

BANK FOR INTERNATIONAL SETTLEMENTS

**PAYMENT SYSTEMS
IN THE CZECH REPUBLIC**

**Prepared by the Czech National Bank and the
Committee on Payment and Settlement Systems of the
central banks of the Group of Ten countries**

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FOREWORD

The Committee on Payment and Settlement Systems (the CPSS) of the central banks of the Group of Ten countries periodically publishes - under the aegis of the Bank for International Settlements - a reference work on payment systems in the G-10 countries known as the "Red Book", the latest edition of which dates from December 1993. The CPSS has also invited central banks in a number of countries where important developments in payment systems are under way to publish - in collaboration with its Secretariat at the Bank for International Settlements - separate "Red Book" studies for their countries. This is the first edition of the "Red Book" for the Czech Republic.

Central banks in many countries have been influential in improving public understanding of payment and settlement arrangements in their countries and public awareness of the various policy issues connected with such arrangements. Payment systems include not only retail money transfer systems used by businesses and consumers for commercial purposes but also large-value interbank funds transfer systems that underpin the money and credit markets of market-oriented economies. In addition, major settlement systems include so-called exchange-for-value systems that are increasingly used for the settlement of securities transactions. Public interest in issues relating to the economic efficiency and financial risks of all types of payment and settlement systems has continued to increase in recent years.

We hope that this "Red Book" country study will contribute to the general understanding of payment and settlement arrangements in the Czech Republic, both domestically and internationally.

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Table of contents

INTRODUCTION

1.	INSTITUTIONAL ASPECTS	1
1.1	General legal aspects	1
1.2	The role of financial institutions	2
1.2.1	<i>Banks</i>	2
1.2.2	<i>Savings and credit cooperatives</i>	2
1.2.3	<i>Investment companies and investment funds</i>	3
1.3	The role of the central bank	3
1.3.1	<i>Issuing function</i>	3
1.3.2	<i>Management of the payment system</i>	3
1.3.3	<i>Maintaining accounts</i>	3
1.4	The role of other private and public institutions	4
1.4.1	<i>The Czech Post</i>	4
1.4.2	<i>The Prague Stock Exchange</i>	4
1.4.3	<i>The RM-System</i>	4
1.4.4	<i>Payment card companies</i>	4
2.	PAYMENT INSTRUMENTS	5
2.1	Cash payments	5
2.2	Non-cash payments	5
2.2.1	<i>Deposits</i>	5
2.2.2	<i>Payment methods</i>	5
2.3	Recent developments	8
3.	THE INTERBANK PAYMENT SYSTEM	8
3.1	General overview	8
3.1.1	<i>The interbank settlement system</i>	9
3.1.2	<i>Legal aspects</i>	9
3.1.3	<i>Participants in the system</i>	9
3.1.4	<i>Types of transaction</i>	10
3.1.5	<i>Description of the Clearing and Settlement Centre's activities</i>	10
3.1.6	<i>Pricing policy</i>	11
3.2	Main projects	11
4.	THE SPECIAL USE OF INTERBANK TRANSFER SYSTEMS FOR INTERNATIONAL AND DOMESTIC FINANCIAL TRANSACTIONS	12
4.1	International transfers	12
4.1.1	<i>General overview</i>	12
4.1.2	<i>Operations performed by banks</i>	12

4.1.3	<i>Role of the National Bank in the international clearing and settlement arrangements between the Czech and Slovak Republics</i>	13
4.1.4	<i>Foreign cheques and payment cards</i>	14
4.2	The clearing and settlement of securities transactions	14
4.2.1	<i>The institutional framework</i>	14
4.2.2	<i>The Prague Stock Exchange</i>	15
4.2.3	<i>The RM-System</i>	15
4.2.4	<i>Short-term securities</i>	15
5.	THE ROLE OF THE CENTRAL BANK IN THE INTERBANK PAYMENT SYSTEM	16
5.1	General responsibilities	16
5.2	Provision of clearing and settlement services	17
5.2.1	<i>The use of accounts held at the central bank for payment transactions</i>	17
5.2.2	<i>The role of the central bank in the RTGS system</i>	17
5.3	Monetary policy and payment systems	17
5.4	Major projects and policies being implemented	18
	Statistical tables	19
	Annex 1: Comparative tables	29
	Annex 2: Glossary	53

INTRODUCTION

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

After the change in the political situation in 1989, the commercial activities of the SBCS were separated from its central banking functions and were transferred to two newly created commercial banks and one already existing commercial bank. At this time there was a rapid expansion of the banking industry in general, including the establishment of many new commercial banks: in fact, the number of banks grew tenfold. Therefore in 1992 the central bank introduced a new interbank payment system and set up a Clearing and Settlement Centre to handle all domestic currency payments between banks.

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

1. INSTITUTIONAL ASPECTS

1.1 General legal aspects

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

The payment system in the Czech Republic is provided by banks and by the Czech postal system. Banks (see Section 1.2.1) operate on the basis of the 1992 Banks Act (with several amendments, the most recent in 1995), which lays down the conditions to be met for setting up banks as well as banks' rights and obligations when performing banking activities. The Banks Act stipulates that only banks may accept deposits from the public (with the exception of savings and credit cooperatives, see Section 1.2.2); consequently, maintaining accounts and providing cashless payment services are exclusively banking activities. The postal system operates on the basis of the 1946 Postal Act (in the near future a new postal act should be passed). The postal payment system provides a primarily cash-based money transfer service, mostly for private individuals.

There is no special law regulating the payment system in the Czech Republic. Payments between private individuals and legal entities are considered to be a civil-law relationship and are subject to the Civil Code (1964) and the Commercial Code (1992). These codes also contain the basic principles on which banking contracts are based. To implement the interbank payment system the central bank issued a decree in 1992 which is binding on all banks operating in the Czech Republic. In the same year (but amended in 1994) the central bank issued the General Commercial Conditions, which serve as a model for banks when creating their own commercial conditions for maintaining accounts and providing payment services.

1.2 The role of financial institutions

1.2.1 Banks

At the end of 1995 there were 58 banks and foreign bank branches operating in the Czech Republic. Banks are authorised to perform their activities on the basis of a licence issued by the National Bank in agreement with the Ministry of Finance. Most banks hold a universal licence which permits them to carry out all principal banking activities. All banks provide domestic payment services for their customers but some of them (e.g. specialised or local banks) are not authorised to transfer payments abroad or issue certain payment instruments (namely cheques and payment cards). Some banks specialise in certain activities. For example, building savings banks specialise in accepting deposits and providing housing loans to their depositors; in 1995 six such banks were in operation in the Czech Republic. The Czech state encourages saving at these banks by providing personal holders of savings accounts with a contribution related to the amount saved per year. A licence for providing mortgage loans has so far been granted to the two largest universal banks and also to two specialised mortgage banks. Other banks focus on particular types of customer; for example, Ceska sporitelna provides services mostly for small investors who are private individuals. Overall, payment system services were provided by 3,476 bank operating units (i.e. head offices and branches) in 1995. Of the total number of accounts and transactions processed in 1995, the five largest banks in the Czech Republic accounted for 90%.

Banks are subject to supervision performed by the National Bank to ensure the security of deposits and the sound functioning of the banking system. For the same reason the central bank lays down the framework of rules for the cashless payment system. The principal rule is that banks are obliged to perform all interbank transfers, including transfers for their customers, by means of the central bank's Clearing and Settlement Centre, which was set up for this purpose in 1992. This system is used by all banks in the Czech Republic, each bank having a code which uniquely identifies it and which is an obligatory part of a payment transaction. Additional numerical codes are used (so-called payment symbols) to provide more detailed information about the payments. Cashless transfers do not have to be documented by an additional advice of payment because the bank transfers the necessary information as part of the payment process. This means that there is no physical circulation of documents between the payer's bank and the payee's bank.

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

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

1.2.2 Savings and credit cooperatives

In 1995 a special law was passed laying down the regulatory framework for savings and credit cooperatives and in 1996 the first cooperatives started operating. The cooperatives are specialised non-banking institutions which accept deposits, lend funds and provide payment services (including payment cards). As they are not authorised under the Banks Act, they can provide services only for their members and they cannot participate directly in the interbank payment system. The activities of the cooperatives are supervised by a special administrative office which was set up under the 1995 law.

1.2.3 Investment companies and investment funds

These financial institutions are set up and operated under a special law and are subject to supervision by the Ministry of Finance. As they are not banks as defined by the Banks Act, they are not direct participants in the interbank payment system and they have to use the services of commercial banks when making payments.

Investment companies collect funds by selling investment certificates and setting up open-ended funds. The funds are used to buy securities or are deposited in special bank accounts. Investment funds collect their capital by issuing shares. The funds are used for buying securities, real estate or other assets or for making deposits. Both investment companies and investment funds played an important role in the first and second waves of the privatisation of state-owned organisations.

1.3 The role of the central bank

Section 2 of the 1993 National Bank Act provides that, in order to safeguard the stability of the Czech currency, the National Bank shall "issue banknotes and coins, control the circulation of money, the payment system and settlement between banks and ensure the smooth and efficient operation of these functions". For this purpose the National Bank has the authority to submit draft legislation to the government concerning these areas and to issue binding regulations by decree.

1.3.1 Issuing function

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

1.3.2 Management of the payment system

As part of its function of controlling and coordinating the payment system, the National Bank has introduced standardised payment instruments; it also issues and updates the General Commercial Conditions as a model for the commercial conditions of banks. The National Bank regulates the domestic payment system by decree and operates the Clearing and Settlement Centre at the heart of the system. To support the interbank payment system, the National Bank is required to maintain an account for each bank. These accounts are used by banks to carry out all interbank payments in the Czech Republic. The National Bank evaluates and uses the information obtained from the interbank payment system to monitor banks' activities and to exert influence on them by means of monetary policy instruments (such as minimum reserves or short-term loans).

1.3.3 Maintaining accounts

The National Bank maintains accounts for and provides payment system services to a limited range of institutions; above all it is the bank of banks and a bank of the state (it maintains accounts for institutions included in the state budget). Furthermore, it can maintain accounts for other

legal entities such as international institutions. The National Bank, like other banks, provides these services on a contractual basis in accordance with its commercial conditions by means of its seven regional and two specialised branches, which share a common computer network.

1.4 The role of other private and public institutions

1.4.1 The Czech Post

The postal payment system is operated by the Czech Post, which is a state institution. The Czech Post provides cash-based money transfer services for a major part of the population, including the acceptance of cash to be paid into accounts at banks and the paying-out of cash remitted from bank accounts (see Table 14). Through its 3,500 operating units, the Czech Post processes 200 million transactions amounting to Kc 500 billion per year. The Czech Post does not take deposits or maintain accounts and does not perform the functions of a bank. Because of this it is not a direct member of the interbank payment system and when transferring funds to and from banks it therefore uses the services of commercial banks.

1.4.2 The Prague Stock Exchange

The Prague Stock Exchange, a joint stock company, has existed since 1992. Its activity is regulated by a law passed in 1992 and it is supervised by the Ministry of Finance.

In 1994, trading on the Stock Exchange amounted to Kc 195.4 billion, with most transactions processed electronically (in the Czech Republic securities are to a large extent issued in dematerialised form). About 70% of Stock Exchange trading involved securities on the listed market, and the dominant part of the trading on both the listed and the non-listed market was in shares.

The Stock Exchange is directly connected as a third party (see section 3.1.3) to the National Bank's Clearing and Settlement Centre, where payments relating to processed trade transactions are settled.

1.4.3 The RM-System

The RM-system, which enables securities to be traded off the Stock Exchange, is a joint stock company that was set up with the aim of satisfying the needs of individual investors. In contrast to the Stock Exchange, participation in the RM-system is not based on membership and all members of the general public have direct access to the system.

1.4.4 Payment card companies

Banks in the Czech Republic cooperate within the framework of the Association for Bank Cards, which was founded in 1991 with the aim of increasing the use of debit payment cards. At the end of 1995 the Association had 27 members. The association coordinates all commercial activities related to payment cards, especially the expansion of cashless shopping, the location and networking of ATMs and connections to Europay, VISA and other card companies. It also addresses security and standardisation issues and is involved in designing the domestic payment card clearing system.

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

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

2. PAYMENT INSTRUMENTS

2.1 Cash payments

The most common means of payment, used in particular by individuals, are banknotes and coins. At the end of 1995, notes and coins in circulation amounted to Kc 120.4 billion. Banknotes and coins are accepted and distributed at banks, post offices and ATMs throughout the Czech Republic. Under the laws concerning legal tender, non-banks are obliged to accept banknotes without restriction, while the maximum number of coins that has to be accepted is limited by a decree of the National Bank.

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

2.2 Non-cash payments

2.2.1 Deposits

Banks provide various types of current accounts (for example, different types of giro accounts) that can be used to make cashless payments. It is not common for deposit accounts to be used to make payments. In 1995 banks maintained 5.84 million current accounts (on which 333 billion transactions were settled for a total amount of Kc 15,177 billion - see Tables 10 and 11) and 2.75 million deposit accounts.

2.2.2 Payment methods

Credit transfers accounted for 77.43% of the total *number* of cashless payments in 1995, direct debits for 10.83%, cheques for 4.18% and payment cards for 7.56%. Credit transfers accounted for 88.03% of the total *value* of cashless payments, direct debits for 5.32%, cheques for 6.45% and payment cards for 0.20%.

(a) Credit transfers

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

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

The National Bank has standardised the design of paper forms; customers can present a universal payment order for a credit transfer at any bank where they hold an account. The bank branch

will then transform the paper-based data into electronic form; in the interbank payment system data is always presented exclusively in electronic form.

If the transfer is between accounts held at the same bank, the payee's account is usually credited on the same day as the payer's account is debited. In the case of interbank credit transfers the payee's account is usually credited on the next or, at the latest, on the second working day after the payer's account is debited. The time between presentation of a payment order and the debiting of the payer's account is subject to contract between the customer and the bank. Execution times vary from bank to bank; they are influenced by the bank's branch network and its technical infrastructure.

(b) Direct debits

In the Czech Republic, direct debits are commonly used for certain types of payment such as energy and telecommunication charges, for liabilities arising from the processing of cheques and payment cards (see below) or for payments arising from other types of contract. In contrast to credit transfers, direct debit payment orders are presented by payees to their banks for collection. Again, the payment order can be given to the bank in electronic or paper form but in either case the bank will send the order electronically through the interbank payment system to the payer's bank. The payer's bank will settle the payment provided the payer has given prior authorisation for the debit. If there is no such authorisation, the bank will not carry out the payment and will return it. As with credit transfers, standardised numeric codes are used to identify the nature of the payment. These include special codes used within the interbank clearing and settlement system - for example, by the payee bank to identify that the direct debit payment is related to a cheque or payment card transaction or by the payer bank to confirm the authorisation of a debit operation.

(c) Cheques

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

Banks issue and accept domestic guaranteed cheques, private cheques (personal, non-guaranteed cheques), bank cheques and eurocheques. *Domestic guaranteed cheques* are personal cheques presented with a guarantee card and can be used to make face-to-face payments or to make cash withdrawals. Payments with these cheques are guaranteed (as are eurocheques) up to the amount of Kc 6,500 per cheque; a customer may present up to ten cheques at a time. Domestic guaranteed cheques were introduced in 1995 by banks, in cooperation with the National Bank, in order to promote the use of cheques. The cheques and the guarantee cards have a uniform appearance and incorporate modern security features against counterfeiting. Banks issuing and accepting this instrument are members of the Association of the Guaranteed Cheque System; at the end of 1995, the Association had 29 member banks.

Personal (non-guaranteed) cheques are used for payments of larger amounts or to withdraw cash from bank accounts. *Bank cheques* are cheques drawn by a bank on itself. The cheques are purchased by payers and given to payees, who present them to their banks for collection. Banks are taking steps to broaden the usage of bank cheques instead of cash settlement for large amounts. *Eurocheques* are issued by three big Czech banks and accepted by 28 banks. In the Czech Republic, eurocheques are mainly used by foreigners; full convertibility of the Czech koruna will probably bring an increased share of eurocheques in cheque payments. The settlement of eurocheques is governed by the rules of Europay.

In 1995 the share of cheque payments in the total number of payments increased by 1.6% (compared with 1993), while their share in the total value increased by 1.3%.

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

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

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

(d) Payment cards

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

(i) Credit cards

Credit cards are not yet issued in the Czech Republic.

(ii) Debit cards

Some banks issue their own debit cards, such cards being used mainly for withdrawals from ATMs, but most banks issue cards under licence from Eurocard/MasterCard or VISA. These cards have been used increasingly during the last five years. There are currently some 900,000 cards in circulation, which can be used at more than 8,600 retail outlets. Non-banks usually accept cards using paper-based procedures but some POS terminals have been installed that are connected to the network with on-line authorisation. Cards can also be used for cash withdrawals at ATMs. Customer fees and terms and conditions for merchants differ across banks.

Eurocheque cards (as well as eurocheques) are issued by three banks at the moment. Before the introduction of convertibility of the national currency (in October 1995), eurocheque cards were only issued on accounts in convertible foreign currencies and used only to guarantee eurocheques (i.e. they had no electronic function). However, banks are now preparing to issue eurocheque cards on accounts in domestic currency, and these cards will make use of the magnetic stripe to enable cash to be withdrawn from ATMs. At the end of 1995, more than 2,500 eurocheque cards were in circulation.

(iii) Non-bank cards

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

(iv) Automated teller machines

Both off-line and on-line ATMs are in use in the Czech Republic. Off-line ATMs are used by only one bank, which was the first bank to issue payment cards to its customers (from January 1990). However, this bank has now also started to install on-line ATMs, while other banks use only on-line ATMs. These on-line ATMs are connected through a uniform network which accepts Eurocard/MasterCard, Cirrus, Maestro and eurocheque cards and, for some ATMs, VISA cards as well. In 1995, there were 1,063 ATMs and 668 EFTPOS terminals accepting domestic and foreign payment cards.

(v) Settlement of transactions

Transactions using payment cards are cleared in two separate card-clearing systems, each of which uses "third-party" instructions (see Section 3.2.3) to inform the National Bank's Clearing and Settlement Centre of the net amounts to be settled. Work is currently in progress on setting up a single system to clear the majority of payment card transactions.

2.3 Recent developments

Further developments in cashless payments in the Czech Republic are expected. For example, many banks are introducing home-banking, telephone-banking and other new payment services. Czech banks are also adopting the latest international standards, such as new S.W.I.F.T. subsets or data interchange based on EDIFACT. (The National Bank has also embarked on a large project that will enable it to gather statistics from commercial banks based on EDI standards.) As far as card schemes are concerned, preparations are under way to introduce chips for bank cards (mainly for an electronic purse scheme) and in September 1995 two banks started a pilot electronic purse project. In view of past developments (the share of card transactions in the total number of bank operations increased by 4.2% in 1995 compared with 1993), and given the advantages of a multipurpose chip card, a further increase in the number of bank payment cards and in the number of retailers willing to accept the cards can be expected in the coming years.

3. THE INTERBANK PAYMENT SYSTEM

3.1 General overview

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

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

3.1.1 *The interbank settlement system*

The National Bank's interbank settlement system is based on the following principles:

- real-time gross settlement (RTGS);
- obligatory direct participation by all commercial banks;
- direct bilateral connections between the head office of a commercial bank and the Clearing and Settlement Centre;
- settlement on accounts held at the central bank (which also serve as the accounts on which reserve requirements are held);
- irrevocability of all transactions accepted by the system;
- no overdrafts permitted and no intraday credit provided;
- uncovered transactions are not settled but held in a queue (with two priority levels);
- the processing of different types of transaction (accounting, accounting cancellations, and information)

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

3.1.2 *Legal aspects*

The decision to have a single interbank payment system in the Czech Republic is contained in the Interbank Payment System and Accounting of Banks Decree. This decree sets out the rights and obligations of commercial banks and of the central bank in the operation of the Clearing and Settlement Centre. The accounts used to settle interbank transactions are held at the National Bank on the basis of the account agreements signed with the commercial banks in accordance with the Commercial Code. These agreements stipulate for all banks uniform legal and technical conditions for keeping accounts and for the exchange and processing of interbank payment system data.

3.1.3 *Participants in the system*

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

Under bilateral agreements with the National Bank, certain financial institutions are allowed to participate in the system with a special status as so-called third parties. These third parties are non-bank financial institutions which play an important role in the market such as card payment clearing houses and the Stock Exchange Register. Third parties have no interbank payment system accounts with the National Bank but (with the permission of the direct participants concerned) can submit payment orders to the Centre to transfer funds between direct participants (e.g. to settle the net positions arising out of the card payment clearing or payments relating to stock exchange transactions).

3.1.4 Types of transaction

Several types of transaction are possible in the interbank payment system. They may be classified as follows:

- accounting transactions (i.e. funds transfer instructions);
- non-accounting transactions (e.g. appeals¹ and direct debit requests - see Section 2.2.2(b)); and
- information and control transactions.

In turn, accounting transactions can be credit transfers submitted either by direct participants (see Section 2.2.2(a)) or by third parties (see Section 3.2.2). Moreover, banks can attach one of two priority levels to transfer instructions: transfers can either be priority transactions or standard transactions.

3.1.5 Description of the Clearing and Settlement Centre's activities

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

During the accounting day, banks send transfer data to the Clearing and Settlement Centre in electronic form in accordance with fixed conditions determined by the National Bank. Data can be delivered either by telecommunications network or physically on tapes or diskettes. (The facility to deliver data physically is a relic from the past - when the system was set up in 1992 it was impossible to rely on submission of data by network because of the very poor situation in telecommunications at the time.)

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

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

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

¹ Appeals are non-accounting requests for collection.

3.1.6 Pricing policy

Pricing policy is set by the National Bank to reflect the actual costs of the Clearing and Settlement Centre. At the same time, the pricing structure is designed to encourage banks to optimally spread the data delivered to the Centre. The time schedule of the accounting day and the related charges have been amended several times during the relatively short existence of the system. The aim has been not only to extend the hours when the system is available for use by the banks but also to support the National Bank's efforts to increase the punctuality of the end-of-day procedure.

With regard to transaction volumes, the National Bank encourages delivery of payment instructions as early as possible in order not to overload the system at the end of the accounting day (the throughput of the system varies between 150,000 and 190,000 transactions per hour depending on the type of transaction). The current charge for payer banks is therefore set at the very low level of Kc 0.70 per item at the beginning of the accounting day, whereas at the end of the day, when only high-value bank-to-bank transactions are expected, the charge is considerably higher (Kc 200 per item):²

Charges for payer banks (D = settlement day)³

Time	Price (in Czech korunas)
16.00-21.30 on D-1	0.70
07.00-08.00 on D	1.00
08.00-10.30 on D	1.50
10.30-11.30 on D	5.00
11.30-12.00 on D	20.00
12.00-13.30 on D	200.00

Payee banks are also charged, although in this case at a flat rate of Kc 0.70 per item regardless of the time of day.

3.2 Main projects

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

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

² In May 1996 the exchange rate was Kc 18.02 = DM 1.00.

³ In order to bring opening hours into line with those common elsewhere in Europe, there are plans to extend the cut-off time.

4. THE SPECIAL USE OF INTERBANK TRANSFER SYSTEMS FOR INTERNATIONAL AND DOMESTIC FINANCIAL TRANSACTIONS

4.1 International transfers

4.1.1 General overview

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

Cross-border payment transactions are carried out by banks licensed for foreign payments (at the end of 1995, 47 out of 58 existing banks and branches of foreign banks held such a licence). Cross-border payments are also processed by the main international payment card companies, while the Czech Post intermediates cross-border transfers in foreign currencies on the basis of international postal regulations. The National Bank, which is in charge of holding hard currency reserves, is also active in international payments.

4.1.2 Operations performed by banks

Czech banks have entered into many bilateral correspondent bank relationships in order to provide international services. Among banks offering such services, 32 are participants in S.W.I.F.T. Foreign banks that are active in international transfers also use their own networks and the correspondent relationships of their head offices. (At the end of 1995 there were ten branches and eight subsidiaries of foreign banks in the Czech Republic, while seven Czech banks had branches abroad.)

As well as "clear transfers" to and from abroad, banks also process "documentary transfers", such as letters of credit and appeals, using rules and other procedures set by the International Chamber of Commerce. The final clearing and settlement of documentary transfers takes place in the same way as for clear transfers.

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

Two large Czech banks are members of the international Clearing Bank Association, which provides payment system services in ECUs for countries in Central and Eastern Europe. (At the end of 1995 there were 14 banks from eight countries participating in these arrangements, with three Western European banks operating as clearing banks.)

4.1.3 Role of the National Bank in the international clearing and settlement arrangements between the Czech and Slovak Republics

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

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

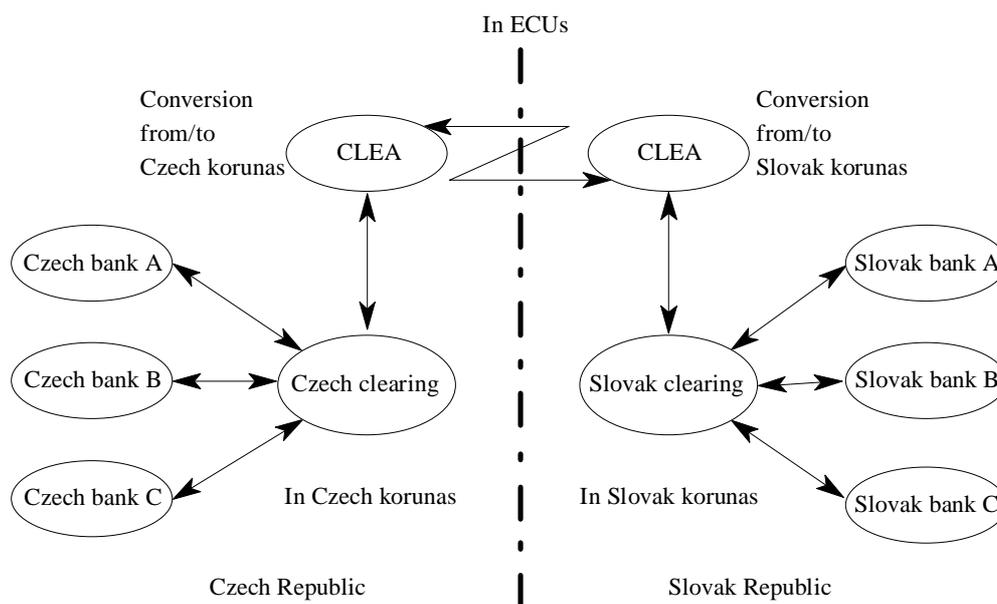
The international payment system between the Czech and Slovak Republics was based on the simple principle of transferring payments from one domestic clearing and settlement system to the other, using a third currency as a settlement currency (the choice was the ECU). It was quite easy to introduce such a system, as the two countries had very similar domestic payment systems to which all existing banks were connected. Under the arrangement, "old block" payments were converted at an exchange rate of one Czech koruna to one Slovak koruna, while "new block" payments were denominated in the so-called "clearing ECU" (which could fluctuate by up to 5% around the market ECU, the actual exchange rates between the clearing ECU and domestic currencies being set by the central banks of the two republics).

The international payment system is illustrated in Chart 1 (overleaf). The exchange of payment instructions between the two countries took place once a day, with only credit transfers being allowed. Cross-border transactions issued by a bank in one country were first delivered (together with domestic payments) to the domestic clearing centre. The payments, denominated in domestic currency, were checked and, assuming sufficient cover was available, the corresponding domestic currency amount was debited from the sending bank's account and credited to the account of a "virtual" clearing bank called CLEA, which was an integral part of the general ledger of the National Bank. The cross-border payments were then converted into ECUs (still in the first country) and the transactions added to a file which at the specified time was transmitted to the second country's virtual clearing bank, also called CLEA. In the receiving country's clearing and settlement system the conversion from ECUs into domestic currency took place and the transaction was transmitted from the account of CLEA bank to the payee's bank.

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

The system functioned smoothly for more than two and half years, processing over 10,000 transactions daily. However, in October 1995 the arrangement between the two clearing centres was cancelled in anticipation of the Czech Republic's membership of the OECD (one of the OECD rules stipulates that members are allowed to have only one exchange rate between their domestic currency and other currencies, a rule which the clearing arrangement between the two countries would have contravened). Since then, payments between the Czech and Slovak Republics have been handled in the same way as any other international payments.

Chart 1



4.1.4 Foreign cheques and payment cards

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

Eurocheques are used in the Czech Republic by foreign visitors for shopping and for settling bills for accommodation and other services. They can be used to make purchases in retail and service outlets especially in the larger cities, or encashed at 28 banks (at their 1,760 branches) and at 700 other places (such as bureaux de change). In 1995 foreign visitors to the Czech Republic used about 200,000 eurocheques. (In addition to eurocheques, eurocheque cards are used by foreign visitors to the country.) For Czech customers, eurocheques are issued by three large banks and in 1995 more than 4,000 such eurocheques were used abroad. The clearing and settlement of eurocheques is performed by the national Eurocheque Clearing Centre operated by Ceskoslovenska obchodni banka.

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

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

4.2 The clearing and settlement of securities transactions

4.2.1 The institutional framework

During the long era of socialism almost all companies in the industrial, service and agricultural sectors were state-owned. After the change in the political and economic system at the end of the 1980s it was necessary to change both the type of ownership in the economy and the legislation relating to corporate entities.

In 1992, important laws were passed governing the functioning of the securities markets, namely the Securities Act, the Investment Funds and Investment Companies Act and the Stock Exchange Act.

In cooperation with several leading institutions and politicians, a voucher privatisation scheme was prepared with the aim of changing the ownership structures. All citizens over 18 years old had the opportunity to take part in the privatisation. Everybody could buy a voucher book at a price of Kc 1,000 and vouchers from this book could be used in special centrally organised auctions to bid for shares in companies. Mainly as a result of this measure, several million small shareholders and several thousand issues of securities were created. This may also be one of the reasons why in the Czech Republic there is more than one public securities market: apart from the Prague Stock Exchange there is also a system called the RM-System, which is operated by the organisation that carried out the voucher privatisation (RM = Registracni misto, the place where citizens could register for the voucher privatisation).

Today all book-entry and immobilised securities with a maturity of one year or longer are registered with a special institution, the Securities Centre. Exchange (and even some off-exchange) trades in these securities are settled by a system called the Stock Exchange Register. Securities with a maturity shorter than one year are cleared, settled and registered in the Register of Short Term Securities (Trh kratkodobych dluhopisu, the TKD system), operated by the National Bank.

4.2.2 The Prague Stock Exchange

In 1992 the Prague Stock Exchange resumed its long pre-war tradition. The members of the Exchange are predominantly institutional investors (banks, investment companies, brokers, etc.). Settlement takes place electronically using the Stock Exchange Register system. After the trade is executed on day T, the purchaser's bank is informed on T+1 of the cost of the purchase and during the next business day (T+2) the bank can comment on the financial status of its client. If the purchaser's bank agrees to make the payment, this takes place on T+3 when the final change of ownership is also registered at the securities centre. If an interbank transfer is needed, the Stock Exchange Register system sends a third-party order to the National Bank's Clearing and Settlement Centre. (The National Bank will only transfer funds if it has a standing authority from the purchaser's bank to debit that bank's account on instructions received from the Register system.)

4.2.3 The RM-System

As noted above, the RM-System is operated by the company that carried out the voucher privatisation. Some of the registration centres used while the scheme was operating were converted into offices of this "electronic broker", where members of the public may buy or sell securities without going to banks or other, traditional, brokers. The RM-System cooperates very closely with the Securities Centre, where the majority of securities are registered. Trades are settled through a commissioned commercial bank, with which the buyer has to deposit in advance sufficient covering funds for a purchase.

4.2.4 Short-term securities

The National Bank is by law responsible for operating the system of registration of ownership and of clearance and settlement for short-term securities (the TKD system). For this purpose, the National Bank created an in-house system which has been operational since May 1995. The system operates on the delivery-versus-payment principle and can be used for all securities issued in the Czech Republic with an original maturity of less than one year. These securities are mainly Treasury bills, National Bank bills and FNM bills (issued by Fond narodniho majetku, the National Property Fund, an agency which manages some state or soon-to-be privatised property before it is transferred to private owners). Apart from these major issuers, there are new issuers entering the short-term securities market who may also use the TKD system (notably large banks and companies).

There are more than 30 participants in the TKD system, mostly banks, which handle trades for around 100 customers (banks and large companies, including non-residents). The nominal value of the securities registered on the accounts is approximately Kc 220 billion and average daily turnover is about 100 transactions with a value of several tens of billions of Czech korunas.

The system runs in real time with all participants connected on-line. If buy and sell instructions from participants match, the TKD system marks the securities as "frozen" and sends a third-party payment instruction to the National Bank's Clearing and Settlement Centre. If the funds transfer is not confirmed (e.g. if it is held in a "hold queue"), the securities remain "frozen" in the account of the seller. Only after the funds transfer has taken place is the TKD system notified electronically and the securities movement effected.

5. THE ROLE OF THE CENTRAL BANK IN THE INTERBANK PAYMENT SYSTEM

5.1 General responsibilities

The responsibility of the central bank to safeguard the stability of the currency set out in the Constitution is further defined in the National Bank Act, which provides that the National Bank shall control the circulation of money and the payment system and ensure the smooth and efficient operation of these functions. The National Bank fulfils this obligation partly by issuing regulations applying to banks and the payment system and partly by direct involvement in the payment system and the provision of technical support.

In 1992 the National Bank set up a uniform interbank payment system accessible to all banks in the Czech Republic. It sets out the basic rules applicable to the system, including the principles of gross settlement with full coverage of the payments, electronic paperless data transfer and the use of standard codes to identify banks. These principles also affect the way individual banks operate their internal payment systems.

The National Bank follows the latest international developments and seeks to ensure the optimal development of the interbank payment system. Its efforts focus not only on improving the way in which the National Bank processes data and shortening the time taken to process interbank payments but also on introducing new features to improve the security of the whole system.

The National Bank is also involved in the operation of the cheque payment system. It coordinates the banks' work in establishing common principles for cheque payments, particularly as regards the issue and use of bank cheques. In 1994, the National Bank took the lead in developing the new system for guaranteed cheques - the uniform domestic cheque system using guarantee cards. The National Bank coordinates the banks in this system and plays a significant role in the process of creating and modifying the system's governing principles.

The National Bank plans to increase its activity in the process of regulating bank payment cards, particularly electronic purses. Because of their possible monetary effects, the National Bank is considering restricting the right to issue electronic purses to banks so that electronic money is under the supervision of the central bank. It also proposes to introduce some other basic principles for regulating electronic purses. For example:

- the total value held on all issued electronic purses will have to be recorded by the issuing bank in its internal accounts;
- the transfer of funds directly from one card to another will be forbidden;
- funds held on an electronic purse are not considered to be a deposit, and therefore they will not be covered by statutory deposit insurance.

Apart from its legal, regulatory and procedural responsibilities in the payment system, the National Bank also acts as a bank in its own right which maintains accounts, carries out payment transactions and offers other payment services to its customers. The National Bank holds accounts for banks and accepts their deposits, its main role in this field being the administration of the accounts used in the interbank payment system. The National Bank maintains the accounts of state institutions and other institutions which form part of the state budget and acts as an agent of the state on the interbank market. It also maintains accounts and offers payment services for other legal entities and for its own employees. It maintains correspondent relations, in particular with other central banks and major international commercial banks. The National Bank also manages the country's foreign exchange reserves and carries out foreign exchange interventions and other operations.

5.2 Provision of clearing and settlement services

5.2.1 The use of accounts held at the central bank for payment transactions

For the operation of the interbank payment system, the National Bank maintains a non-interest-bearing account in Czech korunas for every bank in the Czech Republic. Balances on these accounts also form the reserve requirements, which are mandatory in the Czech Republic. Minimum reserves are set at 11.5 % of deposits averaged over 14-day cycles. Banks are allowed to use minimum reserves for interbank payments but, over the cycle, have on average to meet the minimum requirement. No overdrafts are allowed on the accounts and no intraday credit is provided, so a bank has to obtain any funds it needs to cover its interbank payments from the market or by means of an overnight credit line from the National Bank.

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

5.2.2 The role of the central bank in the RTGS system

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

The National Bank is responsible for the operation and regulation of the interbank RTGS system. The principles of the system are stated in a National Bank decree. In addition, the National Bank sets the conditions for the maintenance of the interbank payment system accounts, the pricing policy and technical data standards (see Section 3).

5.3 Monetary policy and payment systems

Under the 1993 National Bank Act, the primary task of the National Bank is to safeguard the stability of the Czech koruna. To carry out this task the National Bank:

- sets monetary policy;
- issues banknotes and coins;
- controls the money circulation;

- regulates the payment system and interbank clearing and settlement and ensures their smooth and efficient operation;
- supervises banking activity and ensures the secure and effective development of the banking system in the Czech Republic;
- performs other activities specified in the National Bank Act and other legal documents.

The National Bank's monetary policy is based on regular macroeconomic analyses and continuous monitoring of economic indicators such as GDP, inflation, unemployment, foreign trade and foreign exchange reserves.

The National Bank implements monetary policy by means of market instruments. (If necessary, it can also have a direct influence on the monetary base and an indirect influence on the monetary aggregates and the volume of loans offered by banks to non-banking institutions, but these administrative tools are not used by the National Bank at the moment.) The following market tools are used:

- refinanced and rediscount loans;
- open market operations;
- exchange rate interventions;
- the imposition of reserve requirements in order to control the liquidity of the banking sector and the money supply.

The National Bank operates daily on the domestic money market in order to influence market interest rates. The implementation of monetary policy is supported by the effective operation of the payment system controlled by the National Bank.

5.4 Major projects and policies being implemented

The Clearing and Settlement System came into operation with so-called "cold" backup - namely the possibility of reprocessing all the day's data on a smaller computer at the National Bank. However, with the growing number of transactions processed each day the establishment of a better and more reliable backup became a matter of urgency. Final acceptance tests were successfully completed in October 1996. Live operation of the backup system started at the beginning of 1997.

In connection with this project, a new method of communication and data security was prepared. The standard of communications was very poor in Czechoslovakia at the time the Clearing and Settlement Centre was set up and so banks were allowed to deliver data on magnetic tape. The new communications system will allow banks to be connected on-line with an adequate level of security.

The National Bank is also modernising the TKD system (see Section 4.2.4), which has been in operation in its latest version since May 1995. In the light of the experience with its operation, new technology and a higher level of security are planned for implementation in 1997.

There are also new developments at the Stock Exchange. In addition to the introduction of continuous trading, the Stock Exchange Register has prepared a new system for registering securities and settling trades. The National Bank is cooperating with the Stock Exchange on these projects.

Table 1
Basic statistical data

	1993	1994	1995
Population (millions, year-end)	10.331	10.336	10.321
GDP (CZK billions)	400.7	411.2	431.1
GDP per capita (CZK)	38,788	39,783	41,769
Exchange rate (domestic currency vis-à-vis USD):			
<i>year-end</i>	29.95	28.04	26.60
<i>average</i>	29.15	28.78	26.55

Table 2
Settlement media used by non-banks
 (at year-end, in billions of Czech korunas)

	1993	1994	1995
Banknotes and coin	61.4	83.9	103.5
Transferable deposits*	300.1	337.8	349.0
Money supply (M2)	720.4	870.4	1,039.6

* Sight deposits.

Table 3

Settlement media used by banks
(at year-end, in billions of Czech korunas)

	1993	1994	1995
Reserve balances held at central bank ¹	6.8	23.2	90.6
Transferable deposits at other institutions ²	211.2	236.8	225.1
Minimum reserves held at central bank	59.0	51.3	75.2
<i>Memorandum item:</i>			
Lombard loans ³	0	0.2	0

¹ Banks' deposits with the Czech National Bank excluding minimum reserves. ² Deposits with other banks. ³ Loans from the Czech National Bank.

Table 4

Banknotes and coin
(in millions of Czech korunas)

	1993	1994	1995
Total banknotes and coin outstanding	70,136	96,325	120,441
Denomination of banknotes:			
5,000 korunas	1,554	18,155	29,006
2,000 korunas*	0	0	0
1,000 korunas	50,181	57,936	67,915
500 korunas	8,255	9,145	10,840
200 korunas	3,625	4,021	4,508
100 korunas	2,913	3,180	3,541
50 korunas	535	1,015	1,220
20 korunas	0	519	769
Total banknotes	67,063	93,971	117,799
Total coin	3,073	2,355	2,642
Banknotes and coin held by banks	8,700	12,400	16,960
Banknotes and coin outside banks	61,436	83,925	103,481

* Not issued until 1996.

Table 5
Institutional framework
(at year-end)

Categories	1993	1994	1995
Total banks*	54	57	59
<i>of which:</i>			
<i>central bank</i>	1	1	1
<i>state-owned banks</i>	1	1	1
<i>banks with privately and domestically owned majority</i>	18	15	15
<i>banks with foreign-owned majority and foreign bank branches</i>	20	22	24
<i>other banks</i>	14	18	18
Number of current accounts (thousands):			
<i>central bank</i>	22	22	21
<i>other banks</i>	4,633	5,052	5,826
Number of branches:			
<i>central bank</i>	19	18	18
<i>other banks</i>	3,491	3,518	3,458
Deposits on current accounts (CZK billions):			
<i>central bank</i>	41.4	64.6	57.2
<i>other banks</i>	258.7	273.2	291.8

* Including savings banks.

Table 6
Cash dispensers, ATMs and EFTPOS terminals
(at year-end)

	1993	1994	1995
Cash dispensers and ATMs:			
<i>Number of networks</i> ¹	4	4	4
<i>Number of machines (ATMs)</i>	474	787	1,063
<i>Number of transactions (millions)</i>	6.32	12.91	25.14
<i>Value of transactions (CZK billions)</i>	5.81	13.26	27.45
EFTPOS:			
<i>Number of networks</i> ²	1	1	2
<i>Points of sale</i> ³	3,100	5,930	8,620
<i>Number of machines</i>	20	161	668
<i>Number of transactions (millions)</i> .....	.	0.09	0.32
<i>Value of transactions (CZK billions)</i> .....	.	0.41	1.74

¹ EuroCard/MasterCard, VISA, Česká spořitelna, Moravia bank. ² EuroCard/MasterCard, from 1995 VISA. ³ Includes those equipped only with an imprinter rather than an EFTPOS machine.

Table 7

Number of payment cards in circulation

(at year-end, in thousands)

	1993	1994	1995
Cards with a cash/debit/credit function ¹	377.2	651.2	919.9
<i>of which:</i>			
<i>debit cards</i>	377.2	651.2	919.9
<i>credit cards</i>	0	0	0
<i>ATM cards</i> ²	193.7	338.1	467.9
Cards with a cheque guarantee function ³	2.3	2.6	5.9
Retailer cards ⁴	141	197.8	207.5

¹ Cards issued by banks. ² Included in debit cards. ³ Eurocheque cards and domestic Guaranteed Cheque System cards. ⁴ Issued by the CCS.

Table 8

**Payment instructions handled by the interbank payment system:
volume of transactions**

	1993			1994	1995
	Pre-division*	Post-division*	total		
Total for the year (millions)	6.85	65.59	72.44	94.87	124.42
Daily average (thousands)	274	285	284	372	492

* The Czechoslovak koruna was replaced by separate Czech and Slovak korunas on 8th February 1993. "Pre-division" figures refer to Czechoslovak koruna transactions throughout the territory of the former Czechoslovakia, "post-division" figures to Czech koruna transactions in the Czech Republic. At the time of the division, one Czechoslovak koruna equalled one Czech koruna.

Table 9

**Payment instructions handled by the interbank payment system:
value of transactions**
(in billions of Czech korunas)

	1993			1994	1995
	pre-division*	post-division*	total		
Total for the year	1,009	7,379	8,488	11,795	18,346
Daily average	40.38	32.08	32.77	46.25	72.51

* The Czechoslovak koruna was replaced by separate Czech and Slovak korunas on 8th February 1993. "Pre-division" figures refer to Czechoslovak koruna transactions throughout the territory of the former Czechoslovakia, "post-division" figures to Czech koruna transactions in the Czech Republic. At the time of the division, one Czechoslovak koruna equalled one Czech koruna.

Table 10

**Indicators of use of various cashless payment instruments:
volume of transactions**
(in thousands)

Instruments	1993	1994	1995
Cheques issued ¹	4,788	7,559	13,916
Payments by debit and credit cards	6,375	15,856	25,200
Direct debits	10,447	14,365	36,064
Other ²	142,345	163,777	257,846
Total	163,955	201,557	333,026

¹ Issued and paid by banks. ² Includes credit transfers.

Table 11

**Indicators of use of various cashless payment instruments:
value of transactions**
(in millions of Czech korunas)

Instruments	1993	1994	1995
Cheques issued ¹	402,108	530,860	979,440
Payments by debit and credit cards	6,153	16,226	29,874
Direct debits	302,325	399,944	808,002
Other ²	11,432,375	12,554,347	13,360,181
Total	12,142,961	13,501,427	15,177,497

¹ Issued and paid by banks. ² Includes credit transfers.

Table 12
Participation in S.W.I.F.T. by domestic institutions

	1993	1994	1995
Members	16	19	19
<i>of which: live</i>	15	19	19
Sub-members ¹	10	12	12
<i>of which: live</i>	10	12	12
Participants ²	0	0	1
<i>of which: live</i>	0	0	0
Total users	26	31	32
<i>of which: live</i>	25	31	31
<i>Memorandum items:</i>			
Total S.W.I.F.T.:			
<i>members</i>	2,244	2,551	2,693
<i>sub-members</i>	1,887	2,097	2,259
<i>participants</i>	125	218	277
<i>users</i>	4,256	4,866	5,229

¹ Domestic users sponsored by members abroad. ² Participants are not shareholders in S.W.I.F.T. and their message traffic over the networks is restricted.

Table 13
S.W.I.F.T. message flows to/from domestic users*

	1993	1994	1995
Total messages sent	449,371	1,678,147	2,340,672
<i>of which:</i>			
<i>category I</i> .....	.	.	.
<i>category II</i> .....	.	.	.
<i>of which:</i>			
<i>sent/received</i> .....	.	.	.
<i>to/from domestic users</i> .....	.	.	.
Total messages received	420,051	1,559,489	2,144,686
<i>of which:</i>			
<i>category I</i> .....	.	.	.
<i>category II</i> .....	.	.	.
<i>Memorandum item:</i>			
Global S.W.I.F.T. traffic	457,218,200	518,097,873	603,575,374

* Data per category not monitored.

Table 14
Postal payment system

	1993	1994	1995
Cash at post cashdesks (CZK millions)	2,255	2,778	2,362
Number of cash disbursements (thousands)	66,413	67,570	69,122
<i>of which:</i>			
<i>debited from bank accounts</i>	32,487	33,170	31,572
<i>pension disbursements</i>	28,008	27,875	27,387
Value of cash disbursements (CZK millions)	285,417	278,956	271,191
<i>of which:</i>			
<i>debited from bank accounts</i>	67,890	71,607	73,108
<i>pension disbursements</i>	73,387	82,543	95,431
Number of cash receipts (thousands)	146,754	133,150	130,648
Value of cash receipts (CZK millions)	354,309	222,086	218,826

Annex 1

COMPARATIVE TABLES

Table 1
Notes and coin in circulation¹

	1991	1992	1993	1994	1995
	USD per inhabitant²				
Czech Republic .....	.	.	198	289	374
Belgium	1,331	1,239	1,164	1,229	1,391
Canada	646	627	636	637	662
France	863	828	739	807	891
Germany	1,411	1,534	1,511	1,790	2,025
Italy	1,168	1,023	921	1,032	1,082
Japan	2,789	2,739	3,243	3,736	3,873
Netherlands	1,438	1,344	1,267	1,428	1,541
Sweden	1,587	1,207	1,042	1,120	1,312
Switzerland	2,802	2,748	2,638	2,982	3,393
United Kingdom	509	446	455	504	528
United States	1,070	1,167	1,272	1,385	1,443
	As percentage of GDP				
Czech Republic .....	.	.	15.3	20.4	24.0
Belgium	6.2	5.9	6.0	5.2	5.3
Canada	3.1	3.3	3.4	3.4	3.4
France	3.7	3.6	3.5	3.4	3.7
Germany.....	6.0	6.5	6.7	6.8	6.9
Italy	5.4	5.7	5.8	5.9	5.5
Japan	9.4	9.0	9.5	9.7	10.4
Netherlands	6.8	6.5	6.5	6.3	6.0
Sweden	5.3	5.1	5.3	5.0	4.7
Switzerland	8.0	8.0	7.9	7.8	7.7
United Kingdom	2.7	2.9	2.8	2.8	2.8
United States	4.6	4.8	5.0	5.2	5.2
	As percentage of narrow money³				
Czech Republic .....	.	.	16.9	19.9	22.9
Belgium	31.2	31.5	29.6	27.1	27.2
Canada	46.1	47.0	44.0	44.2	42.8
France	15.8	15.9	15.3	15.1	14.0
Germany	28.4	29.9	29.2	29.6	29.1
Italy	14.2	15.7	15.5	16.0	16.3
Japan	33.1	31.2	31.1	30.7	29.2
Netherlands	28.6	27.4	25.1	25.0	22.1
Sweden	11.5	10.8	10.7	10.7	10.5
Switzerland	21.8	21.6	19.7	19.7	18.0
United Kingdom	5.6	4.8	4.5	4.6	4.6
United States	29.5	28.5	28.5	30.7	33.0

¹ For explanation of figures see relevant country tables. ² Year-end figures converted at end-of-year exchange rates. ³ Narrow money: M₁; except for Sweden (M₂) and the United Kingdom (M₂).

Table 2

Transferable deposits held by non-banks¹

	1991	1992	1993	1994	1995
	USD per inhabitant²				
Czech Republic .....	.	.	970	1,166	1,271
Belgium	2,929	2,700	2,764	3,307	3,715
Canada	3,728	3,505	3,614	3,511	3,693
France	4,445	4,381	4,080	4,543	5,459
Germany	3,655	3,591	3,761	4,287	4,953
Italy	6,756	5,286	4,863	5,236	5,399
Japan ³	7,001	7,141	8,160	9,424	11,031
Netherlands	3,585	3,561	3,776	4,277	5,433
Sweden	12,450	10,119	8,850	9,811	11,351
Switzerland	5,565	5,601	5,839	6,799	8,386
United Kingdom	8,515	9,357	9,589	10,493	11,073
United States	2,529	2,910	3,182	3,101	2,913
	As percentage of GDP				
Czech Republic .....	.	.	74.8	82.1	80.9
Belgium	13.6	12.8	14.0	14.0	14.0
Canada	18.0	18.5	19.5	18.8	19.1
France	19.9	19.3	19.4	19.2	20.4
Germany	15.6	15.3	16.7	16.3	16.8
Italy	31.0	29.4	30.4	29.8	27.6
Japan ³	26.3	25.0	24.6	25.3	25.1
Netherlands	17.0	17.3	19.4	18.8	21.2
Sweden	41.2	43.0	44.6	42.4	40.6
Switzerland	15.9	16.3	17.4	18.0	19.0
United Kingdom	45.8	60.0	60.0	58.6	59.5
United States	10.8	11.9	12.5	11.7	10.6
	As percentage of narrow money⁴				
Czech Republic .....	.	.	83.1	80.1	77.2
Belgium	68.8	68.5	70.0	72.9	72.8
Canada	266.3	263.0	249.9	243.9	238.7
France	84.2	84.1	84.7	84.9	86.0
Germany	73.7	70.1	72.7	70.8	71.2
Italy	82.2	81.3	81.9	81.4	81.1
Japan ⁵	97.9	91.5	86.5	85.3	82.7
Netherlands	71.4	72.6	74.9	75.0	77.9
Sweden	90.2	90.6	90.6	90.3	90.6
Switzerland	43.7	43.6	43.6	44.9	44.3
United Kingdom	94.4	95.5	95.5	95.4	95.4
United States	69.7	71.1	71.2	68.9	66.6

¹ For explanation of figures and definition of transferable deposits, see relevant country tables. ² Year-end figures converted at end-of-year exchange rates. ³ End-March figure converted at end-March exchange rate. ⁴ Narrow money: M₁; except for Sweden (M₃) and the United Kingdom (M₂). ⁵ End-March figure.

Table 3
Settlement media used by banks¹
 (1995)

	Banks' reserves at central bank (USD billion)²	Banks' reserves at central bank in percentage of narrow money³	Transferable deposits at other banks (USD billion)²	Transferable deposits at other banks in percentage of narrow money²
Czech Republic	3.04	20.03	8.46	49.76
Belgium	0.063	0.12	4.4	8.4
Canada	0.3	0.57	.	.
France	1.4	0.39	643.0	175.2
Germany	26.0	4.6	253.9	44.6
Italy	46.6	12.2	40.5	10.6
Japan	31.5	1.9	92.9 ⁴	5.5 ⁵
Netherlands	6.091	5.65	1.9	1.8
Sweden	0.11	0.10	8.0	7.2
Switzerland	4.2	3.1	16.7	12.5
United Kingdom	2.8	0.4	347.4	51.3
United States	29.6	2.6	32.7	2.8

¹ For explanation of figures see relevant country tables. ² Year-end figures converted at end-of-year exchange rates. ³ Narrow money: M₁; except for Sweden (M₃) and the United Kingdom (M₂). ⁴ End-March figure converted at end-March exchange rate. ⁵ End-March figure.

Table 4
Institutional framework¹
 (1995)

	Number of institutions	Number of inhabitants per institution	Number of branches	Number of inhabitants per branch	Number of accounts per inhabitant
Czech Republic	59	174,932	3,476	2,969	0.6
Belgium	146	69,562	9,456	1,074	1.2
Canada ²	2,553	11,633	13,681	2,171	.
France	613	94,290	46,646	1,236	1.1
Germany	3,617	22,615	67,986 ³	1,203	1.0
Italy	972	58,951	38,038	1,506	0.5
Japan	5,287	23,643	73,309	1,705	.
Netherlands	127	121,717	6,501	2,378	1.2
Sweden	109	81,009	3,892	2,269	3.1
Switzerland	384	18,386	7,383	956	.
United Kingdom	565	103,363	36,964	1,580	2.3
United States	23,958	10,978	72,124	3,646	.

¹ For explanation of figures see relevant country tables. ² Deposit-taking institutions only. ³ Including post office branches which are entrusted with the execution of semi-cashless payments for Deutsche Postbank AG.

Table 5
Cash dispensers and ATMs¹

	1991	1992	1993	1994	1995
Number of machines per 1,000,000 inhabitants					
Czech Republic .....	.	.	46	76	103
Belgium	105	109	119	313	360
Canada	467	510	554	578	595
France	284	305	325	356	395
Germany	171	235	308	361	436 ⁵
Italy	204	245	266	326	378
Japan	795	870	935	978	1,013
Netherlands	223	261	292	325	355
Sweden	258	254	255	259	267
Switzerland	347	387	439	481	532
United Kingdom	314	324	328	342	358
United States	331	342	367	418	467
Number of transactions per inhabitant					
Czech Republic .....	.	.	0.6	1.3	2.4
Belgium	8.1	8.8	9.1	11.9	14.2
Canada	33.6	36.0	37.5	41.0	45.9
France	11.0	12.0	13.3	14.2	15.7
Germany .....	.	.	.	11.5	13.4 ⁵
Italy ²	2.9	3.6	4.1	4.6	5.3
Japan	2.2	2.9	3.3	3.6	3.8
Netherlands	13.7	17.3	20.5	23.9	27.5
Sweden	24.1	25.1	28.3	30.7	31.8
Switzerland	6.6	7.4	8.3	9.1	10.3
United Kingdom	18.8	20.2	21.3	22.9	25.2
United States	25.3	28.2	29.8	31.8	36.9
Average value of transactions (USD)³					
Czech Republic .....	.	.	30.7	36.6	41.0
Belgium	117.4	113.2	110.3	125.2	137.5
Canada ⁴	56.7	56.7	53.5	51.2	51.3
France	82.7	86.1	77.0	76.5	81.3
Germany .....	.	.	.	157.6	196.6 ⁵
Italy	239.2	245.4	196.8	195.3	194.4
Japan	363.0	359.3	395.4	419.8	450.6
Netherlands	92.2	98.5	96.4	97.9	108.4
Sweden	120.6	128.6	101.2	104.7	112.6
Switzerland	224.6	225.1	207.8	217.8	242.1
United Kingdom	78.2	84.6	72.5	74.6	77.3
United States	67.0	66.9	68.2	67.2	67.7

¹ For explanation of figures see relevant country tables. ² Estimated figures referring to the whole system; they differ from those provided in the statistical annex of the Italian chapter. ³ Converted at yearly average exchange rates. ⁴ Average value of a cash withdrawal only. ⁵ Increase partly due to new data source.

Table 6
EFTPOS terminals¹

	1991	1992	1993	1994	1995
Number of terminals per 1,000,000 inhabitants					
Czech Republic .....	.	.	0	16	65
Belgium	3,213	4,034	5,246	6,294	7,174
Canada	472	1,035	2,134	4,086	6,394
France	3,568	5,594	7,435	7,574	9,394
Germany	432	640	344	767	856
Italy	805	1,094	1,350	1,819	2,683
Japan	213	264	168	227	
Netherlands	268	754	1,606	3,094	4,747
Sweden	1,034	1,647	3,054	5,514	6,160
Switzerland	697	1,022	1,433	2,379	3,499
United Kingdom	3,299	3,806	4,639	5,993	8,647
United States	348	450	759	1,440	2,107
Number of transactions per inhabitant					
Czech Republic .....	.	.	.	0.009	0.031
Belgium	9.9	12.0	14.2	18.0	20.8
Canada	0.4	1.1	2.6	6.3	13.3
France	18.5	22.7	24.3	26.1	32.9
Germany	0.25	0.35	0.85	1.28	1.83
Italy ²	0.19	0.28	0.39	0.57	0.83
Japan	0.006	0.006	0.005	0.006	
Netherlands	2.1	3.1	4.4	8.2	16.6
Sweden	3.5	5.3	6.5	8.8	10.4
Switzerland	2.0	2.8	4.0	5.7	8.0
United Kingdom .....	.	.	.	.	.
United States	0.9	1.1	1.7	2.4	2.9
Average value of transactions (USD)³					
Czech Republic .....	.	.	.	162.2	204.4
Belgium	57.9	57.7	63.2	71.2	77.6
Canada	44.3	43.8	38.8	37.3	35.0
France	58.5	62.5	58.0	57.6	63.3
Germany	53.6	43.5	54.2	64.0	95.7
Italy	163.6	161.6	121.5	117.5	116.0
Japan	103.9	97.7	184.9	80.2	
Netherlands	30.1	46.0	58.5	62.9	59.1
Sweden	93.5	101.0	85.5	80.8	80.7
Switzerland	41.0	51.8	58.8	73.8	96.4
United Kingdom .....	.	.	.	.	.
United States	28.7	27.7	24.0	25.0	24.0

¹ For explanation of figures see relevant country tables. ² Estimated figures referring to the whole system; they differ from those provided in the statistical annex of the Italian chapter. ³ Converted at yearly average exchange rates.

Table 7
Number of cards*
 (1995 per 1,000 inhabitants)

	Cards with a cash function	Cards with a debit/credit function	Cards with cheque guarantee function	Retailers' cards
Czech Republic	89	89	1	20
Belgium	931	931	457	120
Canada	1,405	533	.	4,209
France	423	409	.	.
Germany .....	.	909	470	59
Italy	241	357	29	.
Japan	2,077	1,891	.	471
Netherlands	1,062	97	47	.
Sweden	699	537	.	.
Switzerland	795	847	545	.
United Kingdom	1,433	1,014	822	223
United States .....	.	2,475	.	2,233

* For explanation of figures, see relevant country tables.

Table 8
Relative importance of cashless payment instruments¹
 (percentage of total volume of cashless transactions)

	1991	1992	1993	1994	1995
	Cheques				
Czech Republic .....	.	.	2.9	3.8	4.2
Belgium	21.6	18.8	16.0	11.7	10.6
Canada	64.8	62.4	58.7	52.8	46.9
France	52.2	50.6	49.1	46.9	44.8
Germany	9.6	8.8	8.1	7.9	7.0
Italy ²	41.6	40.0	37.2	34.0	32.8
Japan .....	.	.	.	.	.
Netherlands	14.3	12.3	8.1	6.0	4.0
Sweden ⁵	9.9	9.3	.	.	.
Switzerland ³	5.4	4.4	3.3	2.6	2.0
United Kingdom ⁴	48.5	45.4	43.0	40.2	36.7
United States	81.6	81.1	80.1	78.9	77.4
	Payment by cards				
Czech Republic .....	.	.	3.9	7.8	7.6
Belgium	13.3	15.6	16.5	18.0	19.7
Canada	27.8	28.9	31.1	35.3	40.0
France	14.5	15.0	15.7	16.3	17.3
Germany	1.8	2.1	2.6	3.1	3.6
Italy ²	3.1	3.7	4.1	5.2	6.6
Japan .....	.	.	.	.	.
Netherlands	1.8	2.6	4.1	7.9	13.6
Sweden ⁵	8.8	8.2	9.8	11.6	14.2
Switzerland	9.7	11.8	13.8	16.2	18.4
United Kingdom	16.4	18.8	21.0	23.3	25.9
United States	16.0	16.2	16.9	18.0	19.1

¹ For explanation of figures see relevant country tables. In some cases the total may not sum to 100% because of other items. ² Estimated figures referring to the whole system; they differ from those provided in the statistical annex of the Italian chapter. ³ Postal cheques are not included because detailed figures were no longer published by the PTT after 1992. In 1991 its share was approximately 4%. ⁴ Includes Town cheques. ⁵ Statistics on the volume and value of cheque payments are not available for 1993 and 1994. The percentage figures for these years therefore do not include cheques.

Table 8 (cont.)

	1991	1992	1993	1994	1995
	Credit transfers				
Czech Republic .....	.	.	86.8	81.3	77.4
Belgium	57.0	56.9	58.5	60.9	60.2
Canada	3.9	4.4	5.2	6.4	7.3
France	15.2	15.4	15.4	15.7	16.0
Germany	51.3	49.8	45.6	48.7	49.5
Italy ²	40.9	42.1	44.6	46.8	45.9
Japan .....	.	.	.	.	.
Netherlands	61.3	61.3	66.4	64.2	60.6
Sweden	76.9	77.6	84.5	82.3	79.4
Switzerland	82.7	81.3	80.1	78.1	76.3
United Kingdom ⁶	20.9	20.6	20.4	20.1	19.7
United States	1.6	1.8	1.9	2.1	2.3
	Direct debits				
Czech Republic .....	.	.	6.4	7.1	10.8
Belgium	8.2	8.8	9.0	9.4	9.5
Canada	3.5	4.3	5.0	5.5	5.8
France	9.3	10.2	10.6	11.7	12.2
Germany	37.3	39.3	43.7	40.3	39.9
Italy ²	3.8	4.1	4.4	4.7	5.4
Japan .....	.	.	.	.	.
Netherlands	22.6	23.9	21.5	21.9	21.8
Sweden	4.4	4.9	5.7	6.1	6.4
Switzerland	2.3	2.5	2.8	3.1	3.3
United Kingdom	14.2	15.1	15.6	16.5	17.7
United States	0.8	0.9	1.0	1.1	1.2

⁶ Paper-based and paperless (includes large-value: CHAPS).

Table 9

Relative importance of cashless payment instruments¹

(percentage of total value of cashless transactions)

	1991	1992	1993	1994	1995
	Cheques				
Czech Republic .....	.	.	94.2	93.0	88.0
Belgium	5.4	6.2	5.4	4.6	4.3
Canada	99.0	98.8	98.8	98.7	98.1
France	7.3	6.4	4.6	4.4	4.7
Germany	2.8	2.4	2.3	2.3	2.1
Italy ²	9.1	7.1	5.4	4.5	4.5
Japan .....	.	.	.	.	.
Netherlands	0.2	0.2	0.1	0.1	0.1
Sweden	11.4	10.6	.	.	.
Switzerland ³	0.2	0.1	0.1	0.1	0.1
United Kingdom ⁴	16.1	11.6	9.4	7.6	5.3
United States	13.7	13.1	12.6	12.2	11.9
	Payment by cards				
Czech Republic .....	.	.	2.5	3.0	5.3
Belgium	0.1	0.2	0.1	0.1	0.2
Canada	0.3	0.3	0.3	0.3	0.5
France	0.2	0.2	0.2	0.2	0.2
Germany	0.02	0.02	0.02	0.02	0.03
Italy ²	0.04	0.04	0.03	0.04	0.05
Japan .....	.	.	.	.	.
Netherlands	0.0	0.0	0.0	0.1	0.2
Sweden	0.7	0.7	0.9	1.0	1.4
Switzerland ⁵ .....	.	.	.	.	.
United Kingdom	0.2	0.2	0.2	0.2	0.2
United States	0.1	0.1	0.1	0.1	0.1

¹ For explanation of figures see relevant country tables. In some cases the total may not sum to 100% because of other items. ² Estimated figures referring to the whole system; they differ from those provided in the statistical annex of the Italian chapter. ³ Postal cheques are not included because detailed figures were no longer published by the PTT after 1992. In 1991 its share was below 0.1%. ⁴ Includes Town cheques. ⁵ Below 0.1%.

Table 9 (cont.)

	1991	1992	1993	1994	1995
	Credit transfers				
Czech Republic .....	.	.	3.3	3.9	6.5
Belgium	94.3	93.4	94.2	94.7	95.2
Canada	0.6	0.7	0.7	0.7	1.1
France	89.9	91.2	93.5	94.0	93.3
Germany	95.4	95.5	95.7	95.7	95.8
Italy ²	88.6	91.1	93.2	94.2	94.1
Japan .....	.	.	.	.	.
Netherlands	98.4	98.6	98.8	98.7	98.6
Sweden	84.9	86.3	95.8	96.2	95.7
Switzerland	99.8	99.9	99.9	99.8	99.8
United Kingdom ⁶	82.5	87.1	89.5	91.2	93.4
United States	85.4	85.8	86.4	86.8	87.0
	Direct debits				
Czech Republic .....	.	.	0.0	0.1	0.2
Belgium	0.2	0.2	0.3	0.5	0.3
Canada	0.1	0.2	0.2	0.2	0.3
France	0.7	0.6	0.7	0.8	0.6
Germany	1.8	2.1	2.0	2.0	2.1
Italy ²	0.3	0.2	0.2	0.2	0.2
Japan .....	.	.	.	.	.
Netherlands	1.4	1.2	1.1	1.1	1.2
Sweden	3.0	2.4	3.3	2.8	2.9
Switzerland .....	.	.	.	0.1	0.1
United Kingdom	1.2	1.1	1.0	1.0	1.0
United States	0.8	1.0	0.9	0.9	0.9

⁶ Paper-based and paperless (includes large-value: CHAPS).

Table 10a
Features of selected interbank funds transfer systems¹
 (figures relate to 1995)

	Type ²	Owner/ Manager ³	No. of participants		Processing ⁴	Settlement ⁵	Membership ⁶
				of which direct			
Czech Republic							
Clearing and Settlement System	L + R	CB	59	59	ACH	RTGS	O
Belgium							
CH	L + R	B + CB	142	72	M	N	O
CEC	R	B + CB	81	.	ACH	N	O
Canada							
IIPS	L	B + AS	66	20	.	. ⁷	RM
France							
SAGITTAIRE	L	CB	60	60	RTT	N	RM
CH Paris ⁸	L + R	B	435	38	M	N	RM
CH Provinces ⁹	R	CB	. ¹⁰	. ¹⁰	M	N	O
SIT	R	B	289	23	RTT	N	RM
CREIC	R	CB	16	16	ACH	N	O
Card payments	R	B	212	11	ACH	N	RM
TBF	L	CB	.	.	RTT	RTGS	O
Germany							
MAOBE	R	CB	5,570	.	ACH	GS	O
DTA	R	CB	5,570	.	ACH	GS	O
EIL-ZV	L	CB	5,570	.	RTT	RTGS	O
Platz. überweisungsverkehr	L + R	CB	5,570	.	M	GS	O
Konvent. Abrechnung	L + R	CB	625	.	M	N	O
EAF	L	CB	68	.	RTT	N	RM
Italy							
Local clearing	L + R	CB	643	268	RTT ¹¹	N	O
Retail	R	CB ¹²	832	124	ACH	N	O
ME ¹³	L	CB	299	299	RTT	N	O
SIPS	L	CB ¹²	678	178	RTT	N	O
BISS	L	CB	426	426	RTT	RTGS	O

¹ For additional information see relevant country chapters. ² L = Large-value system, R = Retail system. ³ Owner/Manager: B = Banks, CB = Central Banks, AS = Payment Association. ⁴ Processing method: M = Manual, ACH = Automated Clearing House (off-line), RTT = Real-Time Transmission. ⁵ N = multilateral Netting, BN = Bilateral Netting, RTGS = Real-Time Gross Settlement, GS = other Gross Settlement. ⁶ O = Open membership (any bank can apply) or RM = Restricted Membership (subject to criteria). ⁷ Other (see Table 11, Footnote 7). ⁸ Clearing House in Paris. ⁹ Clearing Houses in the provinces. ¹⁰ All institutions on which cheques are drawn or at which bills of exchange are payable are bound by regulations to participate in the local clearing houses, through an agent in certain cases. ¹¹ Transactions can also be submitted on floppy disk. ¹² System managed by the Interbank Society for Automation in the name and on behalf of the Banca d'Italia. ¹³ Electronic memoranda.

Table 10a (cont.)

	Degree of centralisation ¹⁴	Pricing ¹⁵	Closing time for same-day transactions ¹⁶	Number of transactions (thousands)	Value of transactions (USD billions) ¹⁷	Ratio of transactions value to GDP (at annual rate)
Czech Republic						
Clearing and Settlement system	C	F	15.00	124,420	691	42.63
Belgium						
CH	D	V	16.30	14,445	11,357.1	42.2
CEC	C	F	13.45	826,221	903.1	3.4
Canada						
IIPS	D	N	16.00	2,323	11,706	20.4
France						
SAGITTAIRE	C	F	13.00	4,500	27,532	13.64
CH Paris ⁸	C	F	15.00	699,100	26,210	17.07
CH Provinces ⁹	C	N	11.00	2,883,000	1,322	0.86
SIT	D	F	13.30	2,588,800	1,873	1.2
CREIC	C	F	NO	281,800	23	0.02
Card payments	C	F	10.30	1,872,600	119	0.08
TBF	C	F	17.30	.	.	.
Germany						
MAOBE	D	V	NO	115,300	186	0.07
DTA	D	V	NO	2,107,100	3,092	1.28
EIL-ZV	D	V	15.00	5,500	18,840	7.81
Platz. überweisungsverkehr ¹⁸	D	N	12.00	8,100	3,620	1.50
Konvent. Abrechnung ¹⁹	D	F	13.00	1,700	5,149	2.14
EAF	C	V	12.30	17,800	103,514	42.92
Italy						
Local clearing	D	V	9.30	235,665	2,194	2.0
Retail	C	F	NO ²⁰	586,865	761	0.7
ME ¹⁵	C	V	16.00	1,810	11,300	10.4
SIPS	C	F	14.00	4,462	16,807	15.4
BISS	C	V	17.00	46	85	0.1

¹⁴ Geographical access to the system: C = Centralised (one processing centre only) or D = Decentralised. ¹⁵ Prices charged to participants: F = Full costs (including investments), V = Variable costs, S = Symbolic costs (below variable costs), N = No costs. ¹⁶ Closing time for same day transactions (NO = no same-day transactions). ¹⁷ Converted at yearly average exchange rates. ¹⁸ Decrease due to conversion requirement, resulting in a switch of previously paper-based payments to EIL-ZV and DTA. ¹⁹ Reporting change in 1995: number of delivery envelopes cleared instead of individual payments contained therein. ²⁰ Except for the credit transfers entered before 12.00 which are settled on the same day.

Table 10b
Features of selected interbank funds transfer systems¹
 (figures relate to 1995)

	Type ²	Owner/ Manager ³	No. of participants		Processing ⁴	Settlement ⁵	Membership ⁶
				of which direct			
Japan							
FEYCS	L	B	264 ⁷	264 ⁷	RTT	N	RM
BOJ-NET	L	CB	417 ⁷	417 ⁷	RTT	RTGS ⁸	RM
Netherlands							
BGC-CH	R	B	66	66	ACH	N	O
8007-S.W.I.F.T.	L	CB	64	64	ACH + RTT	N	O
FA	L	CB	145	145	RTT	N + RTGS	O
Sweden							
RIX	L	CB	114	23	RTT	RTGS	RM
Bank Giro System	R	B	20	20	ACH	N	O
Switzerland							
SIC	L + R	CB + B	214	214	RTT	RTGS	RM
DTA/LSV	R	B	168	168	ACH	N	RM
United Kingdom							
CHAPS	L	B	429	16	RTT	N	RM
TOWN ⁹ .....	.	.	.	.	.	.	.
BACS	R	B	35,000	17	ACH	N	RM
Cheque/credit	R	B	613	12	M	N	RM
United States							
Fedwire	L	CB	10,000	10,000	RTT	RTGS	O
CHIPS	L	B	105	105	RTT	N	RM

¹ For additional information see relevant country chapters. ² L = Large-value system; R = Retail system. ³ Owner/Manager: B = Banks, CB = Central Banks. ⁴ Processing method: M = Manual, ACH = Automated Clearing House (off-line), RTT = Real-Time Transmission. ⁵ N = multilateral Netting, BN = Bilateral Netting, RTGS = Real-Time Gross Settlement, GS = other Gross Settlement. ⁶ O = Open membership (any bank can apply) or RM = Restricted Membership (subject to criteria). ⁷ As of year-end. ⁸ The system has been designed to allow participants to enter funds transfer instructions continuously, in which case settlement takes place on the central bank's books immediately. It is, however, also used to settle on a net basis. ⁹ Town Clearing ceased operation on 24th February 1995.

Table 10b (cont.)

	Degree of centralisation ⁹	Pricing ¹⁰	Closing time for same-day transactions ¹¹	Number of transactions (thousands)	Value of transactions (USD billions)	Ratio of transactions value to GDP (at annual rate)
Japan						
FEYCS	D	V ¹²	13.45	8,839	81,624	16.0
BOJ-NET	D	V ¹²	17.00	3,849	434,677	85.0
Netherlands						
BGC-CH	D	F	12.45	1,410,900	1,363	3.4
8007-S.W.I.F.T.	C	V	12.45	2,100	6,438	16.3
FA	C	V	15.30	400	5,261	13.3
Sweden						
RIX	C	F	16.30	119	7,509	32.8
Bank Giro System	C	F	NO	249,153	318	1.4
Switzerland						
SIC	C	F	16.15	95,990	27,235	88.9
DTA/LSV	C	F	NO	80,368	238	0.8
United Kingdom¹³						
CHAPS	D	F	15.45	12,596	42,171	38.1
TOWN ¹⁴ .....	.	.	.	.	.	.
BACS	C	F	NO	2,268,000	1,664	1.5
Cheque/credit	D	F	NO	2,377,000	2,104	1.9
United States						
Fedwire	C	F	18.30	75,900	222,954	30.7
CHIPS	C	F	16.30	51,000	310,021	42.7

⁹ Geographical access to the system: C = Centralised (one processing centre only) or D = Decentralised. ¹⁰ Prices charged to participants: F = Full costs (including investments), V = Variable costs, S = Symbolic costs (below variable costs), N = No costs. ¹¹ Closing time for same-day transactions (NO = no same-day transactions). ¹² Prices are set on the principle that institutions which are to benefit from on-line processing should pay the relevant charges. ¹³ Interbank figures only. ¹⁴ Town Clearing ceased operation on 24th February 1995.

Table 11
Operating hours of selected large-value interbank funds transfer systems¹
(as of December 1995)

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	Cut-off for international correspondents' payment orders	Memo item: Standard money market hours (local time)
Czech Republic Clearing and Settlement System	G	7.00-15.00 ²	7.00-15.00	13.30		(8.00-17.00)
Belgium C.E.C. ³	N	13.46-13.45 ⁴	16.30	13.30	8.30 ⁵	
Clearing House of Belgium	N	9.00-16.30	16.30	13.00	8.30 ⁵	(9.00-16.15 ⁶)
Canada⁷ IIPS	N ⁸	8.00-16.00	12.00 ⁹	14.30 ¹⁰	16.00 ¹⁰	(7.30-17.30)
France SAGITTAIRE	N	8.00-13.00 ¹¹	18.30	.	8.00 ¹²	(8.15-17.00)
TBF (planned)	G	7.30-17.30	7.30-17.30	(13)	8.00 ¹²	
Germany Express electronic credit transfer system	G	8.15-15.00	8.15-15.00	(14)	8.00 ¹²	
Express (paper-based) local credit transfer system	G	8.00-12.00	8.00-12.00	(14)	8.00 ¹²	(9.30-13.00 ¹⁵)
EAF ¹⁶	N	8.00-12.30	14.30 ¹⁷	(14)	8.00 ¹²	
Italy BISS	G	8.00-17.00	8.00-17.00	17.00	9.00 ¹²	(8.45-16.30 ¹⁸)
SIPS	N	8.00-14.00	16.30	14.00	9.00 ¹²	
ME	N	8.00-16.00	16.30	16.00	9.00 ¹²	
Japan FEYCS	N	9.00-13.45	15.00	10.30 ¹²	10.30 ¹²	(9.00-17.00)
BOJ-NET	G ¹⁹	9.00-17.00	9.00-17.00	14.00	n.a.	
Netherlands Central Bank FA System	G	8.00-15.30	8.00-15.30	. ²⁰	. ²⁰	(9.00-13.00)
8007 S.W.I.F.T.	N	8.00-12.00 ²¹	13.00	8.00 ¹²	8.00 ¹²	
Sweden RIX	G ¹⁹	8.00-16.30 ²²	8.00-16.30 ²²	(23)	8.00 ¹²	(9.00-16.00)
Switzerland SIC	G	18.00-16.15 ²⁴	18.00-16.15 ²⁴	15.00 ²⁴	8.00 ⁵	(9.00-16.00)
United Kingdom CHAPS	N	8.30-15.45	end of day	none	12.00	(7.30-15.30 ²⁵)
United States⁷ Fedwire	G	8.30-18.30	8.30-18.30	18.00	18.00	(8.30-18.30 ²⁶)
CHIPS	N	7.00-16.30	18.00 ²⁷	16.30	16.30	
ECU clearing system	N	14.01-14.00 ²⁸	15.45	none	none	(TOM/NEXT ²⁹)

Footnotes to Table 11

(n.a.= not applicable)

- ¹ Some systems make no 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. Money market hours indicated refer to the time period in which domestic interbank transactions are normally carried out. They therefore do not relate to particular interbank funds transfer systems.
- ² Accounting day starts at 16.00 on D-1.
- ³ In June 1990 a special "large-value credit transfer application" was introduced in the C.E.C. All net settlements from the C.E.C. take place at the end of the day at the (manual) Clearing House of Belgium.
- ⁴ The C.E.C. transfer system operates round-the-clock, five days a week.
- ⁵ S.W.I.F.T. guideline.
- ⁶ Luxembourg dealers, who are important operators in Belgian francs, are only active in the market before noon; the central bank conducts its daily fine-tuning operations at about 11.00.
- ⁷ Eastern time.
- ⁸ Settlement typically takes place on the basis of bilateral net positions. The net receiving bank in each pair creates a paper document called an inter-member debit voucher and delivers it to the net sending bank as part of the exchanges covered by the Automated Clearing and Settlement System (ACSS) operated by the Canadian Payments Association. Settlement may also take place on a gross basis or on an item-by-item basis, in each case over the ACSS.
- ⁹ Net settlement at noon the next day (retroactively).
- ¹⁰ Local time at the receiving IIPS point, or the beneficiary account point, whichever is earlier.
- ¹¹ SAGITTAIRE'S exchange day, i.e. the period during which orders are recorded by the Bank of France, begins at 8.00 and ends at 17.30. Orders sent after 17.30 are stored by S.W.I.F.T. and processed at the start of the next exchange day. SAGITTAIRE'S accounting day starts at 13.00 on D - 1 and ends at 13.00 on D (transfers sent after 13.00 on D, regardless of whether they are processed during the same exchange day or at the start of the following exchange day, are only entered in the accounts on D + 1). The net positions of members are drawn up after the close of the accounting day.
- ¹² S.W.I.F.T. guideline; in practice it may be later.
- ¹³ A cut-off for third-party orders is being discussed for the planned TBF system.
- ¹⁴ This is subject to arrangements between the correspondent banks.
- ¹⁵ For settlement purposes it can be later.
- ¹⁶ Electronic netting system in Frankfurt for interbank transfers predominantly relating to international DM transactions.
- ¹⁷ Planned time for communication of completion (positive message) or non-completion (negative message) of settlement.
- ¹⁸ The money market may continue to operate beyond the standard hours according to the closing times of the clearing and settlement systems.
- ¹⁹ The system has been designed to allow participants to enter funds transfer instructions continuously, in which case settlement takes place on the central bank's books immediately (in the case of RIX, provided they are confirmed by the counterparty). BOJ-NET, however, is also used to settle on a net basis.
- ²⁰ Interbank guilder transfers relating to international transactions are sent through the 8007 S.W.I.F.T. system which is operated by the Netherlands Bank; net settlement of these transactions takes place over the Central Bank FA System.
- ²¹ The 8007 S.W.I.F.T. system is, for a given value day, also open from 15.00 to 17.00 on the previous business day.
- ²² Closing time for new payment orders is 16.15; payments can be confirmed, and thereby settled, until 16.30.
- ²³ Since mid-1994, the routine involving a single cut-off time at noon for third-party payment orders has no longer been used. Instead, the participants have to decide among themselves which cut-off times they will use for different types of third-party orders. Large-value payments can be made during any time of the day.

- 24 The system is open for input 24 hours a day. Settlement services are limited by the indicated opening and closing times. A value day starts at 18.00 local time on the previous business day and ends at 16.15 on the value day. Third-party payments may be entered for same-day settlement until 15.00. Between 15.00 (cut-off 1) and 16.00 (cut-off 2) only cover (bank-to-bank) payments are accepted for same-day settlement. From 16.00 to 16.15 transactions are restricted to the processing of lombard credits (collateralised loans from the Swiss National Bank at a penalty rate).
- 25 For same-day value: there are no standard money market hours but trading typically takes place between about 7.30 and 15.30. The market is most liquid in the morning. The Bank of England intervenes in the market as necessary between 9.45 and 15.30.
- 26 Trading occurs among dealers for funds on deposit at Federal Reserve Banks (i.e. federal funds) as early as 6.30.
- 27 Payments over CHIPS become final on completion of settlement, which normally occurs between 17.00 and 17.30. Rules are designed to ensure that settlement takes place no later than 18.00.
- 28 ECU payment orders can be sent (for up to 28 forward value days) through S.W.I.F.T. 24 hours a day, seven days a week. At 14.00 (GMT + 1) on each value day the netting computer calculates participants' net net positions. Messages arriving after 14.00 are processed automatically for the next value day(s).
- 29 There is no overnight market for ECU interbank loans. Day-to-day interbank ECU transactions are normally carried out in the Euro-markets on a TOM/NEXT basis.

Table 12
Features of selected securities settlement systems
 (figures relate to 1995)

	Type ¹	Owner/ Manager ²	No. of participants		Settlement of cash leg ³	Delivery ³
				of which direct		
Czech Republic						
TKD	G,O	CB	200	35	G	G
Stock Exchange	G,E,O	SE	86	86	G/N	G/N
RM System	E,O	O	727,000	579,000	N	N
Belgium						
NBB Clearing	G	CB	209	.	N	N
CIK	E	B	163	.	N	N
Canada						
BBS ⁴	G,E,O	B,SE,O	85	85	N	G/N
DCS ⁵	G	B,SE,O	55	55	N	G
France						
SATURNE	G,O	CB	450	450	N	G
RELIT	G,E,O	B	449	449	N	G/N
Germany						
DKV	G,E,O	SE	397	395	N/G	G
Italy						
Securities Settlement Procedures:						
Daily Procedure	G,O	CB	317	317	N	N
Monthly Procedure	E	CB	256	256	N	N
CAT	G	CB	780	780	. ⁶	G
Japan						
JGB registration	G	CB	424 ⁷	424 ⁷	G/N	G/N
JGB book-entry	G	CB	360 ⁷	360 ⁷	G/N	G/N
Netherlands						
NECIGEF	G+E+O	B+CB+SE	53	53	G	G
CB Clearing Institute	G+O	CB	80	80	N	N
Sweden						
VPC	G+E+O	B+O	51	51	G/N	G
OM	O	O	37	37	N	N
Switzerland						
SECOM	G,E,O	B	348	348	N ⁸ /G ⁹	G
United Kingdom						
CGO	G+O	CB/SE	297	15	N	G
CMO	O	CB	61	13	N	G
United States						
Fedwire	G	CB	8,192	8,192	G	G
DTC (NDFS) ¹⁰	E,O	B,SE,O	522	522	N	G

¹ G = Government securities, E = Equity, O = Other. ² B = Banks, CB = Central Banks, SE = Stock Exchange, O = Other. ³ G = Gross, N = Net. ⁴ The book-based system of The Canadian Depository for Securities Limited (CDS). ⁵ The real-time, on-line debt-clearing service of CDS, which commenced operation during August 1994. ⁶ Deliveries free of payments. ⁷ End-year. ⁸ Until 24th March 1995. ⁹ Since 27th March 1995. ¹⁰ Next-day funds settlement.

Table 12 (cont.)

	Delivery lag	Central Securities Depository	Cash Settlement Agent	Number of transactions (thousands)	Value of transactions (USD billions) ¹¹	Ratio of transactions value to GDP (at annual rate)
Czech Republic						
TKD	T	CB	CB	15,951	226.8	13.99
Stock Exchange	T+3, up to T+15 ¹²	SCP ¹³	CB	1,208	7.3	0.45
RM System	up to T+3	SCP	IPB ¹⁴	1,500	0.9	0.06
Belgium						
NBB Clearing	T+2/T+3 ¹⁵	NBB	NBB	198	2,888.9	10.73
CIK .....	.¹⁶	CIK	NBB	1,750	18.6	0.07
Canada						
BBS ⁴	up to T+3	CDS	B ¹⁷	{10,200 ¹⁸	{28,886 ¹⁸	{50.4
DCS ⁵	up to T+3	CDS	B ¹⁹			
France						
SATURNE	T	Banque de France	CB	316	8,824	5.75
RELIT	T+3 ²⁰	SICOVAM	CB	.	8,446	5.50
Germany						
DKV	T+0-40	DKV	CB	23,400	8,286	3.4
Italy						
Securities Settlement Procedures:						
Daily Procedure	T+3	CAT	CB	.	9,139	8.4
Monthly Procedure ..	T+15/45	Monte Titoli	CB	.	152	0.1
CAT	T	CAT	. ⁶	960.5	967	0.9
Japan						
JGB registration	T+7	CB	CB	598.3	17,417	3.4
JGB book-entry	T+7	CB	CB	486.5	26,730	5.2
Netherlands						
NECIGEF	T+3	NECIGEF	KAS-ASS	1,028	.	.
CB Clearing Institute ..	T,T+3	CB	CB	3	62.3	0.16
Sweden						
VPC	T+2, T+3 ²¹	VPC	CB	2,912	5,821	25.4
OM	T+3		CB	31,638	931	4.1
Switzerland						
SECOM	T+3	SEGA	CB	3,952	752	2.5
United Kingdom						
CGO	T+1	.	CB	747.5	25,254	22.8
CMO	T	CB	CB	269.0	5,216	4.7
United States						
Fedwire	T,T+1	CB	CB	12,800	149,800	20.7
DTC (NDFS) ¹⁰	T+5	DTC	DTC	119,000	41,000	5.7

¹¹ Converted at yearly average exchange rate. ¹² T+3 for central market trades; up to T+15 for direct and block trades. ¹³ SCP = Stredisko cennych papiru, Securities Centre. ¹⁴ IPB = Investicni a ppostovni banka. ¹⁵ T+2 for Treasury bills; T+3 for bonds. ¹⁶ Seller delivery. ¹⁷ A single chartered bank. ¹⁸ Figures are for the twelve months ended 31st October 1995. ¹⁹ A single chartered bank, though not the same bank as for the BBS. ²⁰ When processed by the "SLAB" system (special delivery service by bilateral agreements), the delivery occurs same day. ²¹ Same-day delivery and settlement is also possible under specific conditions.

Annex 2

GLOSSARY

List of terms and abbreviations

Red Book terms

Advisory netting: see position netting.

Assured payment system (APS): an arrangement in an exchange-for-value system under which completion of timely settlement of a payment instruction is supported by an irrevocable and unconditional commitment from a third party (typically a bank, syndicate of banks or clearing house). See exchange-for-value settlement system.

Automated clearing house (ACH): an electronic clearing system in which payment orders are exchanged among financial institutions, primarily via magnetic media or telecommunication networks, and handled by a data-processing centre. See also clearing.

Automated teller machine (ATM): electro-mechanical device that permits authorised users, typically using machine-readable plastic cards, to withdraw cash from their accounts and/or access other services, such as balance enquiries, transfer of funds or acceptance of deposits. ATMs may be operated either on-line with real-time access to an authorisation database or off-line.

Bank draft: in Europe, the term 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. In the United States, the term generally refers to a draft or cheque drawn by a bank on itself or on funds deposited with another bank. In the case of a cashier's cheque, the bank is both the drawer and drawee. In the case of a teller's cheque, one bank is the drawer and a second bank is the drawee. Bank drafts may be written by a bank for its own purposes or may be purchased by a customer and sent to a payee to discharge an obligation. See draft.

Batch: the transmission or processing of a group of payment orders and/or securities transfer instructions as a set at discrete intervals of time.

Beneficial ownership/interest: the entitlement to receive some or all of the benefits of ownership of a security or other financial instrument (e.g. income, voting rights, power to transfer). Beneficial ownership is usually distinguished from "legal ownership" of a security or financial instrument. See legal ownership.

Bilateral net settlement system: a settlement system in which participants' bilateral net settlement positions are settled between every bilateral combination of participants. See also net credit or debit position.

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

Bill of exchange: a written order from one party (the drawer) to another (the drawee) to pay a specified sum on demand or on a specified date to the drawer or to a third party specified by the drawer. Widely used to finance trade and, when discounted with a financial institution, to obtain credit. See also draft.

Book-entry system: an accounting system that permits the transfer of claims (e.g. securities) without the physical movement of paper documents or certificates. See also dematerialisation, immobilisation.

Bulk transfer system: see retail transfer system.

Call money: a loan contract which is automatically renewed every day unless the lender or the borrower indicates that it wishes the funds to be returned within a short period of time.

Capital risk: see principal risk.

Caps: for risk management purposes, the quantitative limits placed on the positions (debit or credit positions, which may be either net or gross) that participants in a funds or securities transfer system can incur during the business day. Caps may be set by participants on credit extended bilaterally to other participants in a system, e.g. bilateral credit limits, or by the system operator or by the body governing the transfer system on the aggregate net debit a participant may incur on the system, e.g. sender net debit limits. Sender net debit limits may be either collateralised or uncollateralised.

Card: see cash card, cheque guarantee card, chip card, credit card, debit card, delayed debit card, prepaid card, retailer's card, travel and entertainment card.

Cash card: card for use only in ATMs or cash dispensers (often, other cards also have a cash function that permits the holder to withdraw cash).

Cash dispenser: electro-mechanical device that permits consumers, typically using machine-readable plastic cards, to withdraw banknotes (currency) and, in some cases, coins. See also automated teller machine (ATM).

Cashier's cheque: see bank draft.

Central bank credit (liquidity) facility: a standing credit facility that can be drawn upon by certain designated account holders (e.g. banks) at the central bank. In some cases, the facility can be used automatically at the initiative of the account holder, while in other cases the central bank may retain some degree of discretion. The loans typically take the form either of advances or overdrafts on an account holder's current account which may be secured by a pledge of securities (also known as lombard loans in some European countries), or of traditional rediscounting of bills.

Central securities depository: a facility for holding securities which enables securities transactions to be processed by book entry. Physical securities may be immobilised by the depository or securities may be dematerialised (i.e. so that they exist only as electronic records). In addition to safekeeping, a central securities depository may incorporate comparison, clearing and settlement functions.

Certificate: physical document which evidences an ownership claim in, indebtedness of, or other outstanding financial obligations of the issuer.

Chaining: a method used in certain transfer systems (mostly for securities) for processing instructions. It involves the manipulation of the sequence in which transfer instructions are processed to increase the number or value of transfers that may be settled with available funds and/or securities balances (or available credit or securities lending lines).

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. Widely used for settling debts and withdrawing money from banks. See also bill of exchange.

Cheque guarantee card: a card issued as part of a cheque guarantee system. This function may be combined with other functions in the same card, e.g. those of a cash card or debit card. See also cheque guarantee system.

Cheque guarantee system: a system to guarantee cheques, typically up to a specified amount, that have been validated by the merchant either on the basis of a card issued to the cheque writer or through a central database accessible to merchants. Validated cheques are guaranteed by the issuer of the guarantee card, the drawee bank or the system operator.

Chip card: also known as an IC (integrated circuit) card or smart card. A card containing one or more computer chips or integrated circuits for identification, data storage or special-purpose processing used to validate personal identification numbers (PINs), authorise purchases, verify account balances and store personal records. In some cases, the memory in the card is updated every time the card is used, e.g. an account balance is updated.

Clearing/Clearance: clearing is the process of transmitting, reconciling and in some cases confirming payment orders or security transfer instructions prior to settlement, possibly including netting of instructions and the establishment of final positions for settlement. In the context of securities markets this process is often referred to as clearance. Sometimes the terms are used (imprecisely) to include settlement.

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

Clearing house funds: term most commonly used in certain US markets to refer to funds that typically are provisional on the day of receipt and final on the following day. More specifically, the term is used to refer to monetary claims with next-day finality that are exchanged by participants in certain clearing house arrangements in settlement of obligations arising from the clearing process. Such claims are typically transferred via cheques, drafts or other similar payment

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

Comparison: see matching.

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 to question the trade.

Correspondent banking: an arrangement under which one bank (correspondent) holds deposits owned by other banks (respondents) and provides payment and other services to those respondent banks. Such arrangements may also be known as agency relationships in some domestic contexts. In international banking, balances held for a foreign respondent bank may be used to settle foreign exchange transactions. Reciprocal correspondent banking relationships may involve the use of so-called nostro and vostro accounts to settle foreign exchange transactions.

Counterparty: the opposite party to a financial transaction, such as a securities trade or swap agreement.

Credit caps: see caps.

Credit card: card indicating that the holder has been granted a line of credit. It enables him to make purchases and/or draw 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 the members using the card services.

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

Credit transfer: a payment order or possibly a sequence of payment orders made for the purpose of placing funds at the disposal of the beneficiary. Both the payment instructions and the funds described therein move from the bank of the payer/originator to the bank of the beneficiary, possibly via several other banks as intermediaries and/or more than one credit transfer system.

Credit transfer system (or giro system): a system through which payment instructions and the funds described therein may be transmitted for the purpose of effecting credit transfers.

Cross-currency settlement risk (or Herstatt risk): see principal risk.

Custody: the safekeeping and administration of securities and financial instruments on behalf of others.

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

Debit caps: see caps.

Debit card: card enabling the holder to have his purchases directly charged to funds on his account at a deposit-taking institution (may sometimes be combined with another function, e.g. that of a cash card or cheque guarantee card).

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

Default: failure to complete a funds or securities transfer according to its terms for reasons that are not technical or temporary, usually as a result of bankruptcy. Default is usually distinguished from a "failed transaction".

Delayed debit card: card issued by banks indicating that the holder may charge his account up to an authorised limit. It enables him 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.

Deletion: a mechanism whereby some or all transfers to/from a defaulting participant are excluded from the settlement process. In a netting scheme, other participants' bilateral and/or multilateral net positions are recalculated. See unwinding.

Delivery: final transfer of a security or financial instrument.

Delivery versus payment system (or DVP, delivery against payment): a mechanism in an exchange-for-value settlement system that ensures that the final transfer of one asset occurs if and only if the final transfer of (an)other asset(s) occurs. Assets could include monetary assets (such as foreign exchange), securities or other financial instruments. See exchange-for-value settlement system, final transfer.

Dematerialisation: the elimination of physical certificates or documents of title which represent ownership of securities so that securities exist only as accounting records.

Direct debit: a pre-authorised debit on the payer's bank account initiated by the payee.

Direct participant/member: the term generally denotes participants in a funds or securities transfer system that directly exchange transfer orders with other participants in the system. In some systems direct participants also exchange orders on behalf of indirect participants. Depending on the system, direct participants may or may not also be settling participants. In the EC context this term has a specific meaning: it refers to participants in a transfer system which are responsible to the settlement institution (or to all other participants) for the settlement of their own payments, those of their customers and those of indirect participants on whose behalf they are settling. See participant/member, indirect participant/member, settling participant/member.

Discharge: release from a legal obligation imposed by contract or law.

Draft: a written order from one party (the drawer) to another (the drawee) to pay a party identified on the order (payee) or to bearer a specified sum, either on demand (sight draft) or on a specified date (time draft). See cheque, bank draft, bill of exchange.

EFTPOS: see point of sale (POS).

Electronic data interchange (EDI): the electronic exchange between commercial entities (in some cases also public administrations), in a standard format, of data relating to a number of message categories, such as orders, invoices, customs documents, remittance advices and payments. EDI messages are sent through public data transmission networks or banking system channels. Any movement of funds initiated by EDI is reflected in payment instructions flowing through the banking system. EDIFACT, a United Nations body, has established standards for electronic data interchange.

Exchange-for-value settlement system: system which involves the exchange of assets, such as money, foreign exchange, securities or other financial instruments, in order to discharge settlement obligations. These systems may use one or more funds transfer systems in order to satisfy the payment obligations that are generated. The links between the exchange of assets and the payment system(s) may be manual or electronic. See delivery versus payment system.

Face-to-face payment: payment carried out by the exchange of instruments between the payer and the payee in the same physical location.

Failed transaction: a transaction (e.g. a funds or securities transfer) that does not settle on time, usually for technical or temporary reasons.

Final (finality): irrevocable and unconditional.

Final settlement: settlement which is irrevocable and unconditional.

Final transfer: an irrevocable and unconditional transfer which effects a discharge of the obligation to make the transfer. The terms "delivery" and "payment" are each defined to include a final transfer.

Giro system: see credit transfer system.

Gridlock: a situation that can arise in a funds or securities transfer system in which the failure of some transfer instructions to be executed (because the necessary funds or securities balances are unavailable) prevents a substantial number of other instructions from other participants from being executed. See also failed transaction, queuing, systemic risk.

Gross settlement system: a transfer system in which the settlement of funds or securities transfers occurs individually on an order-by-order basis according to the rules and procedures of the system, i.e. without netting debits against credits. See real-time gross settlement, net settlement system.

Haircut: the difference between the market value of a security and its collateral value. Haircuts are taken by a lender of funds in order to protect the lender, should the need arise to liquidate the collateral, 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.

IC card: see chip card.

Immobilisation: Placement of certificated securities and financial instruments in a central securities depository to facilitate book-entry transfers.

Imprinter: mechanical device to reproduce the name and account number of a cardholder on a paper sales slip. See also imprinter voucher.

Imprinter voucher: in card transactions, a sales slip that is to be signed by the customer on which the name and card number of the customer are imprinted. See also imprinter.

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

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.

Intraday credit: see daylight credit.

Irrevocable and unconditional transfer: a transfer which cannot be revoked by the transferor and is unconditional.

Issuer: the entity which is obligated on a security or other financial instrument. For example, a corporation or government having the authority to issue and sell a security; a bank that approves a letter of credit. Sometimes used to refer to a financial institution that issues credit or debit cards.

Large-value funds transfer system: interbank 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. Though as a rule no minimum value is set for the payments they carry, the average size of payments through such systems is relatively large. Large-value funds transfer systems are sometimes called wholesale funds transfer systems.

Legal ownership: recognition in law as the owner of a security or other financial instrument.

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.

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

Loss-sharing rule (or loss-sharing agreement): an agreement between participants in a transfer system or clearing house arrangement regarding the allocation of any loss arising when one or more participants fail to fulfil their obligation: the arrangement stipulates how the loss will be shared among the parties concerned in the event that the agreement is activated.

Magnetic ink character recognition (MICR): a technique, using special MICR machine-readable characters, by which documents (i.e. cheques, credit transfers, direct debits) are read by machines for electronic processing. See optical character recognition (OCR).

Margin: margin has at least two meanings. In the futures/commodity markets, margin is a good faith deposit (of money, securities or other financial instruments) required by the futures clearing system to assure performance. In the equities markets, margin is a sum of money deposited by a customer when borrowing money from a broker to purchase shares. The money deposited with the broker is the difference between the purchase value of the shares and the collateral value of the shares. See haircut.

Marking to market: the practice of revaluing securities and financial instruments using current market prices. In some cases unsettled contracts to purchase and sell securities are marked to market and the counterparty with an as yet unrealised loss on the contract is required to transfer funds or securities equal to the value of the loss to the other counterparty.

Matching (or comparison checking): the process used by market participants before settlement of a transaction to ensure that they agree with respect to the terms of the transaction.

Money order: an instrument used to remit money to the named payee, often used by persons who do not have a chequing account relationship 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.

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, settling participant and direct participant.

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

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

Net debit cap: see caps, net credit or debit position.

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

Net settlement system: a system to effect net settlement.

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

Nominee: a person or entity named by another to act on his behalf.

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.

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

Off-line: in the context of payment and settlement systems, the term may refer to the transmission of transfer instructions by users, through such means as voice, written or telefaxed instructions, that must subsequently be input into a transfer processing system. The term may also refer to the storage of data by 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 on-line.

On-line: in the context of payment and settlement systems, the term may refer to the transmission of transfer instructions by users, through such electronic means as computer-to-computer interfaces or electronic terminals, that are entered into a transfer processing system by automated means. The term may also refer to the storage of data by the transfer processing system on a computer database such that the user has direct access to the data (frequently real-time) through input/output devices such as terminals. See off-line.

Optical character recognition (OCR): a technique, using special OCR machine-readable characters, by which documents (e.g. cheques, credit transfers, direct debits) are read by machines for electronic processing. See magnetic ink character recognition (MICR).

Overnight money (or day-to-day money): a loan with a maturity of one business day.

Paperless credit transfers: credit transfers that do not involve the exchange of paper documents between banks. Other credit transfers are called paper-based.

Participant/Member: a party who 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/member, 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 lag: the time-lag between the initiation of the payment order and its final settlement.

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

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

PIN (personal identification number): a numeric code which the cardholder may need to quote for verification of identity. In electronic transactions, it is seen as the equivalent of a signature.

Point of sale (POS): this term refers to the use of payment cards at a retail location (point of sale). The payment information is captured either by paper vouchers or by electronic terminals, which, in some cases, are designed also to transmit the information. Where this is so, the arrangement may be referred to as "electronic funds transfer at the point of sale" (EFTPOS).

Position netting (or advisory netting): the netting of instructions in respect of obligations between two or more parties which neither satisfies nor discharges those original individual obligations. Also referred to as payment netting in the case of payment instructions.

Prepaid card (or payment card): a card "loaded" with a given value, paid for in advance.

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

Provisional transfer: a conditional transfer in which one or more parties retain the right by law or agreement to rescind the transfer.

Queuing: a risk management arrangement whereby transfer orders are held pending by the originator/deliverer or by the system until sufficient cover is available 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 gross settlement (RTGS): a gross settlement system in which processing and settlement take place in real time (continuously).

Real-time transmission, processing or settlement: the transmission, processing or settlement of a funds or securities transfer instruction on an individual basis 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 participant: a participant in a transfer system which has neither its head office nor any of its branches located in the country where the transfer system is based.

Remote payment: payment carried out through the sending of payment orders or payment instruments (e.g. by mail). Contrast with face-to-face payment.

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

Respondent: see correspondent banking.

Retailer's 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.

Retail transfer system: interbank funds transfer system which handles a large volume of payments of relatively low value in such forms as cheques, credit transfers, direct debits, ATM transactions and EFT at the point of sale.

Same-day funds: money balances that the recipient has a right to transfer or withdraw from an account on the day of receipt.

Securities depository (book-entry system): see central securities depository.

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

Settlement agent: an institution that manages the settlement process (e.g. the determination of settlement positions, monitoring the exchange of payments, etc.) for transfer systems or other arrangements that require settlement. See final settlement, settlement, settlement institution(s), multilateral net settlement system.

Settlement finality: see final settlement.

Settlement institution(s): the institution(s) across whose books transfers between participants take place in order to achieve settlement within a settlement system. See settling participant/member, 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.

Settling participant/member: in some countries, a settling participant in a funds or securities transfer system delivers and receives funds or securities to/from other settling participants through one or more accounts at the settlement institution for the purpose of settling funds or securities transfers for the system. Other participants require the services of a settling participant in order to settle their positions. Currently in the EC direct participants are by definition also settling participants. See direct participant/member, tiering arrangement.

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 risk.

Settlement system: a system in which settlement takes place.

Standing order: an instruction from a customer to his bank to make a regular payment of a fixed amount to a named creditor.

Substitution: the substitution of one party for another in respect of an obligation. In a netting and settlement context the term typically refers to the process of amending a contract between two parties so that a third party is interposed as counterparty to each of the two parties and the original contract between the two parties is satisfied and discharged. See novation.

S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunication): a cooperative organisation created and owned by banks that operates a network which facilitates the exchange of payment and other financial messages between financial institutions (including broker-dealers and securities companies) throughout the world. A S.W.I.F.T. payment message is an instruction to transfer funds; the exchange of funds (settlement) subsequently takes place over a payment system or through correspondent banking relationships.

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

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, indirect and settling participant/member.

Trade date: the date on which a trade/bargain is struck.

Trade netting: a consolidation and offsetting of individual trades into net amounts of securities and money due between trading partners or among members of a clearing system. A netting of trades which is not legally enforceable is a position netting.

Trade-for-trade (gross) settlement: the settlement of individual transactions between counterparties. See gross settlement system.

Trade-for-trade settlement system: see gross settlement system.

Transfer: operationally, the sending (or movement) of funds or securities or of a right relating to funds or securities from one party to another party by (1) conveyance of physical instruments/money; (2) accounting entries on the books of a financial intermediary; or (3) accounting entries processed through a funds and/or securities transfer system. The act of transfer affects the legal rights of the transferor, transferee and possibly third parties in relation to the money balance, security or other financial instrument being transferred.

Transfer system: a generic term covering interbank funds transfer systems and exchange-for-value systems.

Travel and entertainment (charge) card: card issued by non-banks indicating that the holder has been granted a line of credit. It enables him to make purchases but does not offer extended credit, the full amount of the debt incurred having to be settled at the end of a specified period. The holder is usually charged an annual fee.

Truncation: a procedure in which the physical movement of paper payment instruments (e.g. paid cheques or credit transfers) within a bank, between banks or between a bank and its customer is curtailed or eliminated, being replaced, in whole or in part, by electronic records of their content for further processing and transmission.

Ultimate settlement: sometimes used to denote final settlement in central bank money.

Unwinding (or settlement unwind): a procedure followed in certain clearing and settlement systems in which transfers of securities or funds are settled on a net basis, at the end of the processing cycle, with all transfers provisional until all participants have discharged their settlement obligations. If a participant fails to settle, some or all of the provisional transfers involving that participant are deleted from the system and the settlement obligations from the remaining transfers are then recalculated. Such a procedure has the effect of transferring liquidity pressures and possibly losses from the failure to settle to other participants, and may, in the extreme, result in significant and unpredictable systemic risks.

Variation margin (or mark-to-market payments): the amount which is paid by a counterparty to reduce replacement cost exposures resulting from changes in market prices, following the revaluation of securities or financial instruments that are the subject of unsettled trades.

Wholesale funds transfer system: see large-value funds transfer system.