95	2.55	<i>nap</i>
<i>other</i>	<i>nap</i>	0.05	0.02	0.04	0.04	0.05
Transactions outside the regulated market	0.53	3.12	11.34	17.92	30.77	53.78
<i>of which:</i>						
<i>shares</i>	0.01	2.02	0.17	0.76	0.19	0.73
<i>Treasury bonds</i>	0.52	1.10	11.16	17.16	30.58	53.04
<i>other</i>	0.15	<i>neg</i>	0.01	<i>nap</i>	<i>neg</i>	0.01
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
KDPW	2,841.16	4,821.87	4,479.71	5,278.07	5,521.95	5,050.11
<i>of which:</i>						
<i>shares</i>	2,355.02	4,146.64	4,056.23	4,939.88	4,750.20	3,564.37
<i>Treasury bonds</i>	351.34	347.83	202.62	198.63	189.32	209.22
<i>futures contracts</i>	<i>nap</i>	<i>nap</i>	16.16	91.46	546.10	1,244.93
<i>warrants</i>	<i>nap</i>	<i>nap</i>	2.08	14.67	22.73	9.69
<i>mass privatisation programme certificates</i>	105.47	301.01	186.00	0.46	<i>nap</i>	<i>nap</i>
<i>other</i>	29.34	26.39	16.62	32.96	13.60	21.91
SKARBNET	45.16	80.75	88.40	102.25	94.23	77.86
Treasury bills	45.16	80.75	88.40	102.25	94.23	77.86
SEBOP	2.22	5.92	7.35	8.07	9.25	5.13
National Bank of Poland bills	2.22	5.92	7.35	8.07	9.25	5.13

Table 11b**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions***(PLN billions)*

	1996	1997	1998	1999	2000	2001
Trading platforms						
Stock exchange transactions	24.93	36.82	36.72	50.25	116.28	92.93
<i>of which:</i>						
<i>shares</i>	14.95	26.17	31.17	44.48	84.55	40.22
<i>Treasury bonds</i>	8.11	6.74	3.86	2.38	2.29	2.56
<i>mass privatisation programme certificates</i>	1.86	3.89	1.36	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>futures contracts</i>	<i>nap</i>	<i>nap</i>	0.30	3.18	29.31	49.32
<i>warrants</i>	<i>nap</i>	<i>nap</i>	<i>neg</i>	0.01	0.04	0.01
<i>other</i>	0.01	0.02	0.03	0.20	0.09	0.82
OTC market transactions	0.02	0.02	1.20	0.40	0.28	0.15
<i>of which:</i>						
<i>shares</i>	0.02	0.01	0.10	0.16	0.22	0.05
<i>Treasury bonds</i>	<i>nap</i>	<i>nap</i>	1.10	0.22	0.05	<i>nap</i>
<i>warrants</i>	<i>nap</i>	<i>nap</i>	<i>neg</i>	0.02	0.01	<i>nap</i>
<i>other</i>	<i>nap</i>	0.01	<i>neg</i>	<i>neg</i>	<i>neg</i>	0.10
Transactions outside the regulated market	3.31	13.79	89.65	87.74	162.54	418.08
<i>of which:</i>						
<i>shares</i>	0.71	1.62	0.50	2.59	1.44	0.02
<i>Treasury bonds</i>	2.59	12.17	89.15	85.14	161.02	417.97
<i>other</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>nap</i>	0.08	0.10
Clearing houses	nap	nap	nap	nap	nap	nap
Securities settlement systems						
KDPW	45.34	83.25	176.45	195.46	372.71	590.87
<i>of which:</i>						
<i>shares</i>	22.33	47.88	59.06	85.90	156.06	82.43
<i>Treasury bonds</i>	20.72	30.11	114.58	105.85	186.60	457.20
<i>futures contracts</i>	<i>nap</i>	<i>nap</i>	0.30	3.30	29.63	49.49
<i>warrants</i>	<i>nap</i>	<i>nap</i>	<i>neg</i>	0.02	0.05	0.01
<i>mass privatisation programme certificates</i>	2.23	5.22	2.42	0.00	<i>nap</i>	<i>nap</i>
<i>other</i>	0.05	0.04	0.09	0.38	0.37	1.74
SKARBNET	222.44	378.95	411.85	463.69	519.40	601.63
Treasury bills	222.44	378.95	411.85	463.69	519.40	601.63
SEBOP	36.03	122.10	610.88	753.41	810.57	547.74
National Bank of Poland bills	36.03	122.10	610.88	753.41	810.57	547.74

Table 11c
Number of participants in trading platforms, clearing houses and securities settlement systems

	1996	1997	1998	1999	2000	2001
Trading systems						
Warsaw Stock Exchange	37	37	35	36	38	28
Banks	24	15	27	8	nav	nav
Brokers/dealers	13	22	8	28	nav	nav
Central Quotation Table	9	17	20	20	20	17
Banks	5	11	10	7	6	3
Brokers/dealers	4	6	10	13	14	14
Clearing systems	nap	nap	nap	nap	nap	nap
Securities settlement systems						
KDPW	65	75	75	80	79	72
Banks	41	45	44	47	44	42
Brokerage houses	21	27	28	30	32	27
Insurance companies	1	1	1	1	1	1
Other	2	2	2	2	2	2
SKARBNET	68	76	75	68	65	63
Banks	67	67	67	62	60	58
Insurance companies	1	1	1	1	1	1
Other	0	8	7	5	4	4
SEBOP	40	48	48	44	44	38
Banks	39	47	47	43	43	37
Other	1	1	1	1	1	1

Table I I d
Outstanding securities

(end of year)

	1996	1997	1998	1999	2000	2001
KDPW						
Value of securities registered/issued (PLN billions)						
Stock exchange						
Shares	21.24	38.17	63.80	109.97	120.89	96.46
Treasury bonds	23.44	27.36	44.05	53.08	74.19	98.84
Other securities	1.40	1.35	0.39	0.05	0.28	1.45
OTC market						
Shares	0.06	0.13	0.38	0.33	0.28	0.19
Treasury bonds	nap	nap	3.33	1.69	nap	nap
Other securities	nap	0.01	0.03	0.03	0.05	0.28
Number of securities registered/issued						
Stock exchange						
Shares	83	143	198	221	225	230
Treasury bonds	44	47	45	49	47	51
Other securities	1	1	7	30	79	86
OTC market						
Shares	2	13	24	25	21	21
Treasury bonds	nap	nap	2	2	nap	nap
Other securities	nap	1	8	11	4	4
SKARBNET						
Value of Treasury bills issued (PLN billions)	40.80	51.99	41.37	45.46	46.25	48.54
Number of Treasury bills issued	50	50	50	50	50	50
Value of Treasury bills registered (PLN billions)	27.07	32.26	28.91	26.98	23.44	35.22
Number of Treasury bills registered	50	50	50	50	50	50
SEBOP						
Value of National Bank of Poland bills issued (PLN billions)	15.60	39.56	243.02	300.71	278.22	187.72
Number of National Bank of Poland bills issued	93	120	164	168	111	79
Value of National Bank of Poland bills registered (PLN billions)	12.53	14.37	28.58	11.13	20.48	14.27
Number of National Bank of Poland bills registered	48	23	11	4	7	7

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
KDPW						
Netting ratio for cash over year	nap	nap	55% ¹⁾	60%	78%	79%
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

1) Since 26 May 1998.

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	38	38	36	23	24	24
<i>of which live</i>	36	37	36	23	24	24
Sub-members	8	10	10	8	11	14
<i>of which live</i>	8	10	10	8	11	11
Participants	0	2	3	14	13	13
<i>of which live</i>	0	2	2	11	13	13
Total users	46	50	49	45	48	51
<i>of which live</i>	44	49	48	42	48	48
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	3,632,414	4,331,308	5,179,797	5,926,206	6,625,274	8,172,400
<i>of which:</i>						
<i>category I</i>	1,852,636	1,977,735	2,124,543	2,365,591	2,581,666	2,804,623
<i>category II</i>	872,270	1,077,815	1,257,844	1,232,807	1,346,111	1,516,247
Total messages received	3,455,810	3,922,272	4,312,496	4,788,718	5,542,536	6,469,943
<i>of which:</i>						
<i>category I</i>	1,786,521	1,886,103	2,013,212	2,270,438	2,600,684	2,992,756
<i>category II</i>	137,423	162,083	212,131	275,697	464,179	600,845
Domestic traffic	887,359	947,321	981,128	1,006,125	1,080,306	1,182,418
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Romania

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	22,608.00	22,546.00	22,503.00	22,456.00	22,431.00	22,400.00
GDP (ROL billions)	108,919.60	252,925.70	371,193.70	539,356.90	796,533.70	1,128,400.00
GDP per capita (ROL millions)	4.82	11.22	16.50	24.02	35.51	50.38
Exchange rate vis-à-vis ECU/EUR <i>end of year</i>	5,005.00	8,867.00	12,788.00	18,330.76	24,117.66	27,881.19
<i>average</i>	3,862.9	8,090.92	9,989.25	16,295.57	19,955.75	26,026.89

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, ROL billions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	5,382.70	9,200.10	11,525.00	17,371.60	25,741.00	35,635.30
Transferable deposits	5,790.60	9,531.10	10,584.70	12,297.30	20,589.40	28,673.30
Narrow money supply (M1)	11,173.30	18,731.20	22,109.70	29,668.90	46,330.40	64,308.60
<i>Memorandum items:</i>						
Broad money supply	30,334.60	62,150.40	92,529.90	134,122.50	185,060.00	270,511.10
Transferable deposits in foreign currencies	4,529.00	9,439.00	11,817.20	22,576.40	27,831.20	38,240.10
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	nap
<i>of which:</i>						
<i>on card-based products</i>	nap	nap	nap	nap	nap	nap
<i>on network-based products</i>	nap	nap	nap	nap	nap	nap

Table 3
Settlement media used by banks

(December average, ROL billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	1,590.20	2,789.80	6,560.00	17,027.00	23,888.50	28,214.00
<i>of which:</i>						
<i>required reserves</i>	1,370.40	2,770.70	6,560.00	16,837.00	23,573.50	27,734.00
<i>free reserves</i>	219.80	19.10	0.00	190.00	315.00	480.00
Transferable balances held at other banks ¹⁾	nap	nap	nap	nap	nap	nap
<i>Memorandum item:</i>						
Institutions' borrowing from central bank	nap	nap	nap	nap	nap	nap

1) Correspondent accounts in ROL between banks have not been allowed since 1995.

Table 4**Banknotes and coins***(end of year, total value, ROL billions)*

	1996	1997	1998	1999	2000	2001
Total banknotes issued	5,860.5	9,583.9	12,258.7	18,583.1	27,973.7	39,736.3
<i>of which:</i>						
ROL 500,000	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	4,577.5	15,101.8
ROL 100,000	<i>nap</i>	<i>nap</i>	3,484.6	8,219.5	11,826.5	13,513.3
ROL 50,000	699.1	5,314.9	5,704.0	6,408.0	9,034.5	8,303.7
ROL 10,000	3,693.9	3,186.5	2,458.3	3,240.5	1,448.1	2,108.2
ROL 5,000	1,196.0	915.9	459.4	550.2	810.7	572.1
ROL 2,000	<i>nap</i>	<i>nap</i>	<i>nap</i>	9.7	89.9	87.6
ROL 1,000	183.4	84.3	79.2	150.8	186.5	49.6
ROL 500	88.1	82.3	73.2	4.4	<i>nap</i>	<i>nap</i>
Total coins issued	45.4	46.6	47.1	93.1	135.0	274.1
<i>of which:</i>						
ROL 5,000	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	7.6
ROL 1,000	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	6.5	126.5
ROL 500	<i>nap</i>	<i>nap</i>	<i>nap</i>	46.0	81.3	92.8
ROL 100	30.0	32.2	32.7	32.7	32.7	32.7
ROL 50	9.2	9.4	9.4	9.4	9.4	9.4
ROL 20	2.8	2.8	2.8	2.8	2.8	2.8
ROL 10	1.4	1.4	1.4	1.4	1.5	1.5
ROL 5	0.7	0.7	0.7	0.7	0.7	0.7
ROL 3	0.3	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>
ROL 1	0.6	0.1	0.1	0.1	0.1	0.1
fractional coins	0.4	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>
Total banknotes and coins issued	5,905.9	9,630.5	12,305.8	18,676.2	28,108.7	40,010.4
Banknotes and coins held by credit institutions	519.7	426.8	771.7	1,274.0	2,322.9	4,320.0
Banknotes and coins in circulation outside credit institutions	5,382.70	9,200.10	11,525	17,371.60	25,741.70	35,635.30

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (ROL billions)
Central bank	1	22	<i>nap</i>	<i>nap</i>	<i>nap</i>
Credit institutions	45	2,772	9,775.0	1,090.00	28,673.30
Post Office ¹⁾	1	7,145	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total	47	9,939	9,775.0	1,090.00	28,673.30
<i>of which:</i>					
virtual institutions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Branches of foreign banks	8	23	50.0	<i>nap</i>	<i>nav</i>
<i>of which:</i>					
EU-based	7	21	46.0	<i>nap</i>	<i>nav</i>

1) Does not hold deposit or sight accounts for customers.

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	4.50	36.64	137.50	384.97	1,085.68	2,263.81
Number of networks	1	2	3	4	6	10
Number of ATMs with a cash dispensing function	27	79	186	472	747	1,283
<i>of which:</i>						
<i>open access</i>	27	79	186	472	747	1,283
<i>limited access</i>	nap	nap	nap	nap	nap	nap
Volume of transactions (millions)	nav	0.29	1.81	5.21	15.91	34.86
<i>of which:</i>						
<i>at ATMs with open access</i>	nav	0.29	1.81	5.21	15.91	34.86
<i>at ATMs with limited access</i>	nap	nap	nap	nap	nap	nap
Value of transactions (ROL billions)	nav	52.89	517.75	1,420.13	10,185.27	32,624.14
<i>of which:</i>						
<i>at ATMs with open access</i>	nav	52.89	517.75	1,420.13	10,185.27	32,624.14
<i>at ATMs with limited access</i>	nap	nap	nap	nap	nap	nap
Number of ATMs with a giro transfer function	nap	nap	nap	nap	358.00	694.00
<i>volume of transactions (millions)</i>	nap	nap	nap	nap	nav	nav
<i>value of transactions (ROL billions)</i>	nap	nap	nap	nap	nav	nav
Debit function						
Cards with a debit function (thousands)	4.50	36.64	137.50	383.26	1,039.82	2,082.00
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nap	nap	nap	nap	nap	nap
Number of networks	nav	2	3	3	6	10
Number of terminals	nav	49	193	451	1,312	2,422
Volume of transactions (millions) ¹⁾	0.03	0.05	0.14	0.18	0.26	0.53
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nap	nap	nap	nap	nap	nap
Value of transactions (ROL billions) ¹⁾	nav	76.91	200.63	326.12	501.68	887.95
<i>of which:</i>						
<i>transactions with retailer cards (ROL billions)</i>	nap	nap	nap	nap	nap	nap
Credit function						
Cards with a credit function (thousands)	nap	nap	nap	2	48.60	156.43
<i>of which:</i>						
<i>retailer cards (thousands)</i>	nap	nap	nap	nap	nap	nap
Number of networks	nap	2	3	3	6	10
Number of terminals	nap	49	193	451	1,312	2,422
Volume of transactions (millions) ¹⁾	nap	nap	nap	0.002	0.02	0.12
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	nap	nap	nap	nap	nap	nap
Value of transactions (ROL billions) ¹⁾	nap	nap	nap	1.02	27.91	183.68
<i>of which:</i>						
<i>transactions with retailer cards (ROL billions)</i>	nap	nap	nap	nap	nap	nap
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (ROL billions)	nap	nap	nap	nap	nap	nap

1) Cash withdrawals are not included.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (ROL billions)	nap	nap	nap	nap	nap	nap
Float (ROL billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	nap	nap	nap	nap	nap	nap
Number of terminals	nap	nap	nap	nap	nap	nap
Volume of transactions (millions)	nap	nap	nap	nap	nap	nap
Value of transactions (ROL billions)	nap	nap	nap	nap	nap	nap
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	3.69	36.64	137.50	385.05	1,088.40	2,241.17
<i>of which:</i>						
<i>cards with a combined debit, cash and credit function (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>cards with a cheque guarantee function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001 ¹⁾
National Payment System	9.96	11.67	12.21	12.44	14.19	16.51
Net settlement subsystem	9.94	11.60	12.08	12.23	13.93	16.21
<i>of which:</i>						
<i>credit transfers</i>	7.65	8.50	8.77	8.44	9.32	10.80
<i>cheques</i>	2.24	2.35	2.48	2.55	3.00	3.42
<i>bills of exchange and promissory notes</i>	<i>nav</i>	0.01	0.13	0.49	0.82	1.17
<i>cash operations</i>	0.05	0.07	0.08	0.07	0.05	0.05
<i>State Treasury payment orders</i>	<i>nav</i>	0.67	0.62	0.69	0.75	0.77
Gross settlement subsystem	0.02	0.06	0.12	0.19	0.25	0.30
<i>of which:</i>						
<i>interbank customer-initiated</i>						
<i>large-value transfers</i>	0.01	0.02	0.02	0.04	0.10	0.11
<i>State Treasury large-value payments and collections</i>	<i>nap</i>	<i>nap</i>	0.02	0.06	0.08	0.10
<i>interbank transactions</i>	0.01	0.04	0.08	0.09	0.07	0.08
Special settlement regime²⁾	0.00	0.01	0.01	0.01	0.01	0.01
<i>Credit transfers</i>	0.00	0.01	0.01	0.01	0.01	0.01
Concentration ratio (overall National Payment System)	nav	nav	nav	nav	nav	67.16%

1) Since 1 May 2001 the interbank payment system has been operated by TRANSFOND SA.

2) Settlement only for clearing houses and other current account holders.

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions**

(ROL billions)

	1996	1997	1998	1999	2000	2001
National Payment System	398,261.97	886,686.07	1,102,066.33	1,571,125.65	2,139,084.04	3,262,712.35
Net settlement subsystem	154,794.00	295,607.00	375,437.76	493,627.89	683,853.28	927,659.18
<i>of which:</i>						
<i>credit transfers</i>	51,121.00	92,650.00	127,185.31	183,877.52	274,595.00	371,711.40
<i>cheques</i>	6,852.00	14,368.00	22,851.42	35,885.09	58,355.00	93,018.59
<i>bills of exchange and promissory notes</i>	66.00	299.00	2,806.59	10,471.01	18,430.00	30,840.53
<i>cash operations</i>	24,605.00	55,580.00	84,095.44	105,645.97	120,622.28	158,955.39
<i>State Treasury payment orders</i>	72,150.00	132,710.00	138,499.00	157,748.30	211,851.00	273,133.27
Gross settlement subsystem	243,361.00	590,267.00	725,838.47	1,075,827.96	1,452,181.76	2,329,455.01
<i>Credit transfers</i>	243,361.00	590,267.00	725,838.47	1,075,827.96	1,452,181.76	2,329,455.01
<i>of which:</i>						
<i>interbank customer-initiated</i>						
<i>large-value transfers</i>	9,840.00	26,499.00	33,783.58	66,204.84	160,433.00	214,925.23
<i>State Treasury large-value payments</i>						
<i>and collections</i>	nap	nap	51,308.83	143,448.15	198,984.17	310,777.88
<i>interbank transactions</i>	233,521.00	563,768.00	640,746.06	866,174.96	1,092,764.59	1,799,333.03
Special settlement regime ²⁾	106.97	812.07	790.10	1,669.80	3,049.00	5,598.17
<i>Credit transfers</i>	106.97	812.07	790.10	1,669.80	3,049.00	5,598.17
Concentration ratio (overall National Payment System)	nav	nav	nav	nav	nav	63.67%

1) Since 1 May 2001 the interbank payment system has been operated by TRANSFOND SA.

2) Settlement only for clearing houses and other current account holders.

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
Instruments						
<i>Cheques</i>	4.10	5.44	5.74	5.35	7.66	13.01
<i>of which:</i>						
<i>face-to-face</i>	4.10	5.44	5.74	5.35	7.66	13.01
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>teleshopping</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
<i>Payments by debit card</i>	0.03	0.05	0.14	0.18	0.26	0.53
<i>of which:</i>						
<i>face-to-face</i>	0.03	0.05	0.14	0.18	0.26	0.53
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>teleshopping</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
<i>Payments by credit card</i>	nap	nap	nap	0.002	0.02	0.12
<i>of which:</i>						
<i>face-to-face</i>	nap	nap	nap	0.002	0.02	0.12
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>teleshopping</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
<i>Credit transfers</i>	21.73	19.69	20.82	30.54	36.24	46.77
<i>of which:</i>						
<i>face-to-face</i>	21.73	19.69	20.82	28.77	33.34	42.80
<i>via PC or other terminal</i>	nap	nap	nap	0.0003	0.0013	0.02
<i>teleshopping</i>	nap	nap	nap	1.77	2.90	3.95
<i>via mobile phone</i>	nap	nap	nap	0.00	0.00	0.00

Table 9 (continued)

	1996	1997	1998	1999	2000	2001
Direct debits	nav	nav	nav	0.09	0.14	0.19
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	0.09	0.14	0.18
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	25.85	25.18	26.70	36.16	44.32	60.62

Table 10**Indicators of the use of various cashless payment instruments: value of transactions***(ROL billions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	15,738.00	40,788.00	67,501.24	105,204.70	158,707.77	246,553.01
<i>of which:</i>						
<i>face-to-face</i>	15,738.00	40,788.00	67,501.24	105,204.70	158,707.77	246,553.01
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by debit card	nav	76.91	200.63	326.12	501.68	887.95
<i>of which:</i>						
<i>face-to-face</i>	nav	76.91	200.63	326.12	501.68	887.95
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Payments by credit card	nap	nap	nap	1.02	27.91	183.68
<i>of which:</i>						
<i>face-to-face</i>	nap	nap	nap	1.02	27.91	183.68
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Credit transfers	400,193.00	856,031.00	1,409,175.08	1,770,008.10	2,447,469.16	3,926,039.14
<i>of which:</i>						
<i>face-to-face</i>	400,193.00	856,031.00	1,409,175.08	1,706,175.78	2,300,889.64	3,655,803.70
<i>via PC or other terminal</i>	nap	nap	nap	56.34	11.70	567.62
<i>telebanking</i>	nap	nap	nap	63,775.98	146,567.82	269,667.82
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Direct debits	nav	nav	nav	neg	neg	neg
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	neg	neg	neg
<i>via PC or other terminal</i>	nap	nap	nap	nap	nap	nap
<i>telebanking</i>	nap	nap	nap	nap	nap	nap
<i>via mobile phone</i>	nap	nap	nap	nap	nap	nap
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	nap
Total	415,931.00	896,895.91	1,476,876.95	1,875,539.94	2,606,706.53	4,173,663.78

Table I Ia**Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions**

	1996	1997	1998	1999	2000	2001
BVB ¹⁾	17,768	609,651	512,705	415,046	496,196	348,663
Shares	17,768	609,651	512,705	415,046	496,196	348,658
Bonds	nap	nap	nap	nap	nap	5
SNCDD	nap	260,573	345,677	135,470	75,185	43,458
Shares	nap	260,573	345,677	135,470	75,185	43,458
National Bank of Romania						
government securities system ²⁾	11	82	597	6,246	19,761	28,421
Government securities	11	82	597	6,235	19,572	27,849

1) Figures are both for listed and unlisted markets.

2) Issues denominated in foreign currencies are not included.

Table I Ib**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions**

(ROL billions)

	1996	1997	1998	1999	2000	2001
BVB	15.00	1,946.00	1,846.00	1,415.00	1,867.00	3,781.90
Shares	15.00	1,946.00	1,846.00	1,415.00	1,867.00	3,781.90
Bonds	nap	nap	nap	nap	nap	0.004
SNCDD	nap	1,606.73	1,469.52	1,521.65	1,786.24	1,502.41
Shares	nap	1,606.73	1,469.52	1,521.65	1,786.24	1,502.41
National Bank of Romania						
government securities system	150.42	8,251.53	16,096.44	105,396.97	278,508.72	433,488.78
Government securities ¹⁾	150.42	8,251.53	16,096.44	105,396.97	278,508.72	433,488.78

1) Issues denominated in foreign currencies are not included.

Table I I c**Number of participants in trading platforms, clearing houses and securities settlement systems***(end of year)*

	1996	1997	1998	1999	2000	2001
BVB	42	131	195	168	143	112
Banks	nap	16	23	19	18	18
Stockbrokers	42	115	167	142	118	89
Other (custodian banks)	nap	nap	5	7	7	5
SNCDD	49	142	182	141	105	89
Banks	2	10	12	7	7	5
Stockbrokers	47	132	170	134	98	84
National Bank of Romania						
government securities system	24	32	36	36	38	39
Banks	24	32	36	36	38	39

Table I I d**Outstanding securities***(end of year)*

	1996	1997	1998	1999	2000	2001
BVB						
Value of shares issued (ROL billions)	231.00	5,056.00	3,922.00	5,725.00	9,436.00	38,573.00
Value of bonds issued ¹⁾ (ROL billions)	nap	nap	nap	nap	nap	15.00
Number of shares issued	17.00	75.00	126.00	126.00	115.00	65.00
Number of bonds issued	nap	nap	nap	nap	nap	2.00
Value of shares registered (ROL billions)	231.00	5,056.00	3,922.00	5,725.00	9,436.00	38,573.00
Value of bonds registered (ROL billions)	nap	nap	nap	nap	nap	15.00
Number of shares registered	17.00	75.00	126.00	126.00	115.00	65.00
Number of bonds registered	nap	nap	nap	nap	nap	2.00
SNCDD						
Value of securities issued (ROL billions)	nav	nav	nav	nav	nav	99.81
Volume of securities issued	nav	nav	nav	nav	nav	5,261.00
Value of securities registered (ROL billions)	nav	nav	nav	nav	nav	99.81
Volume of securities registered	nav	nav	nav	nav	nav	5,261.00
National Bank of Romania						
government securities system ²⁾						
Value of securities issued (ROL billions)	8,197.45	30,297.60	46,187.50	110,279.27	108,608.78	80,646.51
Number of securities issued	47	54	71	130	124	113
Value of securities registered (ROL billions)	7,996.56	28,768.65	37,884.73	83,784.38	87,740.23	74,808.26
Volume of securities registered	42	49	64	106	117	104

1) *Municipal bonds.*2) *Issues denominated in foreign currencies are not included.*

Table 11e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
BVB						
Netting ratio for cash over year	nav	nav	nav	nav	nav	27.4%
Netting ratio for securities over year ¹⁾	nap	nap	nap	nap	nap	nap
SNCDD						
Netting ratio for cash over year	nap	53.63%	69.87%	73.90%	65%	71.70%
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap
National Bank of Romania government securities system ²⁾						
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

1) Not applicable; the transfer of securities between sellers' and buyers' accounts is done on a trade-by-trade basis.

2) Transactions are settled on a gross basis.

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	19	23	26	17	19	19
<i>of which live</i>	19	23	26	17	19	19
Sub-members	8	12	14	14	16	16
<i>of which live</i>	7	11	14	13	15	16
Participants	0	1	2	11	10	9
<i>of which live</i>	0	1	2	11	9	9
Total users	27	36	42	42	45	44
<i>of which live</i>	26	35	42	41	43	44
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	756,257	933,005	1,239,267	1,421,400	1,698,624	1,920,116
<i>of which:</i>						
<i>category I</i>	407,591	483,502	582,390	672,602	825,636	945,091
<i>category II</i>	130,730	178,644	265,558	337,180	475,723	583,558
Total messages received	949,032	1,191,390	1,478,115	1,705,356	1,931,298	2,084,506
<i>of which:</i>						
<i>category I</i>	446,884	573,240	679,699	829,720	1,003,025	1,129,638
<i>category II</i>	39,909	49,569	60,039	56,298	63,519	69,830
Domestic traffic	235,864	296,418	385,702	407,500	457,079	476,517
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Slovakia

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	5,374.0	5,383.0	5,391.0	5,395.8	5,400.5	5,400.5
GDP (SKK billions)	606.1	686.1	750.8	815.3	887.2	976.9
GDP per capita (SKK thousands)	112.78	127.46	139.27	151.1	164.28	180.89
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	39.48	38.38	42.44	42.4	43.93	42.78
<i>average</i>	38.91	38.11	39.49	44.12	42.6	43.3

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year; SKK billions)

	1996	1997	1998	1999	2000	2001 ¹⁾
Banknotes and coins	43.50	48.70	49.80	57.50	67.00	81.00
Transferable deposits	130.4	117.4	97.4	96.4	120.2	147.6
Other	nap	nap	nap	nap	nap	nap
Narrow money supply (M1)	173.9	166.1	147.2	153.9	187.2	228.6
<i>Memorandum items:</i>						
Broad money supply (M2)	416.9	453.5	472.7	526.7	607.9	680
Transferable deposits in foreign currencies	nav	nav	nav	nav	nav	nav
Outstanding value on e-money schemes	nap	nap	nap	nap	nap	neg
<i>of which:</i>						
<i>on card-based products</i>	nap	nap	nap	nap	nap	nap
<i>on network-based products</i>	nap	nap	nap	nap	nap	neg

1) Preliminary data.

Table 3
Settlement media used by banks

(end of year, SKK billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank ¹⁾	25.55	36.03	38.83	39.33	38.76	30.9
<i>of which:</i>						
<i>required reserves</i>	24.77	36.55	38.33	38.97	38.81	30.82
<i>free reserves</i>	0.78	-0.52	0.5	0.36	-0.05	0.08
Transferable balances held at other banks	nav	nav	nav	nav	nav	nav
<i>Memorandum items:</i>						
Institutions' borrowing from central bank – value	31.1	50.2	55.3	39.6	35.6	27.7
Number of institutions borrowing from central bank	12	17	19	18	19	16

1) Average for the year.

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

	1996	1997	1998	1999	2000	2001
Total banknotes issued	51.21	57.20	56.94	66.20	74.52	89.60
<i>of which:</i>						
SKK 5,000	16.62	18.73	18.13	23.51	29.41	38.43
SKK 1,000	25.64	29.69	30.44	33.54	36.18	41.83
SKK 500	4.66	4.43	4.06	4.54	4.09	4.28
SKK 200	1.27	1.28	0.94	1.19	1.34	1.47
SKK 100	2.13	2.14	2.40	2.39	2.38	2.40
SKK 50	0.51	0.53	0.54	0.57	0.62	0.66
SKK 20	0.38	0.40	0.43	0.46	0.50	0.53
Total coins issued	0.94	1.00	1.07	1.14	1.24	1.36
<i>of which:</i>						
SKK 10	0.51	0.53	0.57	0.59	0.65	0.70
SKK 5	0.18	0.18	0.19	0.20	0.22	0.24
SKK 2	0.10	0.12	0.13	0.14	0.15	0.17
SKK 1	0.08	0.08	0.09	0.09	0.10	0.11
SKK 0.5	0.03	0.04	0.04	0.05	0.05	0.06
SKK 0.2	0.03	0.03	0.03	0.04	0.04	0.05
SKK 0.1	0.01	0.02	0.02	0.03	0.03	0.03
commemorative coins	0.32	0.34	0.39	0.46	0.51	0.57
Total banknotes and coins issued	52.47	58.54	58.40	67.80	76.27	91.53
Banknotes and coins held by credit institutions	8.97	9.84	8.60	10.30	9.27	10.53
Banknotes and coins in circulation outside credit institutions	43.50	48.70	49.80	57.50	67.00	81.00 ¹⁾

1) Preliminary data.

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches ²⁾	Number of accounts thousands	Number of internet-linked accounts	Value of accounts (SIT billions)
Central bank	1	16	28.441	0	nav
Banks (total)	19	1,010	2,607.706	63,802.8	nav
<i>of which:</i>					
banks with foreign ownership ¹⁾	13	897	2,241.192	53.713	nav
banks with domestic ownership	6	113	365.082	10.090	nav
Post Office	1	1,630	nap	nap	nap
Total	21	2,656	2,636.147	63,802.8	nav
Branches of foreign banks	2	42	1.432	0	nav
<i>of which:</i>					
EU-based	1	1	1.261	0	nav

1) Including housing savings banks.

2) Including sub-branches.

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	772.692	1,002.317	1,358.134	1,542.985	1,719.503	1,974.581
Number of networks ¹⁾	2	2	1	1	1	1
Number of ATMs with a cash dispensing function	782	873	965	1,011	1,084	1,182
<i>of which:</i>						
<i>open access</i>	782	873	965	1,011	1,084	1,182
<i>limited access</i>	0	0	0	0	0	0
Volume of transactions (millions)	26.755	39.068	48.857	52.892	49.478	52.125
<i>of which:</i>						
<i>at ATMs with open access</i>	26.755	39.068	48.857	52.892	49.478	52.125
<i>at ATMs with limited access</i>	0	0	0	0	0	0
Value of transactions (SKK billions)	26.589	39.883	57.632	69.002	82.522	95.917
<i>of which:</i>						
<i>at ATMs with open access</i>	26.589	39.883	57.632	69.002	82.522	95.917
<i>at ATMs with limited access</i>	0	0	0	0	0	0
Number of ATMs with a giro transfer function ²⁾	114	129	178	288	371	506
<i>volume of transactions (millions)</i>	3.12	4.7	9.04	12.62	13.82	16.78
<i>value of transactions (SKK billions)</i>	3.04	5.07	11.14	16.93	22.3	29.69
Debit function						
Cards with a debit function (thousands)	771.792	1,000.917	1,355.834	1,539.685	1,712.656	1,952.223
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Number of networks	2	2	1	1	1	1
Number of terminals	389	1,092	3,001	4,623	6,322	9,602
Volume of transactions (millions) ³⁾	0.143	0.439	1.161	2.293	5.648	10.603
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Value of transactions (SKK billions) ³⁾	0.185	0.501	1.494	3.116	6.844	11.737
<i>of which:</i>						
<i>transactions with retailer cards (SKK billions)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Credit function ⁴⁾						
Cards with a credit function (thousands)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	2.5	17.4
<i>of which:</i>						
<i>retailer cards (thousands)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of networks	2	2	1	1	1	1
Number of terminals	389	1,092	3,001	4,623	6,322	9,602
Volume of transactions (millions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Value of transactions (SKK billions)	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>of which:</i>						
<i>transactions with retailer cards (SKK billions)</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>

1) Since 1998 common ZBK ATM network.

2) Three banks.

3) All payments by debit, credit and charge cards.

4) Only payment cards issued by banks.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap	nap
Value of purchase transactions (SKK billions)	nap	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap	nap
Value of money loaded (SKK billions)	nap	nap	nap	nap	nap	nap
Float (SKK billions)	nap	nap	nap	nap	nap	nap
Delayed debit cards (charge cards) ⁴⁾						
Cards with a delayed debit function (thousands)	0.9	1.4	2.3	3.3	4.347	4.958
Number of terminals	nav	nav	nav	nav	nav	nav
Volume of transactions (millions)	nav	nav	nav	nav	nav	nav
Value of transactions (SKK billions)	nav	nav	nav	nav	nav	nav
Memorandum item:						
Total number of cards in circulation (thousands)	772.692	1,002.317	1,358.134	1,542.985	1,719.503	1,974.581
<i>of which:</i>						
<i>cards with a combined debit, cash and e-money function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>cards with a cheque guarantee function (thousands)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

4) Only payment cards issued by banks.

Table 7

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

	1996	1997	1998	1999	2000	2001
SIPS	88.620	108.965	122.582	131.137	141.800	158.225
Concentration ratio	nav	nav	nav	nav	nav	nav

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions**

(SKK billions)

	1996	1997	1998	1999	2000	2001
SIPS	18,613	25,454	23,488	19,938	25,719	31,632
Concentration ratio	nav	nav	nav	nav	nav	nav

Table 9**Indicators of the use of various cashless payment instruments:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	0.303	0.305	0.197	0.146	0.180	0.143
of which:						
face-to-face	0.303	0.305	0.197	0.146	0.180	0.143
via PC or other terminal	0	0	0	0	0	0
telebanking	0	0	0	0	0	0
via mobile phone	0	0	0	0	0	0
Payments by debit card ¹⁾	0.292	0.592	1.272	2.330	5.687	10.664
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	0	0	0	0	0	0
telebanking	0	0	0	0	0	0
via mobile phone	0	0	0	0	0	0
Payments by credit card	nav	nav	nav	nav	nav	nav
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	nav	nav	nav	nav	nav	nav
Credit transfers ^{2), 3)}	88.620	108.965	115.751	123.005	132.746	148.458
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	0	0	0	0	nav	nav
via mobile phone	0	0	0	0	nav	nav
Direct debits ^{2), 3)}	nav	nav	2.956	3.592	4.051	4.399
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	0	0	0	0	0	0
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	neg
Total	nav	nav	120.176	129.073	142.664	163.654

1) Payments by all payment cards at POS terminals.

2) Domestic transactions processed by the Slovak National Clearing Centre.

3) Includes items initiated by banks.

Table 10
Indicators of the use of various cashless payment instruments: value of transactions
(SKK billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	nav	nav	1.686	1.667	1.776	1.736
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	1.686	1.667	1.776	1.736
<i>via PC or other terminal</i>	0	0	0	0	0	0
<i>telebanking</i>	0	0	0	0	0	0
<i>via mobile phone</i>	0	0	0	0	0	0
Payments by debit card ¹⁾	0.906	1.336	1.927	3.351	7.044	11.964
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	0	0	0	0	0	0
<i>telebanking</i>	0	0	0	0	0	0
<i>via mobile phone</i>	0	0	0	0	0	0
Payments by credit card	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	nav	nav	nav	nav	nav	nav
Credit transfers ^{2), 3)}	18,613	25,454	23,446	19,887	25,672	31,600
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	0	0	0	0	nav	nav
<i>via mobile phone</i>	0	0	0	0	nav	nav
Direct debits ^{2), 3)}	nav	nav	39,418	49,315	47,761	38,397
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	0	0	0	0	0	0
Card-based e-money	nap	nap	nap	nap	nap	nap
Network-based e-money	nap	nap	nap	nap	nap	neg
Total	nav	nav	23,489.0	19,941.3	25,728.6	31,652.1

1) Payments by all payment cards at POS terminals.

2) Domestic transactions processed by the Slovak National Clearing Centre.

3) Includes items initiated by banks.

Table I Ia**Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions***(millions)*

	1996	1997	1998	1999	2000	2001
Trading platforms						
BSSE	0.181	0.158	0.060	0.021	0.019	0.020
RM-System Slovakia, a.s.	0.621	0.558	0.240	0.112	0.669	0.123
<i>of which:</i>						
<i>shares</i>	0.369	0.178	0.077	0.011	0.017	0.039
<i>bonds</i>	0.253	0.381	0.161	0.101	0.652	0.084
Clearing houses						
BSSE	0.181	0.158	0.060	0.021	0.019	0.020
RM-System Slovakia, a.s.	0.621	0.558	0.240	0.112	0.669	0.123
Securities settlement systems ¹⁾						
BSSE	0.181	0.158	0.060	0.021	0.019	0.020
RM-System Slovakia, a.s.	0.621	0.558	0.240	0.112	0.669	0.123
Central Registry						
T-bills	0.774	0.887	0.260	0.151	0.033	0.092
National Bank of Slovakia bills	1.093	0.075	0.787	0.638	1.903	2.364

1) Number of transferred securities on the secondary market.

Table I Ib**Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions***(SKK billions)*

	1996	1997	1998	1999	2000	2001
Trading platforms						
BSSE	114.1	164.1	299.1	188.4	255.5	393.5
RM-System Slovakia, a.s.	28.349	15.286	6.859	5.067	36.931	7.942
<i>of which:</i>						
<i>shares</i>	25.747	12.051	5.425	3.808	3.959	3.214
<i>bonds</i>	2.603	3.235	1.434	1.259	32.972	4.728
Clearing houses						
BSSE	114.1	164.1	299.1	188.4	255.5	393.5
RM-System Slovakia, a.s.	28.349	15.286	6.859	5.067	36.931	7.942
Securities settlement systems						
BSSE	114.1	164.1	299.1	188.4	255.5	393.5
RM-System Slovakia, a.s.	28.349	15.286	6.859	5.067	36.931	7.942
Central Registry						
T-bills	759.15	848.33	253.04	146.96	31.3	86.92
National Bank of Slovakia bills	1,083.14	74.40	774.06	629.15	1,888.37	2,345.68

Table I Ic**Number of participants in trading platforms, clearing houses and securities settlement systems**

	1996	1997	1998	1999	2000	2001
Trading systems						
BSSE	53	54	50	47	44	40
RM-System Slovakia, a.s.	533,123	492,769	300,424	42,188	470,941	979,638
Primary market for government securities	nav	nav	40	52	94	107
Clearing systems						
BSSE	53	54	50	47	44	40
RM-System Slovakia, a.s.	890,038	870,486	525,345	191,370	1,144,060	1,033,782
Securities settlement systems						
BSSE	53	54	50	47	44	40
RM-System Slovakia, a.s.	888,845	523,563	523,563	166,935	1,025,037	1,143,075
Central Registry	nav	195	nav	164	113	124

Table I Id**Outstanding securities***(end of year)*

	1996	1997	1998	1999	2000	2001
BSSE						
Value of securities issued (SKK billions)	nav	53.9	77.9	63.3	115.3	224.6 ¹⁾
Number of securities issued	nav	114	74	51	45	52 ²⁾
Value of securities registered (SKK billions)	nav	276.8	271.9	264.6	272.3	461.2 ³⁾
Number of securities registered	nav	1,048	981	967	975	977 ⁴⁾
Central Registry ⁵⁾						
Value of securities issued (SKK billions)	83.172	104.484	110.983	115.396	197.848	416.209
National Bank of Slovakia bills	0	0	0	10	84.900	145.254
Government securities	83.172	104.484	110.983	105.396	112.948	270.955
<i>of which:</i>						
<i>T-bills</i>	29.507	43.053	19.94	16.127	18.429	39.375
<i>government bonds</i>	53.665	61.431	91.043	89.269	94.519	231.58
Number of securities issued	23	39	46	66	52	75
National Bank of Slovakia bills	0	0	0	1	5	5
Government securities	23	39	46	65	47	70
<i>of which:</i>						
<i>T-bills</i>	9	16	6	23	15	28
<i>government bonds</i>	14	23	40	42	32	42
RM-System Slovakia, a.s.						
Value of securities issued (SKK billions)	nap	nap	nap	nap	nap	nap
Number of securities issued	nap	nap	nap	nap	nap	nap
Value of securities registered (SKK billions)	nap	nap	nap	nap	nap	nap
Number of securities registered	nap	nap	nap	nap	nap	nap

1) *Nominal values of issued capital.*2) *Number of issues.*3) *Market value of all traded issues as of end of year.*4) *Number of traded issues as of end of year.*5) *Primary market for government securities and National Bank of Slovakia bills.*

Table 11e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
BSSE						
Netting ratio for cash over year	nav	nav	nav	nav	nav	nav
Netting ratio for securities over year	nav	nav	nav	nav	nav	nav
RM-System Slovakia, a.s.						
Netting ratio for cash over year	nap	nap	nap	nap	nap	nap
Netting ratio for securities over year	nap	nap	nap	nap	nap	nap

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	13	14	14	13	10	10
<i>of which live</i>	13	14	14	13	10	10
Sub-members	9	9	8	7	7	6
<i>of which live</i>	9	9	8	7	7	6
Participants	0	2	2	3	2	2
<i>of which live</i>	0	2	2	3	2	2
Total users	22	25	24	23	19	18
<i>of which live</i>	22	25	24	23	19	18
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,007	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	1,368,074	1,542,961	1,733,608	1,771,687	1,952,408	2,124,122
<i>of which:</i>						
<i>category I</i>	829,041	843,325	863,666	884,158	973,956	1,087,683
<i>category II</i>	339,395	393,984	463,422	517,092	588,695	635,396
Total messages received	1,094,468	1,241,090	1,378,552	1,441,899	1,526,900	1,651,527
<i>of which:</i>						
<i>category I</i>	570,691	589,508	635,017	699,370	778,820	870,119
<i>category II</i>	29,357	55,087	58,559	70,910	84,648	90,581
Domestic traffic	110,065	161,440	226,358	236,014	202,760	221,269
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.

Slovenia

Table 1
Basic statistical data

	1996	1997	1998	1999	2000	2001
Population ¹⁾ (thousands)	1,991.2	1,986.9	1,982.6	1,985.6	1,990.3	1,987.3
GDP (SIT billions)	2,555.4	2,907.3	3,253.8	3,648.4	4,035.5	4,520.4
GDP per capita (SIT millions)	1.2834	1.4633	1.6412	1.8375	2.0276	2.2747
Exchange rate vis-à-vis ECU/EUR						
<i>end of year</i>	176.47	186.36	187.97	198.91	213.54	218.84
<i>average</i>	171.80	180.91	185.95	194.47	206.61	217.98

1) Average for the year.

Table 2
Settlement media used by non-banks

(end of year, SIT billions)

	1996	1997	1998	1999	2000	2001
Banknotes and coins	66.839	78.120	93.639	125.001	119.806	142.110
Transferable deposits	168.253	192.379	239.057	274.747	304.170	360.095
Narrow money supply (M1)	235.092	270.499	332.696	399.748	423.976	502.205
<i>Memorandum items:</i>						
Broad money supply ¹⁾	1,135.268	1,411.330	1,690.279	1,912.932	2,206.350	2,876.680
Transferable deposits in foreign currencies	68.188	65.975	66.048	97.130	117.302	154.248
Outstanding value on e-money schemes	0	0	0	0	0	0
<i>of which:</i>						
<i>on card-based products</i>	0	0	0	0	0	0
<i>on network-based products</i>	0	0	0	0	0	0

1) Broad money supply (M3) consists of currency in circulation, sight deposits with the Bank of Slovenia and banks, savings deposits, time deposits with the Bank of Slovenia and banks, and foreign currency deposits.

Table 3
Settlement media used by banks

(end of year, SIT billions)

	1996	1997	1998	1999	2000	2001
Transferable balances held at central bank	43.093	55.067	62.863	61.253	66.801	78.594
<i>of which:</i>						
<i>required reserves</i>	39.884	46.581	59.041	59.098	62.125	75.058
<i>free reserves</i>	3.209	8.486	3.822	2.155	4.676	3.536
Transferable balances held at other banks ¹⁾	nav	nav	0.972	0.879	1.651	0.843
<i>Memorandum item:</i>						
Institutions' borrowing from central bank ²⁾	15.418	17.834	3.628	25.474	21.871	260.984

1) Indirect RTGS participants' (savings co-operatives) positions with the direct RTGS participants.

2) Lombard loans, liquidity loans, repurchase agreements, other.

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

	1996	1997	1998	1999	2000	2001
Total banknotes issued	71.443	85.652	104.667	142.488	139.643	165.778
<i>of which:</i>						
<i>SIT 10</i>	0.215	0.240	0.270	0.301	0.276	0.269
<i>SIT 20</i>	0.207	0.241	0.269	0.300	0.350	0.395
<i>SIT 50</i>	0.334	0.372	0.411	0.455	0.516	0.542
<i>SIT 100</i>	0.967	1.276	1.211	1.295	1.369	1.401
<i>SIT 200</i>	0.809	0.623	0.955	1.096	1.267	1.411
<i>SIT 500</i>	1.323	1.429	1.557	1.651	1.862	2.001
<i>SIT 1,000</i>	11.217	11.960	13.165	16.160	12.542	12.137
<i>SIT 5,000</i>	31.247	32.878	37.090	48.233	49.629	60.197
<i>SIT 10,000</i>	24.714	36.226	49.333	72.590	71.426	87.019
<i>Tolar coupons</i>	0.410	0.407	0.406	0.407	0.406	0.406
Total coins issued	0.417	0.488	0.551	0.634	0.784	0.988
<i>of which:</i>						
<i>SIT 0.1</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>
<i>SIT 0.2</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>	<i>neg</i>
<i>SIT 0.5</i>	0.012	0.013	0.013	0.014	0.014	0.014
<i>SIT 1</i>	0.077	0.091	0.102	0.115	0.125	0.133
<i>SIT 2</i>	0.096	0.114	0.129	0.158	0.176	0.199
<i>SIT 5</i>	0.227	0.269	0.305	0.346	0.380	0.406
<i>SIT 10</i>	0	0	0	0	0.087	0.192
<i>SIT 100</i>	0	0	0	0	0	0.042
Total banknotes and coins issued	71.860	86.140	105.218	143.122	140.427	166.766
Banknotes and coins held by credit institutions	5.016	8.019	11.577	18.120	20.619	24.655
Banknotes and coins in circulation outside credit institutions	66.839	78.120	93.639	125.001	119.806	142.110

Table 5**Institutional framework***(end of 2001)*

Categories	Number of institutions	Number of branches	Number of accounts	Number of internet-linked accounts	Value of accounts (SIT billions)
Central bank	1	1	193	0	5.001
Credit institutions	81	704	2,074,180	88,935	355.094
Post Office	1	548	0	0	0
Agency for Payments	1	41	38,841	5,381	nap
Total	84	1,294	2,113,214	94,316	360
<i>of which:</i>					
<i>virtual institutions</i>	0	0	0	0	0
Branches of foreign banks	1	1	0	0	0
<i>of which:</i>					
<i>EU-based</i>	1	1	0	0	0

Table 6
Payment card functions and accepting devices

(end of year)

	1996	1997	1998	1999	2000	2001
Cash function						
Cards with a cash function (thousands)	1,284.521	1,781.529	2,423.703	2,792.807	3,367.049	3,521.245 ¹⁾
Number of networks	2	2	2	2	1	1
Number of ATMs with a cash dispensing function	407	501	612	765	865	953 ¹⁾
<i>of which:</i>						
<i>open access</i>	407	501	612	765	865	953 ¹⁾
<i>limited access</i>	0	0	0	0	0	0
Volume of transactions (millions)	16.785	20.854	27.934	34.515	41.048	36.243 ²⁾
<i>of which:</i>						
<i>at ATMs with open access</i>	16.785	20.854	27.934	34.515	41.048	36.243 ²⁾
<i>at ATMs with limited access</i>	0	0	0	0	0	0
Value of transactions (SIT billions)	129.495	168.167	224.01	307.769	425.016	416.518 ²⁾
<i>of which:</i>						
<i>at ATMs with open access</i>	129.495	168.167	224.01	307.769	425.016	416.518 ²⁾
<i>at ATMs with limited access</i>	0	0	0	0	0	0
Number of ATMs with a giro transfer function	0	0	0	0	0	0
<i>volume of transactions (millions)</i>	0	0	0	0	0	0
<i>value of transactions (SIT billions)</i>	0	0	0	0	0	0
Debit function						
Cards with a debit function (thousands)	0	289.301	775.032	961.982	1,392.179	1,477.001 ¹⁾
<i>of which:</i>						
<i>retailer cards (thousands)</i>	0	0	0	0	0	0
Number of networks	3	3	3	3	3	3
Number of terminals ³⁾	4,558	8,073	11,361	15,287	21,723	25,071 ¹⁾
Volume of transactions (millions)	0	neg	1.216	5.264	13.933	18.684 ²⁾
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	0	0	0	0	0	0
Value of transactions (SIT billions)	0	0.239	6.890	30.034	92.982	115.452 ²⁾
<i>of which:</i>						
<i>transactions with retailer cards (SIT billions)</i>	0	0	0	0	0	0
Credit function						
Cards with a credit function (thousands)	468.912	594.717	593.863	647.816	742.071	779.503 ¹⁾
<i>of which:</i>						
<i>retailer cards (thousands)</i>	125.391	173.489	178.197	208.993	243.401	267.262 ¹⁾
Number of networks	3	3	3	3	3	3
Number of terminals ³⁾	4,558	8,073	11,361	15,287	21,723	25,071 ¹⁾
Volume of transactions (millions)	24.260	30.998	38.238	44.194	51.933	41.280 ²⁾
<i>of which:</i>						
<i>transactions with retailer cards (millions)</i>	5.841	7.884	10.091	11.144	13.506	11.387 ²⁾
Value of transactions (SIT billions)	106.144	143.160	184.651	224.695	321.860	260.786 ²⁾
<i>of which:</i>						
<i>transactions with retailer cards (SIT billions)</i>	25.070	34.270	46.332	56.945	118.134	76.572 ²⁾

1) As at end of the third quarter (data for the end of the year are not available).

2) Includes only the first three quarters of 2001 (data for the fourth quarter are not available).

3) Separate figures for debit and credit terminals are not available.

Table 6 (continued)

	1996	1997	1998	1999	2000	2001
Electronic money function						
Cards with an e-money function (thousands)	0	0	0	0	0	0
Number of accepting terminals	0	0	0	0	0	0
Number of networks	0	0	0	0	0	0
Number of purchase transactions (millions)	0	0	0	0	0	0
Value of purchase transactions (SIT billions)	0	0	0	0	0	0
Number of loading transactions (millions)	0	0	0	0	0	0
Number of loading terminals	0	0	0	0	0	0
Value of money loaded (SIT billions)	0	0	0	0	0	0
Float (SIT billions)	0	0	0	0	0	0
Delayed debit cards (charge cards)						
Cards with a delayed debit function (thousands)	160.885	178.148	195.323	385.380	438.573	489.274
Number of terminals	1,813	3,314	4,767	10,608	15,522	19,381
Volume of transactions (millions)	nav	nav	nav	nav	nav	nav
Value of transactions (SIT billions)	nav	nav	nav	nav	nav	nav
<i>Memorandum item:</i>						
Total number of cards in circulation (thousands)	1,411.908	1,957.015	2,603.893	3,003.797	3,612.450	3,790.505 ¹⁾
<i>of which:</i>						
<i>cards with a combined debit, cash and e-money function (thousands)</i>	0	0	0	0	0	0
<i>cards with a cheque guarantee function (thousands)</i>	941	1,071	1,233	1,392	1,476	1,532 ¹⁾

1) As at end of the third quarter (data for the end of the year are not available).

Table 7

**Payment instructions handled by selected interbank funds transfer systems:
volume of transactions**

(millions)

	1996	1997	1998	1999	2000	2001
Agency for Payments	nap	87.53	89.56	84.00	82.34	72.37
SIBPS ¹⁾	0	0	0.20	0.51	1.04	1.44
Giro Clearing system ¹⁾	0	0	0.16	9.79	34.84	48.18
Concentration ratio						
Agency for Payments	nap	nap	nap	nap	nap	nap
SIBPS	0	0	36.08%	73.26%	69.35%	70.24%
Giro Clearing system	0	0	60.67%	59.34%	84.02%	83.81%

1) The system only processes credit payments.

Table 8**Payment instructions handled by selected interbank funds transfer systems:
value of transactions***(SIT billions)*

	1996	1997	1998	1999	2000	2001
Agency for Payments	nap	44,492.04	39,509.81	39,949.82	42,221.55	43,445.75
SIBPS ¹⁾	0	0	13,924.91	23,184.37	22,218.30	29,153.14
Giro Clearing system ¹⁾	0	0	16.08	1,259.30	2,801.55	3,794.08
Concentration ratio						
Agency for Payments	nap	nap	nap	nap	nap	nap
SIBPS	0	0	71.10%	72.73%	72.11%	73.82%
Giro Clearing system	0	0	53.37%	58.46%	73.98%	75.88%

1) *The system only processes credit payments.***Table 9****Indicators of the use of various cashless payment instruments:
volume of transactions ^{1), 2)}***(millions)*

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	34.196	31.174	26.692	23.012	13.205	4.343 ³⁾
<i>of which:</i>						
<i>face-to-face</i>	34.196	31.174	26.692	23.012	13.205	4.343 ³⁾
<i>via PC or other terminal</i>	0	0	0	0	0	0
<i>telebanking</i>	0	0	0	0	0	0
<i>via mobile phone</i>	0	0	0	0	0	0
Payments by debit card ^{4), 5)}	0	neg	1.216	5.264	13.933	18.684 ³⁾
<i>of which:</i>						
<i>face-to-face</i>	0	neg	1.216	5.264	13.933	18.684 ³⁾
<i>via PC or other terminal</i>	0	0	0	0	0	0
<i>telebanking</i>	0	0	0	0	0	0
<i>via mobile phone</i>	0	0	0	0	0	0
Payments by credit card	24.260	30.998	38.238	44.194	51.933	41.280 ³⁾
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	0	0	0	0	0	0
Credit transfers	nav	nav	nav	nav	14.318	22.543
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	13.396	16.313
<i>via PC or other terminal</i> ⁶⁾	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	0.922	6.230
<i>via mobile phone</i>	0	0	0	0	0	0
Direct debits	nav	nav	nav	nav	5.931	10.089
<i>of which:</i>						
<i>face-to-face</i>	nav	nav	nav	nav	nav	nav
<i>via PC or other terminal</i>	nav	nav	nav	nav	nav	nav
<i>telebanking</i>	nav	nav	nav	nav	nav	nav
<i>via mobile phone</i>	0	0	0	0	0	0
Card-based e-money	0	0	0	0	0	0
Network-based e-money	0	0	0	0	0	0
Total	58.456	62.172	66.146	72.470	99.320	96.939

1) *Includes payments where originator and beneficiary are the same (separate data are not available).*2) *Excludes items initiated by banks, since these data are not available.*3) *Includes only the first three quarters of 2001 (data for the fourth quarter are not available).*4) *Includes charge cards.*5) *Does not include ATM transactions.*6) *Included in the telebanking figures (separate figures are not available).*

Table 10
Indicators of the use of various cashless payment instruments: value of transactions ^{1),2)}
(SIT billions)

	1996	1997	1998	1999	2000	2001
Instruments						
Cheques	294.600	290.259	266.650	249.995	158.841	77.055 ³⁾
of which:						
face-to-face	294.600	290.259	266.650	249.995	158.841	77.055 ³⁾
via PC or other terminal	0	0	0	0	0	0
telebanking	0	0	0	0	0	0
via mobile phone	0	0	0	0	0	0
Payments by debit card ^{4),5)}	0	0.239	6.890	30.034	92.982	115.452 ³⁾
of which:						
face-to-face	0	0.239	6.890	30.034	92.982	115.452 ³⁾
via PC or other terminal	0	0	0	0	0	0
telebanking	0	0	0	0	0	0
via mobile phone	0	0	0	0	0	0
Payments by credit card	106.144	143.160	184.651	224.695	321.860	260.786 ³⁾
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	0	0	0	0	0	0
Credit transfers	nav	nav	nav	nav	nav	2,928.730
of which:						
face-to-face	nav	nav	nav	nav	nav	1,811.595
via PC or other terminal ⁶⁾	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	1,117.135
via mobile phone	0	0	0	0	0	0
Direct debits	nav	nav	nav	nav	nav	286.423
of which:						
face-to-face	nav	nav	nav	nav	nav	nav
via PC or other terminal	nav	nav	nav	nav	nav	nav
telebanking	nav	nav	nav	nav	nav	nav
via mobile phone	0	0	0	0	0	0
Card-based e-money	0	0	0	0	0	0
Network-based e-money	0	0	0	0	0	0
Total	400.744	433.658	458.191	504.724	573.683	3,668.446

1) Includes payments where originator and beneficiary are the same (separate data are not available).

2) Excludes items initiated by banks, since these data are not available.

3) Includes only the first three quarters of 2001 (data for the fourth quarter are not available).

4) Includes charge cards.

5) Does not include ATM transactions.

6) Included in the telebanking figures (separate figures are not available).

Table I Ia
Instructions handled by trading platforms, clearing houses and securities settlement systems: volume of transactions

	1996	1997	1998	1999	2000	2001
Trading platforms						
Ljubljana Stock Exchange	131,257	140,355	237,604	447,037	396,602	320,157
<i>of which:</i>						
government securities	22,249	6,624	6,162	6,461	5,898	8,606
bonds	2,413	2,314	1,985	1,445	1,470	1,309
shares	106,591	131,417	229,457	426,281	371,419	296,405
other	4	0	0	12,850	17,815	13,837
Clearing houses						
KDD ¹⁾	132,103	171,458	279,041	497,570	438,347	355,613
<i>of which:</i>						
government securities ²⁾	22,393	8,092	7,237	7,191	6,519	9,559
bonds ²⁾	2,429	2,827	2,331	1,608	1,625	1,454
shares ²⁾	107,281	160,539	269,473	474,468	410,513	329,230
other ²⁾	0	0	0	14,303	19,690	15,369
Securities settlement systems						
KDD ³⁾	175,279	250,856	407,340	714,859	599,234	471,136
<i>of which:</i>						
government securities	nav	nav	nav	nav	nav	nav
bonds	nav	nav	nav	nav	nav	nav
shares	nav	nav	nav	nav	nav	nav

1) All transactions on the single organised market (Ljubljana Stock Exchange) are cleared through KDD. The volumes of transactions handled by the trading platform and by the clearing house respectively are not equal, because each stock exchange transaction could lead to several separate instructions for the clearing house.

2) A breakdown by sub-items is not available. The structure shown is consequently an approximation based on the breakdown under "Trading platforms".

3) All transactions settled through KDD (organised and OTC market).

Table I Ib
Instructions handled by trading platforms, clearing houses and securities settlement systems: market value of transactions

(SIT billions)

	1996	1997	1998	1999	2000	2001
Trading platforms						
Ljubljana Stock Exchange	86.864	108.296	173.375	265.671	269.617	348.644
<i>of which:</i>						
government securities	15.730	15.751	22.455	37.178	45.710	46.485
bonds	4.053	4.990	7.127	4.568	13.919	7.965
shares	67.081	87.555	143.793	222.224	208.147	292.542
other	0	0	0	1.701	1.841	1.652
Clearing houses						
KDD ¹⁾	86.864	108.296	173.375	265.671	269.617	348.644
<i>of which:</i>						
government securities	15.730	15.751	22.455	37.178	45.710	46.485
bonds	4.053	4.990	7.127	4.568	13.919	7.965
shares	67.081	87.555	143.793	222.224	208.147	292.542
other	0	0	0	1.701	1.841	1.652
Securities settlement systems						
KDD ²⁾	nav	nav	nav	nav	nav	nav
<i>of which:</i>						
government securities	nav	nav	nav	nav	nav	nav
bonds	nav	nav	nav	nav	nav	nav
shares	nav	nav	nav	nav	nav	nav

1) All transactions on the single organised market (Ljubljana Stock Exchange) are cleared through KDD.

2) All transactions settled through KDD (organised and OTC market).

Table I I c
Number of participants in trading platforms, clearing houses and securities settlement systems

	1996	1997	1998	1999	2000	2001
Trading systems						
Ljubljana Stock Exchange	45	42	38	36	34	32
<i>of which:</i>						
<i>banks</i>	13	11	9	10	11	11
<i>stockbrokers</i>	32	31	29	26	23	21
Clearing systems						
KDD ¹⁾	52	53	60	59	59	65
<i>of which:</i>						
<i>banks</i>	16	14	11	11	12	13
<i>stockbrokers</i>	33	31	30	28	24	21
<i>insurance companies</i>	0	0	0	0	1	8
<i>certified investment companies</i>	1	6	16	16	18	15
<i>other</i>	2	2	3	4	4	8

1) KDD is also a securities settlement system.

Table I I d
Outstanding securities
(end of year)

	1996	1997	1998	1999	2000	2001
Ljubljana Stock Exchange						
Value of shares issued (SIT billions)	124.99	315.945	483.037	566.461	705.093	849.989
Value of other securities issued (SIT billions)	52.085	83.400	227.214	353.526	433.339	529.980
Number of shares issued	46	79	120	176	193	189
Number of other securities issued	20	28	34	34	32	32
KDD ¹⁾						
Value of shares issued (SIT billions)	237.424	375.263	838.940	1,216.643	1,327.702	1,365.861
Value of other securities issued (SIT billions)	233.498	417.088	459.441	454.36	508.613	667.356
Number of securities issued	234	381	500	764	879	885

1) Data include dematerialised securities only.

Table I I e
Netting ratio in clearing systems

	1996	1997	1998	1999	2000	2001
KDD						
Netting ratio for cash over year	nav	61.20%	73.99%	82.81%	87.36%	86.68%
Netting ratio for securities over year ¹⁾	0	0	0	0	0	0

1) Securities are settled on a gross basis.

Table 12
Participation in SWIFT by domestic institutions

	1996	1997	1998	1999	2000	2001
Members	18	19	19	14	15	14
<i>of which live</i>	18	19	19	14	15	14
Sub-members	2	2	1	2	2	0
<i>of which live</i>	2	2	1	2	2	0
Participants	0	9	11	13	11	9
<i>of which live</i>	0	9	11	13	11	9
Total users	20	30	31	29	28	23
<i>of which live</i>	20	30	31	29	28	23
<i>Memorandum items:</i>						
Total SWIFT users	5,918	6,372	6,771	6,991	7,293	7,457
<i>of which:</i>						
<i>members</i>	3,014	3,070	3,052	2,230	2,307	2,265
<i>sub-members</i>	2,500	2,621	2,781	2,825	3,037	3,143
<i>participants</i>	404	681	938	1,936	1,949	2,049

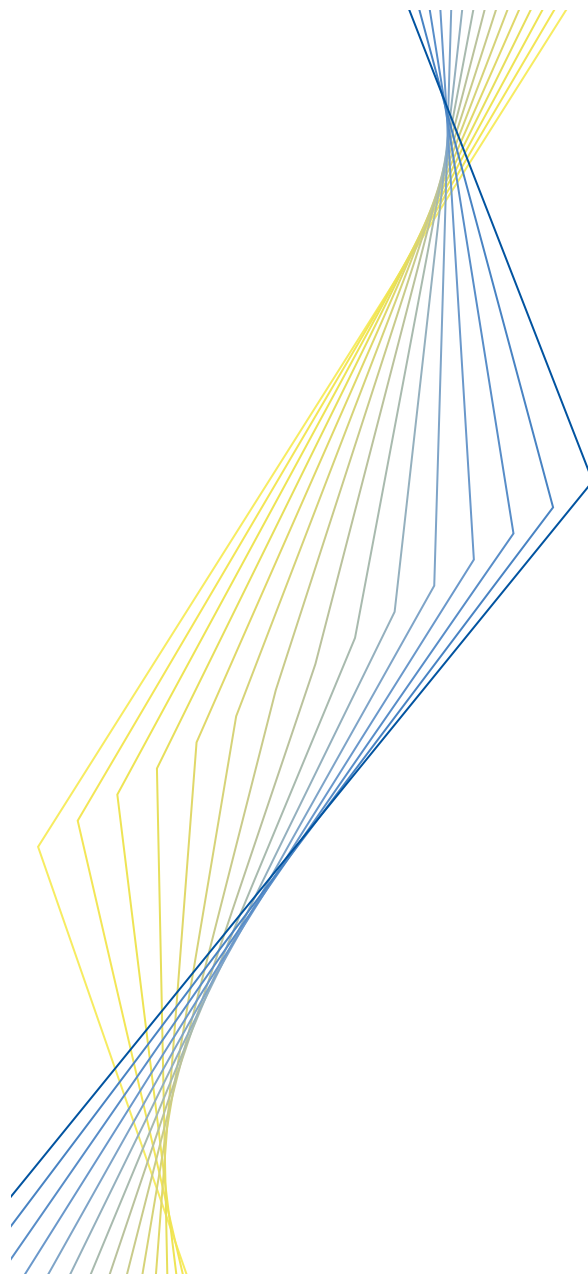
Table 13
SWIFT message flows to/from domestic users

	1996	1997	1998	1999	2000	2001
Total messages sent	1,214,805	1,360,618	1,764,343	2,022,597	2,616,382	3,112,621
<i>of which:</i>						
<i>category I</i>	673,198	729,308	805,134	1,160,078	1,739,626	2,203,593
<i>category II</i>	337,841	387,087	670,712	595,587	607,510	636,411
Total messages received	952,972	1,083,939	1,481,143	1,810,434	2,452,800	2,999,590
<i>of which:</i>						
<i>category I</i>	483,381	542,665	592,701	939,369	1,533,432	2,023,453
<i>category II</i>	34,350	45,035	302,491	242,324	226,044	224,963
Domestic traffic	168,492	196,224	451,050	716,918	1,251,625	1,660,040
<i>Memorandum item:</i>						
Global SWIFT traffic ¹⁾	687,785,294	812,117,556	941,235,088	1,076,490,597	1,298,668,103	1,533,906,047

1) In January 2000 changes were made to the reporting methodology, resulting in a 2% increase in global SWIFT traffic. The new methodology was applied retroactively to 1999.



EUROPEAN CENTRAL BANK



Annex 3
Methodology for
the statistical data

August 2002

Statistical methodology for the country tables

General

Exceptions	Data in the tables conform to this methodology unless otherwise indicated. However, it should be noted that varying methods of collecting data can complicate cross-country comparisons.
Breaks in series	These are indicated by a footnote.
Sources of data	These are indicated where appropriate.
Definitions	Definitions used in the tables but not given in this methodology are based on the glossary included in this publication. Where necessary, footnotes to individual tables explain the country-specific definitions, e.g. of “banks”. (It should be noted that, in general, the term “banks” should be broadly construed according to local regulations so as to include all relevant financial institutions, e.g. “credit institutions”, in the accession countries.)
Intrabank items	These are included as appropriate, except where indicated.
Foreign currency	Foreign currencies are not included in the figures unless otherwise indicated.
Total	Totals are calculated on the basis of the items available.
Time period	Each table indicates the period (e.g. year) or point in time (e.g. end of year) to which the data apply. Where the data apply to a period, they are the total for that period, unless otherwise indicated (e.g. a daily average).
Estimated data	Where data are broadly estimated and thus only indicative, this is indicated in a footnote (except for population and GDP in Table 1 and data in Tables 12 and 13, where it is understood that the data are estimated).
Seasonal adjustment	Figures are not seasonally adjusted unless otherwise indicated.
“nav”, “nap”, “neg” and “0”	Where data are not available, this is indicated by “nav”. Where items are not applicable, this is indicated by “nap”. Where data are negligible (relative to other relevant data in the table concerned), this is indicated by “neg”. Where data mean exactly zero or none, rather than being a small number rounded to zero, this is indicated by “0”.

Table 1:	Basic statistical data
Population	Figures are averages for the year or at a point in the year, as indicated.
GDP	Figures are nominal (not real).
GDP per capita	This figure is the GDP figure divided by the population figure.
Exchange rate (domestic currency vis-à-vis ECU/EUR) end-of-year/average	The exchange rate of the local currency against the ECU/euro is provided both as an end-of-year value and as an average for the year.

Table 2:	Settlement media used by non-banks
Banknotes and coins	Banknotes and coins represent the value of cash in circulation in the economy. This excludes the value of banknotes and coins kept in vaults at central banks or at banks (see Table 4), but includes the value held by non-residents.
Transferable deposits	These are transferable deposits which can be used to make cashless payments using one of the instruments mentioned in Tables 9 and 10. They do not include deposits in foreign currencies unless these are included in the narrow money supply M1. If they are not included in M1, they are included under the separate item, "transferable deposits in foreign currencies".
Other	Filled in only if M1 includes items other than banknotes and coins and transferable deposits.
M1	Cash in circulation and transferable deposits held by non-banks. This has not been filled in by countries which no longer calculate this aggregate.
<i>Memorandum items:</i>	
Broad money supply	Included in some cases. Footnotes to individual tables explain the definition of broad money supply used and how it differs from narrow money supply.
Outstanding value on e-money schemes	The difference between the value of cash loaded onto electronic purses (a reloadable multi-purpose prepaid card which may be used for small retail or other payments instead of banknotes and coins) or onto electronic wallets (a computer device used in some electronic money systems which can contain an IC card or in which IC cards can be inserted and which may perform more functions than an IC card) and the value spent.

Table 3:**Settlement media used by banks**

Transferable balances held at central bank	Deposits held by banks at the central bank which can be used for payment purposes, regardless of the type of account (e.g. current account, reserve account, settlement account or clearing account).
<i>of which:</i> <i>required reserves</i>	Funds that banks are required to hold at the central bank. If only part of the required reserves can be used for payment purposes, that amount is indicated here.
<i>free reserves</i>	Funds held voluntarily at the central bank that can be used for payment purposes.
Transferable balances held at other banks	Deposits held at other banks in the country (not at the central bank) which can be used for payment purposes.
Others	Included only if assets other than “transferable balances held at central bank” and “transferable balances held at other banks” are relevant. In some cases a breakdown is provided. In other cases a footnote indicates what is included in this item.
<i>Memorandum item:</i>	
Institutions’ borrowing from central bank	Institutions’ borrowing (in the forms defined in a footnote by the respective country) from the central bank which can be used for payment purposes.

Table 4:**Banknotes and coins (end-of-year figures)**

Total banknotes issued	Value of banknotes which are part of the central bank’s liabilities. A breakdown by denomination is provided.
Total coins issued	The total value of coins is provided along with a breakdown by denomination.
Total banknotes and coins issued	Value of banknotes and coins excluding those kept in vaults at central banks or at treasury departments (but including those held at credit institutions).
Banknotes and coins held by credit institutions	Banknotes and coins in the vaults of credit institutions and thus not in circulation.
Banknotes and coins in circulation outside credit institutions	Total banknotes and coins issued minus banknotes and coins held by credit institutions (identical to “banknotes and coins” in Table 2).

Table 5:	Institutional framework (end-of-year figures)
Categories	Categories of institutions are based on the individual countries' own financial systems. Categories are explained in a footnote where necessary.
Columns 1 and 2	Number of points of entry into the cashless payment system.
Column 1: number of institutions	Any institution which executes cashless payments is mentioned, even if it does not hold deposits for customers (e.g. because the money transferred is given to the institution in cash by the customer, or debited from a sight account held at another institution).
Column 2: number of branches	All branches of an institution. As a rule, the head office of the institution is counted as a branch if it offers cashless payment services.
Column 3: number of accounts	Number of accounts on which cashless payments (see definitions in Tables 9 and 10) can be made. The only accounts mentioned here are those which: <ul style="list-style-type: none"> – are held by deposit-taking institutions for non-deposit-taking institutions; – can be debited directly using one of the instruments mentioned in Tables 9 and 10.
Column 4: number of internet-linked accounts	Number of accounts relating to internet services (credit transfers and the payment of bills, etc. carried out via the internet).
Column 5: value of accounts	Aggregate value of deposits held on accounts mentioned in Columns 3 and 4. As a rule, the sum of the entries in the last column is identical to "transferable deposits" in Table 2.
<i>Virtual institutions</i>	Institutions providing services only via the internet.
<i>Memorandum item:</i>	
Branches of foreign banks	Branches or agencies of foreign banks. Banks which are foreign-owned or are subsidiaries of foreign banks are not included here.
<i>of which EU-based</i>	Sub-item to branches of foreign banks, giving the number of branches for which the head office is located in the EU.

Table 6: Payment card functions and accepting devices (end-of-year figures)

All items include systems operated by banks and non-banks.

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 is counted in each of the first three main items). Similarly, a number of terminals accept both debit and credit cards. Therefore, in general, these figures should not be added.

A transaction might include balance enquiries, rather than only instructions which affect account balances. It is indicated in a footnote if this is the case and such transactions cannot be measured separately.

Card with a cash function	Any card enabling the holder to withdraw cash from a cash dispenser.
Number of networks	A network of ATMs is defined as a group of ATMs managed by one or more service providers for a bank or group of banks.
ATMs with a cash dispensing function	Electro-mechanical device allowing authorised users to withdraw cash from their accounts and in some cases to access a range of other services, such as balance enquiries, transfers of funds and acceptance of deposits. The ATM may be operated online (with real-time reference to an authorisation database) or offline.
Number of machines	As a rule, each terminal is counted as one machine.
<i>of which:</i>	
<i>open access</i>	The ATM can be accessed by a holder of a card issued by a bank other than the bank which owns the ATM, subject to an agreement between the two banks.
<i>limited access</i>	The ATM can only be accessed by a holder of a card issued by the bank which owns the ATM.
ATMs with a giro transfer function	ATMs which allow cardholders to make credit transfers from their own account to other accounts held at the same institution or at different institutions.
Card with a debit function	A card which enables the holder to have purchases directly charged to funds on the cardholder's account at a deposit-taking institution (may sometimes be combined with another function, such as that of a cash card or cheque guarantee card).
Retailer card	A card issued by non-banking institutions for use at specified retail outlets.

EFTPOS	A terminal at a retail location which is designed to capture, and in some cases also transmit, debit card transactions by electronic means.
Number of networks	An EFTPOS network is defined as a group of EFTPOS terminals managed by one or more service providers for a bank or group of banks.
Number of terminals	As a rule, each EFTPOS terminal is counted as one machine.
Card with a credit function	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 pre-arranged ceiling. The credit granted may be settled in full by the end of a specific period, or may be settled in part, with the balance taken as extended credit. Interest is charged on the amount of extended credit and the holder is sometimes charged an annual fee.
Retailer credit card	A card issued by non-banking institutions for use at specified retail outlets. The holder of the card is granted a line of credit.
Card with an e-money function	A reloadable multi-purpose prepaid card which can be used at the sites of several service providers for a wide range of purposes and which has the potential to be used on a national or an international scale, but may sometimes be restricted to a certain area.
	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.
Accepting terminals	Refers to the number of terminals (devices) at the point of sale for receiving e-money. Mobile phones are not included in this figure.
Float	Amount of money (cash value) which has been loaded onto the e-money cards and has not been used.

Travel and entertainment cards are shown in the relevant category.

Delayed debit cards are shown separately.

Tables 7 and 8: Volume and value of payment instructions handled by selected interbank funds transfer systems

With regard to the volume and value of transactions, each payment instruction is counted once (not twice, i.e. the debit from the payer's account and the credit to the payee's account are not counted separately).

Interbank funds transfer system (IFTS)	A system in which most (or all) direct participants are credit institutions and which is used primarily to process cashless payments.
Funds transfer system (FTS)	A formal arrangement based on private contract or statute law with multiple membership, common rules and standardised arrangements for the transition and settlement of money obligations arising between the members. As a rule, all IFTSs are mentioned here, both those managed by central banks and those managed by private operators. Figures are provided system by system, with categories of various payment instruments (such as cheques, direct debits, credit transfers, postal drafts, ATMs and POS, etc.) as sub-items.
Concentration ratio	Market share of the five largest participants in each system.

Tables 9 and 10: Volume and value of indicators of the use of various cashless payment instruments

These tables present the instruments that customers use for initiating payments to the banking system. The data also include banks' own payments, if available. The inclusion/exclusion of the latter data is indicated with a footnote. The objective of these tables is to estimate the volume and the value of cashless payment instruments used in the country concerned. In the absence of global figures, data for a sample of banks or customers are extrapolated to provide figures covering the whole volume and value of cashless payment instruments used in the country.

In principle, the term "payment" is defined here to exclude 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 is not counted (e.g. cheques used to obtain cash, or ATM withdrawals - although these operations might be included in Tables 7 and 8, which have a different focus). Likewise, transfers between accounts in the same name at the same institution are excluded (e.g. transfers from a current account to a savings account, if both accounts are held at the same bank). However, because in practice it is usually impossible to exclude them from the data, transfers between accounts in the same name, but where the accounts are held at different institutions, are included unless indicated otherwise.

Strictly speaking, "cashless" means "without the involvement of cash". Such a narrow definition would exclude money (postal) orders, which involve cash at one or both ends of the transaction, as well as the majority of traveller's 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 traveller's cheques according to the way they are paid or settled. Therefore, all payment instruments which involve cashless interbank settlement are included in the statistics.

In the case of cross-border payments, there is a need to avoid double counting (i.e. in the country of the originator and in the country of the beneficiary). Cross-border cashless payments are accordingly counted in the country of the originator.

The following guidelines are also followed:

- No distinction is made between interbank items (bank A to bank B), inter-branch items (bank A branch to another bank A branch), or intra-branch items (bank A customer to another bank A customer at the same branch); all are included in the statistics.
- Funds transfers used to settle credit card transactions are included (this is a payment from the user to the issuer).
- Money orders are included under credit transfers.
- Delayed debit cards are included under debit or credit cards, the means of inclusion is explained in a footnote.

The division of each payment instrument into sub-categories is based on the way in which the customer submits the payment instrument to the bank:

- | | |
|----------------------------|---|
| – face-to-face | - paper-based (e.g. cheques) or electronically submitted (e.g. debit card at EFTPOS); |
| – via PC or other terminal | - the client submits the payment instrument via the internet; |
| – telebanking | - via a fixed line network; |
| – via mobile phone | - via a wireless network. |

Cheques	Traveller's cheques, eurocheques and bankers' drafts are included under cheques. Commercial bills are included if funds transfers can be made on the basis of these, without using another medium.
Payments by debit and credit cards	Also includes charge cards.
Other card payments	Payments made using retailer cards or prepaid cards are shown here if the data are available. The row label or a footnote indicates the type of payments included.
Credit transfers	A payment order or possibly a sequence of payment orders made for the purpose of placing funds at the disposal of the beneficiary.
Direct debits	Pre-authorized debit of the payer's account by the payee.
Total	The sum of the above items.

Tables I Ia and I Ib: Instructions handled by trading platforms, clearing houses and securities settlement systems (volume and value of transactions)

Figures are provided separately for each trading platform, clearing house and SSS, with categories of various securities (such as government securities, bonds, shares, CDs, futures, options, etc.) as sub-items. Where data are not available for some of the sub-items, this is indicated with “nav”.

Central banks also have the option to provide figures only in respect of SSSs, indicating “nav” for not available or “nap” for not applicable for data relating to trading platforms and clearing houses. Instructions comprise all transfer instructions entered into the trading platform, clearing house or SSS (including deliveries free of payment). As regards options, all contracts are included. As far as CDs are concerned, transactions are considered regardless of their issuers (banks, central bank or mortgage institutions). Each transaction is counted once (not twice for sale and purchase). It is the transactions themselves that are counted and not the double message notifications.

Trading platform	An infrastructure or mechanism aimed at facilitating securities transactions between those who wish to buy and sell. A trading platform could be a legal entity recognised as an exchange or an integrated part of a stock exchange.
Clearing house	A department of an exchange or a separate legal entity which provides a range of services related to the clearing and settlement of transactions and payments and to the management of risks associated with the resulting contracts. In many cases, the clearing house acts as the central counterparty.
Securities settlement systems	Transfer systems which settle transfer instructions for both securities and funds. As a rule all SSSs are mentioned here, i.e. not only those managed by the central bank, but also those managed by private operators.

Table I Ic: Number of participants in trading platforms, clearing houses and securities settlement systems

Figures are provided separately for each trading platform, clearing house and SSS, with categories of various participants (such as banks and stockbrokers, etc.) as sub-items.

Central banks also have the option to provide figures only in respect of SSSs indicating “nav” for not available or “nap” for not applicable for data relating to trading platforms and clearing houses.

Table 11d: Outstanding securities

Number and value of securities which have been issued; number and value of securities which have been registered. Central banks can also provide figures for the total volume.

Number of stocks listed	This covers the number of companies whose shares are traded on the trading platform. If a particular company has more than one type of share listed on the same platform, these only count as one.
Number of other securities listed	The number of ISIN codes that are traded on the trading platform (not counting the shares that have already been counted in the line above).

Table 11e: Netting ratio in clearing systems

The figure showing the size of the netted transactions in relation to the size of the traded transactions before netting takes place. The ratio refers to the value of the transactions.

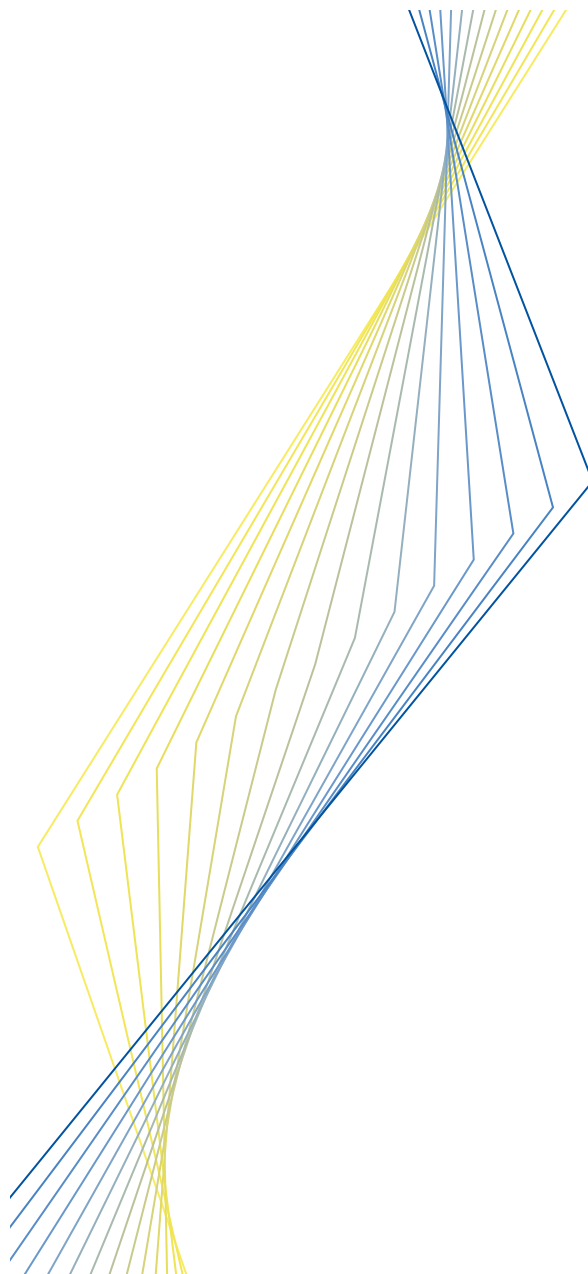
Tables 12 and 13: SWIFT tables

These figures are provided by SWIFT.

Sub-members (Table 12)	Domestic users sponsored by members abroad.
Participants (Table 12)	Participants are not shareholders of SWIFT and their message traffic over the network is restricted.
Category I (Table 13)	Messages relating to payments and used by banks to transfer funds to an account of a customer (e.g. MT100 messages).
Category II (Table 13)	Messages relating to payments and used by banks to transfer funds to an account of another bank (e.g. MT200 messages).
Domestic traffic (Table 13)	Messages sent to/received from domestic users.



EUROPEAN CENTRAL BANK



Annex 4 Glossary

August 2002

Glossary

Term	Definition
Acceptance for settlement:	the stage in the processing of a payment at which it has passed all risk management and other tests and can be settled under the system's rules and procedures.
Access:	the right of or opportunity for an institution to use the services of a particular payment or securities settlement system to settle payments/ transactions on its own account or for customers. See also participant/ member of an IFTS, direct participant in an IFTS, indirect participant/ member.
Acquirer:	the entity or entities which hold deposit accounts for card acceptors (retailers) and to which the card acceptor transmits the data relating to the transaction. The acquirer is responsible for the collection of transaction information and settlement with the acceptors.
Acquiring technical operator:	the party providing the technical facilities for each acquiring entity to accept the data relating to each transaction.
Advisory netting:	see position netting.
Ancillary system:	a system in which payments or securities are exchanged and/or cleared while the ensuing monetary obligations are settled in another system, typically an RTGS system.
Assured payment system (APS):	an arrangement in an exchange-for-value system under which completion of the 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 also exchange-for-value settlement system.
Asymmetric cryptography:	a set of cryptographic techniques in which two different keys (private and public keys) are used for encrypting and decrypting data. The private key is kept secret by its holder while the public key is made available to communicating entities. Also called public key cryptography.
Authentication:	the methods used to verify the origin of a message or to verify the identity of a participant connected to a system and to confirm that a message has not been modified or replaced in transit.
Automated clearing house (ACH):	an electronic clearing system in which payment orders are exchanged among financial institutions, primarily by using magnetic media or via telecommunication networks, and handled by a data-processing centre. See also clearing/clearance.

Automated teller machine (ATM):	an electromechanical device which permits authorised users, typically using machine-readable plastic cards, to withdraw cash from their accounts and/or access other services, such as making balance enquiries, transferring funds or making deposits. ATMs may be operated either online with real-time access to an authorisation database or offline.
Availability:	criterion for evaluating a system on the basis of its backup facilities and the possibility of switching over to them.
Balance-based system:	an electronic money system in which the electronic funds are stored on a device as a numeric ledger, with transactions performed as debits or credits to a balance.
Bank draft:	a term which generally refers to a draft drawn by a bank on itself. The draft is purchased by the payer and sent to the payee, who presents it to his bank for payment. That bank presents it to the payer's bank for reimbursement. See draft.
Bank identifier code (BIC):	a universal means of identifying financial institutions in order to facilitate the automated processing of telecommunication messages in financial environments.
Batch processing:	the transmission or processing of a group of payment orders and/or securities transfer instructions in batches 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). Beneficial ownership is usually distinguished from "legal ownership" of a security or financial instrument. See legal ownership.
Bilateral credit limit:	see credit limit.
Bilateral exposure:	one party's exposure to another party. See credit risk/exposure.
Bilateral net settlement system:	a settlement system in which participants' bilateral net settlement positions are settled between each 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 also 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 which permits the transfer of claims without the physical movement of paper documents or certificates (e.g. electronic transfer of securities). See also debt book-entry system, share book-entry system, dematerialisation, immobilisation.
Bridge:	the name commonly used for the link between Euroclear Bank and Clearstream Luxembourg. See link between securities settlement systems.
Broker:	a firm which communicates bid and ask levels to potential principals and otherwise arranges transactions as agent for a fee, without acting as a party in the transactions.
Broker-dealer:	a person or firm sometimes acting as broker and sometimes as principal intermediary in securities transactions. See broker.
Bulk funds transfer system:	see retail funds transfer system.
Business continuity:	a payment system or securities settlement system arrangement which aims to ensure that it meets agreed service levels even if one or more components of the system fail or if it is affected by another abnormal event. This includes both preventative measures and arrangements to deal with these events.
Capital risk:	see principal risk.
Caps:	quantitative limits on the funds transfer activity of individual participants in a system; limits may be set by each individual participant or may be imposed by the body managing the system. Limits can be placed on the net debit position or net credit position of participants in the system.
Card:	see cash card, cheque guarantee card, chip card, credit card, debit card, delayed debit card, prepaid card, retailer card, travel and entertainment card.
Card-based products:	electronic money products which provide the customer with a portable, specialised computer device, typically an IC card containing a microprocessor chip. See also IC (integrated circuit) card.
Case law:	precedents established in previously decided court cases which may influence future interpretations of law or the disposition of future court cases.
Cash card:	card for use only in ATMs or cash dispensers. (Other cards often have a cash function which permits the holder to withdraw cash.)
Cash correspondents:	banks (or similar institutions) used by the SSS to make or receive payments.

Cash dispenser:	an electromechanical device which permits consumers, typically using machine-readable plastic cards, to withdraw banknotes (currency) and, in some cases, coins. See also automated teller machine.
Cashier's cheque:	see bank draft.
Central bank bills:	short-term securities issued by the central bank which could be marketable or tradable.
Central bank credit (liquidity) facility:	a standing credit facility which can be drawn upon by certain designated account holders (e.g. banks) at a central bank. The facility can be used automatically at the initiative of the account holder. The loans typically take the form of either advances or overdrafts on an account holder's current account which may be secured by a pledge of securities or by repurchase agreements. See daylight credit (or daylight overdraft, daylight exposure, intraday credit), marginal lending facility.
Central counterparty:	an entity which interposes itself as the buyer to every seller and as seller to every buyer of a specified set of contracts.
Central securities depository (CSD):	an entity which holds and administers securities and enables securities transactions to be processed by book entry. Securities can be held in a physical but immobilised or dematerialised form (i.e. so that they exist only as electronic records). In addition to the safekeeping and administration of securities, a CSD may incorporate clearing and settlement functions.
Certification authority:	an entity entrusted with creating and assigning public key certificates.
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 in order to increase the number or value of transfers which may be settled with available funds and/or securities balances (or available credit or securities lending lines).
Charge card:	see travel and entertainment card.
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 may be 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, which have been validated by the retailer either on the basis of a card

issued to the cheque writer or through a central database accessible to retailers. 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. 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 the netting of instructions and the establishment of final positions for settlement. Sometimes the terms are used imprecisely to include settlement.
Clearing and settling an institution which transmits information and funds through a institution: payment system network. It may operate as an agent or a principal.
- Clearing house:** a department of an exchange or a separate legal entity which provides a range of services related to the clearing and settlement of transactions and payments, and the management of risks associated with the resulting contracts. In many cases, the clearing house acts as central counterparty. See central counterparty, clearing/clearance.
- 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.
- Closed network:** telecommunications network used for a specific purpose, such as a payment system, and to which access is restricted.
- Close-out netting:** a special form of netting which occurs following some predefined events such as default. Close-out netting is intended to reduce exposures on open contracts if one party falls foul of certain conditions specified by the contract (e.g. becomes subject to insolvency procedures) before the settlement date. (This is also referred to as default netting, open contract netting or replacement contract netting).
- Collateral:** assets pledged as a guarantee for the repayment of the short-term liquidity loans which credit institutions receive from the central banks, as well as the assets sold to central banks by credit institutions as part of repurchase operations.

Collateral pool:	pool account on which a pooling system's participant holds securities pledged in favour of the central bank in charge of the system when obtaining credit (for intraday, overnight or monetary policy operations). See collateral pooling system.
Collateral pooling system:	a central bank system for managing collateral in which the counterparties open a pool account in which they deposit assets to serve as collateral in their transactions with the central bank. In a pooling system, by contrast with an earmarking system, the underlying assets are not earmarked for individual transactions. See collateral pool.
Computer-based terminal (CBT):	a network interface device, provided and operated by the user, consisting of both hardware and software.
Confidentiality:	the quality of being protected against unauthorised disclosure.
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:	<p>an arrangement under which one bank provides payment services and other services to another bank. Payments through correspondents are often executed through reciprocal accounts (nostro and loro accounts), to which standing credit lines may be attached.</p> <p>Correspondent banking services are primarily provided across international boundaries, but are also found 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 regard this account as its nostro account.</p>
Correspondent central banking model (CCBM):	a model established by the European System of Central Banks (ESCB) with the aim of enabling counterparties to transfer eligible assets as collateral in a cross-border context. In the CCBM, NCBs act as custodians for one another. This means that each NCB has a securities account in its securities administration for each of the other NCBs (and for the European Central Bank (ECB)).
Counterparty:	the opposite party in a financial transaction (e.g. the other party in any transaction with the central bank).
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 institution:** a credit institution is an institution covered by the definition contained in Article 1 (1) of the European Parliament and Council Directive 2000/12/EC of 20 March 2000 relating to the taking up and pursuit of the business of credit institutions, i.e. “an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credit for its own account”.
- Credit limit:** the limit on the credit exposure which a payment system participant incurs vis-à-vis another participant (bilateral credit limit) or vis-à-vis all other participants (multilateral credit limit) as a result of receiving payments which have not yet been settled.
- Credit risk/exposure:** the risk that a counterparty will not settle an obligation in full, either when due or at any time thereafter. In exchange-for-value systems, the credit risk is generally defined to include replacement cost risk and principal risk.
- Credit transfer:** a payment order or sometimes 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:** a funds transfer system through which payment orders move from (the bank of) the originator of the transfer message or payer to (the bank of) the receiver of the message or beneficiary.
- Cross-border netting scheme:** an arrangement to net positions or obligations between or among parties in more than one country or jurisdiction. See also netting.
- Cross-border settlement:** a settlement which takes place in a country other than the country or countries in which one or both of the parties to the trade are located.
- Cross-system settlement:** a settlement of a trade which is effected through a link between two separate securities transfer systems.
- Cryptography:** the application of mathematical methods to develop techniques and algorithms which can be applied to data in order to ensure goals such as confidentiality, data integrity and/or authentication.

Current exposure:	the loss that would be incurred today on a contract or set of contracts if a counterparty failed to perform on its obligations. Also known as replacement cost, current exposure is what it would cost to replace a given contract if the counterparty defaulted today.
Custodian:	an entity, often a bank, which safekeeps and administers securities and other financial assets on behalf of others and which may also provide various other services, including clearance and settlement, cash management, foreign exchange and securities lending.
Custody:	the safekeeping and administration of securities and financial instruments on behalf of others.
Custody risk:	the risk of loss of securities held in custody occasioned by the insolvency, negligence or fraudulent action of the entity safekeeping the securities.
Customer-to-customer transfer:	see transferability.
Daily processing:	the complete cycle of processing tasks which needs to be completed in a typical business day, from start-of-day procedures to end-of-day procedures, including the backing-up of data.
Daily settlement:	the completion of settlement on the day of value of all payments accepted for settlement.
Day of value:	the day on which a payment is due to be credited to the receiving participant in the payment system. The day of value for the receiving participant's customer (i.e. the day on which the receiving participant credits the customer in its books) may or may not be the same day, depending on specific arrangements or local practice.
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 payment settlements. In a credit transfer system with end-of-day final settlement, daylight credit is, in effect, 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.
Dealer:	a firm that enters into transactions as a counterparty on both sides of the market in one or more products. OTC derivatives dealers are primarily large international financial institutions - mostly commercial banks, but also some securities firms and insurance companies - as well as a few affiliates of what are primarily non-financial firms.
Debit caps:	see caps.
Debit card:	a card enabling the holder to have his purchases directly charged to funds on his 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:** a funds transfer system in which debit collection orders made or authorised by the payer move from (the bank of) the payee to (the bank of) the payer and result in a charge (debit) to the account of the payer; for example, cheque-based systems are typical debit transfer systems. Also called debit collection system.
- 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 which are not technical or temporary, usually as a result of bankruptcy. Default is usually distinguished from a “failed transaction”.
- Defaulter pays:** a loss-sharing arrangement whereby each participant is required to collateralise any exposures which it creates for other participants. As a result, losses from a party’s default are borne by the defaulting party.
- Deferred net settlement system:** a system which effects the settlement of obligations or transfers between or among parties on a net basis at some later time.
- Delayed debit card:** a card issued by banks indicating that the holder may charge his account up to an authorised limit. It allows holders 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.
- Delivery:** final transfer of a security or financial instrument.
- Delivery versus payment system (or delivery against payment; DVP):** a mechanism in an exchange-for-value settlement system which ensures that the final transfer of one asset occurs if, and only if, the final transfer of another asset (or other assets) occurs. Assets could include securities or other financial instruments.
- 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.
- Deposit facility:** a standing facility of the Eurosystem which counterparties may use to make overnight deposits at an NCB and which are remunerated at a pre-specified interest rate.

Derivative:	a financial contract, the value of which depends on the value of one or more underlying reference assets, rates or indices. For analytical purposes, all derivatives contracts can be divided into basic building blocks of forward contracts, options or combinations thereof.
Data encryption standard (DES):	a symmetric cryptographic algorithm (ANSI standard) which is widely used, in particular in the financial industry. Triple-DES consists of operating three times the algorithm on a set of data (encrypting/decrypting/encrypting) using a double-length DES key.
Digital signature:	a string of data, generated by a cryptographic method, which is attached to a message in order to ensure its authenticity and protect the recipient against repudiation by the sender.
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 (IFTTS) 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.
Disclosure:	see public disclosure.
Distributing institution:	an institution which distributes (as an agent) or sells (as the issuer or an underwriter) electronic money to its customers.
Domestic settlement:	a settlement which takes place in the country in which both parties to the trade are located.
Domestic trade:	a trade between parties located in the same country.
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 cheque, bank draft, bill of exchange.
DVP schemes as defined by the GI0:	three schemes can be distinguished: 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; and 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.
EEA (European Economic Area) countries:	the EU Member States plus Iceland, Liechtenstein and Norway.
EFTPOS:	see point of sale.
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 money (e-money):	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 (see also multi-purpose prepaid card).
Electronic purse:	a reloadable multi-purpose prepaid card which may be used for small retail or other payments instead of banknotes and coins. See multipurpose prepaid card.
Electronic wallet:	a computer device used in some electronic money systems which can contain an IC card or in which IC cards can be inserted and which may perform more functions than an IC card. See IC (integrated circuit) card.
Encryption:	the use of cryptographic algorithms to encode clear text data (plaintext) into ciphertext in order to prevent unauthorised observation.
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 an individual 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 which are generated. The links between the exchange of assets and the payment system(s) may be manual or electronic. See delivery versus payment system (or delivery against payment; DVP).
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 securities transaction which does not settle on the contractual settlement date.
Final (finality):	irrevocable and unconditional.
Final settlement:	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 as a final transfer. See provisional transfer.
Financial application (FIN):	the SWIFT II application within which all SWIFT II user-to-user messages are input and output. Certain user-to-SWIFT and SWIFT-to-user messages may also be sent and received within FIN.
Financial risk:	term covering a range of risks incurred in financial transactions - both liquidity and credit risks. See also liquidity risk, credit risk/exposure.
Firewall:	a hardware and/or software-based system that is used as an interface between the internet and a computer system to monitor and filter incoming and outgoing communications.
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.
Free-of-payment (FOP) delivery:	delivery of securities with no corresponding payment of funds.
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 is held in a separate fungible pool. 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 in its account with a CSD or other financial intermediary.
Giro system:	see credit transfer system.
Global custodian:	a custodian which provides its customers with custody services in respect of securities traded and settled not only in the country in which the custodian is located but also in numerous other countries throughout the world.
Gridlock:	a situation which 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 transfer instructions occurs individually (on an instruction-by-instruction basis).
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, from losses owing to declines in the market value of the security. See margin.
Herstatt risk:	see principal risk.
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 telecommunication link to the institution's computer centre.
Hybrid system:	a payment system which combines characteristics of RTGS systems and netting systems.
IC (integrated circuit) card:	a plastic card in which one or more integrated circuits are embedded. Also called chip card.
Immobilisation:	placement of certificated securities and financial instruments in a central securities depository to facilitate book-entry transfers.
Indirect participant/member:	refers to a type of participant in a funds or securities transfer system in which there is a tiering arrangement. Indirect participants are

distinguished from direct participants by their inability to perform some of the system activities (e.g. inputting of transfer orders, settlement) performed by direct participants. Indirect participants thus require the services of direct participants to perform those activities on their behalf. In an EU context, the term refers more specifically to participants in a transfer system which are responsible only to their direct participants for settling the payments input into the system. See direct participant/member, settling participant/member, tiering arrangement.

Initial margin:	a risk control measure applied in reverse transactions implying that the collateral required for a transaction is equal to the credit extended to the counterparty plus the value of the initial margin. More generally, cash or collateral which is deposited with the clearing house in order to ensure performance on obligations. (Also known as performance bond or original margin.)
Integrity:	the quality of being protected against accidental or fraudulent alteration or the quality of indicating whether or not alteration has occurred.
Interbank Funds Transfer System (IFTS):	a funds transfer system in which most (or all) direct participants are financial institutions, particularly banks and other credit institutions. Interchange fee: a transaction fee set by the network organisation and paid by the card-issuing institution to the acquiring institution for the cost of deploying and maintaining ATMs and EFTPOS terminals.
Interlinking:	within the TARGET system, Interlinking provides common procedures and an infrastructure which allow payment orders to move from one domestic RTGS system to another.
International central securities depository (ICSD):	a securities settlement system which clears and settles international securities or cross-border transactions in domestic securities. At present, there are two ICSDs located in EU countries, Clearstream Luxembourg and Euroclear Bank.
Internet:	a worldwide open communication infrastructure consisting of interconnected computer networks which allows access to remote information and the exchange of information between computers.
Interoperability:	a situation in which payment instruments belonging to a given scheme may be used in other countries and in systems installed by other schemes. Interoperability requires technical compatibility between systems, but can only take effect where commercial agreements have been concluded between the schemes concerned.
Intraday credit:	see daylight credit (or daylight overdraft, daylight exposure, intraday credit).

Intraday liquidity:	funds which can be accessed during the business day, usually to enable financial institutions to make payments in real time. See also intraday credit.
Irrevocable and unconditional transfer:	a transfer which cannot be revoked by the transferor and is unconditional (and therefore final).
Issuer:	the entity which is obligated on a security or other financial instrument. For example, a corporation or government with authority to issue and sell securities; or a bank which issues a letter of credit. The term is sometimes used to refer to a financial institution which issues credit or debit cards. In a stored value or similar prepaid electronic money system, the issuer is the entity which receives payment in exchange for value distributed in the system and which is obligated to pay or redeem transactions or balances presented to it.
Key:	a unique series of digits used in combination with a cryptographic algorithm.
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:	recognition in law as the owner of a security or financial instrument.
Legal risk:	the risk of loss because of the unexpected application of a law or regulation or because a contract cannot be enforced.
Letter of credit (L/C):	a promise by a bank or other issuer to a third party to make payment on behalf of a customer in accordance with specified conditions. Frequently used in international trade to make funds available in a foreign location.
Limit:	see credit limit.
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.
Link between securities settlement systems:	a link consists of all the procedures and arrangements which exist between two SSSs for the transfer of securities between the two SSSs concerned through a book-entry process.
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.
Long position:	a condition that the buyer or holder of securities owns more securities than it contracts to deliver.
Loss-sharing agreement:	an agreement among participants in a clearing or settlement system regarding the allocation of any losses arising from the default of a participant in the system or of the system itself.
Loss-sharing pools:	cash, securities or possibly other assets that are provided by the participants in advance and are held by the system to ensure that commitments arising from loss-sharing agreements can be met.
MAC:	Message Authentication Code: a hash algorithm parameterised with a key to generate a number which is attached to the message and used to authenticate it and guarantee the integrity of the data transmitted.
Magnetic ink character recognition (MICR):	a technique, using special MICR machine-readable characters, whereby documents (i.e. cheques, credit transfers, direct debits) are read by machines for electronic processing. See optical character recognition (OCR).
Margin:	a term generally referring to the collateral used to secure an obligation, either realised or potential. In securities markets, it is the collateral deposited by a customer in order to secure a loan from a broker for the purchase of shares. In organisations with a central counterparty, the deposit of collateral to guarantee performance on an obligation or cover potential market movements on unsettled transactions is also sometimes referred to as margin.
Marginal lending facility:	a standing facility of the Eurosystem which counterparties may use to receive overnight credit from an NCB against a pre-specified interest rate.
Market risk:	the risk of losses in on and off-balance-sheet positions arising from movements in market prices.
Marking to market:	the practice of revaluing securities and financial instruments using current market prices. In some cases, unsettled contracts to purchase

or sell securities are marked to market and the party 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 party.

Matching:

the process used for comparing the trade or settlement details provided by parties in order to ensure that they agree on the terms of the transaction. Also called comparison checking.

Minimum standards of the Lamfalussy report (Lamfalussy standards):

the six minimum standards for the design and operation of crossborder and multicurrency 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 which can be produced by each participant. (iv) Multilateral netting systems should, as 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 relevant 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 current account with a financial institution, to pay bills or to 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.

Multifunction cards:

a card which, in addition to a stored value card function, may include other payment facilities such as a debit or credit card function and/or non-payment facilities.

Multilateral credit limit:

see credit limit.

Multilateral net settlement position:

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

if the sum is negative, the participant is in a multilateral net debit position.

Multilateral net settlement system:	a settlement system in which each settling participant settles (typically by means of a single payment or receipt) the multilateral net settlement position which results from the transfers made and received by it, for its own account and on behalf of its customers or non-settling participants for which it is acting. See multilateral netting, multilateral net settlement position, direct participant in an IFTS.
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. Such netting is conducted through a central counterparty. The multilateral net position is also the bilateral net position between each participant and the central counterparty. 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 level, but which may sometimes be limited to a certain area. A reloadable multi-purpose prepaid card is also known as an electronic purse. See electronic money (e-money).
Multi-purpose prepaid card scheme:	a scheme in which at least three parties are involved: the issuer, the cardholder and the acceptor of the card. (Where one acceptor currently exists, it must be possible for other legally distinct acceptors to join the scheme.)
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 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 parties on a net basis. See netting.
Net settlement system:	a funds transfer or securities settlement system whose 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 the default of one of the parties. See also bilateral netting, multilateral netting, position netting, novation, substitution (of party).
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.
Network money:	electronic money which is transferred via telecommunications networks such as the internet.
Nominee:	a person or entity named by another to act on its behalf. A nominee is commonly used in a securities transaction to obtain registration and legal ownership of a security.
Non-repudiability:	the ability to prevent denial or repudiation by the sender or receiver of a payment message.
Novation:	satisfaction and discharge of existing contractual obligations by means of their replacement by new obligations (whose effect, for example, is to replace gross with net payment obligations). The parties to the new obligations may be the same as to the existing obligations or, in the context of some clearing house arrangements, there may additionally be substitution of parties. See substitution (of party).
Obligation:	a duty imposed by contract or law. It is also used to describe a security, such as a bond or promissory note (containing the issuer's undertaking to pay the owner), or another financial instrument.
Offline:	in the context of payment and settlement systems, the term may refer to the transmission of transfer instructions by users through such means as spoken, written or faxed instructions, which must subsequently be input into a transfer processing system. The term may also refer to the storage of data by the transfer processing system on media such as magnetic tape or disk such that the user may not have direct and immediate access to the data. See online.
Offsetting:	see netting.
Online (e-money):	in electronic money systems this term indicates that a direct connection is made to a centralised computer system for authorisation or validation before a transaction is executed.

Online (payment and settlement systems):	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, which 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 such that the user has direct access to the data (frequently in real time) through input/output devices such as terminals.
Open network:	telecommunications network to which access is not restricted.
Open offer netting:	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; one between the clearing house and one entity, and one 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.
Operating system:	that part of the software of a computer system (or chip) which is closely connected to the hardware on which it runs and performs basic input/output operations, computations, memory management, etc.
Operational risk:	the risk of human error or a breakdown of some component of the hardware, software or communications systems which is crucial to settlement.
Operational safe custody accounts:	securities accounts run by the central bank in which credit institutions can place securities which are eligible as collateral for central bank operations. The securities held on these accounts are finally deposited with the CSD under the name of the NCB, so that the transfer into a safe custody account results in a transfer between the bank’s and the NCB’s account with the CSD. The securities deposited with the NCB are generally pledged to the NCB as collateral for (interest-bearing) overnight and (interest-free) intraday credits. They can also be used for open market transactions (repos) based on general authorisation given to the NCB to acquire securities.
Optical character recognition (OCR):	a technique, using special machine-readable characters, whereby documents (e.g. cheques, credit transfers, direct debits) are read by machines for electronic processing. See magnetic ink character recognition (MICR).
Optimisation routine:	routine processes in a payment system to determine the order in which payments are accepted for settlement. Optimisation routines

are used to improve system liquidity and increase settlement efficiency. See also queuing, scheduling.

Overnight money (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. The objectives of oversight are 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 and to foster the efficiency and soundness of payment systems. Payment systems oversight is aimed at a given system (e.g. a funds transfer system) rather than at individual participants. It also covers payment instruments.
Oversight of securities settlement systems:	a task, principally intended to promote the smooth functioning of securities settlement systems and to protect the financial system from possible “domino effects” which may occur when one or more participants in the securities settlement system incur credit or liquidity problems. The oversight of securities settlement systems is aimed at a given system (e.g. a securities transfer system) rather than at individual participants. It is performed by the competent financial authority/authorities and/or the central bank in accordance with the local legal framework.
Paperless credit transfers:	credit transfers which do not involve the exchange of paper documents between banks. Other credit transfers are referred to as paper-based.
Participant/member of an IFTS:	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 the transfer system. See direct participant in an IFTS, indirect participant/member.
Payment:	the payer’s transfer of a monetary claim on a party acceptable to the payee. Typically, claims take the form of banknotes or deposit balances held at a financial institution or at a central bank.
Payment instrument:	any instrument enabling the holder/user to transfer funds.
Payment lag:	the time lag between the initiation of the payment order and its final settlement.
Payment message/instruction/order:	an order or message to transfer funds (in the form of a monetary claim on a party) to the account of the beneficiary. The order may relate either to a credit transfer or to a debit transfer. See also credit transfer, debit transfer system, payment.

Payment netting:	settling payments due on the same date and in the same currency on a net basis.
Payment system:	a payment system consists of a set of instruments, banking procedures and, typically, interbank funds transfer systems which 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.
Personal identification number (PIN):	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.
Pledge:	a delivery of property to secure the performance of an obligation owed by one party (the debtor/pledgor) to another (the secured party). A pledge creates a security interest (lien) in the property so delivered.
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 on paper vouchers or by electronic terminals, which, in some cases, are designed to also transmit the information. Where this is so, the arrangement may be referred to as “electronic funds transfer at point of sale” (EFTPOS).
Pooling system:	see collateral pool, collateral pooling system.
Position netting:	a netting of instructions in respect of obligations between two or more parties which neither satisfies nor discharges those original individual obligations. Also referred to as payment netting, in the case of payment instructions, or advisory netting.
Prefunding:	the requirement that funds be available in accounts at the settlement institution before institutions use these accounts to meet their settlement obligations.
Prepaid card:	a card on which value is stored, and for which the holder has paid the issuer in advance. See also limited-purpose prepaid card, multi-purpose prepaid card, stored value card and electronic purse.
Prepaid card holder:	the customer associated with the prepaid cardholder’s identification on the card or, in the case of anonymous card products not related to any account, the customer owning the card.
Principal risk:	the risk that a party will lose the full value involved in a transaction (credit risk). 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). The principal risk which arises from the settlement of foreign exchange transactions (foreign exchange settlement risk) is sometimes called cross-currency settlement risk or Herstatt risk. See credit risk/exposure.

Provider:	an operator which establishes the hardware and software conditions for the conduct of transactions with electronic money, without necessarily being the issuer of the electronic money units.
Provisional transfer:	a conditional transfer in which one or more parties retain the right by law or agreement to rescind the transfer.
Public disclosure:	making information accessible to the public, for example by posting it on an internet website.
Public key cryptography:	see asymmetric cryptography.
Queuing:	an arrangement whereby transfer orders are held pending by the originator/deliverer or by the system until sufficient cover is available in 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:	the processing of instructions at the time they are received rather than at some later time.
Real-time gross settlement (RTGS):	the continuous (real-time) settlement of funds or securities transfers individually on an order-by-order basis (without netting).
Real-time gross settlement (RTGS) system:	a settlement system in which processing and settlement take place on an order-by-order basis (without netting) in real time (continuously).
Real-time risk management:	a process which allows the risk associated with payments between payment system participants to be managed immediately and continuously.
Real-time transmission, processing or settlement:	the transmission, processing or settlement of a funds or securities transfer instruction at the time it is initiated.
Receiver finality:	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 an SSS:	the facility for an SSS in one country (“home country”) to become a direct participant in an SSS established in another country (“host country”) and, for that purpose, to have a securities account in its own name with the SSS 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, if necessary, without having established a branch in the host country.
Remote participant:	a participant in a system which has neither its head office nor any of its branches located in the country where the system is based.
Remote payment:	payment carried out through the sending of payment orders or payment instruments (e.g. by post). 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. Also called market risk, price risk. See also credit risk/exposure.
Repo:	see repurchase agreement.
Repudiation:	the denial by one of the parties to a transaction of participation in all or part of that transaction or of the content of the communication.
Repurchase agreement:	an arrangement whereby an asset is sold while the seller simultaneously obtains the right and obligation to repurchase it at a specific price on a future date or on demand. Such an arrangement is similar to collateralised borrowing, with the exception that ownership of the securities is not retained by the seller.
Reserve requirement:	the requirement for institutions to hold minimum reserves with the central bank. In the minimum reserve framework of the Eurosystem, the reserve requirement of a credit institution is calculated by multiplying the reserve ratio for each category of items in the reserve base with the amount of those items in the institution’s balance sheet.

In addition, institutions are allowed to deduct a lump-sum allowance from their reserve requirement.

Respondent:	see correspondent banking.
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, and ATM and EFTPOS transactions.
Retail payments:	this term describes all payments which are not included in the definition of large-value payments. Retail payments are mainly consumer payments of relatively low value and urgency.
Retail transactions:	transactions of small amounts mainly initiated by individuals. See retail payments.
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 contract with a counterparty to buy and subsequently resell securities at a specified date and price; the mirror image of a repo.
Reverse transaction:	an operation whereby an NCB buys or sells assets under a repurchase agreement or conducts credit operations against collateral.
Risk management test:	a test carried out on payments submitted to a payment system in order to establish whether processing a particular payment would cause the system or its participants greater risk than permitted under the rules of the system.
Same-day funds:	money balances which the recipient has a right to transfer or withdraw from an account on the day of receipt.
Scheduling:	a technique to manage payment queues by determining the order in which payments are accepted for settlement. See also queuing, optimisation routine.
Securities settlement system (SSS):	a system which permits the holding and transfer of securities, either free of payment (FOP) (for example in the case of a pledge) or against payment (DVP). It comprises all the institutional arrangements required for the clearing and settlement of securities trades and the safekeeping of securities. Settlement of securities occurs on securities deposit accounts held with the CSD, ICSD or institution in charge of operating the system. The final custodian is normally a CSD.
Seigniorage:	in a historical context the term "seigniorage" was used to refer to the share, fee or tax which the seignior, or sovereign, took to cover

the expenses of coinage and for profit. With the introduction of paper money, larger profits could be made because banknotes cost much less to produce than their face value. When central banks became monopoly suppliers of banknotes, seigniorage came to be reflected in the profits made by them and ultimately their major or only shareholder, the government. Seigniorage can be estimated by multiplying banknotes and coin outstanding (non-interest-bearing central bank liabilities) by the long-term rate of interest on government securities (a proxy for the return on central bank assets).

- Sender finality:** 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 which discharges obligations in respect of funds or securities transfers between two or more parties. A settlement may be final or provisional. See gross settlement system, net settlement system, net settlement, final settlement.
- Settlement agent:** an institution which manages the settlement process (e.g. the determination of settlement positions, monitoring the exchange of payments, etc.) for transfer systems or other arrangements which require settlement. See final settlement, settlement, settlement institution, multilateral net settlement system.
- Settlement asset:** an asset used for the discharge of settlement obligations as specified by the rules, regulations, or customary practice of a payment system.
- Settlement finality:** see final settlement.
- Settlement institution:** the institution through which 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 obligation:** an amount due from one financial institution to other financial institutions as a result of the clearing of payments. See also net credit (or net debit) position.
- Settlement risk:** 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 risks.
- 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 bookentry system.
Single-purpose prepaid card:	a stored value card for which the card issuer and merchant (card acceptor) are identical, thus representing a prepayment for specific goods and services delivered by the issuer. See prepaid card.
Smart card:	an integrated circuit card with a microprocessor capable of performing calculations.
Software-based electronic money products:	electronic money products which employ specialised software on a personal computer and which can typically be used to transfer a value in electronic form via telecommunications networks such as the internet.
Stakeholder:	in a payment system, stakeholders are those parties whose interests are affected by the operation of the system.
Standing facility:	a central bank facility available to counterparties on their own initiative. The Eurosystem offers two overnight standing facilities, the marginal lending facility and the deposit facility.
Standing order:	an instruction from a customer to its bank to make a regular payment of a fixed amount to a named recipient.
Stored value card:	a prepaid card in which the record of funds can be increased as well as decreased. Also called an electronic purse.
Straight-through processing:	the automated end-to-end processing of trades/payment transfers including the automated completion of confirmation, generation, clearing and settlement of instructions.
Substitution (of party):	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.
Substitution (of securities):	recalling the securities lent from a borrower and replacing them with other securities of equivalent market value during the life of the lending.
Supervision of financial institutions:	the assessment and enforcement of compliance by financial institutions with laws, regulations or other rules intended to ensure that they operate in a safe and sound manner and that they hold capital and reserves sufficient to support the risks which arise in connection with the conduct of their business.

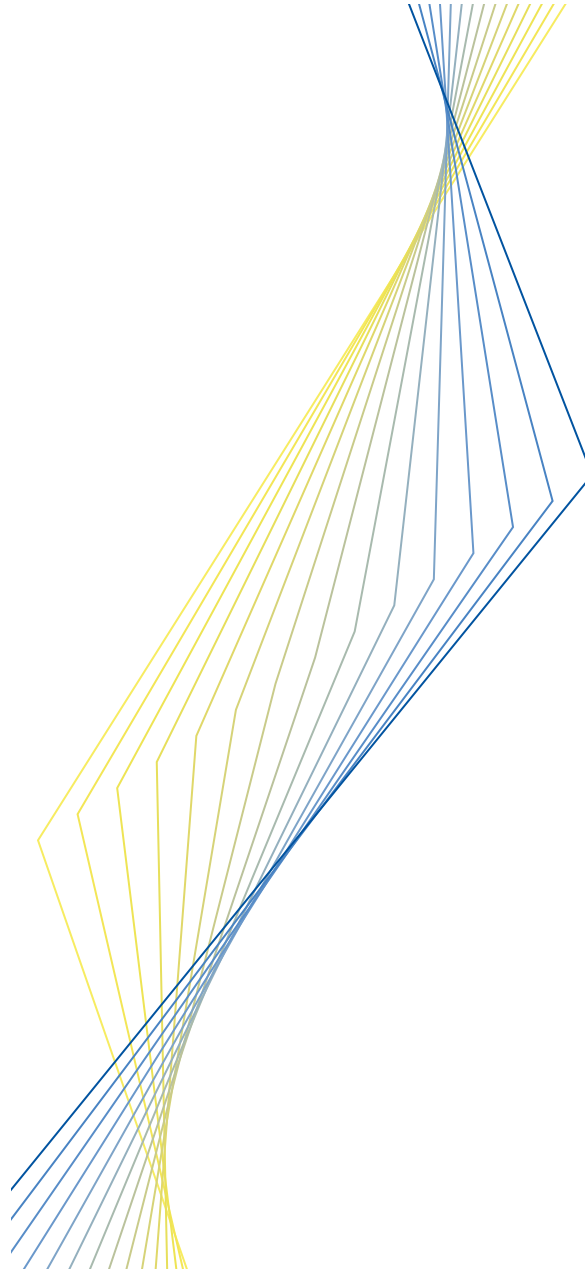
Surcharge fee:	a transaction fee set by an ATM owner and paid directly by the cardholder to the ATM owner for the cost of deploying and maintaining the ATM.
Survivors pay:	a loss-sharing arrangement which, in the event of a participant's inability to settle, requires losses to be borne by the surviving participants in accordance with a predetermined formula.
Swap:	an agreement on the exchange of payments between two parties at some point(s) in the future in accordance with a specified formula.
SWIFT:	the Society for Worldwide Interbank Financial Telecommunication
(S.W.I.F.T. s.c.r.l.):	a co-operative organisation created and owned by banks which operates a network to facilitate the exchange of payment and other financial messages between financial institutions (including broker-dealers and securities companies) throughout the world. A SWIFT payment message is an instruction to transfer funds; the exchange of funds (settlement) subsequently takes place via a payment system or through correspondent banking relationships.
Switch fee:	a transaction fee set by the network organisation and paid by the card-issuing institution to the organisation for the cost of routing transaction information.
Symmetric cryptography:	a set of cryptographic techniques in which devices share the same secret key in combination with algorithms. For encryption, the same key is used for encrypting and decrypting, and the decrypting algorithm is the reverse function of the encrypting algorithm.
Systemic disruption:	an event or events whose impact has the potential to threaten the stability of the financial system through transmission from one financial institution to another, including through the payment system. See also systemic risk.
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.
Systemically important payment system:	a payment system is systemically important where, if the system were insufficiently protected against risk, disruption within it could trigger or transmit further disruptions amongst participants or systemic disruptions in the financial area more widely.
TCP/IP:	Transmission Control Protocol/Internet Protocol: a set of commonly used communications and addressing protocols; TCP/IP is the de facto set of communications standards of the internet.

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, indirect participant/member.
Tier one asset:	a marketable asset fulfilling certain uniform euro area wide eligibility criteria specified by the ECB. Among these criteria are the requirements that it must be denominated in euro, be issued (or guaranteed) by entities located in EEA countries and be located in an NCB or a CSD within the euro area.
Tier two asset:	a marketable or non-marketable asset for which specific eligibility criteria are established by the NCBs, subject to ECB approval.
Time-stamp:	a value inserted in a message to indicate the time at which the message was created.
Trade date:	the date on which a trade/bargain is executed.
Trade netting:	a legally enforceable 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.
Trade-for-trade (gross) settlement:	the settlement of individual transactions between parties. See gross settlement system.
Transfer:	operationally, the sending (or movement) of funds or securities or of rights relating to funds or securities from one party to another party by (i) conveyance of physical instruments/money; (ii) accounting entries on the books of a financial intermediary; or (iii) accounting entries processed through a funds and/or securities transfer system. The act of transfer affects the legal rights of the transferor, the transferee and possibly third parties with regard to the money, security or other financial instrument being transferred.
Transfer system:	a generic term covering interbank funds transfer systems and exchange-for-value systems.
Transferability:	in electronic money systems, the degree to which an electronic balance can be transferred between devices without interaction with a central entity.

Travel and entertainment card:	a card issued by non-banks indicating that the holder has been granted a line of credit. It enables it 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. Also called charge card.
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:	a term 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 being provisional until all participants have discharged their settlement obligations. If a participant fails to settle, some or all of the provisional transfers



EUROPEAN CENTRAL BANK



Annex 5
Co-ordination Group
members

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