

Payment systems in France

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List of abbreviations

AEX	Amsterdam Exchanges
AFECEI	French Association of Credit Institutions and Investment Firms - <i>Association Française des Établissements de Crédit et des Entreprises d'Investissement</i>
AFEI	French Investment Firms Association - <i>Association Française des Entreprises d'Investissement</i>
ASF	Finance Companies Association - <i>Association des Sociétés Financières</i>
BXS	Brussels Exchanges
BMS	Electronic purse consortium - <i>Billétique Monétique Services</i>
CB	Banking Commission - <i>Commission Bancaire</i>
CECEI	Credit Institutions and Investment Firms Committee - <i>Comité des Établissements de Crédit et des Entreprises d'Investissement</i>
CFONB	French Committee for Banking Organisation and Standardisation - <i>Comité Français d'Organisation et de Normalisation Bancaires</i>
Clearnet SA	Clearing house and central counterparty for financial instruments
CMF	Financial Markets Council - <i>Conseil des Marchés Financiers</i>
CNCT	National Credit and Securities Council - <i>Conseil National du Crédit et du Titre</i>
COB	French Stock Exchange Commission - <i>Commission des Opérations de Bourse</i>
CoMF	Financial and Monetary Code - <i>Code Monétaire et Financier</i>
CRBF	Banking and Financial Regulations Committee - <i>Comité de la Réglementation Bancaire et Financière</i>
CREICs	Regional centres for the exchange of truncated cheques - <i>Centres Régionaux d'Échange d'Images Chèques</i>
CRI	Centre for Interbank Funds Transfers - <i>Centrale des Règlements Interbancaires</i>
Euroclear France	French CSD and clearing authority, previously Sicovam SA
FBF	French Banking Federation - <i>Fédération Bancaire Française</i>
FCC	Central Cheque Register - <i>Fichier Central des Chèques</i>
FNCI	National Register of Irregular Cheques - <i>Fichier National des Chèques Irréguliers</i>
GCB	Bank Card Consortium - <i>Groupement Cartes Bancaires</i>
GSIT	Interbank automated clearing group - <i>Groupement pour un système interbancaire de télécompensation</i>
GUF	SWIFT Users Group in France - <i>Groupement des Utilisateurs SWIFT en France</i>
IEDOM-IEOM	Monetary Institutes of the French Overseas Departments and Territories - <i>Institut d'émission des départements d'outremer, Institut d'émission des territoires d'outremer</i>
ISB	Inter-brokers' subsystem - <i>Sous-système Inter-Sociétés de Bourse</i>
Matif	French financial futures market - <i>Marché à Terme International de France</i>
Monep	Paris traded options market - <i>Marché des Options Négociables de Paris</i>

France

NSC	New electronic trading system used by the French stock exchange since 1995 - <i>Nouveau Système de Cotation</i>
PLC	Automated intraday repo in RGV2 - <i>Pension Livrée Conservatoire</i>
PLI	Intraday repo in TBF - <i>Pension Livrée Intrajournalière</i>
PNS	Paris Net Settlement system
RCB	Bank Card Network - <i>Réseau Cartes Bancaires</i>
Relit	Securities DVP system - <i>Règlement-livraison de titres</i>
RGV	High-speed Relit system - <i>Relit Grande Vitesse</i>
RGV2	High-speed Relit system 2 - <i>Relit Grande Vitesse 2</i>
SBI	Brokers'/intermediaries' subsystem - <i>Sous-système Sociétés de Bourse-Intermédiaires</i>
SCSSs	Securities clearing and settlement systems
SEME	French banking consortium promoting an e-money product called MONEO - <i>Société Européenne de Monnaie Electronique</i>
SFPMEI	Special purpose credit institution for issuing e-money - <i>Société Financière du Porte-monnaie Électronique Interbancaire</i>
Sicovam SA	French CSD and clearing authority - <i>Société Interprofessionnelle pour la Compensation des Valeurs Mobilières SA</i> , now Euroclear France
SIT	French automated clearing house for retail payment instruments - <i>Système Interbancaire de Télécompensation</i>
SLAB	Delivery by mutual consent subsystem - <i>Sous-système de Livraison par Accord Bilatéral</i>
TBF	RTGS system operated by the Bank of France - <i>Transferts Banque de France</i>
TIP	Interbank payment order - <i>Titre Interbancaire de Paiement</i>

Introduction

A number of important reforms have been implemented in France over the past years in the field of payment systems and securities clearing and settlement systems (SCSSs). The main objectives of these reforms were to minimise the risks arising from interbank settlements, to improve efficiency and to ensure the openness of the French systems within the euro area.

The French infrastructure for wholesale transactions is thus characterised by a common platform for settlement in central bank money, composed of three systems linked by real-time bridges:

- at the heart of this organisation is the French RTGS system operated by the Bank of France, TBF, which came into operation in October 1997 and is part of the TARGET system;
- in the field of SSSs, the high-speed Relit system, RGV, started up in February 1998. Thanks to its close link with the RTGS system and a sophisticated mechanism for self-collateralisation, RGV provides for continuous intraday final DVP in central bank money; and
- launched in February 1997, the Paris Net Settlement (PNS) system, which can be described as a hybrid settlement system inasmuch as it offers netting mechanisms while settling in real time and in central bank money.

In the field of retail means of payment and systems, substantial changes have been implemented in order to achieve the dematerialisation of interbank exchanges in 2002. Since February 2002, there has been only one retail payment system, the French automated clearing house (Système Interbancaire de Télécompensation - SIT), through which all retail payments, now including cheques, are cleared.

As for the oversight of these systems, L 141-4 of the Financial and Monetary Code (CoMF), which codifies Article 4 of the 1993 Bank of France Statute, gives a broad competence to the Bank of France to ensure the smooth operation and security of payment and securities systems. This article has been recently broadened in order to strengthen its statutory powers vis-à-vis the issuers of means of payment regarding security matters.

1. Institutional aspects

1.1 The general institutional framework

1.1.1 General legal aspects

1.1.1.1 Issuance of means of payment

The French banking law gives a broad definition of means of payment, referring to “all instruments which, irrespective of the medium or technical procedure used, enable any person to transfer funds”. The issuance and the management of means of payment are defined as banking operations.

The Financial and Monetary Code (CoMF), which codified in this field the Banking Act of 24 January 1984, governs banking activities and the conditions under which they are carried out in France.

According to the CoMF, only credit institutions (Article L 511-5), the Treasury, the Post Office, the public trustee office (Caisse des Dépôts et Consignations), the Bank of France and the monetary institutes for the French Overseas Departments and Territories (IEDOM-IEOM) (Article L 518-1) may conduct banking operations, including the issue and processing of means of payment, as a regular part of their business.

The CoMF also codified the Financial Modernisation Act of 2 July 1996 which implemented the EU Investment Services Directive.

Both banking and financial provisions are compliant with the EU principle of mutual recognition of licences settled by the Banking Directive 2000/12 and the Investment Services Directive. These provisions have been codified in the CoMF in Articles L 511-22 to L 511-28 and L 532-23 to L 532-27.

1.1.1.2 *Functioning of payment and securities settlement systems*

The Act of 31 December 1993 abolished the “zero hour” rule in payment systems by amending the French Banking Act (Article 93-1, now CoMF L 330-1). Since the implementation of this provision, netting arrangements for payment systems have been legally binding in the event of failure by a participant and the finality of payments in RTGS systems cannot be legally challenged, provided the systems comply with the legal definition of payment systems.¹ The protection against any “zero hour” provisions also applies explicitly to SSSs.

The legal basis for collateral arrangements in payment and securities settlement systems is formed by Article 330-2 of the CoMF. This Article stipulates that regulations, master agreements or standardised agreements governing payment or multilateral settlement systems may provide for collateral arrangements in order to secure settlement within the system. The collateral eligible under the specific regime of Article 330-2 is widely defined (transfer of claims, securities, guarantees, etc). The transfer of collateral is performed through a transfer of full ownership without any formal requirement to inform third parties and is enforceable despite the provisions of the Business Reorganisation and Bankruptcy Act 85-98.

1.1.1.3 *Legal basis for oversight functions*

The legislation adapting the Bank of France’s Statute to the provisions of the Maastricht Treaty states that “the Bank of France shall ensure the smooth operation and the security of payment systems within the framework of the tasks of the European System of Central Banks relating to the promotion of the smooth operation of payment systems” (Article 4 of Act 93-980 of 4 August 1993 as amended by Act 98-357 of 12 May 1998, codified in Article L 141-4 of the CoMF). This provision establishes payment and securities systems oversight as an integral part of the Bank of France’s statutory tasks within the Eurosystem.

Having regard to the growing concern about security and public confidence in the field of payments, Act 2001-1062 of 15 November 2001 strengthened the oversight role of the Bank of France in matters of means of payment security and granted it greater means of action thereon, by adding the following amendment to Article L 141-4 of the CoMF:

“The Bank of France shall ensure the security of means of payment, other than banknotes and coins, as defined in Article L 311-3, and the relevance of the standards applicable thereto. If it deems that any such means of payment is insufficiently secure, it may recommend that the issuer take all necessary measures to remedy such insufficiency. If its recommendations are of no avail, it may, after having solicited the observations of the issuer, hand down a negative opinion published in the Official Journal.

For the performance of its duties, the Bank of France shall conduct expert analyses and shall ask the issuer or any interested party for all relevant information concerning means of payment and the terminals or technical facilities associated therewith.”

With respect to securities clearing and settlement systems (SCSSs), Article L 622-7-IV of the CoMF (previously Article 32-16 of the Act of 2 July 1996, as amended by the Act of 2 July 1998), states that the general regulations of the Conseil des marchés financiers (CMF) - Financial Markets Council - shall specify “the general organisational and operational principles of securities settlement systems and the conditions under which the CMF approves the operating rules of such systems, without prejudice to the powers granted to the Bank of France by Article 4 of Act 93-980 of 4 August 1993 on the Statute of the Bank of France and the supervision of credit institutions”. In addition, Act 2001-1168 of 11 December 2001 amended the Article L 141-4 of the CoMF to further clarify the oversight competence of the Bank of France as regards SCSSs. It states that the Bank of France oversees

¹ Article L 330-1-I of the CoMF (previously Article 93-1 of the Banking Act) states that: “an interbank settlement system or a financial instrument settlement and delivery system shall mean a national or international procedure organising dealings between two or more parties that have the status of credit institutions, or institutions or companies referred to in Article L 518-1, of investment firms or clearing house members or of non-resident institutions with comparable status, for the usual execution, whether or not this involves netting, of payment as well as, where financial instrument settlement and delivery systems are concerned, the delivery of financial instruments between said participants. Without prejudice to the provisions of article L 622-7, the system must either have been instituted by a public authority or be governed by a master agreement complying with the general principles of a market-wide agreement or a standardised agreement.”

CCPs and securities settlement systems within the framework of the European System of Central Banks, without any prejudice to the securities regulators' and banking supervisors' competencies.

1.2 Role of the Bank of France

1.2.1 Payment and securities systems

Payment systems oversight forms an integral part of the Bank of France's statutory tasks. It performs its duty of ensuring "the smooth operation and the security of payment systems within the framework of the tasks of the European System of Central Banks (ESCB) relating to the promotion of the smooth operation of payment systems" through the provision of settlement services, the definition of recommendations and supportive action aimed at facilitating private sector initiatives contributing to a safe and efficient functioning of payment systems.

Pursuant to Article L 141-4 of the CoMF, the statutory competence of the Bank of France in the field of payment systems oversight also explicitly covers SSSs and CCPs. Well-designed and efficient SCSSs are important for the stability of the financial system since weaknesses in SCSSs can be a source of systemic disturbances to securities markets and to other payment and settlement systems.

The oversight of payment systems and SCSSs is three-tiered: defining the principles or standards underpinning their conception and operation, monitoring their implementation and, lastly, overseeing the actual conditions of operation and use. Consequently:

- the Bank of France participates actively in the definition of new international and European standards (CPSS/IOSCO working group, G10 central banks committee and ESCB/CESR task force);
- the Bank of France regularly assesses the systems according to the standards in force. In addition, the central bank periodically meets the managers of the systems in order to consider possible operational problems and to assess the envisaged evolutions;
- the Bank of France can defend its views regarding the orientations suggested by systems operators and concerning changes in the functioning rules. In case of necessity it may oppose these orientations or changes if they do not comply with the standards and principles. In a number of cases, the Bank of France may also decide to carry out audits;
- in order to monitor the functioning of large-value payment systems, the Bank of France has set up a statistical observatory, which among other things monitors the behaviour of participants in these systems, and a simulation tool. The operation of these systems and the interactions between them have been modelled and replicated using the simulation tool, which analyses changes in the behavioural patterns of participants, such as variations in the supply of liquidity or changes in optimisation mechanisms;
- in case of operational problems, the Bank of France is immediately informed of developments, and jointly defines with the managers of the systems and major market participants the measures necessary to avoid a spillover effect.

The integration of financial markets and infrastructures in the securities field in the euro area has led the monitoring authorities of the countries concerned to implement joint supervision of these activities.

In January 2001, the relevant authorities of Belgium, France and the Netherlands adopted a Memorandum of Understanding relative to the joint implementation of their respective responsibilities in terms of oversight, regulation and supervision of the Euronext Group. The first part of this document, signed for France by the Commission des Opérations de Bourse (COB) - the French Stock Exchange Commission - and the CMF, organises the coordinated regulation of the securities and derivatives transactions of the Euronext Group. The second part of this Memorandum of Understanding, signed on behalf of France by the CMF, the Commission Bancaire (CB) - Banking Commission - and the Bank of France, addresses the coordination of Euronext's clearing activities oversight, regulation and supervision; these activities are undertaken by the clearing house and central counterparty Clearnet.

Another Memorandum of Understanding was signed on 22 October 2001 by the Belgian and French authorities (the Belgian National Bank and the Financial and Banking Commission for Belgium; the Bank of France and the CMF for France) in order to organise the prudential supervision of the

Euroclear Group's current membership (Euroclear Bank-Euroclear France) and the oversight of its securities settlement systems.

A third Memorandum of Understanding with the Belgian and Dutch authorities was signed by the Financial Markets Council and the Bank of France on behalf of France in 2002. It organises cooperation for prudential supervision and oversight of the securities settlement services provided by Euroclear Bank for trades on Euronext markets.

This coordination involves monthly meetings between the relevant authorities.

1.2.2 Payment media

The ability of economic agents to effect payments efficiently is a condition for economic development. Therefore, large-scale use of payment media requires public confidence. This concern has come to the fore in recent years with the huge growth in the use of information technologies in this field. The dematerialisation of payment media, now well established in France, allows cost cutting and fosters shorter and more reliable processes. In the meanwhile, the security of payment media relies increasingly on their IT environment. The legal framework for the Bank of France's oversight mission on the security of payment media has been significantly strengthened by the Everyday Security Act.

According to its new statutory powers in security matters, the Bank of France is entitled to monitor the security level of the different payment media and to make recommendations about it. To fulfil its mission, the Bank of France considers that the security of payment media is based on the following three elements which are all relevant for its oversight role:

- the soundness of the issuer, which faces risks that may threaten its stability and could lead to systemic effects while undermining public confidence in the means of payment;
- the stability of agreements between all the parties involved in payment relationships. These agreements are essential for the protection of users against several kinds of risks, such as financial losses, non-execution of the transaction on the agreed conditions and fraud;
- the technical and organisational security dedicated to the protection of payment media against all types of threats. For each means of payment, the Bank of France analyses possible threats to its security, defines the minimum security objectives to which it must conform, and monitors that the resources implemented are adequate to meet the foregoing minimum objectives.

As an example, strong competition between credit institutions in the area of electronic purses, where security is an important issue, prompted the Bank of France to encourage market players to formalise minimum functional security requirements (or a "protection profile") for these products. This exercise involved IT security experts from the banking and smart card industries. All electronic purse providers in France have commissioned assessments against the above-mentioned minimum functional security requirements for the trial and potential rollout phases.

Such monitoring implies close relationship with industry representatives. In addition, the law allows the Bank of France to conduct expert analyses and ask the issuer or any interested party for all relevant information concerning payment media and the terminals or technical facilities associated therewith. If it deems that any such means of payment is insufficiently secure, it may recommend that the issuer take all necessary measures to remedy such insufficiency. If its recommendations are to no avail, it may, after having solicited the observations of the issuer, hand down a negative opinion published in the French Official Journal.

1.2.3 Prevention of fraud

The role of the Bank of France as a service provider in the field of payment instruments relates to its responsibilities regarding two national registers that help to ensure the security of card and cheque payments.

As part of the prevention system established by Act 91-1382 of 30 December 1991 on cheque and payment card security, the Central Cheque Register (Fichier Central des Chèques - FCC) stores centralised information on cheque payment incidents and the resulting bank-imposed and court-ordered cheque-writing bans. Pursuant to an agreement, the Register keeps a central record of bank card confiscations by institutions belonging to the Bank Card Consortium (Groupement Cartes

Bancaires - GCB). Access to this Register is restricted to credit institutions prior to the issuing of a cheque book, though they are also able to consult it before granting a loan.

The above-mentioned Act also states that anyone who receives a cheque in payment is entitled to obtain information from the Bank of France as to whether the cheque is regular. In order to provide this service, the Bank of France keeps a central record in the National Register of Irregular Cheques (Fichier National des Chèques Irréguliers - FNCI) of all incidents affecting the regularity of cheques drawn on a bank account. These may include loss or theft of cheque books, account closures and details of all accounts held by individuals or firms that have been banned from writing cheques. As authorised by a Decree of the Minister of the Economy and Finance dated 24 July 1992, the Bank of France has delegated responsibility for implementing the procedures for consultation of the Register, especially by retailers, to a company called Mantis. This company provides a service allowing access to the Register operating under the name RESIST.

1.3 Role of other private and public sector bodies

1.3.1 Financial intermediaries allowed to provide payment services

Following the merger and consolidation process within the financial sector, there were 1,037 credit institutions conducting their business in France at the end of 2001, versus 1,608 in 1994. Of these, 249 were commercial banks licensed as all-purpose institutions to conduct a very wide range of activities; 167 were cooperative banks, savings banks or municipal banks; 521 were finance companies (sociétés financières), which are not allowed to take deposits from the public for less than two years and the activities of which are restricted in accordance with their status; 17 were specialised financial institutions (Institutions Financières Spécialisées) entrusted by law with a permanent public interest mission (and unable to engage in banking operations other than those pertaining to that mission). Finally, there were 55 branches of credit institutions incorporated in the EEA and 28 branches of credit institutions incorporated in third countries.

The number of domestic branches of all credit institutions totalled 26,049 at the end of 2001.

The Post Office's financial arm plays a significant role in the French financial system as it holds a proportion of sight accounts, most of which are held on the books of the Postal Cheque Centres (Centres de Chèques Postaux - CCPs), and time accounts, held with the National Savings Bank.

The Treasury's receiving and paying officers used to manage bank accounts for private individuals (around 0.8 million) and carry out a number of banking operations. However, the Treasury stopped this activity at the end of 2001, and now holds public bodies' accounts only.

1.3.2 Representative bodies

Credit institutions and investment firms are collectively represented in their relations with the public authorities through a two-tier system:

- institutions that are not members of banking networks must belong to a professional association, such as the French Banking Federation (Fédération Bancaire Française - FBF) for banks,² the Finance Companies Association (Association des Sociétés Financières - ASF) for finance companies and the French Investment Firms Association (Association Française des Entreprises d'Investissement - AFEI) for investment firms; and
- the central bodies of the banking networks and professional associations mentioned above are affiliated to the French Association of Credit Institutions and Investment Firms (Association Française des Etablissements de Crédit et des Entreprises d'Investissement - AFECEI), which represents all credit institutions and investment firms, provides information to its members and to the public, studies all issues of common interest and prepares relevant recommendations.

² In addition to banks, four central bodies of banking networks have joined the FBF.

1.3.3 Regulatory and supervisory authorities

The Banking and Financial Regulations Committee (Comité de la Réglementation Bancaire et Financière - CRBF) issues general regulations and rules applicable to credit institutions and investment service providers.

The Credit Institutions and Investment Firms Committee (Comité des Établissements de Crédit et des Entreprises d'Investissement - CECEI) is in charge of making all individual decisions concerning credit institutions and investment firms, in particular decisions concerning licences.

The Banking Commission (Commission Bancaire - CB), which is chaired by the Governor of the Bank of France, is responsible for supervising credit institutions and investment firms.

Other authorities such as the Financial Markets Council (Conseil des Marchés Financiers - CMF) and the French Stock Exchange Commission (Commission des opérations de Bourse - COB) have responsibilities regarding regulated markets and the establishment and monitoring of compliance with rules related to the provision of investment services and to securities markets.

1.3.4 Other entities

The National Credit and Securities Council (Conseil National du Crédit et du Titre - CNCT) conducts studies regarding the conditions under which the banking and financial system operates. The CNCT is also a forum for wide-ranging consultation among the representatives of all parties involved in France's economic and financial sphere.

Several entities have been established to study, discuss and coordinate the evolution of the payment systems infrastructure, both in general and in banking terms, as well as in terms of technical change and standardisation.

The French Committee for Banking Organisation and Standardisation (Comité Français d'Organisation et de Normalisation Bancaires - CFONB) is the French banking standard-setting body and a forum for studying the modernisation of banking organisation.

A number of economic interest groupings (Groupements d'Intérêts Economiques - GIE) also intervene in the field of payment systems, in particular the SWIFT Users Group in France (Groupement des Utilisateurs SWIFT en France - GUF), the Interbank automated clearing group (Groupement pour un système interbancaire de télécompensation - GSIT) and the GCB (see Section 2).

The Centre for Interbank Funds Transfers (Centrale des Règlements Interbancaires - CRI), which is currently owned by 10 credit institutions and the Bank of France, plays three different roles: its first purpose is to act as a forum for studying issues in the field of large-value payment systems; it is also the operator of the single platform carrying SWIFT messages for both TBF and PNS; and lastly, it owns and operates the PNS system (see Section 3).

2. Payment media used by non-banks

2.1 Cash payments

Both French banknotes and coins were legal tender until 17 February 2002. Euro coins were delivered to the public from 14 December 2001 but were not legal tender before 1 January 2002. Euro banknotes were delivered to the public from 1 January 2002. There are seven denominations of euro banknotes (5, 10, 20, 50, 100, 200 and 500) and eight denominations of euro coins (1, 2, 5, 10, 20 and 50 cents, and EUR 1 and EUR 2) in circulation.

French banknotes and coins were exchangeable at all banks until 30 June 2002. Coins will be exchangeable until 17 February 2005 and banknotes until 17 February 2012 at the Bank of France, the Treasury or the IEDOM.

Cash in circulation accounted for 8.3% of the monetary aggregate M1 and 2.4% of GDP at the end of 2001.

2.2 Non-cash payments

2.2.1 Credit transfers

With 1.6 billion operations exchanged in French payment systems in 2001, averaging a value of EUR 59,200 each, retail credit transfers rank third behind cheques and card payments in terms of the number of transactions. They accounted for around 16% of exchanges of bank and postal transfers.

This instrument is used for payments made by companies, government agencies and local authorities, but seldom by individuals.

The interbank exchange of all credit transfers takes place in paperless form. Ordinary transfers are settled on the day of presentation, while credit transfers for payment on a due date (which remain rare) are presented two or three days in advance of interbank settlement.

Various types of automated transfers meet specific needs. Referenced credit transfers (Virement Référéncé - VR) are initiated through a home banking service in settlement of an invoice and contain all the references of the creditor. Credit transfers from abroad (Virement d'Origine Extérieure - VOE) enable a bank established in France to send a transfer received from abroad via SIT to the payee's bank, along with the information needed by the payee, such as the exchange rate applied and the commission charged. Lastly, credit transfers by electronic data interchange (Virement Echange de Données Informatisées - VEDI) contain message references in EDIFACT format.

2.2.2 Cheques

The cheque is still the most widely used payment instrument in France. Approximately 3.61 billion cheques, with an average value of EUR 508, were exchanged in payment systems in 2001, representing 37% of total exchanges. However, the relative share of cheques in cashless payments has continued to decline steadily since 1993.

Cheques are still popular because customers consider them easy to use, either for remote payments or face-to-face transactions, and they are free of charge for the drawer.

2.2.3 Direct debits

Since their introduction in 1967, direct debits have been very successful: over 1.37 billion such transactions were exchanged in French payment systems in 2001, with an average value of EUR 238. They are generally used for recurrent payments such as electricity, gas, telephone and water bill payments, and for monthly tax payments. Direct debits offer advantages to banks (processing costs are relatively low thanks to automation), as well as to the utility companies (by simplifying their accounting administration) and to individuals (by simplifying the payment).

Initiators of direct debits require approval from a bank. They must also obtain a signed authorisation from the payer, which is then sent to the payer's bank. Before transmitting the direct debit order to its bank for collection, the initiator must notify the payer of the amount and date of the debit (by sending an invoice, for example) to enable the latter to make sure there are sufficient funds on its account or to contest the order if it so wishes.

Use of the interbank payment order (Titre Interbancaire de Paiement - TIP) has grown steadily since its introduction in 1988. It now represents 130 million operations per year, with an average value of EUR 316 in 2001. A TIP works in the same way as a direct debit, except the payer is required to assent to each payment by signing the TIP form which is sent with the corresponding invoice.

The TIP allows creditors to rationalise and optimise the collection of receivables and banks are able to process them automatically at one of the 13 centres approved by the CFONB before they are exchanged via SIT. The TIP is expected to gradually replace most recurrent remote payments made by cheque.

2.2.4 Card payments

Debit cards

Bank cards are mostly debit cards, which can be used to execute both payments and cash withdrawals through a nationwide network of POS terminals and ATMs.

Debit card payments ranked second behind cheques in terms of number of transactions in 2001, with 3 billion operations exchanged and an average value of EUR 46.

The cards issued by credit institutions have to meet the technical and security standards set by the Bank Card Consortium (Groupement Cartes Bancaires - GCB), the association of the main French banks which manages the domestic debit card system. The interoperability of bank cards facilitated by these standards has been the main driving force behind the development of debit cards in France.

There were 43.3 million interbank cards (cartes bancaires) in circulation at end-2001. Approximately 26 million of these also allow payment to be made abroad (to merchants affiliated to either Visa or Eurocard/MasterCard).

For several years, cards have been systematically equipped with a microprocessor, resulting in an exceptionally low level of card fraud (0.026% of the value of transactions in 2001).

A specific network, the Bank Card Network (Réseau Cartes Bancaires - RCB), is used for the transmission of authorisations for withdrawals and payments. This network enables an ATM or a POS terminal to obtain authorisation from the bank that has issued the card. This authorisation also means that the payment is guaranteed for the beneficiary.

Card transactions have been processed through SIT (see Section 4) since the second half of 1995.

Credit cards, travel and entertainment cards

In previous years, these cards were only issued by bodies which did not, in principle, take deposits, but which were required to have a credit institution status in France in accordance with the legal framework. Recently, deposit banks have started to issue credit cards, in addition to debit cards. The main issuers are Cetelem, subsidiary of BNP Paribas ("carte Aurore", 9 million users in France), Cofinoga, Finaref (about 8 million cards issued), Cofidis (4 million cards), Accord (1.5 million cards), and Pass (2 million cards). American Express has issued 500,000 travel and entertainment cards in France.

Retailer cards

An estimated 20 million cards are issued by retailers or service providers in order to secure customer loyalty and, in some cases, grant credit facilities. The credit is repaid by debiting the customer's bank account. However, once such cards are used to obtain credit, or whenever they can be used at outlets other than the issuer's own, the card must be issued by a credit institution, even though the retailer's name generally features prominently on the card.

ATM and POS networks

At the end of 2001, 32,500 ATMs had been installed nationwide. In addition to these, there were 750,000 POS terminals in operation. Both ATMs and POS terminals are interoperable.

2.2.5 Postal instruments

Postal instruments are identical to the instruments used by the banks, except for the postal cheque, which can also be used as a postal giro.

2.2.6 Other payment instruments

Bills of exchange now play a relatively limited role, with companies using credit transfers. Approximately 114 million transactions involving other payment instruments were exchanged in 2001, with an average value of EUR 3,961.

2.3 Recent developments

2.3.1 *Electronic money*

Three banking consortia were created at the end of the 1990s, each of them promoting competing electronic purses with a specific technology and different market approach. At the end of 2001, Moneo, Modeus and Mondex were still in use.

Société Européenne de Monnaie électronique (SEME), which promoted Moneo, and the bankers of Modeus announced the merger of their organisations in July 2000. The new company BMS (Billétique Monétique Services) is the result of the convergence of the two projects and brings together the main credit institutions, transport companies and some technological firms.

After its successful launch in Tours in 1999, Moneo was introduced in the Department of Finistère in November 2000 and in Montpellier, Poitiers, Bordeaux and Lyon in the first half of 2001. In December 2001, more than 318,000 electronic purses were in use, and two and a half transactions per purse per month were performed for an average amount of EUR 3.65. Moneo is based on the GeldKarte technology as a result of the ongoing partnership of GCB and its German counterpart ZKA (Zentraler Kreditausschuss) in the field of interoperable electronic purses. However, Moneo has some specific features, including an offline loading facility at POS terminals that ensures that the cardholder never runs out of electronic cash. Moneo is typically a mixed card containing the traditional chip-based French debit card along with the electronic purse; both payment instruments are used in their respective domains (Moneo for low amounts and the debit card for all other amounts).

In a parallel way, the second project, Modeus, couples a contactless transport ticketing application with an electronic purse, with a view to testing the coexistence of these two services on the same smartcard. This brings both better ergonomics and strong constraints in terms of transaction times and security. The pilot has been launched in a major railway and metro station in Paris. The targeted customers are mass transportation users, of which only 50% are bank cardholders.

Crédit Mutuel has created a special purpose company called MONDEX France to buy and operate the licence for the MONDEX International technology for the French territory and the euro. The MONDEX system has the following features: a single issuer provides electronic value to members who distribute and acquire it; purse-to-purse transfers are technically feasible between all actors regardless of their status (customers, merchants, banks). In the French scheme, a fraud detection module based on the activity of individual purses will be added to the basic management system of MXI and purse-to-purse transfers will be limited to customers within the same family. The pilot phase was launched in Strasbourg in 1999.

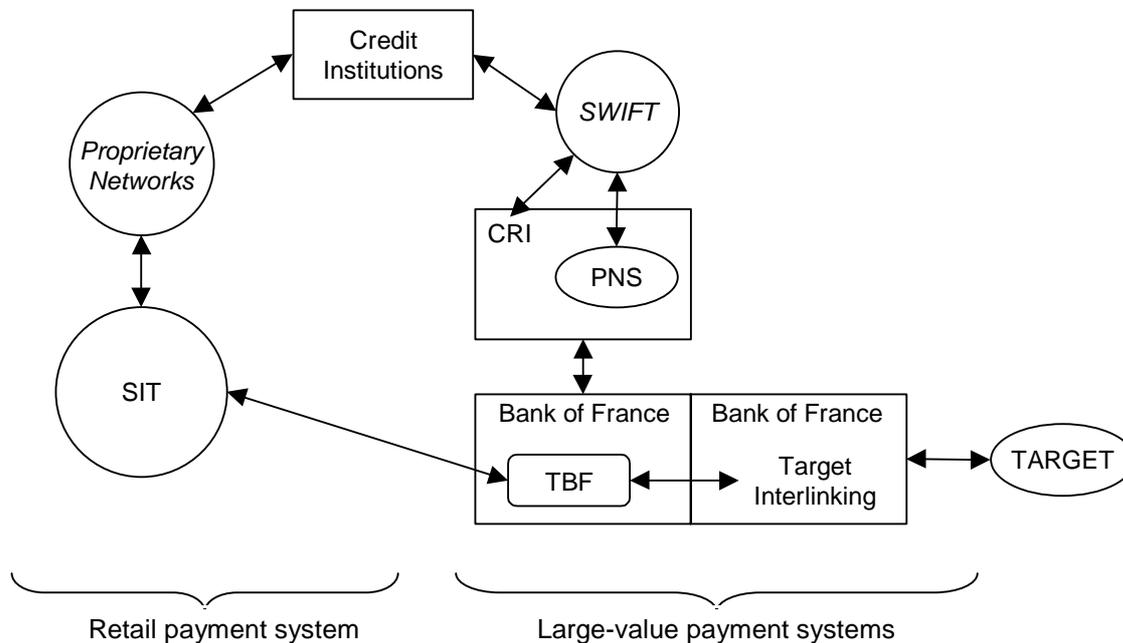
All 11 banks participating in these two consortia (BMS and MONDEX) are committed to the convergence or the interoperability of the schemes after the trials and have agreed upon a single electronic money issuer, a special purpose credit institution called Société Financière du Portemonnaie Électronique Interbancaire (SFPMEI). The role of the SFPMEI, which was licensed as a credit institution in September 1999, is to issue electronic money and collect as well as manage the funds received as a counterpart of the issuing process. The SFPMEI also defines security requirements (technical and organisational) for the schemes and makes sure that they comply with these requirements on an ongoing basis. It guarantees to all e-money holders the redemption of their electronic value.

With this sole issuance structure, the banks reduce costs and also share the necessary security expertise, while competing on tariff structures and service packages.

3. Interbank exchange and settlement systems

3.1 General overview

The current structure of the French payment systems (excluding SSSs) consists of one retail payment system and two large-value payment systems.



There is one single retail system operating in France: the French automated clearing house, SIT. It is managed and operated by the GSIT, a group of 17 participants (including the Bank of France).

Large-value operations are processed in two systems:

- the RTGS system *Transferts Banque de France (TBF)*, which is the French component of *TARGET*, managed and operated by the Bank of France; and
- the hybrid system *Paris Net Settlement (PNS)*, managed and operated by the *Centrale des règlements interbancaires (CRI)*, an interbank body owned by 10 banks and the central bank.

In *TBF* and *PNS*, settlement takes place operation by operation, while in *SIT*, the balances resulting from a business day's operations are settled on a net basis through the accounts held by participants in *TBF*.

3.2 The French real-time gross settlement system, *Transferts Banque de France*

The French RTGS system, *TBF*, started operating in French francs on 27 October 1997 and switched to the euro at the launch of *TARGET* on 4 January 1999. The Bank of France manages the account relationship with *TBF* participants and the operation of the *TBF* system, while the *CRI* ensures the routing and validation of payment and information messages exchanged within the system.

3.2.1 Operating rules

Like the other RTGS systems connected to *TARGET*, *TBF* complies with the minimum common features set forth in the *TARGET* Guideline.

Additional rules related to the service level, accounting structure, liquidity provision, pricing policy and the respective liabilities of participants and the Bank of France as system operator are set forth in the agreement signed by each *TBF* participant.

3.2.2 Participation in the system

The TBF system is open to:

- credit institutions incorporated or established in France;
- institutions governed by Article L 518-1 of the CoMF (public sector financial institutions);
- investment firms incorporated or established in France, provided they are licensed for an activity requiring direct access to a RTGS system and authorised to be a custodian on behalf of customers;
- credit institutions incorporated in an EEA country and benefiting from the European passport;
- investment firms incorporated in an EEA country and benefiting from the European passport, provided they are licensed for an activity requiring direct access to an RTGS system; and
- branches established in an EEA country of credit institutions incorporated in third countries.

At the end of 2001, 192 institutions were participating in TBF on a direct access basis.

Foreign participants have to provide a legal opinion and all participants have to sign an agreement with the Bank of France. This agreement sets out the rules governing the relationship between the holder of a TBF settlement account and the Bank of France.

Furthermore, each settlement account belongs to a group of accounts, which may consist of a single or several settlement accounts. The balance on a group of accounts must always be positive. Hence, negative balances on a participant's settlement account must be guaranteed by positive balances on other settlement accounts belonging to the same group of accounts. The grouping of settlement accounts is left up to the participants, within the framework of the following rules:

- a participant must hold all its settlement accounts within one single group of accounts; and
- within a group of accounts, all settlement accounts must be held by entities belonging to the same banking group.

The constitution of a group of accounts is subject to a formal agreement between the Bank of France, the holder of the group of accounts and the holders of all settlement accounts within this group of accounts.

Finally, an applicant's technical ability to operate in the system must be positively assessed by the CRI against a set of specific criteria, such as the ability to send correctly formatted payment messages and information requests, the existence of a database recording all operations and the ability to fall back on a remote backup site in case of an incident on the primary site.

A participant may leave the system with 40 days' notice. Furthermore, the Bank of France may exclude a participant from the system without notice if it no longer meets statutory criteria, or if its financial situation or behaviour is deemed to jeopardise the system's security and efficiency.

3.2.3 Types of transactions handled

The use of TBF is mandatory for the settlement of monetary policy transactions and for the settlement of balances of ancillary systems (the RGV2 SSS, the PNS large-value hybrid system, Clearnet margins and deposits, SIT). It is also used for domestic and cross-border interbank and customer operations. As the PNS system and the SSS RGV function in real time and in central bank money, TBF also handles real-time liquidity transfers to and from these systems.

Interbank and customer payments can only be originated by the holder of the debited account, with the exception of the Bank of France, which can originate operations by debiting other participants. Payments may not be cancelled once transmitted to the system, but the holder of the credited account may transfer them back once settled on the basis of a cancellation request.

TBF participants can issue time-designated payments by specifying the time of day at which they want their payment to be checked for settlement.

3.2.4 Operation of the system

TBF is open every day except Saturday, Sunday and TARGET closing days. Its operating hours are from 7 am to 6 pm CET.

3.2.5 Transaction processing environment

TBF uses the SWIFT network and message formats (MT 202 for interbank payments and MT 100, 103 and 103+ for customer payments).

SWIFT class 9 message types are also used to convey information and requests concerning account balances, the announcement of central bank operations and settlement of ancillary systems, and system management (eg start and end of the day, incident on a TARGET component).

Payment messages are processed using a Y-shaped message flow structure. When a participant issues a TBF payment message, SWIFT forwards an extract of the payment message to the CRI technical platform, which transmits it to TBF. After checking the extract against settlement criteria, TBF sends back a notification that bears one of the following status readings: executed, queued or rejected. This notification is forwarded to both sending and receiving participants; simultaneously, the original payment message is sent to the receiver, if executed, or returned to the sender, if rejected.

TBF's processing functions and data are replicated on a remote site for business continuity purposes.

3.2.6 Settlement procedures

Standard settlement

As in other RTGS systems, TBF payments are processed one by one on a continuous basis. Payments are settled with immediate finality in central bank money provided that they meet the following settlement criteria:

- the balance on the group of accounts to which the debited settlement account belongs must exceed the amount of the payment;
- a standard priority payment can settle only if there is no payment in the outgoing high priority queue of the group of accounts; and
- a new standard priority (or high priority) payment can settle immediately only if the standard priority (or high priority) queue of the group of accounts is empty.

Payments that do not meet one of these criteria are queued and subject to further settlement attempts. TBF manages two queues:

- a high priority queue for monetary policy operations, settlement of ancillary systems, cancellation requests and payments related to CLS pay-ins; and
- a standard priority queue for other transfers.

When a payment is credited to a participant's account, the system attempts to settle payments queued in its group of accounts, according to its balance and on a FIFO basis within each priority level.

Time-designated payments are processed in the same way as other payments, but they are tested against settlement criteria at the time specified by the sender and not immediately after issuance. Account balances and queues are considered at the level of groups of accounts. A participant's balance is the net sum of the balances on all the settlement accounts belonging to the same group of accounts and its queue consists of payments sent by it and other participants belonging to the same group that have not been settled. Participants can transfer funds freely from one settlement account to another within the same group of accounts, regardless of this group of accounts' balance and queues.

TARGET Interlinking payments

Outgoing TARGET payments are processed in two stages. They are first processed like standard domestic payments: if the settlement criteria are met, TBF debits the sending bank's account and credits a specific settlement account (the Bank of France holds one settlement account per country connected to TARGET). Once this payment is executed, the Bank of France's TARGET platform issues a settlement request to the national central bank (NCB) holding the beneficiary account, using

the standard Interlinking procedures. Concerning incoming cross-border payments, once the Bank of France's TARGET platform receives the settlement request from the sender NCB, the Bank of France's settlement account for this NCB is debited and the beneficiary bank's account is credited.

Settlement of ancillary systems

The settlement cycle for ancillary systems begins with a confirmation period so that participants have time to check the balances announced by the ancillary system and, if necessary, raise the funds needed to cover their debits. In the event that a participant does not agree with its balance, the ancillary system manager must investigate and, should an agreement not be found by the end of the confirmation period, the balances arising from the ancillary system must be reissued to TBF as soon as possible after reconciliation.

Then, settlement occurs either independently for each participant if all balances are held vis-à-vis a central counterparty (in practice, this pattern applies only to the settlement of margins in Clearnet and the payment of fees by Euronext participants), or on an "all or nothing" basis if each participant's balance is the sum of its debits and credits vis-à-vis all the other participants in the system. In the latter case, the settlement routine checks that all negative balances in the ancillary system can settle simultaneously according to the settlement criteria. If this is not the case, the whole system is queued and is subject to further settlement attempts during its settlement period.

Optimisation mechanisms

TBF runs two optimisation mechanisms:

- Global optimisation: when a payment is queued, the system computes a virtual balance for each group of accounts, which is the sum of the actual balance and incoming/outgoing queued payments for this group of accounts. If all virtual balances are positive, all queued payments are settled. Otherwise the system makes the same attempt, but considering only "high priority" virtual balances (sum of actual balance and incoming/outgoing high priority queued payments); if these virtual balances are all positive, all high priority payments are settled.
- Simulation of ancillary systems: this process is launched every 210 seconds when there are one or several multilateral ancillary systems pending in queues. For each group of accounts, the system computes a virtual amount of liquidity, which is the sum of the actual balance and positive balances in queued ancillary systems. The system then scans through the outgoing queues of each group of accounts and checks which operations could be settled with the virtual liquidity. This process is iterative because the operations whose settlement is simulated are credited to other groups of accounts, which in turn allows the simulated settlement of operations pending in their queues. If there is no other ancillary system pending in queues at the end of the process, all simulated operations are settled, otherwise balances and queues return to their initial situation.

3.2.7 Credit and liquidity risk

As in other RTGS systems, TBF settlement occurs in central bank money and with immediate finality. The debiting of the sending bank's account and crediting of the receiving bank's account occur simultaneously, so that funds are available to the latter bank in an unconditional and irrevocable manner as soon as the payment is settled. Thus, participants are not exposed to credit and liquidity risks.

The provision of liquidity in TBF fully complies with the framework defined at the Eurosystem level, which aims at providing unlimited and free-of-charge collateralised credit to RTGS participants in order to ensure a smooth processing of payments. TBF participants can obtain liquidity either through intraday repos or by using intraday secured loans. This latter mechanism allows banks to obtain intraday credit in exchange for the transfer of good quality private claims to the Bank of France.

3.2.8 Pricing

The pricing for TBF consists of an annual fee and a transaction fee. The transaction fee is the same for all participants, regardless of the volumes they process through the system. The annual fee covers access to both TBF and PNS and depends on the number of settlement accounts held within the TBF

group of accounts to which the participant belongs. Furthermore, new participants in the system have to pay an entry fee.

3.2.9 Statistics

In 2001, a monthly average of 112,379 cross-border transfers and 204,399 domestic payments were issued in TBF. The daily transaction volumes amounted to 5,309 for the cross-border component and 9,657 for the domestic component, and the daily values EUR 75 billion and EUR 270 billion respectively. The historical peaks in volume are 8,554 cross-border payments and 26,834 domestic payments, and the highest turnovers EUR 161 billion and EUR 780 billion respectively.

3.3 The other French large-value payment system, Paris Net Settlement

Paris Net Settlement (PNS) went live on 19 April 1999 and replaced the *Système Net Protégé* (SNP), which had been operating since 1997. It is owned and managed by the CRI.

PNS, which settles in central bank money, can be defined as a hybrid settlement system as it offers netting mechanisms while transactions are settled in real time.

3.3.1 Operating rules

The PNS system is open every day except Saturday, Sunday and TARGET closing days. Its operating hours are from 8 am to 4 pm CET.

In order to feed liquidity in central bank money into the system, PNS participants are committed to making a transfer from their TBF settlement account to their position in PNS at the opening of the system. The minimum amount of this initial transfer is EUR 15 million.

At the system's close at 4 pm, payments still pending in queues are rejected and the balances of PNS participants are transferred to their TBF settlement accounts. Because PNS payments can only be settled if the debited participant's liquidity is sufficient, balances in PNS are structurally positive and the end-of-day settlement in TBF always results in credits to the participants' settlement accounts.

3.3.2 Participation in the system

PNS is open to the same categories of institutions as TBF. In 2001, 24 credit institutions were participating in PNS on a direct access basis.

Foreign participants have to provide a legal opinion and all participants must sign an agreement with the CRI and also with the Bank of France. The latter agreement governs the rules for the settlement account that a participant holds with the Bank of France in order to fund its PNS position with central bank money.

An applicant's technical ability to operate in the system must be positively assessed by the CRI against a set of specific criteria, such as the ability to send correctly formatted payment messages and information requests, the existence of a database recording all operations and the ability to fall back on a remote backup site in case of an incident on the primary site.

The withdrawal and exclusion of participants follow the same rules and criteria as for TBF.

3.3.3 Types of transactions handled

PNS is a credit transfer system, which means that payments can only be issued by the holder of the debited account. It processes customer and interbank payments, as well as liquidity transfers to and from TBF. The value of payments processed is not subject to upper or lower limits.

3.3.4 Transaction processing environment

PNS operates in an environment similar to that of TBF. It uses the SWIFT network and message formats and the Y-shaped message flow structure.

PNS has a real-time link with TBF to allow the processing of liquidity transfers between the two systems. A participant wishing to move liquidity from PNS to TBF must send a PNS payment to the

account that the Bank of France holds in the system to this effect; once settled, this payment automatically triggers a TBF transfer from the Bank of France's PNS settlement account to this participant. Conversely, a TBF-to-PNS transfer consists of two steps: a TBF payment from the participant to the Bank of France's PNS settlement account, which once settled triggers a PNS payment from the Bank of France to the participant.

PNS processing functions and data are replicated on a remote site for business continuity purposes.

3.3.5 Settlement procedures

PNS payments are processed one by one on a continuous basis. Each transaction meeting the following settlement criteria is settled immediately:

- the balance on the sender's account must exceed the amount of the payment;
- the balance of exchanges between sender and receiver must stay within the bilateral limit defined by the sender vis-à-vis the receiver; and
- there must be no other payment pending in the participant's queue.

In the event that these criteria are not fulfilled, the transaction is queued. Like TBF, PNS permanently scans queues: when a payment is credited to a participant's account, the system attempts to settle payments queued on its account, according to its balance and on a FIFO basis.

PNS runs two optimisation mechanisms:

- **Bilateral optimisation:** each time a payment from A to B is queued, the system scans queued payments from A to B and from B to A and attempts to settle them simultaneously on a FIFO basis and according to both participants' balances and bilateral limits.
- **Global optimisation:** this process is launched upon a decision by the CRI. First, all payments that would cause bilateral limits to be exceeded are virtually removed from the queues and transitory balances are computed (as the sum of real balances and queued payments that have not been virtually removed). Then, queued payments are virtually removed from the queue of the participant with the transitory balance that is the most negative, until it becomes positive. The same process is applied in an iterative way until all transitory balances are positive. Finally, all payments that have not been removed from the queue are settled and other payments are queued again in their previous order.

3.3.6 Risk management features

PNS's main feature in terms of risk mitigation is its scheme of irrevocable settlement in central bank money.

Furthermore, PNS offers two types of caps, both of which are fully under the control of the participants and enable them to control their liquidity and credit risks:

- a **multilateral cap:** by controlling the amount of liquidity fed into PNS via the real-time link with TBF, a participant can in practice set a multilateral limit, ie define the maximum amount it is ready to pay to its counterparties before receiving payments from them; and
- a **bilateral cap:** participants may set bilateral limits vis-à-vis each other. A bilateral limit set by A vis-à-vis B represents the maximum amount A is ready to pay to B before receiving money from the latter, and thus allows counterparty risk to be controlled. It also acts as a self-regulation mechanism, because participants do not have to wait until all operations due to them are settled before feeding liquidity into the system.

3.3.7 Pricing

The pricing principles are the same for PNS as for TBF, although the transaction fee differs between the two systems.

3.3.8 Statistics

In 2001, PNS processed a monthly average of 667,001 payments. The daily turnover was 31,512 payments with a value of EUR 88 billion. The maximum number of payments processed in one day is 54,341 and the highest daily value amounts to more than EUR 145 billion.

4. Retail payment systems

Since February 2002, the only retail payment system has been the French automated clearing house, *Système Interbancaire de Télécompensation (SIT)*, which completed the last phase of its implementation with the integration of euro-denominated truncated cheques. All retail cashless payments are exchanged electronically through SIT. The regional centres for the exchange of truncated cheques (*Centres Régionaux d'Echange d'Image-Chèques*) (CREICs) and the 102 clearing houses located outside Paris closed down in March 2002. The Paris clearing house closed at the end of the first half of 2002.

4.1 The French automated clearing house, SIT

The *Système Interbancaire de Télécompensation (SIT)* is designed to allow the exchange of all electronic retail payment instruments. The system is a remote transmission network providing direct bilateral links between direct participants' computing centres under the supervision of joint centres.

The system is operated by an interbank automated clearing group called the GSIT formed in June 1983. The Bank of France is a member of the GSIT and its decision-making and research bodies.

Almost seven billion transactions were processed by SIT in 2001, totalling EUR 2.44 billion.

4.1.1 Operating rules

The operations of the system are ruled by an interbank agreement governing the exchange conditions (*Charte Interbancaire Régissant les Conditions d'Echange - CIRCE*) which is binding for all the participants.

SIT consists of a network of computers, called stations, located on each participant's premises. Stations must be approved by the GSIT and are dedicated to SIT when connected to the network. Eighty stations were connected at the end of 2001.

During the working day, all direct participants are committed to receiving the interbank operations addressed to them. Direct participants are financially liable for their own operations and those of the institutions they represent. They have to comply with minimum volume requirements set by the Board of the GSIT.

A management centre continuously monitors the smooth operation of SIT and the traffic flow. This centre also monitors security, detecting incidents and automatically rerouting transactions.

An accounting centre keeps transaction records up to date, supplying the requisite data for daily clearing. It transmits the netted multilateral balances to TBF for settlement.

4.1.2 Participation

All banks sending or receiving payments eligible for SIT must participate in the system as either direct or indirect participants:

- direct participants must send and receive, for their own account, a certain percentage of the volume exchanged annually via SIT. The responsibilities of direct participants are both financial and technical and extend to the institutions they represent. There were 17 direct participants at the end of 2001; and
- indirect participants (689 at the end of 2001) send and receive payments via a direct participant.

4.1.3 Types of transactions handled

SIT has been handling all retail payments between banks including cheques since June 2001 (ie credit transfers, cheques, direct debits and card payments and withdrawals, bills of exchange).

4.1.4 Operation of the system

SIT operates 21 hours a day from Monday to Saturday. SIT working days start at midnight and end at 9 pm. The cutoff time for same-day settlement is 2.30 pm for exchanges up to 1.30 pm. For payments sent after the cutoff, balances are transferred to the next day.

The acknowledgement of payment transactions between a sending and a receiving credit institution automatically triggers the transmission of an accounting message from the sending party to the SIT accounting centre, which calculates daily clearing balances to be forwarded to the Bank of France for settlement in TBF.

4.1.5 Technical environment

Each direct participant has one or more processing centres, where a dedicated station serves as an access point to SIT. The stations are connected to all of the joint centres (administration, accounting and backup). Each station comprises two kinds of logical units, the SI (Sending Installation) and the RI (Receiving Installation), which communicate with those of SIT and the other participants.

The SIT joint centres, which provide full backup, perform the following specific functions: monitoring the network, controlling the flow of operations, maintaining software consistency and security, accounting and computing balances, and providing the final backup for receiving institutions. The network is designed to support 250 stations. Data are transferred via the TRANSPAC public packet-switching network (gradually evolving to an IP network since mid-2002).

4.1.6 Settlement procedures

SIT balances are calculated after the cutoff (2.30 pm) and net balances for debiting and crediting to the accounts of direct participants are then transmitted to the CRI to be settled in TBF at 3.15 pm.

4.1.7 Pricing

The pricing of the system is based on fixed fees according to the type of membership (direct or indirect) and the number of gateways and stations, and variable fees according to the number and type of operations exchanged (number of operations and groups of operations).

4.1.8 Credit and liquidity risk management

At present, SIT has an unwinding rule in the event of the failure of a direct participant. A guarantee fund is under consideration. The exchanges of indirect participants are guaranteed by their direct participants.

4.2 Exchange of truncated cheques

Banks decided that, from 2002, all cheques in euros would be truncated and exchanged through SIT, resulting in an increase in the volume of operations and an improvement of cheque process.

4.2.1 Objectives

Exchange of truncated cheques is the last step of the payment instrument modernisation in France, and consequently all retail payment instruments are currently handled electronically through SIT. The main objective is the reduction of processing costs for both banks and customers (procedure simplification, delay improvement).

4.2.2 Operating rules

The rules are agreed upon by the banking community and are described in a pro forma agreement.

Remitter banks are committed to conducting the following operations:

- verifying that the cheque complies with legislation concerning cheques and regulations on banking practice;
- ensuring the accuracy of the information transmitted;
- storing the cheque or an exact copy thereof; and
- providing on request a copy for 10 years following the exchange date.

In addition, a proportion of the cheques has to be physically circulated for verification by the debited banks: those whose amount is above EUR 5,000, those that are non-standardised or considered suspicious by the remitter bank, and others randomly selected.

5. Securities settlement systems

5.1 Trading

5.1.1 Institutional aspects

5.1.1.1 General legal aspects

Euronext Paris, which has the status of a specialised financial institution under French law, manages the French stock exchange by:

- designing market member admission rules and admitting market members;
- designing listing rules and admitting securities and derivatives to listing;
- designing market rules;
- managing the electronic trading platform;
- computing and publishing market data.

5.1.1.2 Recent evolution of Euronext

On 22 September 2000, shareholders of the Amsterdam Exchange, Brussels Exchange and ParisBourse^{SBF} SA received shares in the new holding company Euronext NV, in exchange for their existing interests. However, in order to meet regulatory requirements, the three market operators, all now wholly owned subsidiaries of Euronext NV, retained a separate identity under the new names Euronext Amsterdam NV, Euronext Brussels SA/NV and Euronext Paris SA.

5.1.1.3 Supervision and regulation

All the rules designed by Euronext Paris SA are subject to the approval of the regulating authority, the CMF.

National regulators currently supervise the national entities that come under Euronext NV. However, in order to supervise a cross-border exchange like Euronext, the national regulators, namely the COB and CMF in France, the Commission Bancaire et Financière (Banking and Finance Commission) in Belgium and the Authority of Financial Markets of the Netherlands signed a memorandum of understanding on 26 January 2001, detailing the cooperation framework for the supervision of Euronext.

5.1.1.4 Access criteria

In order to become a market member of Euronext Paris, intermediaries must fulfil two conditions: being duly authorised by the French regulatory authorities to offer investment services and complying with Euronext admission rules.

Since the Modernisation of Financial Activities Act dated 2 July 1996 (enforcing the Investment Services Directive), investment services can be offered by:

- investment services intermediaries authorised by the CECEI whose programmes of operations have been approved by the CMF;
- legal entities whose principals and members are intermediaries authorised to offer such investment services, on condition that such principals and members have unlimited liability for all debts and obligations of the legal entity;
- European intermediaries authorised by their home member state to offer such services; and
- legal entities authorised by the CMF to trade for own account or offer trading for third parties.

To set up a single pan-European stock exchange, Euronext is currently adopting common rules especially in the following areas: market member admission rules, listing rules and market rules.

Once a member, the intermediary has access to the French stock markets.

5.1.2 Operational aspects

5.1.2.1 Markets

Euronext Paris SA manages four regulated markets within the meaning of the Investment Services Directive :

- two cash markets: La Bourse de Paris (Premier Marché, Second Marché and Marché des EDR) and le Nouveau Marché; and
- two derivatives markets: MATIF and MONEP.

In addition, Euronext Paris SA manages an organised cash market dedicated to the trading of non-officially listed securities: the “Marché Libre” OTC.

The cash markets

Euronext Paris SA manages four cash markets, whose characteristics are described in the following table.

In addition to shares, the cash regulated markets offer special market segments for the trading of public and private bonds, securitisation funds, warrants, index certificates, European depository receipts (since 1999) and exchange-traded funds (“NextTrack” segment launched in January 2001).

	Regulated markets			Organised market
	Premier marché	Second marché	Nouveau marché	Marché libre OTC
Listed company profile	Largest French and foreign companies (market capitalisation around EUR 1bn/ 25% of capital offered to the public/3-year track record)	Medium-sized French and foreign companies (10% of capital must be offered to the public)	High-growth companies (20% of capital offered to the public, at least 100,000 shares and EUR 5m value offered to the public, minimum capital funds of EUR 1.5m) through capital increase for half at least	Companies not traded on a regulated market
Trading rules	Central Order Book: Continuous trading/fixing Block trading procedures after trading hours	Central Order Book: Continuous trading/fixing Block trading procedures after trading hours	Central Order Book: Continuous trading/fixing Block trading procedures after trading hours	Fixing
Trading platform	NSC	NSC	NSC	NSC
Trading hours	Continuous trading: Pre-opening: 07:15-09:00 Session: 09:00-17:25 Pre-closing: 17:25-17:30 Closing auction: 17:30 Fixing: Pre-opening: 07:15 Auctions: 10:30 and 16:00	Continuous trading: Pre-opening: 07:15-09:00 Session: 09:00-17:25 Pre-closing: 17:25-17:30 Closing auction: 17:30 Fixing: Pre-opening: 07:15 Auctions: 10:30 and 16:00	Continuous trading: Pre-opening: 07:15-09:00 Session: 09:00-17:25 Pre-closing: 17:25-17:30 Closing auction: 17:30 Fixing: Pre-opening: 07:15 Auctions: 10:30 and 16:00	Pre-opening: 07:15 Auction: 15:30
Central counterparty	Clearnet SA	Clearnet SA	Clearnet SA	Clearnet SA (when securities are deposited with Euroclear France)
Settlement System	RGV2	RGV2	RGV2	RGV2

The derivatives markets

The French derivatives markets are MATIF and MONEP, whose characteristics are described in the following table.

	Regulated markets	
	MATIF	MONEP
Traded financial instruments	Futures and options on futures for interest rates Commodity futures	Equity and index options Index futures
Trading rules	Central Order Book	Central Order Book
Trading platform	NSC-VF (futures version) NSC-VO (options version)	NSC-VF (futures version) NSC-VO (options version)
Trading hours	Interest rate instruments: Pre-opening: 07:15-08:00 Session: 08:00-17:30 Night session: 17:30-22:00 Commodity instruments: Pre-opening: 10:30-10:45 Morning session: 10:45-13:00 Pre-opening afternoon session: 14:45-15:00 Afternoon session: 15:00	Depending on the contracts
Central counterparty	Clearnet SA	Clearnet SA

In September 2001, Euronext launched Winefex Bordeaux, a futures contract for Bordeaux red wines traded under the MATIF rules.

5.1.2.2 Trading rules

Financial instruments are traded on the Euronext trading platform either continuously for securities that are liquid enough or securities with a liquidity provider willing to accept certain obligations, or when they are less liquid by auction (single or double fixing). Less liquid derivative instruments can also be traded by auction on demand ("multi-fixing").

The financial instruments are divided into trading groups based on different trading procedures. The composition of these groups, determined on the basis of factors such as the particular characteristics and liquidity of the financial instruments, is detailed in the appendix of the Euronext cash market trading manual.³ Financial instruments within the same group are subject to the same timetable and price variation rules.

Liquidity of the financial instruments is eased on the cash regulated markets by liquidity providers. For securities trading continuously, two types of liquidity providers exist: permanent liquidity providers are required to provide quotes (to maintain a spread of bid and offer prices) in normal auctions, during the main trading session and in interim auctions resulting from volatility interruptions, while volatility liquidity providers are required to enter quotes during all auctions, ie normal opening and closing auctions as well as interim auctions resulting from volatility interruptions. For securities trading by auction, auction liquidity providers are obliged to maintain a spread of bid and offer prices during the order accumulation period preceding auctions held at fixed times. Specific liquidity providers are also operating on bond markets.

In addition to the Central Order Book (COB), MATIF and MONEP are supplemented by market-makers, who continuously offer bid/ask spreads available on the COB.

³ Euronext Instruction no 4-01, available on the Euronext Paris website: www.bourse-de-paris.fr.

In order to foster trades by institutional investors on large amounts of equities, rules for “block trading” were introduced in 1994 for the biggest stocks of the Premier Marché. The aim of this mechanism is to increase the liquidity of the market without questioning the rules of an order-driven market. Thanks to “block trading”, large amount orders are executed immediately at a price derived from the price on the central market.

With regard to shares, block trades, now available on the three cash regulated markets, are transactions that are at least equal to the following thresholds (defined as “Normal Block Size” - NBS): EUR 500,000 in the case of shares included in the Euronext 100 segment, EUR 250,000 in the case of shares included in the Next 150 segment, EUR 100,000 in the case of all other shares traded on a continuous basis and EUR 50,000 in the case of shares traded only through call auction procedures.

Ordinary block trades must be effected within ranges which vary with the securities trading group and size of the NBS (maximum of 5% below the best bid limit price to 5% above the best ask limit price displayed in the COB).

With regard to bonds, block trades must be greater than EUR 250,000 in the case of bonds traded on a continuous basis and EUR 100,000 in the case of bonds traded only through call auction procedures. Block trades in bonds must be effected at prices within the following ranges: 0.5% around the last traded price for bonds traded continuously and 1% around the last traded price for bonds traded through call auction procedures.

5.1.2.3 Trading platform

In 1986, the French stock exchange replaced open outcry trading with a computerised trading system called CAC based on an order-driven approach in which the price is the result of the confrontation between buy and sell orders. Since 1995, the French stock exchange has set up a new electronic trading system called NSC. Thanks to this system, trading takes place through member firms acting as brokers and connected by workstations to the central computers of Euronext Paris SA. For each relevant security, the orders entered in the system are ranked first by price limit (for example, a buy order with a higher limit is executed before an order with lower limit) and then in chronological order. The NSC platform has been retained as the Euronext common trading platform for cash markets.

5.1.2.4 Evolution under way

The aim of Euronext is to offer a single market with:

A single trading platform

In October 2001, the implementation of the NSC platform in the cash markets was completed in the three Euronext marketplaces. The implementation of the NSC platform is now under way on the Lisbon stock-exchange. For the derivatives markets, the LIFFE CONNECT™ platform has been chosen as the common trading platform, and should be implemented soon on the French derivatives markets.

A single Central Order Book

The aim of Euronext is to set up a single Central Order Book, on which the market participants of the Euronext exchanges, including in the next few years the Lisbon stock-exchange will trade the most liquid securities of each market at the same time.

During the transition period, Euronext decided to launch “Euronext List”, which encompasses quoted companies of the three stock exchanges. These companies, which are currently quoted separately in the local central books of Euronext stock exchanges, comply with common standards, especially in terms of financial transparency. Euronext List is composed of two segments, NextEconomy and NextPrime, which comprise companies from sectors related to the new economy and companies from the traditional sectors respectively.

5.2 Clearing

5.2.1 Institutional aspects

5.2.1.1 General legal aspects

The general legal framework applicable to clearing by a central counterparty relies on Article L 431-7 and Articles L 442-1 to 442-9 of the CoMF.

Article L 442-6 enforces the full ownership rights of the clearing house over the deposits and margin calls of its members whether in cash or in securities, whereas Article 431-7 recognises the validity of multilateral netting performed by the clearing house for operations on financial instruments within the scope of the law.

5.2.1.2 Recent evolution of the clearing organisation

Prior to their merger in May 1999 there were three clearing houses in France:

- SBF for equity trades and options;
- Matif SA for exchange-traded derivatives; and
- BCC for repo and outright trades on government debt securities (Clearnet service).

Then, following the merger between the Belgian, Dutch and French stock exchanges, Clearnet became a subsidiary of the Euronext Group. As from 1 February 2001, Clearnet SA has legally become the single clearing house of the Euronext markets, following a merger process with the Dutch and Belgian clearing houses.

Following the agreement between Euronext and Euroclear, Euroclear has taken an ownership interest of up to 20% in Clearnet SA.

5.2.1.3 Supervision and regulation

Under Article L 442-1 of the CoMF, clearing houses must have the status of credit institution. Clearnet SA is a limited purpose credit institution pursuant to the French Banking Act. Accordingly it is supervised by the Banking Commission (Commission Bancaire - CB), which is the French banking supervisor.

The CMF is in charge of establishing (in particular through its rules of procedure) the conditions for the approval of the clearing house rules. This was actually achieved in Chapter II of Title IV of the rules of procedure of the CMF.

Pursuant to the Bank of France's Statute (recently codified as Article L 141-4 of the CoMF) "the Bank of France shall ensure the smooth operation and the security of payment systems within the framework of the tasks of the European System of Central Banks relating to the promotion of the smooth operation of payment systems". In addition, Act 2001-1168 of 11 December 2001 amended Article L 141-4 of the CoMF to further clarify the oversight competence of the Bank of France as regards CCPs. It states that the Bank of France oversees CCPs within the framework of the European System of Central Banks, without any prejudice to the securities and banking regulator competencies.

In January 2001, the Bank of France, the CMF, the CB, the National Bank of Belgium, the Banking and Finance Commission (Belgium), the Financial Markets Authority (Au-FM) of the Netherlands (formerly STE) and the Netherlands Bank agreed on a Memorandum of Understanding which organises the cooperation between the signatory authorities for the supervision and oversight of the clearing activities of the Euronext Group. This MoU is the second part of a general MoU covering the regulation and oversight of the whole Euronext Group.

5.2.1.4 Access criteria

As from 1 February 2001, former clearing members of BXS and AEX have become remote clearing members of Clearnet. During a transitional period ending on 31 December 2002, Belgian and Dutch clearing members which do not fulfil Clearnet's financial criteria have to submit and implement a plan indicating how they intend to comply with them before the end of the period.

In France, pursuant to Article L 442-2 of the CoMF, credit institutions, investment firms and entities whose sole purpose is to provide financial instrument clearing services can be admitted as members of the clearing house. All these categories fall within the scope of the prudential supervision of the CB. Additional criteria also need to be fulfilled (minimum capital requirements).

A clearing member can be either a general clearing member (which clears operations for its own account and on behalf of brokers) or an individual clearing member (which clears only its own trades). Capital requirements are different for general and individual clearing members.

The fulfilment of financial and operational access criteria is checked for applicants but also subject to ongoing monitoring for admitted participants according to a process common to all clearing members whatever the market they operate in.

5.2.2 Operational aspects

5.2.2.1 Range of instruments cleared

Clearnet SA acts as central counterparty, offering its guarantee against daily initial and variation margin calls for a wide range of financial instruments: stock exchange transactions traded on systems managed by the Euronext markets, financial and exchange-traded commodities futures and options, equity and index options and OTC securities trades (Clearnet OTC).

The Clearnet OTC system (a specific service of Clearnet SA launched in October 1998) clears and nets all outright and repo transactions on French government securities negotiated through the inter-dealer brokers Prominnofi and MTS France. The service was extended to German bunds in April 1999.

5.2.2.2 Guarantee provided and risk management

Clearnet SA acts as central counterparty for instruments admitted to its operations. Once a trade has been transmitted to the clearing house, it is registered and Clearnet SA becomes the counterparty of both the seller and the purchaser. The guarantee provided by Clearnet SA includes the cash value of clearing members' positions but also, regarding stock exchange transactions, a procedure to deliver securities to the purchaser on behalf of the defaulting seller. While acting as central counterparty, Clearnet contributes to reducing credit and liquidity risks associated with the trading and delivery of Euronext instruments. In order to perform its guarantee Clearnet implements a wide range of risk control measures: tight access criteria, marked to market valuation of its clearing members' exposures, margin calls and clearing funds.

The guarantee provided by the clearing house covers only its members. The protection of customers is ensured by the participation of clearing members in a guarantee fund. However, individual customers have the possibility to be covered directly by the guarantee of the clearing house, provided they pay a fee, they post deposits and margin calls on a gross basis and their transactions are booked with the clearing house.

There are two types of margin requirements:

- initial margin (deposits) aims at covering the upcoming risk on the open positions registered with the clearing house; and
- variation margin or margin calls cover the price difference between the original price of the registered position and the marked to market price.

Exposures and margin calls are valued at least daily. Additional deposits are called for positions with risks that appear to be insufficiently covered by the existing deposits. As regards futures and options, intraday price variation limits apply to instruments. If the limit is breached, an intraday margin call has to be completed.

There is currently a clearing fund for Dutch derivatives clearing activities, and a clearing fund common to Belgian and French clearing members is to be progressively called. The Dutch fund for cash clearing activities is being integrated into this common fund as from the implementation of Clearing 21 on Dutch cash markets. Following the complete implementation of Clearing 21 (see below), there will be a single clearing fund covering regulated markets for all clearing members. It will be intended to be sufficient in size to cover a default of the largest clearing member. The "largest clearing member" is defined as the clearing member that is responsible for the highest uncovered risk to the clearing

system of Clearnet. The size of the clearing fund is therefore based on the highest uncovered risk of a clearing member. For each clearing member the relative weight of its uncovered risk in relation to the total sum of the uncovered risks of all clearing members determines the size of its contribution to the clearing fund.

With regard to financial futures and options, other risk control measures are also implemented, such as individual exposure limits and market share limits (in order to avoid market manipulation).

In the event of default by a clearing member, the clearing house may transfer the positions of its customers to another clearing member, or liquidate them to extinguish its obligations or mobilise its deposits and collateral to cover potential losses.

In addition to the amount of deposits and collateral of the defaulter, the soundness of the guarantee provided by Clearnet SA relies ultimately on its insurance arrangements and its own capital.

5.2.2.3 Clearing platform

In France, Clearnet is used for cash and derivative markets.

Since September 2000, Clearnet SA has implemented a new clearing platform, called Clearing 21, which aims at offering a technical standard for global players and at permitting cross-product margining. Clearing 21, developed with the Chicago Mercantile Exchange and Nymex, is an integrated system for both cash and derivatives products, operating in real time pursuant to the Span margining model. Clearing 21 is a multicurrency platform which also provides comprehensive real-time information to clearing members on, for example, the type of instrument handled, the position and the type of account. Clearing 21 provides services for the whole post-trade process including the feeding of the account of the clearing member, the management of positions, the calculation of risk margins, and the generation and sending of delivery/settlement instructions.

Formerly, initial margin and margin calls were calculated separately for each type of instrument cleared by the clearing house. Since the launch of the Clearing 21 platform on 8 September 2000, French clearing members have benefited from the possibility to cross-margin futures and options positions with underlying stocks.

Since March 2002, Clearnet 21 has become the new clearing platform for cash markets in Brussels. The migration of the participants in Brussels to C21 is a new step in the move to a single platform for all Clearnet members. Clearing 21 will soon be implemented on Dutch cash markets.

5.2.2.4 Evolution under way

Clearnet SA has taken a range of measures to confirm its position as a major player in the field of clearing activities in Europe.

Clearing 21 is implemented on cash and derivatives markets in France and on cash markets in Belgium; the implementation of C21 on Dutch cash markets will be achieved by the end of 2002. As soon as C21 is fully implemented in Belgium and the Netherlands, the Clearing 21 platform will become the common clearing system for all Euronext markets. The interim period is being used to align the risk management practices of the three previous clearing houses, and when the clearing platform is implemented, a single risk management procedure will be used. Furthermore, following the merger of the Portuguese stock exchange (BVLP - Bolsa de Valores Lisboa Porto) with Euronext, Portugal will need to harmonise its clearing system in order to enlarge the scope of Clearnet's activities to this fourth national market.

5.3 Settlement

5.3.1 Institutional aspects

5.3.1.1 General legal aspects

The full dematerialisation of securities was achieved in France with the implementation of the Act of 30 December 1981 and the Decree of 2 May 1983. Accordingly, all securities transactions are settled in France through book-entry systems.

The general legal framework applicable to securities settlement systems was substantially modified following the Financial Activity Modernisation Act 96-597 passed on 2 July 1996 and amended by the Act of 2 July 1998. In particular, Article 32-16 was amended to specify that the General Regulations of the CMF shall determine “the general organisational and operational principles of financial instrument settlement and delivery systems and the conditions under which the CMF approves the operating rules of such systems, without prejudice to the powers granted to the Bank of France by Article 4 of Act 93-980 of 4 August 1993 on the Statute of the Bank of France and the activities and supervision of credit institutions”.

In addition, Act 2001-1168 of 11 December 2001 amended Article L 141-4 of the CoMF to further clarify the oversight competence of the Bank of France as regards SCSSs. It states that the Bank of France oversees CCPs and SSSs within the framework of the European System of Central Banks, without any prejudice to the securities regulators’ and banking supervisors’ competencies.

The Act of 2 July 1998 also amended Article 93-1 of the Banking Act in order to clarify that the abrogation of any “zero hour” provision applies not only to payment systems but also to securities settlement systems.

5.3.1.2 The role of the central bank

The Bank of France played a major role in the reorganisation of the infrastructure for the settlement of securities in 1995, when it was decided to close down SATURNE, a SSS managed by the central bank, and to launch a new system, RGV, applying irrevocable operation in central bank money. Since the actual closing down of SATURNE in July 1998, the Bank of France is no longer involved in the operation of SSSs. However, it is the settlement agent of the French SSS.

The statutory competence of the Bank of France in the field of oversight of payment systems also explicitly covers SCSSs. Well designed and efficient securities settlement systems are important for the stability of the financial system. One of the main functions of such systems is to ensure delivery of the collateral used in Eurosystem credit operations and DVP in over-the-counter large-value transactions between intermediaries.

5.3.1.3 Oversight and regulation

In 2002, the French, Belgian and Dutch competent authorities signed a Memorandum of Understanding in order to coordinate the oversight and prudential supervision of the securities settlement services provided by Euroclear Bank for trades on Euronext markets. The authorities participating in the Settlement Committee Euronext are the Bank of France and the Financial Markets Council for France, the National Bank of Belgium and the Banking and Finance Commission for Belgium, and the Netherlands Bank and the Financial Markets Authority for the Netherlands.

5.3.1.4 The role of other public and private sector bodies

Sicovam SA (Société Interprofessionnelle pour la Compensation des Valeurs Mobilières SA), created in 1949, merged with Euroclear Bank in January 2001 and became Euroclear France, which is the French central securities depository (CSD) and operates RGV2.

5.3.2 Recent evolution of SSS organisation

5.3.2.1 Implementation of Relit Grande Vitesse 2 (RGV2)

In 1994, when the French financial community decided to switch to a new form of organisation, the settlement of transactions involving securities was split between two systems:

- SATURNE, which was created by the Bank of France in 1988 to manage Treasury bills and notes and which was extended to all negotiable short-term instruments (eg commercial paper, medium term notes);
- Relit, managed by Sicovam SA, settling since 1990 all transactions in marketable securities, including bonds (government debt, public sector as well as corporate bonds) and equities.

As they used to deliver the securities on a gross basis and settle the cash leg on a net basis, both Relit and SATURNE were “model 2” securities settlement systems according to the definitions generally used by central banks since the BIS report released in 1992. As the organisation of the

banks' accounts at the Bank of France prevailing until 1997 did not provide for intraday finality of payment but only for end-of-day finality, the settlement of the cash leg and consequently the delivery of the securities handled in SATURNE and in RGV only became final at the close of the Bank of France's business day at 6.30 pm.

In order to improve the situation, the Bank of France, Sicovam SA and the AFEC (French Association of Credit Institutions) reached a partnership agreement in January 1995. According to the terms of this agreement, it was decided:

- to implement a new real-time large value securities settlement system, called Relit Grande Vitesse (High Speed Relit), managed by Sicovam SA, now Euroclear France;
- to shut down the SATURNE system and to integrate its operations into RGV, which was actually achieved in July 1998; and
- to increase the Bank of France's stake in Sicovam SA to 40%.

This new framework for securities settlements systems relies on the following principles:

- the RGV system, which became operational in February 1998, operates on a gross basis for the securities as well as for the cash leg (model 1), providing irrevocable and final settlement in real time. The system handles transactions continuously within very wide operating hours (8 pm on T-1 to 5 pm on T for market operations).
- the settlement of the cash leg is done in central bank money.

In June 2001, the structure of the SSS was reshaped slightly and RGV2 was created. The RGV2 project had two components:

- a technical component: on 11 June 2001, the Relit platform was closed and the operations previously settled through this platform (mainly stock exchange transactions) moved to the RGV/Relit+ platform, called "RGV2" platform. Before this evolution, there used to be two platforms in France bearing three SSSs: Relit, Relit+ and RGV. The Relit platform, launched in 1990, operated on a batch basis while the Relit+/RGV platform relies on a more modern IT structure, allowing for processing operation by operation. Following the closure of the Relit platform, there is only one technical platform, RGV2, bearing two streams, the "revocable RGV2 stream" (previously Relit+) and the "irrevocable RGV2 stream" (previously RGV). In the first stream there are several final settlements during the day while the second stream is a real-time gross settlement system providing immediate finality. Notwithstanding this technical evolution, the operating rules of both systems have not changed;
- a banking component: on 18 June 2001, OTC equities trades became eligible to RGV. This evolution allows OTC equities lending and repo operations to benefit from the real-time irrevocability processing of RGV in central bank money. However, as equities are not eligible for the Bank of France Tier 2 list, these OTC equities trades cannot benefit from the so-called self-collateralisation process. This new pattern of RGV does not concern the settlement of Bank of France credit operations.

The RTGS stream settles monetary policy operations and all large-value transactions, mainly on fixed income securities, on a gross basis and allows final intraday settlement in central bank money. Participants have central bank money accounts, which can be supplied via the links between TBF and the RGV2 system at any moment of the day.

The other stream settles operations on regulated markets (as well as a number of OTC operations) on a gross basis for the securities leg and on a net basis for the cash leg. This stream operates on the basis of deferred irrevocability until the settlement of the cash balances occurs in TBF.

5.3.2.2 *Merger with Euroclear*

On 23 November 1999, Euroclear, Clearnet SBF SA and Sicovam SA announced an agreement to establish an alliance to offer the market a pan-European solution for clearance and settlement, and netting services.

On 24 March 2000, the Euroclear and Sicovam SA boards announced the signing of an agreement in principle to fully merge the two settlement organisations. The final agreement was signed on 21 September 2000 and has been effective since January 2001.

According to the agreement, Sicovam SA has become Euroclear France, a wholly owned subsidiary of the Euroclear bank that remains incorporated in France. Former Sicovam shareholders have become new shareholders in Euroclear Clearance System plc; in addition, the Bank of France, which used to hold 40% of Sicovam, has sold its stake in Euroclear France. Finally, the Euroclear group has taken an ownership interest of 20% in Clearnet SA.

5.3.3 RGV2: the non-RTGS stream

5.3.3.1 Major regulations

The rules of the non-RTGS stream were approved by the CMF on 19 December 2001.

5.3.3.2 Participation in the system

Credit institutions and investment firms licensed in France or established in the EEA and allowed to use the European passport, as well as CSDs, can be admitted to the system. Other French or foreign institutions can also have access to RGV2, provided the CMF does not veto their participation (for risks prevention purposes).

5.3.3.3 Types of transactions handled in the non-RTGS stream

The non-RTGS stream settles transactions traded on the Euronext Paris regulated markets such as the primary market, the grey market and the secondary market, both outright and securities lending transactions. The non-RTGS stream settles mainly retail equity transactions but also transactions on all securities which are not eligible for the RTGS stream and transactions on securities eligible for the RTGS stream but which do not require immediate finality.

Ordinary OTC operations can be settled on the RTGS or on the non-RTGS stream.

5.3.3.4 Operation of the system

The non-RTGS stream is based on three matching and presettlement subsystems, plus a settlement subsystem:

ISB - inter-brokers subsystem (Sous-système Inter-sociétés de Bourse): the ISB subsystem is managed by the clearing house Clearnet SA to clear the regulated market operations of its participants.

SBI - brokers-intermediaries subsystem (Sous-système d'Ajustement Sociétés de Bourse-Intermédiaires): the SBI subsystem managed by Euroclear France prepares in automatic form the settlement of stock exchange transactions between stockbrokers and other financial intermediaries.

SLAB delivery by mutual consent system (Sous-système de Livraison par Accord Bilatéral): the SLAB subsystem, also managed by Euroclear France, processes OTC transactions entered into by mutual consent between two parties.

Settlement Subsystem (Sous-système de Dénouement): the subsystem ensures the settlement of transactions streamed by SBI and SLAB, as well as free of payment (FOP) transactions entered into directly by the participants and corporate actions initiated by Euroclear France.

5.3.3.5 Settlement procedures

The non-RTGS stream is a "model 2" SSS: a net cash balance is calculated for each participant, whereas the securities leg is settled on a gross basis. Three times a day, net cash balances are posted to the TBF accounts of the participants or to accounts of the TBF settlement agents they have designated to settle their cash position on their behalf. Once the cash settlement has been completed, the DVP process of the related chaining becomes final. The three settlement stages occur at 10.15 am (almost completed at 11.00 am), 3.00 pm (final completion before 3.45 pm) and 4.25 pm (final completion before 5 pm).

5.3.4 **RGV2: the RTGS stream**

5.3.4.1 *Major regulations*

Rules of the RTGS stream were approved by the CMF on 19 December 2001.

5.3.4.2 *Participation in the system*

Credit institutions and investment firms licensed in France or established in the EEA and allowed to use the European passport, as well as CSDs, can be admitted to the system. Other French or foreign institutions can also have access to RGV2, provided the CMF does not veto their participation (for risks prevention purposes).

However, only institutions that fulfil the statutory access criteria for participation in TBF are allowed to be settlement participants and to open a cash position.

5.3.4.3 *Types of transactions handled*

The RTGS stream is firstly used to settle Bank of France credit operations, including monetary policy operations, and intraday credit in TBF against collateral deposited in Euroclear France. These operations cannot be settled in the non RTGS-stream. The Bank of France uses repos to implement monetary policy and intraday credit operations. Collateral is managed in an earmarking procedure. The whole settlement process is ensured by Euroclear France, which provides all requested services, including the valuation and administration of collateral, within operating times fully compliant with TARGET requirements.

The RTGS stream is also used for all large-value transactions between financial intermediaries on fixed income securities, both outright trades and repurchase agreements. Since 18 June 2001, OTC trades on equities have also been eligible for the RTGS stream.

Ordinary OTC operations can be settled on the RTGS or non-RTGS stream.

5.3.4.4 *Operating principles of the system*

The RTGS stream is a model 1 SSS, operating in central bank money, in real time and with immediate finality.

This settlement system relies on the following principles:

- it uses purchasing power in central bank money associated with a self-collateralisation mechanism to ensure the intraday final settlement of the transactions handled;
- there is a real-time bridge between the RTGS stream and TBF allowing for the smooth and immediate transfer of central bank money in both directions.

Purchasing power and self-collateralisation

In order to enable each participant to settle securities purchases through the DVP system, the RTGS stream of RGV2 monitors purchasing power, which includes two components:

- (1) Central bank balances on accounts open on the books of the Bank of France but operated within the SSS. The use of central bank money directly in the settlement process within the SSS allows for continuous real-time settlement of securities transactions in central bank money. The cash assets are supplied by means of the sale of securities within the RGV2 RTGS stream, transfers from TBF and intraday credit operations (Pensions Livrées Intrajournalières - PLIs) implemented at the discretion of the counterparties according to their liquidity needs.
- (2) Automated intraday repos (Pensions Livrées Conservatoires - PLCs) set up within the settlement process with stocks or flows of securities eligible for use as collateral with the Bank of France. In fact, for participants who do not have the necessary cash to settle securities purchases at the end of the processing procedure, this settlement system automatically transforms the asset component of the purchasing power into actual central bank money through intraday repurchase agreements with the Bank of France using securities in stock (earmarked before the start of each operating day by the participant as potential collateral) or by using securities under processing.

In any event, all intraday repurchase agreements have to be reimbursed before the end of the business day. At the end of the day, the RTGS stream automatically tries to settle the reimbursement of the intraday repos.

If participants have sufficient cash to reimburse the repos, their TBF accounts are debited, thereby settling the Euroclear France account in TBF. If, exceptionally, a participant does not have the funds to reimburse the repo, Euroclear France settles the whole intraday repo and sets up an overnight repo for the outstanding cash balance with part (or all) of the securities.

The bridge between TBF and RGV2

Participants may transfer central bank money between the system and TBF at any time of the day. These transfers are triggered either automatically at certain times of the day or on the instructions of participants.

A participant can, at will, transfer cash from its TBF account to the RTGS stream of RGV2 using simple TBF instructions or from its cash position in the system to its TBF account.

In addition to these procedures for cash transfers originated by the participants, Euroclear France automatically transfers cash balances from the system to the TBF accounts once in the morning (RGV 05) and three times in the afternoon (RGV 10, 20 and 30).

During the business day, participants may reimburse the intraday repurchase agreements at any time provided their cash balance is sufficient.

5.3.4.5 RGV2 RTGS stream operating day

The operating day starts at 8 pm the day before. Night processing permits the settlement of trades agreed the previous day. After night processing, RGV2 is able to settle same day value transactions until 5 pm; monetary policy operations of the Bank of France can be settled until 6.30 pm.

5.3.4.6 Risk management

The assessment of all SSSs which applied to settle ESCB credit operations against the nine standards established by the ESCB was conducted in the course of 1998 and the list of eligible SSSs was released in September 1999. At this time, the RGV system was the only system in the euro area which fully complied with all standards and was therefore able to settle transactions with intraday finality on a DVP basis and in central bank money, within the broad TARGET operating hours and based upon a very reliable technical framework.

Thanks to the mechanism for automatically setting up intraday repos, DVP transactions within the RTGS stream of RGV2 (formerly the RGV system) always become final during the course of the day and the average percentage of transactions remaining unsettled at the end of the day is remarkably low.

5.3.4.7 International links

International links with other SSSs use SWIFT securities messages. Securities issued in 11 foreign securities settlement systems may be lodged as collateral at the Bank of France directly through the RTGS stream, using the eligible FOP links established by Euroclear France with foreign CSDs: Clearstream Germany in Germany, OeKB in Austria, the National Bank of Belgium's system, Euroclear and CIK in Belgium, CADE and SCLV in Spain, APK in Finland, Monte Titoli in Italy, Negicex in the Netherlands and Clearstream Banking Luxembourg in Luxembourg.

5.3.4.8 Pricing

Participants are charged a custody fee and a transaction fee.

5.3.5 Evolution under way

Following the recent merger of Euroclear and CRESTCo, the British CSD, a new scheme for operational integration is being designed, with a view to creating a single settlement platform within the next few years for the settlement of French, British, Irish, Dutch and partly Belgian securities.

5.4 The use of the securities infrastructure by the Bank of France

The Bank of France is the cornerstone of the French securities settlement organisation. The Central Bank ensures central bank money settlement with intraday finality and provides a permanent bridge between the cash (TBF) and the securities (RGV2) settlement systems.

5.4.1 The Bank of France as liquidity provider in the SSS

The French securities settlement system RTGS stream offers intraday finality thanks to cash positions administered within RGV2, which form the cash balance component of the purchasing power and are considered as subaccounts on the Bank of France's books, and to the use of intraday repos (PLC) managed by the Bank of France.

The Bank of France provides a permanent bridge between the RGV2 RTGS stream and TBF, formed by transfers of liquidity in central bank money.

The system provides an instrument to settle intraday repos in TBF called Pension livrée intrajournalière (PLI). The PLI has common features with RGV2 automatic repos: no interest is paid to the Bank of France, the repo must be redeemed before the end of the day, otherwise it is turned into an overnight repo at a high penalty rate, and the repo is set up by the SSS. However, there is one major difference: the cash leg is settled in TBF (and not in RGV2) in order to provide the participant with central bank liquidity.

The PLI is completed in three steps:

- the participant enters an instruction into RGV2 specifying the amount of cash needed;
- the securities given as collateral are checked by the SSS (if the valuation is not sufficient, there is a recycling of the participant's instruction during the day); and
- the repo is settled: the securities are credited on a Bank of France custody account and the cash is credited on the participant's cash balance and then transferred to the participant's account in TBF.

5.4.2 Money market operations

The TBF and the RGV2 RTGS stream are the systems used by the Bank of France for money market operations. The overnight repos share common features with the intraday repos since the securities are settled in the RTGS stream and the cash is credited to TBF accounts. However, the process is different because matching takes place between the participant's and the Bank of France's instructions. Thus, following the allotment results, the Bank of France informs the SSS of the cash amount given to each of its counterparties. Each counterparty enters its instructions specifying the collateral used, after which RGV2 matches the instructions.

For the redemption of monetary policy operations, the SSS checks the availability of funds in RGV2 (and not in TBF since it has no direct access to the participants' accounts with TBF). Therefore, the participants have to monitor their cash balance in the RGV 2 system in order to plan the redemption of the repo.

