

**Payment systems in
Belgium**

Table of contents

List of abbreviations	5
Introduction	7
1. The institutional aspects	7
1.1 General institutional framework.....	7
1.2 The role of the central bank	9
1.3 The role of other private and public sector bodies	10
2. Payment media used by non-banks	11
2.1 Cash payments	11
2.2 Non-cash payments	11
2.3 Recent developments	16
3. Interbank exchange and settlement systems	16
3.1 General overview	16
3.2 RTGS system: ELLIPS.....	17
3.3 Retail payment system: CEC	20
3.4 Paper-based system: Clearing House of Belgium	22
4. Securities settlement systems	23
4.1 Trading	23
4.2 Clearing	25
4.3 Settlement	26
4.4 Use of the securities infrastructure by the central bank	30

List of abbreviations

BCC	Bank Card Company
BELARFI	Belgian Financial Architecture
BELFOX	Belgium Futures and Options Exchange
BFC	Banking and Finance Commission - <i>Commission bancaire et financière (CBF)/Commissie voor het Bank - en Financiewezen (CBF)</i>
BXS	Brussels Exchanges
CEC	Centre for Exchange and Clearing - <i>Centre d'Echange et de Compensation (CEC)/Uitwisselingscentrum en Verrekening (UCV)</i>
CIK	Inter-professional securities depository trust - <i>Caisse Interprofessionnelle de Dépôts et de Virements de Titres S.A./Interprofessionele Effectendeposito - en Girokas N.V.</i>
CVH - CPCB	Centralised processing of commercial bills - <i>Centrale voor de verwerking van handelspapier - Centrale pour le traitement des effets de commerce</i>
ELLIPS	Electronic Large-value Interbank Payment System
EMSS	Electronic matching and securities settlement
FMS system	Forward market settlement system
NBB	National Bank of Belgium - <i>Banque Nationale de Belgique (BNB)/Nationale Bank van België (NBB)</i>
POM	Public order member
PPS	Protected payment system

Introduction

Belgian payment systems are characterised by a very high level of automation. This particular situation is the result of efforts made by the credit institutions since the early 1970s to rationalise the processing of payment operations. Very early on, interbank cooperation led to several standardisation agreements, on which the entire process of automation is based. The first fundamental step was the establishment in 1974 of the Centre for Exchange and Clearing (CEC), after which retail payments began to be processed on an automated basis. The second important step towards the complete automation of the national payment systems was the launch in 1996 of the Electronic Large-value Interbank Payment System (ELLIPS), an RTGS system for large-value payments and a component of TARGET.

CEC will run into a third generation, namely CEC III. CEC III is designed to accept internet protocols in the exchange of payment messages. The central application will be rewritten to meet today's technology demands, eg public key infrastructure (PKI).

The National Bank of Belgium (NBB) has been very closely involved in these efforts. In addition to its more traditional role as settlement agent, it assumes the operational management of the interbank settlement systems, which, since 1 January 1999, no longer operate in Belgian francs but only in euros.

Credit transfers and related instruments are still predominant among the means of payment. The use of cheques has been declining steadily for several years. This instrument is tending to be replaced by card payments. Recent developments include the expansion of internet banking as well as new electronic money instruments, notably the nationwide expansion of a multipurpose prepaid card scheme.

1. The institutional aspects

1.1 General institutional framework

Financial intermediaries which provide payment services

Distinctions in the legal status and supervisory framework between commercial banks, savings banks and public credit institutions have disappeared completely since the new Law on the Status and Supervision of Credit Institutions came into force in 1993. Furthermore, most of the former public credit institutions are currently in the midst of a privatisation process and are selling the public shares to the private sector. By the end of December 2000 there were 119 credit institutions, of which 72 under Belgian law and 47 under foreign law (34 from member states of the European Union). The number of credit institutions has dropped significantly in the last few years as a result of a wave of mergers and acquisitions.

These credit institutions include the Post Bank, a subsidiary jointly owned by the Post and the largest Belgian private bank. The Post Bank, which has the status of a credit institution, markets - under the Post Bank logo - banking products such as current accounts, payment cards and savings products through its branch network.

The credit institutions and the Post are represented by 7,994 branches, ie one branch for every 1,283 inhabitants.

Non-bank institutions are also represented in the payment media market, in particular companies issuing in-house cards, luncheon vouchers and traveller's cheques (see Sections 2.2.4 and 2.2.7).

Legal aspects

To begin with, it should be pointed out that Belgium does not have a general legal and regulatory framework relating to payment systems, payment service providers or payment instruments. These areas are mainly governed by specific legislation or regulations, which are in part an implementation of EC Directives and are often aimed at consumer protection.

Second, the legal and regulatory framework applicable to payment systems, payment service providers and payment instruments has improved significantly in recent years with regard to various aspects of these topics.

The main texts governing payment systems and payment service providers are:

- (a) The Law on the Legal Status and Supervision of Credit Institutions (22 March 1993), which aims to protect the savings of the public and to safeguard the smooth functioning of the credit system by laying down rules for the establishment and the operation of the credit institutions as well as for the supervision of the latter. This Law also implements the provisions of the Second Banking Coordination Directive.

Furthermore, the Law on the Legal Status and Supervision of Credit Institutions contains a chapter on netting between credit institutions. The Law seeks to guarantee the legal certainty of offsetting agreements for debts between two or more credit institutions, where one of these institutions is involved in bankruptcy or in any other case involving concurrent claims governed by Belgian law.

Before this Law was adopted, the effectiveness of netting arrangements could be challenged under Belgian law with regard to two principles of bankruptcy law: a) the prohibition of any offsetting after bankruptcy, except between related debts; and b) the principle that the bankruptcy decision of the court has a retroactive effect, starting from the first hour of the day on which it was made ("zero hour rule").

These principles were likely to prevent the participation of the Belgian banks in international interbank netting systems, thereby depriving them of the advantages which might result from the consequent reduction in settlement costs and in credit and solvency risks involved in international financial operations. Moreover, the uncertainties which existed in Belgian law with regard to the possibility of relying upon netting agreements against third parties reduced the attraction of locating the centre of an international netting system in Brussels.

This is why express recognition is given, through Article 157 of the Law on the Legal Status and Supervision of Credit Institutions, to the legal validity of bilateral or multilateral offsetting agreements for claims between credit institutions themselves and between credit institutions and a clearing house, as well as to "closeout" agreements (express termination clauses in the event of bankruptcy or other default situations). These agreements are legally binding and enforceable against third parties (including a liquidator), subject to the conditions defined in this provision. In particular, it is clear that the claims to be offset no longer need to be related. The article also states that payments made by or to a credit institution on the date on which it has been declared bankrupt will be valid if they preceded the time of the bankruptcy decision or if they were made without knowledge of the fact that the credit institution was bankrupt.

The scope of Article 157 has been extended by a Royal Decree dated 28 January 1998 in such a way as to include, henceforth, most financial institutions (and is thus no longer limited to credit institutions).

- (b) The Law on Settlement Finality in Payments (Law on "Finality", 28 April 1999), which transposes Directive 98/26/EC. Moreover, Article 9 of this Law introduces a concept foreign to the Directive, stating that cash settlement accounts held with an operator or a settlement agent of a settlement system may not be blocked by any means by a participant (other than the operator or the settlement agent of the system), a counterparty or a third party.
- (c) Article 8 of the Organic Law of the NBB (22 February 1998), which entrusts the NBB with a supervisory power with regard to clearing, payment and securities settlement systems (see Section 1.2).

Few texts relating specifically to payment instruments exist under Belgian law. The most significant texts relating specifically to this topic are the following:

- the Law on Cheques (1 March 1961);
- the Royal Decree on the Indication of Homogeneous Financial Service Tariffs (23 March 1995);
- the Law on the Value Date of Bank Operations (10 July 1997);

- the Law on the Accountability for Interest Due on Accounts Opened by Credit Institutions or Other Legal Entities (14 July 1998); and
- the Law on Cross-Border Retail Payments (9 January 2000), which transposes the provisions of Directive 97/5/EC of the European Parliament and of the Council of 27 January 1997 concerning cross-border retail payments.

The Belgian legislator has also adopted:

- the Law on Electronic Payment Instruments, which will transpose an EU Recommendation dated 30 July 1997;
- Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a European framework for electronic signatures, which has been translated into two Belgian laws:
 - (1) the Law on the Implementation of the Use of Telecommunications and Electronic Signature in the Legal and Extra Legal Procedure dated 20 October 2000; and
 - (2) the Law on Certain Rules in accordance with the Legal Framework for Electronic Signatures and Certificates dated 14 July 2001.

In addition to these texts, relations between credit institutions, consumers and retailers are mainly governed by contracts.

1.2 The role of the central bank

1.2.1 General responsibilities

The NBB is closely involved in the Belgian interbank clearing mechanisms: it runs and assumes the daily management of the CEC and of ELLIPS. The CEC is an ACH and is designed for retail payments; ELLIPS is an RTGS system and is part of the TARGET system. Furthermore, the NBB also operates the Securities Settlement System (SSS) for dematerialised government securities.

Since 1 January 1999 the NBB has been legally entrusted with the oversight of payment and clearing systems established in Belgium.

1.2.2 Oversight

The NBB's oversight responsibility has an explicit legal basis in Article 8 of its new Organic Law, which reads as follows: *"The Bank shall ensure that the clearing and payment systems operate properly and shall make certain that they are efficient and sound. It may carry out all transactions or provide facilities for these purposes. It shall provide for the enforcement of the regulations adopted by the ECB in order to ensure the efficiency and the soundness of the clearing and payment systems within the European Community and with other countries."* As is stipulated in the Explanatory Notes of this Organic Law, this responsibility covers both cash and securities settlement systems.

In line with the task assignment which was agreed at the Eurosystem level with regard to cash payment systems, the NBB performs the oversight of retail payment systems, Banksys (see Section 1.3), Europay, Euronext, Clearnet and some international enterprises (CLS Bank, EBA).

The NBB also oversees the SSSs established in Belgium: Euroclear Bank, BXS-Clearing and BXS-CIK.

Finally, the NBB also oversees SWIFT. A special arrangement was made in this respect by the Committee on Payment and Settlement Systems (CPSS), under which the NBB acts as leading overseer of SWIFT, and is supported by the central banks of the G10.

1.2.3 Supervision and audit

The NBB is not responsible for the supervision of individual credit institutions (microprudential supervision). This task is undertaken by a legally autonomous institution, the Banking and Finance Commission (BFC). The NBB is, however, concerned with the safety and stability of the financial system as a whole (macroprudential supervision).

Moreover, the NBB also contributes to the supervision exercised by the BFC. One Director of the NBB has a seat on the Board of the BFC as of right. The NBB collects the periodic and annual prudential reports from the credit institutions and sends them to the BFC. The BFC must consult the NBB before publishing regulations concerning solvency and liquidity. All the Belgian credit institutions are supervised by the BFC.

The NBB and the BFC each has its own specific role to play. Essentially, this means that oversight activities focus mainly on systems, while prudential activities focus mainly on institutions. The NBB and the BFC have a long tradition of cooperation.

The audit department of the NBB is concerned with the various clearing systems operated by the NBB (the CEC, ELLIPS and the Clearing House of Belgium) to the extent that the NBB is de facto responsible for the operational organisation of these systems.

1.2.4 Catalyst role of the National Bank of Belgium

The National Bank of Belgium participates in different forums regarding banking developments (e-payments, e-commerce, etc).

Since the beginning of the 1970s Belgian credit institutions have concluded various cooperative agreements in the field of information processing in order to facilitate interbank transactions. The NBB performs the administration of the Secretariat of Protocols. It is also actively involved in preparing and writing the agreements. The first so-called interbank protocol, signed on 8 July 1970, affected credit institution identification by establishing a uniform structure for account numbers, according to which the first three figures identify the institution.

1.3 The role of other private and public sector bodies

The main interbank organisations operating in the field of payment and securities systems are:

- the CEC, founded in 1974 by the banking sector as a whole in order to automate the exchange of payment transactions;
- ELLIPS, founded in 1995 as a non-profit association in order to manage the ELLIPS system;
- the BFC, which is the prudential authority (see Section 1.2.3);
- the Belgian Bankers' Association, a professional organisation which aims to promote its members' professional interests, mainly through economic studies, fiscal, legal and technical advice, and training;
- the Market Authority for the Brussels Stock Exchange (Euronext Belgium), the Market Authority for the Nasdaq Europe market and the Committee of the Securities Regulation Fund are the three market authorities in Belgium. They organise and regulate their markets and exercise first-level supervision. The BFC supervises the way in which the market authorities carry out their duties. This structure is currently under revision and could be subject to change in 2002; and
- Banksys, a company which operates, inter alia, the national ATMs, the POS network, and the electronic purse scheme, and the Bank Card Company (BCC), which is entrusted with the administration of two of the main credit card schemes (ie Visa and Eurocard/MasterCard).¹

¹ At the end of 1999 Banksys took over a large share of the activities of the BCC.

2. Payment media used by non-banks

2.1 Cash payments

Since 1 January 2002 all payments in Belgium have been processed in euros. The Belgian franc lost its legal value as payment instrument on 28 February 2002.

It is difficult to estimate the value or number of cash payments. The only indication available lies in the share of cash in M1, which has recorded a marked decline over a number of years. It amounted to 22.95% at the end of 2000,² compared with 43.7% at the end of 1980. The total stock of cash in circulation on 31 December 2000 amounted to EUR 14.1 billion. Studies indicate that the use of cash in payments declined by 37% over the first-half year after the changeover to the euro in favour of card payments.

2.2 Non-cash payments

Deposit money comprises sight deposits held by non-financial economic agents with financial intermediaries legally entitled to receive such deposits (credit institutions and the Post).

There is no statutory definition of current accounts. According to the regulation³ governing the financial data which the banks have to submit to the central bank and to the BFC on a monthly basis, current accounts are those on which deposited money can be immediately withdrawn.

Royal Decree no 56 of 10 November 1967 obliges businesses to hold an account to which credit transfers can be made by their customers. These are generally current accounts.

For credit transfers, the Law on Value Dates (10 July 1997) imposes a maximum of one working day between the debiting of the principal's account and the crediting of the payee's account. A similar regulation exists for savings accounts.

For other payment instruments, there are no formal regulations governing the practices regarding value dates, and maximum time limits for crediting counterparts are not statutory. Credit institutions must execute payment orders promptly, on the basis of the general law of contract. The standard practice regarding value dates in respect of "ordinary" customers is that accounts are debited one working day before the settlement date and credited one working day after. In the case of cheques which are in the process of being collected, the credit is temporarily revocable.

The principle of allowing providers of payment services to charge current account holders for such services was adopted in 1990.

Deposit money is rather heavily concentrated: the five largest credit institutions account for 73% of deposits by value.

2.2.1 Credit transfers

The most commonly used payment medium in Belgium is the credit transfer. The order is given by the customer making the payment to his/her bank either in paper form - handed in at his/her branch or sent by post - or in automated form (self-service banking, telephone and internet banking, magnetic media). An estimated 656.8 million credit transfers (including standing orders and inpayment transfers; see below and Section 2.2.5) were made in 2000, for a total value of EUR 16.13 billion.

The standing order is a form of credit transfer created in order to rationalise the system for recurring payments (payment of rent, etc). An estimated total of 81.85 million payments of this kind were made in 2000 for a total value of EUR 26.67 billion.

² A change in the definition of transferable deposits included in M1 means that data for 1999 are not comparable with the data from previous years.

³ Royal Decree of 24 November 1937.

A significant development can be seen in the growing popularity of electronic forms of payment orders made by customers in parallel with the growing popularity of self-service banking and home banking products. More and more firms are communicating their payment orders via magnetic media or telecommunications, which obviates the need to capture the data within the financial system. In 2000 it is estimated that 271.01 million payment orders - 41% of all credit transfers - were submitted in paperless form against 158 million - 31.5% - in 1990.

2.2.2 Cheques

The use of cheques, which until 1992 were the second most frequently used cashless payment instrument after the credit transfer, has diminished annually.

On 31 December 2000 there were 3.84 million cheque guarantee cards in circulation (3.67 million of which were eurocheque cards), equivalent to a theoretical average of 27 cards for every 100 current accounts. In 2000, 70.7 million cheques were issued for a total value of EUR 87 billion.

In addition to cheques issued by individual credit institutions and postal cheques, the eurocheque was commonly used in Belgium. For this type of cheque, the guarantee was completely phased out on 1 January 2002.

Cheques are exchanged in the CEC. Only non-truncated cheques of more than EUR 10,000 are still handled in the Clearing House of Belgium.

2.2.3 Direct debits

The direct debit mechanism was created in 1980. Its purpose, like that of the standing order, is to simplify the execution of regular payments. In 2000 it was estimated that 166.2 million payments were executed under direct debit agreements (against 113.5 million in 1996). Direct debits are mainly used for public utility bills.

Direct debit is based on a contract in accordance with which the payer authorises the payee to debit his/her account for specified claims. All signatories of the contract (payer, payee, debtor and bank of the payer) may repeal it. The revocation comes into effect no later than 10 days after the payer's bank has been informed.

2.2.4 Payment cards

Debit cards

Debit cards, issued by the credit institutions under their own logo in association with the logos of Bancontact and Mister Cash,⁴ can be used at ATM and POS terminals. The debit and cheque guarantee card functions are generally packed on the same support together with an e-money function. These cards are hybrid cards having both a magnetic strip, which is used for online operations requiring the use of a PIN before the services can be accessed (POS payments, cash withdrawals at ATMs, loading of e-purse, etc), and a chip, which is used for offline operations (e-money payments).

Banksys (see Section 1.3) is entrusted with the management of the ATM-POS network. Its duties include the monitoring of bank-issued cards and the PIN mailer production for all bank cards. Banksys participates directly in the ACH (see Section 3.3) and exchanges ATM and POS operations to be cleared in this system.

On 31 December 2000 there were 10.96 million debit cards in circulation, all of which provided access to both ATM and POS terminals, thus representing a ratio of 77 cards to every 100 current accounts.

The cost to the consumer of using debit cards at ATM and POS terminals in theory consists only of an annual fee, which is generally included in a package made up of current account management and operations. A small minority of retail outlets charge for POS transactions.

⁴ Bancontact and Mister Cash are the two former ATM-POS networks that merged in 1987 to form Banksys.

Over the last few years, the use of debit cards has gradually become internationalised. Within the framework of the Europay community, holders of Banksys cards also have access to ATMs in an increasing number of European countries, with reciprocity for foreign eurocheque cardholders. Similar interconnections have been established on a bilateral basis between Banksys and other foreign networks. Since 1998 holders of Banksys cards have also been able to pay abroad at Maestro POS.

Credit cards

Credit cards (American Express, Diners Club, Eurocard and Visa) are widely accepted in Belgium. As a result of vigorous promotional efforts by the companies concerned, the number of cards in circulation has shown a considerable increase in recent years: from some 326,000 at end-1985 to around 2,970,000 at end-2000. In 2000, 53.79 million transactions were effected in Belgium for a total of EUR 5.53 billion, 16.53 million of which were payments effected using foreign cards, for a total of EUR 1.80 billion.

BCC, of which the credit institutions are the shareholders, accounts for the distribution of the majority of Visa and Eurocard cards. Banksys is entrusted with the processing and authorisation of transactions executed using these cards on behalf of BCC.

Payment procedures are automated in most cases. At the point of sale, authorisation takes place online, details of the transaction are immediately recorded by the issuing company's computer system and a slip showing the transaction is printed out. The nationwide ATM network can also be accessed using credit cards (except for Diners Club cards).

Fixed liability tariffs for the loss of a credit card are laid down in the law.⁵

Retailer cards

Retailer cards issued by petrol companies and large retailers can, by their nature, only be used at points of sale controlled by their issuers. A distinction can be made between in-house cards meant for the issuer's own infrastructure and those which are in fact managed at the operational level by another commercial card issuer (interbank network or credit card issuer). The latter category comprises cards issued by petrol companies. Moreover, some of these retailer cards are linked with POS terminals, whereas others can only be used manually. One of the best-known cards, issued by a large retailer, can be used either as a debit card (in which case direct debit of the customer's bank account is initiated by the retailer) or as a credit card, the choice being made by the cardholder upon purchase. 1,507,000 cards were in circulation on 31 December 2000; 28.51 million transactions were recorded to the value of EUR 1.57 billion in 2000.

Electronic money

There is no software-based electronic money in Belgium. A multipurpose prepaid card scheme, called PROTON, was launched by Banksys in February 1995. Nationwide expansion was achieved at the beginning of 1998.

PROTON is a microprocessor card which stores monetary value as opposed to tokens or units of service (as a phonecard does). It is designed to be a substitute for cash and is targeted at payments below EUR 15 at local retail outlets, vending machines, car parks, ticket machines, payphones and on public transport. It can be loaded with amounts ranging from EUR 2.5 to EUR 125. Card-to-card payments are not possible.

PROTON is a domestic monocurrency system, the payments being made in euros. The loading transaction is processed with the verification of a PIN and of the funds available on the account. The cards can be reloaded at ATMs or at public telephone booths. A "smartphone", which enables the user to reload the card at home and to use the card to make payments to a service provider over the telephone, has also been available since the end of 1997. Furthermore, card-based payments can be made via the internet by means of a plug-in terminal (BANXAFE) for personal computers.

⁵ The Royal Decree of 24 February 1992, based on the Law on Consumer Credit of 12 June 1991, was published in the Belgian Law Gazette on 4 April 1992.

During a transaction, money is transferred from the PROTON card to the retailer's terminal (offline terminals or vending machines). As only small amounts are involved, and for the sake of speed and convenience, these payments are made without using a PIN. The retailer can transfer the money to his/her bank account simply by making a telephone call from his/her terminal (using the modem). The cardholder can consult the balance on his/her PROTON card at an ATM, public telephone booth, service provider's terminal or by means of a small personal pocket device.

PROTON is only issued by credit institutions. It is up to each institution to set the fees (if any) that it charges to cardholders. The annual fees charged to the cardholders range from EUR 0 to EUR 5. Using or downloading the cards must remain free of charge. Banksys is responsible for the tariff policy applied to the retailers. The retailers have to pay a percentage of the amount stored in their terminals plus a fixed fee (depending on the contract) per collect. At the end of December 2000 more than 8 million cards with the e-money facility had been issued; the total amount outstanding was around EUR 49.2 million. A daily average of 153,649 purchase transactions were made in December 2000 for an average amount of EUR 4.12.

In the near future Banksys will introduce a new payment instrument which allows wireless execution of card payments. This new instrument will work with a mobile phone connection. Through the mobile payment instrument, payments will be possible with both the prepaid card (PROTON) and debit cards.

The PROTON technology has already been adopted by a large number of countries, making it a de facto international standard. Proton World International can be seen as a spin-off of PROTON to commercialise the Proton technology worldwide. Since November 2001 Proton World International has been wholly owned by ERG, an Australian smartcard group.

Single purpose prepaid cards

Single purpose prepaid cards are mainly used in the telephone industry. In Belgium the first cards of this kind, launched in 1979 with the RTT-Telecard, were magnetic strip-type cards which enabled users to make national and international telephone calls from payphones. Although PROTON can now be used in payphones, such cards (now called Belgacom-Telecard) still exist and are now chip-based. All telephone operators also offer prepaid cards.

Other service providers, such as urban transport companies, make use of similar cards, albeit on a smaller scale.

POS network

Banksys manages the POS network and terminals online on behalf of the issuing credit institutions, which are the only shareholders of the company. These terminals are accessible by means of magnetic strip cards and secret PIN codes. In 1999 the Post ceased issuing its own debit cards and instead now makes use of Banksys' POS network.

Each transaction triggers various immediate checks:

- blacklist (stolen cards, etc);
- balance on current account, either on the basis of the balance at the previous day's close, taking into account the total of the operations effected on that day by means of the card, or on the basis of the actual balance (depending on the cardholder's institution); and
- amount of the daily and weekly transactions caps.

This online authorisation procedure eliminates fraud and unauthorised overdrafts.

By 31 December 2000, 116,436 POS terminals had been installed.

Whereas the POS terminals installed at petrol stations and large retail outlets are heavyweight terminals linked via rented lines to the network's computer centres, those installed at small retail outlets and in other sectors involve the use of the switched telephone network (STN).

The interbank network can be accessed not only using bank debit cards but also by means of credit cards and a range of in-house cards mainly issued by petrol companies which can be used exclusively at petrol stations selling their brands. These companies make use of the infrastructure of the interbank network, but offer additional advantages such as discounts and the possibility of using the card abroad. These services are specifically aimed at attracting corporate customers with fleets of vehicles.

ATM networks

Banksys manages the ATM network and terminals online on behalf of the issuing credit institutions. ATMs are accessible by means of magnetic strip cards and secret PIN codes.

Transactions supported by Banksys ATMs (open access ATMs) are cash withdrawals, the checking of balances on current accounts, the alteration of PIN codes and the loading of PROTON cards. Each transaction triggers various immediate checks (see the section entitled *POS network*).

In addition, several credit institutions offer ATM facilities (limited access ATMs) to their own customers within the framework of self-service banking units. These ATMs allow other types of transactions, such as the ordering of documents (credit transfer forms) and transfers between current accounts and savings accounts.

By 31 December 2000, 1,305 Banksys ATMs and 5,560 self-service banking units had been installed.

2.2.5 Postal instruments

The inpayment transfer is a hybrid payment instrument offered chiefly by the Post which enables a payment to be made to a holder of a (bank or postal) current account on the basis of a cash inpayment at a post office. This instrument is primarily intended for payers who do not have a current account. In 2000, 28.3 million inpayment transfers were made to a total value of EUR 6.06 billion, giving an average of EUR 211 per transaction. There is now a move to discourage the use of this instrument, which requires lengthy manual procedures, by applying a fee of EUR 0.42 per transaction.

2.2.6 Commercial bills

Since the end of 1997 the system for the centralised processing of commercial bills (CPCB-CVH), operated and managed by the NBB, has eliminated the physical circulation of commercial bills in the interbank circuit, replacing it with an automated data exchange through the CEC. To this end, the CVH system automatically centralises, retains and presents for cash processing all commercial bills domiciled at financial institutions represented in the CEC. In the case of non-payment of commercial bills, the CVH system carries out the complementary function, assigned to it by law, of central depository of bills of protest. It carries out the majority of administrative tasks relating to the preparation, recording and publication of bills of protest. This publication takes the form of a list, which is transmitted each month to the registries of the Trade Tribunals. The CVH system also ensures the distribution to third parties of information concerning published protests.

The use of the commercial bill⁶ and its variants has tended to decrease over recent years, although specific sectors of the economy still use it frequently. In 2000, 668,777 commercial bills were processed on behalf of 60 financial institutions. 30,793 bills of protest were established, half of which were published, the other half having been settled prior to publication.

2.2.7 Other payment instruments

Other instruments are also used in Belgium, the main ones being:

- the traveller's cheque; and
- the luncheon voucher.

Luncheon vouchers are issued by two French-owned companies (Le Chèque-Repas and Ticket Restaurant) to any firm wishing to distribute them to its employees as part of their remuneration package. Since 1 April 1994 their validity has been limited to three months and they may only be used for the payment of a restaurant bill or for the purchase of food products. Despite these strict limitations and the reduction in the tax advantages for the employer and the employee under the system, this instrument is still popular as an additional method of remuneration: 151.6 million luncheon vouchers

⁶ It could be argued that the commercial bill and its variants are not payment instruments as such, because settlement of the transaction underlying the bill has to be in the form of another payment medium (cash or deposit money). The commercial bill can, however, be passed to a third party by means of endorsement.

were issued in 2000 (against 95.03 million in 1990) for a total value of EUR 749 million (against EUR 394 million in 1990).

2.3 Recent developments

2.3.1 Internet

Home banking and, in particular, internet banking are very successful. Most banks have a website which allows their customers not only to carry out various common operations such as credit transfers, standing orders and balance checking, but also to manage their asset portfolios.

There is no specific payment instrument or system (for example, internet cheques or electronic bill presentment) currently available, but various projects are under way in this field and major developments are expected to take place in the next few years.

2.3.2 Standardisation of payment instruments

Great efforts are still being made to standardise payment instruments in order to facilitate their automated processing. In this respect, several working groups have been created by the Belgian Bankers' Association. The NBB collaborates actively with these groups.

2.3.3 Security of e-payments

Banksys already offers the option of paying with the prepaid, debit and credit card via the internet by means of a plug-in terminal for personal computers (see Section 2.2.4). Working in close cooperation with the credit card companies, Banksys has developed a system of hardware authentication for online transactions and offers an application that allows end-to-end secure electronic transactions from the customer (BANXAFE) through the Banksys infrastructure to the supplier. The system could also be extended to Wireless Application Protocol (WAP) and Interactive Television (iTV) applications.

3. Interbank exchange and settlement systems

3.1 General overview

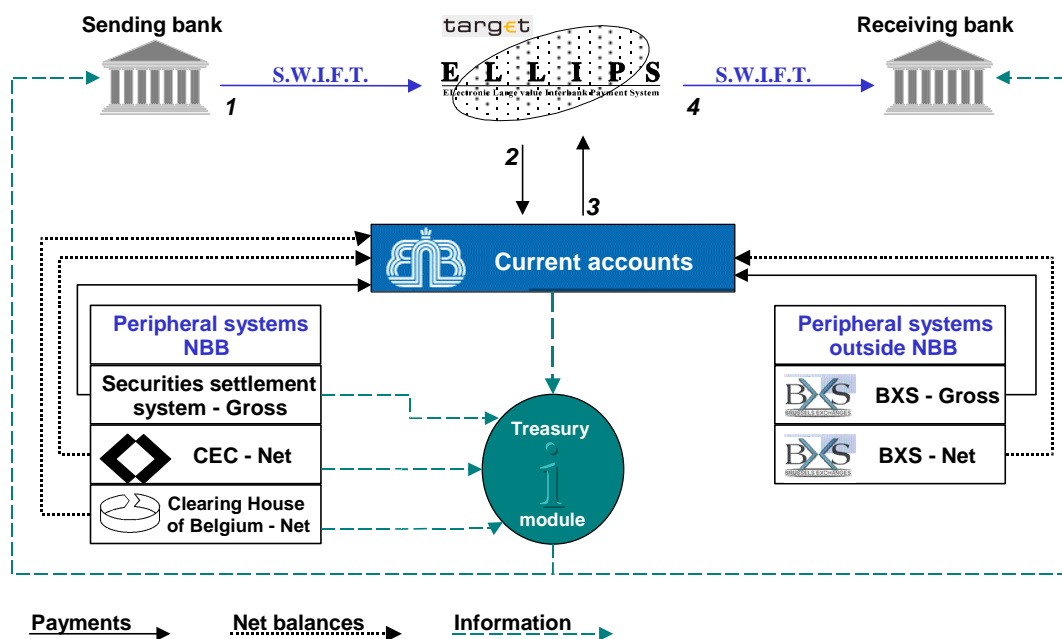
There are three domestic interbank payment systems in Belgium: ELLIPS, the CEC and the Clearing House of Belgium.

ELLIPS is an RTGS system designed to process large-value credit transfers. The CEC is the Belgian ACH for retail payments; it handles both credit and debit orders. Recently work has been carried out to introduce the third generation of the CEC, namely CEC III. These automated systems are the two pillars of the interbank payment system in Belgium. Together they process more than 99.5% of all interbank payments in both number and value.

The remaining interbank payments are processed by the Clearing House of Belgium, a paper-based system which only handles non-truncated cheques of more than EUR 10,000.

Since 1 January 1999 all these systems have operated solely in euros.

Chart 1
Interbank exchange and settlement



3.2 RTGS system: ELLIPS

3.2.1 Operating rules

ELLIPS is a non-profit-making association which has its registered office in the NBB in Brussels. Its operating rules were established by its General Assembly. The system has been operational since 24 September 1996.

The decision-making bodies are the Board of Directors and the General Assembly, both of which are composed of representatives of the members. The NBB acts as Chairman of the Board. It runs the system and assumes the daily management on a contractual basis between the NBB and ELLIPS. It is also a participant in the system.

3.2.2 Participation in the system

In ELLIPS, a two-tier system has been chosen. Direct participation in ELLIPS is confined to the credit institutions authorised in Belgium and the credit institutions operating on the Belgian market within the scope of the freedom of establishment and freedom to provide services within the European Economic Area. The latter implies the possibility of remote participation. The Post and the NBB are participants by right.

Direct participants must hold an account with the NBB and meet several conditions as described in the terms and conditions regarding operational capacity, solvency, legal guarantees and volume.

The direct participants can provide a representation service for other credit institutions (indirect participants). The payment orders of an indirect participant are processed in ELLIPS through its direct participant, who will also be responsible for the settlement of the operations.

ELLIPS is also the Belgian component of the European RTGS system in euros (TARGET). Thus participating in ELLIPS implies access to the TARGET system.

By the end of 2001, ELLIPS had 17 direct participants and 79 indirect participants.

3.2.3 Types of transactions handled

ELLIPS processes credit transfers in euros, for both interbank (MT202) and customer payments (MT100/103). ELLIPS processes both domestic and cross-border payments. Cross-border payments can be made to banks in any of the EU member states participating in TARGET, even those not participating in economic and monetary union.

The use of TARGET is compulsory for transactions directly related to the monetary policy of the ECB.

3.2.4 Operation of the transfer system

Transfers received by ELLIPS are checked immediately for (technical) validation. If a payment is rejected, a SWIFT message is sent to the initiator. Accepted orders are recorded in a file and treated individually and chronologically by the system according to the FIFO principle (first in, first out). But payments with a higher priority (priority codes 2 to 9) will always be handled first as soon as the payments are considered to be valid by the system.

If there is no waiting queue for the sender, ELLIPS treats the transaction as follows:

- the necessary information to settle the transaction is extracted from the payment instruction and sent to the NBB current accounts application (RECOUR);
- if sufficient funds are available on the settlement account held by the sending ELLIPS participant with the NBB, the payment is settled (sender debited, beneficiary credited) and becomes final immediately. ELLIPS is informed and instantly sends the relevant detailed messages to the beneficiary. If insufficient funds are available, the current accounts application informs ELLIPS of this event, and ELLIPS puts the payment instruction in the waiting queue until sufficient funds are available to execute it.

In order to ensure the smooth flow of payments, a bypass FIFO waiting queue mechanism exists. If a waiting queue already exists for the sender, the amount of the new accepted payment will be compared to that of payments in the waiting queue with the same priority. If the amount of the new payment turns out to be smaller than that of all other payments in the waiting queue, and if no payment with a higher priority appears in the waiting queue, the new payment will be processed as if no waiting queue existed. Otherwise the new payment will be placed in the waiting queue. Certain payments may be given preferential treatment, and a higher priority code is entered for such payment messages. An increase in the sender's available funds triggers the processing of the payment messages in the waiting queue. Payment messages with a higher priority code are always treated first. A new function of reservation of funds on settlement accounts has also been introduced to process time-critical payments.

After 5 pm ELLIPS no longer accepts customer payments (SWIFT MT100/MT103), with the exception of cross-border payments from TARGET. At 5.05 pm it tries to process the payments which are still in the waiting queue. In this case ELLIPS carries out a collective deblocking procedure.

At 6 pm ELLIPS no longer accepts interbank payments (MT202), with the exception of cross-border payments from TARGET. Again, at 6.05 pm a collective deblocking procedure is initiated for interbank payments.

If the deblocking of both types of messages cannot result in the execution of all payments still remaining in the waiting queue at that moment, all cross-border payments are deleted from the waiting queue.

Payments related to monetary policy (orders in favour of the deposit account and/or monetary reserves account) may be presented until 6.30 pm.

All domestic payments still in the waiting queue at the closure of ELLIPS will be deleted at that time. Under normal circumstances, ELLIPS closes at 7 pm.

Table 1
ELLIPS time schedule

Operations	Schedule
– ELLIPS opening time	6.30 am
– Payment orders validation controls	6.30 am - 7 am
– Start of payments settlement	7 am
– Cutoff time for transfers agreed on day J-n	9.30 am
– Cutoff time for customer payment orders (MT100/103)	5 pm
– Cutoff time for interbank payment orders (MT202)	6 pm
– Cutoff time for orders in favour of the deposit account and/or the monetary reserve account	6.30 pm
– ELLIPS normal closing time	7 pm
– Treasury module closing time	7.30 pm

3.2.5 Transaction processing environment

Data exchanges between ELLIPS and its members take place exclusively via telecommunication links through the SWIFT network.

ELLIPS has two different types of business continuity environments. The first continuity environment (secondary site) is located in Brussels near the “live system” (first site). It can take on processing in the event of a failure of the primary system by using a mirrored database and fully redundant public utilities. The second continuity environment (third site) is located 35 km from the main centre in Brussels. The database in the second continuity environment has been rebuilt on the basis of database D-1, to which the DB2 logging of D, which is continuously sent to this site, is applied.

3.2.6 Settlement procedures

Each transfer is settled individually by debiting the sender's current account with the NBB and crediting the beneficiary's account. The payments become final immediately (see Section 3.2.4).

3.2.7 Credit and liquidity risk

As ELLIPS is an RTGS system, the payments are settled one by one on the settlement accounts held by the participants with the NBB. If sufficient funds are available on the account of the sending participant, the individual transactions are booked instantly, thus becoming final immediately. Several instruments contribute to ensuring sufficient liquidity: the monetary reserves, free intraday credit guaranteed by collateral, the marginal lending facility and the deposit facility.

3.2.8 Pricing

For domestic payments, each participant pays an annual contribution to cover the fixed costs. The variable costs are shared on the basis of the number and characteristics of the payments. The investment costs, which are not explicitly necessary within the framework of the link between ELLIPS and TARGET, are shared evenly between the participants. Every new participant joining ELLIPS pays an entry fee determined by the Board and based on historical investment costs.

For cross-border payments (TARGET), costs are recovered on the basis of one single tariff per payment, billed to the initiator and based on the number of transactions made by this participant within a single system, according to a degressive scale.

The costs of the treasury module are distributed on the basis of the size of the computer resources used by different types of queries.

3.2.9 The treasury module

An online treasury module provides the participants with a range of information on what has been happening in the payment systems throughout the day. The participant can systematically obtain information on:

- possibilities of credit with the NBB;
- the situation of its current account with the NBB;
- transactions on its current account with the NBB and, more specifically, the ELLIPS payments;
- operations from and intended for other RTGS systems participating in TARGET;
- the situation of the ancillary systems;
- the waiting queue with transactions to be carried out; and
- the waiting queue with transactions addressed to it.

3.3 Retail payment system: CEC

3.3.1 Functioning rules

The CEC is a non-profit-making organisation which was created in 1974. As in the case of ELLIPS, the Board of Directors, made up of representatives of the most important members and chaired by the NBB, takes the decisions on new rules.

The NBB also acts as operational manager of the system.

3.3.2 Participation in the system

According to the organisation's statutes, all credit institutions legally entitled to operate in Belgium as well as the Post, the NBB and some payment organisations (eg Banksys) can make use of the services of the CEC either directly, as members, or through another participant, as sub-members. Direct members must fulfil some financial (minimum risk-asset ratio), operational (technical ability to operate), juridical (legal opinion for members established under a foreign legislation) and volume criteria. All the institutions operating in the CEC must be direct or indirect members of the Clearing House of Belgium.

On 31 December 2001 the CEC comprised 33 members and 61 sub-members.

3.3.3 Types of transactions handled

The CEC is only used for exchanging retail payments. The main categories of operations include credit transfers for up to EUR 500,000, truncated cheques for up to EUR 10,000, unpaid cheques, direct debits, unpaid direct debits, bills of exchange, loading operations of e-purses and ATM/POS transactions. The latter category represents approximately 38% of the total number of operations.

In 2001 the CEC processed a daily average of 3.6 million operations (with a maximum of 7.7 million) for an average amount of EUR 2 billion. The six largest participants accounted for almost 84% of the total number of transactions handled by the system.

3.3.4 Operation of the transfer system

The CEC system operates on a round the clock basis, five days a week, and on Saturday from 9 am to 5 pm without cutoff. The remitting institution generates files of messages to be sent under different application codes, according to their type. Data are transferred to the CEC via telecommunication or, although very rarely, via magnetic media in backup situations. There is no exchange of paper payment documents (including cheques), as these are retained (truncated) by the institution that receives them from the customer. Following certain checks, the messages are sorted by addressee and then sent. The participants can enquire about their treasury positions via telecommunication throughout the day. Participants cannot revoke their operations once they have confirmed them.

Table 2
CEC time schedule for settlement on D-day

Operations	Cutoff times
Direct debits and unpaid direct debits	D: 10.30 am
Credit transfers	D: 1.30 pm
Bills of exchange	D: 1.30 pm
Cheques and unpaid cheques	D: 2.15 pm
Higher-value ¹ or urgent credit transfers	D: 3 pm
Daily cutoff	D: 3.15 pm

¹ Value between EUR 125,000 and EUR 500,000.

The settlement of the data exchanged after these deadlines takes place on the next value date.

3.3.5 Transaction processing environment

Data exchange between the CEC and its members takes place via telecommunication with compulsory encryption. Data are handled via teleprocessing, and magnetic media are only used as backup. The CEC operates with a very high degree of reliability. Immediate contingency facilities exist both within the NBB and in an external backup centre.

3.3.6 Settlement procedures

The settlement of the CEC balances is net and multilateral. The amounts to be cleared as a result of the exchanges are calculated for each member and settled on a current account at the NBB. This account can be either that of a settlement bank (ie an ELLIPS participant) or the member's own account. All exchanged payments are settled on the same day, provided they have been remitted before the cutoff time.

3.3.7 Credit and liquidity risk

The CEC multilateral net balances are settled through ELLIPS participants. Risks are also limited on account of the participation criteria (see Section 3.3.2) and a maximum unit value per type of operation.

3.3.8 Pricing

The cost of the CEC system is shared between its members on the basis of transaction volumes, so that the NBB's costs are fully covered. The direct members also have to pay a fixed annual fee. In addition to these system costs, an interbank pricing system exists according to which every receiving bank pays a certain sum to compensate for the remitter's data exchange costs.

3.3.9 Main projects and policies being implemented

In the future, the CEC will most likely process all retail transactions, including those that are still exchanged in the manual clearing house. This goal should be reached by modernising some paper-based payment instruments and by using new technologies, such as those which allow the processing of images.

The third generation of the CEC, CEC III, will be operational in September 2004. CEC III was desirable because of technological innovations and to meet possible future developments such as image processing, and the need to handle several settlements a day. The new CEC III will also be better prepared for the single euro payment area (SEPA).

3.4 Paper-based system: Clearing House of Belgium

The Clearing House of Belgium (an association without a specific legal structure) is governed by a Board of Directors composed of representatives of the most important member institutions and chaired by the NBB, which also acts as system operator. The Board determines the operating rules. The statutes of the association require the approval of the General Assembly, in which each participant has a voting right. All credit institutions (plus the Post and the NBB) legally active in Belgium can participate in the Clearing House of Belgium.

On 31 December 2001 the Clearing House comprised 32 direct participants and 52 indirect participants.

The Clearing House of Belgium only handles cheques of more than EUR 10,000. The total value of the operations processed by the Clearing House of Belgium is marginal compared to that of the ELLIPS transactions. In 2000 their daily average value amounted to approximately EUR 360 million for a daily average volume of 15,000 payments.

The Clearing House of Belgium processes paper-based transfer orders within and between its various branches (by post or courier service). The announcement and remittance of operations are accepted from 8 am to 11.45 am; the sorting of envelopes by the staff of the Clearing House ends at 12.15 pm, and the withdrawal and confirmation of operations take place between 12.15 pm and the system cutoff time at 3 pm. Operations cannot be revoked unless there is a bilateral agreement in place. Payments become final on the same day.

Table 3
Time schedule of the Clearing House of Belgium

Operations	
Opening	9 am
Announcement and remittance	11.45 am
Sorting	12.15 pm
Withdrawal and confirmation	3 pm
Daily cutoff	3 pm

The operating rules of the Clearing House were modified considerably following the launch of the ELLIPS system. The few remaining paper-based operations are physically exchanged using mailboxes installed on the premises of the NBB, without the compulsory presence of the credit institutions' representatives, while the related financial data are announced via telecommunication either in the Clearing House or at the member banks' head offices. Operations are confirmed electronically by the addressee on receipt of the payment documents.

At the end of the day, the net balances of each participant are automatically settled on a current account at the NBB. This account can be either that of a clearing bank (ie an ELLIPS participant) or the participant's own account. All exchanged operations are settled on the same day.

Since the Clearing House of Belgium is an ancillary system like the CEC, the multilateral net balances are settled through ELLIPS participants. Risk is also limited on account of the participation criteria (see Section 3.4.2).

The cost of the Clearing House of Belgium is borne by the participants on the basis of the number of envelopes exchanged and the use of the computer application and courier services.

4. Securities settlement systems

4.1 Trading

4.1.1 Off-exchange market in linear bonds, strips and Treasury certificates

The off-exchange market in linear bonds, strips and Treasury certificates was established as a regulated market in the sense of the EC Directive on investment services by the Royal Decree of 22 December 1995. The Royal Decree delimits the market, regulates access to it, grants certain categories of legal persons the exclusive right to act as professional intermediaries, determines regulatory and supervisory tasks and, finally, regulates the provision of information to the public. The Committee of the Securities Regulation Fund is the first-level market authority. The BFC is responsible for the second-level control of the Belgian market authorities.

The majority of the secondary market transactions are OTC transactions. This market is sustained by a team of primary dealer market-makers (around 15) appointed by the Belgian Treasury with an obligation to act as market-makers.

Since September 1999 some Belgian long-term dematerialised public debt securities have also been traded on EuroMTS, a pan-European electronic trading system for euro-denominated benchmark government bonds. EuroMTS works through the Telematico system, an electronic trading platform of Italian origin launched in 1988. This system only handles the most liquid domestically issued instruments on a real-time and price-driven basis.

Following the example of Italy, France, the Netherlands and Portugal, Belgium also decided to adopt the MTS technology for its domestic market as from May 2000, through a new purpose-made entity called MTS Belgium (75% of the shareholding's structure is in the hands of the primary dealers in Belgian public securities). The technology used by MTS Belgium is the same as that of EuroMTS, but with a domestic scope in terms of the securities treated (including all long-term and short-term bonds).

The bulk of OTC transactions, including EuroMTS and MTS Belgium transactions, are settled through the NBB's SSS (see Section 4.3.1, *NBB-SSS*).

4.1.2 Euronext Brussels

Legal and institutional aspects

On 22 September 2000 the exchanges of Paris (Bourse de Paris), Amsterdam (AEX) and Brussels (BXS) merged, becoming fully owned subsidiaries of Euronext NV, a Dutch-incorporated *structuur regime* holding company. The Euronext merger has created a single organisation with one line of command for the three exchanges. Euronext NV has a two-tier board structure consisting of a Managing Board and a Supervisory Board. The three members of the Managing Board are appointed by the Supervisory Board. The Managing Board is responsible for the company's general policy and for making decisions on the principles for the organisation of the markets and the clearing and settlement of transactions. Since mid-2001, Euronext NV has itself been listed on the Euronext Paris exchange.

Euronext is creating a fully integrated cross-border stock and derivatives trading market, with one trading system, one central order book and a single set of trading rules. Since November 2001 cash market transactions have been conducted on a single trading platform, the Nouveau Système de Cotation (NSC), which was already being used in Paris. Furthermore, derivatives trading and clearing and settlement will be integrated (see also below).

From a regulatory point of view, the three exchanges will still be regulated markets recognised in their national jurisdictions, but national rules (eg listing requirements, membership, enforcement trading and surveillance) will be harmonised. As far as Belgium is concerned, the main legislation for the stock exchange markets is stipulated in the Law of 6 April 1995 relating to secondary markets. The Euronext Brussels Rule book has been formally established by the Euronext Brussels Managing Board and has to be approved by the Belgian Minister of Finance, on the advice of the BFC. It comprises both harmonised rules, eg the membership rules, and, in a transition period, local Euronext Brussels rules. The BFC has since 2002 acted as the market authority for Euronext Brussels. It concluded a

memorandum of understanding with the market authorities of the French and Dutch Euronext markets regarding the regulation and supervision of Euronext.

Operational aspects

Cash markets

The cash markets comprise four markets. The trading rules are harmonised for the Euronext cash markets. Most securities are traded on the *primary market*, where shares, bonds, loans and rights offered by listed companies are quoted. The primary market is subdivided into the continuous market and the auction or fixing market. The most liquid securities are grouped on the continuous market. Price fixing on the continuous market takes place on a continuous or semi-continuous basis, whereas, on the fixing market, price fixing takes place once or twice a day. The markets are order-driven, and trading takes place on an anonymous basis.

The *secondary market* is mainly a market for real estate certificates, operating as an auction market. *EURO.NM Belgium* aims at financing innovative companies with a high growth potential. On the trading facility market are traded financial instruments already negotiated on another, regularly functioning, recognised and public market.

All these markets are regulated markets in the sense of the EC Directive on investment services. Some market members act as specialists, with obligations regarding orders and price spreads in selected stocks, thus providing liquidity.

Trading hours are currently from 9 am to 5 pm. As an automated electronic trading and support system is used, trade matching between direct market participants takes place immediately. The stock trades are cleared through Clearnet SA (see Section 4.2).

Derivatives markets

Euronext Brussels derivatives trading takes place on a fully automated market. Brokers can introduce various single-order or spread-order types into the system. They are able to see the best bid at all times, ask about the prices available on the market and check the market depth. The trades are cleared through Clearnet SA (see Section 4.2).

4.1.3 Nasdaq Europe

In March 2001, the US-based Nasdaq stock exchange took over Easdaq, the pan-European stock market that operated independently of any national market. Easdaq was renamed Nasdaq Europe. Its listings primarily include companies in the telecommunications, information technology, software and biotechnology sectors. It provides trading in US-listed equities. Share prices for listed companies are quoted in the currency chosen by the company at the time it applies for admission.

The basic legislation for the organisation and functioning of the market is laid down in the Law of 6 April 1995 on secondary markets, the Royal Decree of 10 June 1996 and the Nasdaq Europe market rules, as approved by the Minister of Finance. Nasdaq Europe market rules are comparable to Nasdaq US rules. Nasdaq Europe is a regulated market in the sense of the EC Directive on investment services. The BFC acts as a market authority.

In June 2001, Nasdaq Europe introduced a new trading system. It is a screen-based, price-driven system which uses a multiple market-maker system, similar to the one used by Nasdaq in the United States, to support continuous trading and ensure liquidity. In a later phase, automatic direct matching of buy and sell orders is envisaged. The market is open between 8 am and 5 pm CET. Market-makers registered for a particular security must purchase and sell securities on their own account and on a continuous basis during normal business hours, entering and maintaining two-sided quotations regardless of business conditions. The quotations must be at least the minimum quotation size. Market-makers' quotations must be reasonably in line with prevailing market prices, although no maximum spread is imposed.

Since December 2001, Nasdaq Europe transactions have been cleared through EuroCCP, the London-based central counterparty and subsidiary of the US clearing house DTCC. EuroCCP has links with the main settlement systems in Europe, including Euroclear, Clearstream and Crest.

4.2 Clearing

4.2.1 Clearnet SA

Institutional and legal aspects

The requirements and principles for the functioning of the clearing house of Euronext Brussels were established by the Royal Decree of 18 August 1999. Furthermore, the clearing house rules require the prior approval of the Minister of Finance. The BFC, responsible for the prudential supervision of the clearing house of Euronext Brussels, and the NBB, as oversight authority, were parties to the memorandum of understanding organising the supervision and oversight of the clearing of the Euronext markets.

The three clearing houses of the French, Dutch and Belgian Euronext exchanges legally merged on 1 February 2001. Trades executed on the Euronext platform are cleared through a single central counterparty, the Paris-based credit institution Clearnet, the former clearing house of Euronext Paris. Clearnet has branches in Amsterdam and Brussels. From an operational point of view, a common clearing system (Clearing 21) is already used for the Euronext Paris and Brussels cash markets. The Amsterdam cash market followed in October 2002.

Operational aspects

Operationally speaking, the clearing (interposition of the central counterparty and netting) of Euronext Brussels cash market instruments takes place through the Clearing 21 system, operated by Clearnet SA.

Derivatives instruments traded on Euronext Brussels (futures, options and index participation units) are still cleared through the legacy system of the former Belfox, now operated by Clearnet SA. Some relevant elements:

- Derivatives clearing members are required to separate in Clearnet's books their customers' position accounts from their own, as well as separating their own accounts from the customers' account of the trading members for whom they execute clearing transactions. Furthermore, netting between individual customers' accounts is not allowed.
- Derivatives positions are updated in real time from matched trade reports and are available for remargining at any time based on the latest prices. Position limits are imposed per contract and per clearing member.
- Margins are required from clearing members with regard to their own and their customers' accounts. Furthermore, and notwithstanding the fact that there is no legal relationship between the clearing house and the clearing members' customers, the derivatives clearing rules stipulate that clearing members must ask for minimum margins from their customers.
- Normally, margin requirements are calculated at the end of each day and are to be settled the following morning before 9.45 am. In order to ensure an adequate and timely clearing process in volatile markets, Clearnet SA can either increase margin requirements or impose intraday margining.
- Clearnet establishes an initial margin for each futures contract. A fixed percentage of the contract value is determined with reference to the maximum anticipated price movement in one day. Option margins are also calculated on a daily basis, taking into account market volatility.
- Futures are marked to market daily at the end of each trading day and subject to daily settlement. Debit margins cause cash payments to be made on the following day before 9.45 am. Option premiums are payable in full on T+1.

Both Euronext Brussels cash stock market transactions and stock options exercises and assignments at expiry are settled in the FMS system of CIK (see Section 4.3).

4.3 Settlement

4.3.1 NBB-SSS

Institutional and legal aspects

Articles 3 and 12a (and the subsequent amendments thereof) of the Law of 2 January 1991 relating to public securities and the instruments of monetary policy established the dematerialised form of public debt as well as the SSS managed by the NBB (NBB-SSS). This settlement system is thus fully owned by the NBB and operated within its Financial Markets Department. These articles were inspired by the general philosophy of Royal Decree no 62 of 10 November 1967, which defined the rules applicable to fungible securities under Belgian law.

Legal measures have also been taken in order to protect the investors' interests, particularly against the default of the holder of a dematerialised securities account, eg the segregation of assets. In this respect, the owners of securities held with the NBB-SSS have co-ownership rights to these securities, and this also applies in the very hypothetical case of insolvency of the NBB. The protection of security holders regarding the irrevocability and the finality of settled transactions (including the event of insolvency of the counterpart) had already been ensured by Article 157 of the Banking Law of 22 March 1993 (as extended by the Royal Decree of 28 January 1998), and was further enhanced by the implementation of the EC Directive on settlement finality under Belgian law (Law of 28 April 1999, amended by the Royal Decree of 18 August 1999).

The Law of 6 August 1993, governing transactions on certain securities, introduces a new tax system for fixed income securities deposited in a settlement system; it also assigns the Treasury the responsibility for the collection and payment of the withholding tax due from certain beneficiaries of securities income.

The Securities Regulation Fund (SRF) is responsible for the supervision of the holding of the accounts of dematerialised public debt securities.

The NBB-SSS has a single category of members, the direct participants, encompassing a very wide range of institutions entitled to apply for membership: credit institutions established in the European Union, stockbroking firms established in the European Union, the Treasury administration, the NBB, Clearstream Luxembourg, Euroclear, Sicovam and other SSSs.

Operational aspects

Each participant joining the system has different accounts for the securities held on its own account, those held on behalf of third parties and those pledged for collateralisation purposes.

The settlement of the cash leg of DVP transactions takes place in central bank money on the participant's current account in the books of the NBB. The participants thus benefit from very close integration of the cash and securities dimensions within one single entity.

Repo transactions in Belgian dematerialised public securities traded either on the Repoclear or on the EuroMTS platforms are cleared within Repoclear, a service provided by the London Clearing House (LCH). Acting as a central counterparty, Repoclear performs a multilateral netting process once a day, taking into consideration all the trades concluded between counterparties which have been sent for clearing. The settlement of the netted movements stemming from Repoclear is subsequently ensured within the NBB-SSS settlement process.

During the course of the day incoming notifications are entered into the system as quickly as possible. As soon as a notification has been registered, the system tries to match it. To this end, the notification of the counterparty must already exist. When both notifications have been entered into the system, all details are compared and the match is successful if no discrepancies are found.

The bulk of the orders, sent to the system via the SWIFT network, are automatically authenticated, subject to an exchange of SWIFT keys between the NBB and the participant involved.

Participants located in Belgium can also use a secured IT communications network (developed by the Belgian banking community) to send their orders to the settlement system.

In order to reduce the risks relating to errors or omissions on the part of the counterparties, the system regularly updates the status details of participants' notifications. The participants can verify the status of their instructions online and react in the event of mismatched instructions.

Several definitive batches (about 10 batches a day) are run throughout the working day. Each of these batches performs gross settlement of the eligible notifications, meaning that each transaction gives rise to the simultaneous settlement of one cash and one securities movement (BIS DVP model 1). In other words, the process checks the effective provision of cash (for the buyer) and of securities (for the seller) before settling the relevant transaction.

The batches are run between 8 am and 4.15 pm for FOP and DVP transactions; additional batches may occur between 4.15 pm and 6 pm but only on an FOP basis and for the sake of collateral transactions involving one NCB of the Eurosystem.

Each of these batches starts at a predetermined time and tries to settle the selected transactions, provided there is sufficient cash and security provision. Those transactions not selected (owing to a lack of securities/cash or to other selection criteria) remain in the queue and are examined again when the next batch is run.

The admission requirements regarding the successive batches are determined in such a way that the criteria become increasingly broader throughout the day.

The option of an automatic securities lending facility is offered to the direct participants. This facility enables holders of securities who have no immediate need for them to lend them to other participants. The lent securities are covered by a pledge of securities taken by the system from the borrower's own holdings (full collateralisation basis). These loans are granted without direct intervention of the lenders and borrowers. The automatic securities lending process is undertaken at the end of the last DVP settlement batch of the day, scheduled to be completed at 4.30 pm. The repayment procedure is also automated.

The system operates according to the pooling principle whereby a number of lenders make securities available to participants who need them to settle their planned transactions. This process is fully confidential, with the identity of the lenders not being revealed to the borrowers and vice versa. The automatic securities lending works in such a way as to guarantee fair distribution of the loans in the long run in terms of amounts offered by each potential lender.

The fee structure includes the following elements:

- a monthly flat rate fee as well as a monthly custody fee per participant identification number in the system;
- a half-yearly lump sum to cover the cost of consultation facilities; and
- a notification/movement fee per sent order.

The international holding and trading of Belgian public debt securities have also been simplified as a result of the links established with the NBB-SSS by other SSSs, ie Clearstream Luxembourg, Euroclear (since 1991) and Sicovam (since 1999).

4.3.2 CIK

Institutional and legal aspects

The CIK is a limited liability company under public law, established under the terms of Royal Decree no 62 of 10 November 1967, facilitating circulation of securities. It is located in Brussels. The CIK was recognised and its articles of association were modified and approved by the Royal Decree of 3 September 2000. Its general rules were approved by the Minister of Finance on the same date. The CIK is managed by its Board of Directors.

In 1999 the CIK became a fully owned subsidiary of the Brussels stock exchange (Euronext Brussels). In July 2001 the Euroclear and Euronext groups agreed that the settlement activities of Necigef and CIK, the Dutch and Belgian CSDs, would be absorbed by Euroclear. Euroclear will thus become the preferred settlement partner of Euronext.

The accession rules are laid down in Article 2 of the CIK's by-laws. Any professional authorised to handle stock exchange orders as well as any foreign SSS may become a member (affiliate) of BXS-CIK. Issuers are not admitted.

Affiliates can cancel their membership by giving at least one month's notice by registered letter. The affiliate's liabilities to the CIK end when the affiliate has settled all of its accounts. Any affiliate which does not respect the decisions of the General Assembly or the Board of Directors or, more specifically, the terms of the by-laws, or which, in particular, issues transfer or withdrawal orders for which its account has insufficient funds, may be excluded by the Board of Directors following a summons by registered letter or a hearing. The affiliate shall be notified of the decision of exclusion by registered letter at least 15 days before the decision becomes effective.

The Minister of Finance is represented by a government commissioner who attends Board meetings. The NBB's oversight responsibilities cover the settlement activities of the CIK.

Operational aspects

The CIK acts as a central depository for Belgian private sector securities. As a custodian, it also provides safekeeping for bearer certificates and other related services: payment of principal, interest and dividend in direct participants' accounts, as well as notification of corporate actions. The CIK is also the Belgian National Numbering Agency.

The CIK operates a settlement system in which both stock exchange (Euronext Brussels) transactions and OTC trades are settled.

Eligible securities

Eligible securities for custody services and transfers must be fungible. This covers listed Belgian shares, warrants, bonds and rights as well as foreign listed bonds and shares. Dematerialised private corporate bonds are also eligible. Any unlisted fungible instruments can be eligible upon the agreement of the Board of Directors. Instruments eligible in the CIK are either in dematerialised form (money market instruments and private corporate bonds) or in bearer form (corporate bonds, shares, etc), of which approximately 50% are issued as global certificates, while another 40% are immobilised. Since the implementation of the Law on the Belgian Financial Architecture (BELARFI) in 1998, the CIK has no longer been able to hold positions on accounts for securities issued by the Belgian public sector.

Settlement

Both cash and forward market on-exchange transactions are settled through the CIK's FMS system. OTC transactions are settled through the electronic matching and securities settlement (EMSS) system.

Notifications in the CIK system are SWIFT-based messages and are exchanged via the SWIFT network. A CIK-dedicated workstation (Satelit/Elit) can also be used.

Default procedures

In the event of default (eg bankruptcy), the defaulting participant will be disconnected and will not be allowed to enter into new transactions. Other participants will be informed by official notification.

In the event of bankruptcy, transactions will be settled up until the moment of declaration or official notification by the administrator. The Law of 28 April 1999 transposed into Belgian law Directive 98/26/EC on settlement finality in payment and securities settlement systems. Transfer orders and netting are enforceable and, even in the event of insolvency proceedings against a participant, are binding on third parties, provided that transfer orders had been entered into a system before any such insolvency proceedings were initiated.

– Settlement asset

The CIK does not maintain cash accounts for its participants. The cash accounts are held at the NBB. The cash leg of the transaction is settled in central bank money. Cash settlement is carried out in euros.

– FMS system settlement

All cash market transactions in securities listed on Euronext Brussels, and stock options exercises and assignments, are settled through the FMS system. Since December 2000, settlement has been rolling on a T+3 basis. For on-exchange transactions Clearnet SA interposes itself as a central counterparty between the buyer and the seller.

The CIK organises a DVP settlement based on DVP model 1 according to the 1992 BIS report on “Delivery versus payment in securities settlement systems”. Settlement in the FMS system takes place by means of a batch process for securities and cash, seven times a day between 6 am and 5 pm. The FMS system settles the securities based on a balance per value and per clearing member. The cash settlement is based on a balance per clearing member (identified by its BIC code) per settlement processing cycle. The payment instructions received are processed in real time in the cash accounts of the clearing members held at the NBB. If, and only if, the cash payment is executed, the securities positions of the buyer that were previously blocked are immediately released.

– EMSS system

Matching module

The EMSS provides a real-time matching module, where both buyer and seller introduce the details of their OTC trade. When the trade is fully matched, the transaction is ready for settlement. When the instructions do not match, participants receive a message informing them that the transactions are either unmatched or mismatched.

Settlement module

The EMSS module settles OTC transactions on a trade by trade (gross) basis. It settles DVP transactions on a daily basis from 6 am to 3.15 pm. EMSS also processes FOP transfers of securities. The latter can take place from 6 am to 4 pm.

The EMSS-DVP system is a DVP model 1 system according to the 1992 BIS report on “Delivery versus payment in securities settlement systems”. Securities transfers are processed in the CIK, cash transfers are processed in the NBB, with the two systems being linked in accordance with an agreement between the CIK and the NBB.

The cash delivery instruction sent to the NBB will only be initiated by the reservation of the securities involved in the transaction on a blocked account. The process of cash delivery cannot be initiated in the event of failure on the seller's side. The reciprocity of the cash and securities transfers is guaranteed as reserved securities are only released upon receipt of the confirmation of payment sent by the NBB. In other words, the buyer is never able to use the securities reserved on his/her account.

The release and the irrevocable and final transfer of these reserved securities to the buyer's account are guaranteed by the payment confirmation from the central bank.

Since October 1999, transfers have been performed on a continuous real-time basis, both for securities in the CIK and for the payment instruction in the NBB's payment system. The transactions which are not processed at the end of the day are recycled for settlement on the following day.

Custody

Royal Decree no 62 of 10 November 1967 introduced the circulation of securities through book entry transfers and provided for the fungibility of all securities admitted to operations within the CIK. It stipulates a specific custody regime. The CIK is not entitled to any property rights over the securities deposited. There is no possibility of overdrafts on a CIK participant's securities account. The holder of a security held with the CIK is granted co-ownership rights to like securities. In this respect, the BELARFI Law of 15 July 1998 explicitly provides for the right of recovery in the event of insolvency of the CIK. Furthermore, the separation of own accounts from customer accounts is mandatory for the accounts held with the CIK by its participants.

Links

With regard to the links, the CIK has signed an agreement with SEGA (Switzerland's CSD), stipulating that the CIK is a participant in SEGA. The CIK has also signed agreements with three other foreign CSDs, namely with Clearstream Banking Frankfurt (Germany), Euroclear France (France) and

NECIGEF (the Netherlands), as well as an agreement with Euroclear in which both parties are reciprocal participants. These links with the CSDs are established for FOP transfers of securities (equities) listed on Euronext Brussels. The Euroclear link can be operated as a DVP link.

4.4 Use of the securities infrastructure by the central bank

Generally speaking, the NBB makes use of the SSSs located in Belgium for two main purposes: the holding and management of its own securities portfolio, and the management of the collateral offered to it by counterparts for the sake of monetary policy operations or the coverage of intraday credit facilities.