

**Payment, clearing and  
settlement systems in  
the euro area**



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## List of abbreviations

ACH	automated clearing house
ATM	automated teller machine
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht – Federal Financial Supervisory Authority (Germany)
BIC	Business Identifier Code
CCB	correspondent central bank
CCBM	correspondent central banking model
CCP	central counterparty
CESR	Committee of European Securities Regulators
CET	Central European Time
CLS	Continuous Linked Settlement
COGEPS	Contact Group on Euro Payments Strategy
COGESI	Contact Group on Euro Securities Infrastructures
CPSS	Committee on Payment and Settlement Systems
CSD	central securities depository
CSM	clearing and settlement mechanism
DVP	delivery versus payment
EACB	European Association of Co-operative Banks
EACH	European Association of Central Counterparty Clearing Houses
EACHA	European Automated Clearing House Association
EBA	Euro Banking Association
EBF	European Banking Federation
ECB	European Central Bank
ECC	European Commodity Clearing AG
ECSDA	European Central Securities Depositories Association
EEA	European Economic Area
EMCF	European Multilateral Clearing Facility NV
EMIR	European Market Infrastructure Regulation
EMU	Economic and Monetary Union
EMV	Europay/MasterCard/Visa integrated circuit card standard
EPC	European Payments Council
ESAs	European Supervisory Authorities
ESBG	European Savings Bank Group
ESCB	European System of Central Banks
ESES	Euroclear Settlement of Euronext-zone Securities

ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EURO1	multilateral large-value payment system for euro payments set up by the EBA Clearing Company
FESE	Federation of European Securities Exchanges
FOP	free of payment
HCB	home central bank
IBAN	International Bank Account Number
ICM	Information and Control Module of TARGET2
ICSD	international central securities depository
IOSCO	International Organization of Securities Commissions
ISIN	International Securities Identification Number
LVPS	large-value payment system
MIF	multilateral interchange fee
MiFID	Directive 2004/39/EC on markets in financial instruments
MoU	memorandum of understanding
MTF	multilateral trading facility
NCB	national central bank
OJ L	Official Journal of the European Union (Legislation)
OTC	over the counter
PE-ACH	pan-European automated clearing house
POS	point of sale
PSD	Directive 2007/64/EC on payment services in the internal market
PSSC	Payment and Settlement Systems Committee
PVP	payment versus payment
ROCH	Recognised Overseas Clearing House
RTGS	real-time gross settlement
SCF	SEPA Cards Framework
SCT	SEPA Credit Transfer
SDD	SEPA Direct Debit
SEPA	Single Euro Payments Area
SSP	Single Shared Platform of TARGET2
SSS	securities settlement system
STEP1	low-value payments solution operating on the EURO1 platform
STEP2	retail clearing system of the EBA Clearing Company
STP	straight through processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication

T2S	TARGET2-Securities
TARGET2	Trans-European Automated Real-time Gross settlement Express Transfer system, second generation
TFEU	Treaty on the Functioning of the European Union
XML	Extensible Markup Language





## Introduction

The European Union constitutes an internal market defined by the “four freedoms”: the free movement of capital, people, goods and services – including financial services. Through the Agreement on the European Economic Area (EEA), the internal market also extends to Iceland, Liechtenstein and Norway. The euro area comprises those EU member states that have adopted the euro as their currency. The euro area is a monetary union with a single currency, a common central bank system (the Eurosystem), a single monetary policy and a common money market. The euro area, like any currency area, requires an infrastructure which enables the safe and efficient flow of payments and financial instruments at low cost throughout the whole zone.

Most of the payment, clearing and settlement infrastructures in the euro area and the broader EU were originally created with the aim of meeting the needs of individual countries. They were rather diverse in nature and not necessarily suited to the needs of an internal market, let alone the needs of a single currency area. Financial integration, globalisation and, in particular, the launch of the euro in 1999 have led to an overhaul and reshaping of the infrastructure for effecting payments and for the trading, clearing and settlement of financial instruments. The introduction of the euro has also furthered efforts to harmonise or consolidate infrastructure.

This chapter describes those market infrastructure components that are common to, or relevant for, all euro area countries and depicts the legal and regulatory environment in which they operate. Emphasis is placed on the role of the Eurosystem, which comprises the European Central Bank (ECB) and the national central banks (NCBs) of all the countries in the euro area. Where necessary, the chapter also describes aspects and features of payment, clearing and settlement systems which are relevant to all EU member states.

The reshaping and consolidation of the infrastructure has been particularly prevalent in the market segment for large-value payments, which is now served by two area-wide systems. The technically centralised TARGET2 system, owned and operated by the Eurosystem, provides for real-time gross settlement of euro payments in central bank money (see Section 3.2.1). It is used for the settlement of central bank operations, interbank transfers and other large-value or urgent euro payments. TARGET2 is an essential vehicle for implementing the ECB’s monetary policy and for the functioning of the euro money market. The EURO1 system of the Euro Banking Association (EBA) is a privately owned and operated EU-wide euro payment system in the large-value segment. EURO1 processes both interbank payments and commercial payments. In addition, large-value euro payments related to foreign exchange transactions are settled in the CLS system. The CLS settles the two legs of foreign exchange transactions on a payment versus payment (PVP) basis in the books of a privately owned, single-purpose bank (CLS Bank).

The process of harmonising, integrating and consolidating retail payments and retail payment systems has not progressed as rapidly as that of the large-value segment and is therefore still at an early stage. As at mid-2011, the euro area is served by two area-wide and 20 national retail payment systems, 25 national card schemes and six international card schemes (where a number of debit card schemes also offer credit card functionality and vice versa). However, this situation is expected to change significantly in the years to come. The Single Euro Payments Area (SEPA) project (see Section 2.2.2) was set up by the banking industry with a view to achieving a fully integrated market for retail payment services in the euro area, with no distinction between cross-border and national payments in euros. The first phase of the SEPA initiative was officially launched in January 2008.

Fragmentation of the market infrastructures for post-trade processing, clearing and settlement of euro financial instruments has resulted in inefficiencies and high costs, especially for cross-border transactions. However, the euro has acted as a major catalyst, promoting efforts to reshape, harmonise and integrate the market infrastructure. The

introduction of the euro eliminated currency segmentation, which was one of the main reasons for the fragmentation of listing, trading, clearing and settlement, and the removal of currency risk allowed increased portfolio diversification within the euro area. The euro has also resulted in markets becoming far larger and more liquid.

In recent years a number of public and private sector initiatives have been proposed and implemented with a view to fostering integration and competition in euro area securities market infrastructures, particularly with the aim of enhancing the interoperability and efficiency of post-trading infrastructures. These include: the Markets in Financial Instruments Directive (MiFID) (see Section 1.2.3); the Code of Conduct for Clearing and Settlement (see Section 1.3.3); the removal of the “Giovannini barriers” (see Section 1.3.3); the recommendations of the European System of Central Banks (ESCB) and the Committee of European Securities Regulators (CESR) for securities settlement systems (SSSs) and central counterparties (CCPs) (see Section 1.3.2); the TARGET2-Securities (T2S) project (see Section 4.4.5); the Collateral Central Bank Management project (see Section 4.4.4.6); and several other legislative initiatives (see Section 1.2).

As regards trading, at the end of 2010 there were 62 regulated markets in the euro area (a stock exchange may provide for several regulated markets) and 51 multilateral trading facilities (MTFs). These markets were served by one trade repository, nine CCPs and 25 central securities depositories (CSDs). The latter operate 23 SSSs eligible in Eurosystem credit operations. There are 57 direct links and seven relayed links between CSDs that are eligible in Eurosystem credit operations.

The Eurosystem’s statutory task of promoting the smooth operation of payment systems means that it has a keen interest in furthering the integration of the euro area market infrastructure for payments and post-trading services for financial instruments. It does so through its complementary roles as operator, overseer and facilitator.

Besides TARGET2, another important Eurosystem service contributing to the integration of the money market is the correspondent central banking model (CCBM). The CCBM allows for the cross-border transfer of collateral within the euro area for Eurosystem credit operations. Moreover, to reduce the complexity and cost of back office operations and to improve liquidity management, the Eurosystem is developing a Collateral Central Bank Management facility in order to provide an enhanced service for both domestic and cross-border collateral operations (see Section 4.4.4.6).

The Eurosystem’s most fundamental contribution to integration is through the building of T2S, a single platform for securities settlement in Europe which will create a borderless market for settlement services (see Section 4.4.5). T2S is a major infrastructure project, initiated by the Eurosystem, which aims to overcome the current fragmentation in the securities settlement layer of the European post-trading landscape. Fragmentation and the existence of procedures that have not been harmonised across national settlement systems contribute to high costs and inefficiencies, especially for cross-border securities transactions, which constitute a considerable competitive disadvantage for European capital markets.

The T2S platform will deliver harmonised and commoditised delivery versus payment (DVP) settlement in central bank money, in euros and other participating currencies, for virtually all securities in Europe. By removing the distinction between cross-border and domestic settlement, T2S will be a major breakthrough in delivering an integrated capital market for Europe, providing a solid basis for increased efficiency and competition in the entire post-trading sector.

## **1. Institutional aspects**

### **1.1 The general institutional background**

#### **1.1.1 The Eurosystem**

The Treaty on the Functioning of the European Union (TFEU), notably Title VIII, Chapter 2 on Monetary Policy, and the provisions of the Statute of the ESCB and of the ECB apply to member states of the EU which have adopted the euro, their central banks and the ECB. To distinguish the euro area central banks from those outside the euro area, the name “Eurosystem” has been used since the introduction of the euro in 1999. The Eurosystem therefore consists of the ECB and the NCBs of the countries in the euro area. “ESCB” is used when referring to the ECB and the central banks of all the member states.

A main task of the Eurosystem is to “promote the smooth operation of payment systems” (Articles 127(2) TFEU and 3.1 of the Statute of the ESCB and of the ECB). Article 22 of the Statute empowers the ECB and NCBs to provide facilities, and the ECB to make regulations, to ensure efficient and sound clearing and payment systems within the EU and with other countries.

The decision-making bodies of the Eurosystem are the Executive Board and the Governing Council of the ECB. The Executive Board is composed of six members and is entrusted with implementing the monetary policy of the ECB, preparing the Governing Council meetings and running the ECB’s everyday business. The Governing Council is composed of the six Executive Board members and the governors of the – currently 17 – euro area NCBs. The Governing Council decides upon all matters within the competence of the Eurosystem. The decision-making bodies of the Eurosystem may adopt the legal acts necessary to ensure the performance of the tasks entrusted to the Eurosystem. Legal acts such as regulations, decisions, recommendations and opinions may be addressed to parties other than central banks. Other legal acts in the form of guidelines, instructions and decisions may be addressed to the ECB and Eurosystem central banks.

The General Council comprises the governors of all the NCBs in the 27 EU member states, as well as the President and the Vice-President of the ECB. The General Council deals with matters relating to the ESCB, providing a link between the Eurosystem and the non-euro area central banks, which conduct their monetary policy independently.

#### **1.1.2 The Council of the European Union and the European Parliament**

The Council of the European Union and the European Parliament are empowered by the Treaty on European Union to adopt legal acts. These may include rules relating to credit and other financial institutions, the provision of financial services, payments, financial instruments and market infrastructures. The main legal instruments adopted by the Council and the Parliament are directives and regulations. Directives are implemented at the national level by member states and are used to harmonise existing rules or to introduce new legislation where appropriate. Regulations have general application and are directly applicable without requiring implementation by member states.

#### **1.1.3 The European Commission**

The European Commission acts as the guardian of the EU’s treaties and has the power to propose legislation to the Parliament and the Council. The Commission works in the interests of the EU as a whole. One of the principal aims is to create a single market with a level playing field and equal opportunities throughout the EU. The following Commission directorates general deal with matters related to payments, the trading, clearing and settlement of financial instruments and market infrastructure issues.

- The main role of the Directorate General Internal Market and Services is to coordinate the Commission's policy on the European single market and to seek the removal of unjustified obstacles to trade, in particular in the field of services and financial markets. One of the tasks of the Commission is to strive for further harmonisation of the laws within the EU, including those which have an impact on payment systems or the development of a single securities market for both new issues and trading of securities.
- The Directorate General for Competition, together with the national competition authorities, directly enforces EU competition rules, Articles 101–109 TFEU, to make EU markets work better, by ensuring that all companies compete equally and fairly on their merits.

#### **1.1.4 The European Systemic Risk Board**

The European Systemic Risk Board (ESRB) is an independent body responsible for the macroprudential oversight of the EU financial system. It contributes to the prevention or mitigation of systemic risks to financial stability arising from developments within the financial system so as to avoid periods of widespread financial distress. The ESRB was established by the Council and the European Parliament on the basis of Regulation No 1092/2010 on EU macroprudential oversight of the financial system and establishing a European Systemic Risk Board, and Council Regulation (EU) No 1096/2010 conferring specific tasks upon the ECB concerning the functioning of the European Systemic Risk Board. The two Regulations entered into force on 16 December 2010.<sup>1</sup>

The ESRB is in charge of collecting and analysing all the relevant and necessary information, identifying and prioritising systemic risks, and issuing warnings and recommendations for remedial action in response to the risks identified. Warnings and recommendations may be either public or confidential. They may be of a general or a specific nature, and may be addressed to the EU as a whole or to one or more member states, to one or more of the European Supervisory Authorities (ESAs), or to one or more of the national supervisory authorities. Recommendations may also be addressed to the European Commission in respect of the relevant EU legislation.

The structure of the ESRB comprises: the General Board (the sole decision-making body), the Steering Committee (which prepares the meetings of the General Board), two advisory committees (the Advisory Scientific Committee and the Advisory Technical Committee) and the Secretariat.

The ECB ensures the ESRB Secretariat and provides analytical, statistical, logistical and administrative support.

#### **1.1.5 The European Supervisory Authorities**

Established on 1 January 2011 by three Regulations dated 24 November 2010<sup>2</sup> and granted legal personality, the three ESAs – the European Securities and Markets Authority (ESMA), the European Banking Authority and the European Insurance and Occupational Pensions Authority – replace the three so-called “Level-3 Committees”: the Committee of European Securities Regulators (CESR), the Committee of European Banking Supervisors and the Committee of European Insurance and Occupational Pensions Supervisors.

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<sup>1</sup> OJ L 331, 15.12.2010, p 1 and OJ L 331, 15.12.2010, p 162.

<sup>2</sup> OJ L 331, 15.12.2010, p 84; OJ L 331, 15.12.2010, p 12 and OJ L 331, 15.12.2010, p 48.

While responsibility for day-to-day supervision remains with national authorities, the specific prerogatives of the new ESAs have been designed to improve the quality and consistency of supervision, reinforce the supervision of cross-border groups, strengthen crisis prevention and management across the EU, and establish a set of common standards applicable to all financial institutions (“single rule book”).

Each ESA is composed of: (i) a Board of Supervisors, as the principal decision-making body; (ii) a Management Board ensuring that the ESA carries out its mission and performs its tasks; (iii) the Chair and the Executive Director, appointed by the Board of Supervisors; and (iv) a Board of Appeal, which is a joint body of the three ESAs. A Joint Committee has also been established to ensure cross-sectoral consistency in the activities of the ESAs. It is chaired for a 12-month term on a rotating basis by the Chairpersons of the three Authorities.

The ESRB and the ESAs, together with the national supervisory authorities and the Joint Committee of the ESAs, form the European System of Financial Supervisors.

## **1.2 Major payment system-related legal acts**

EU legislation provides for the harmonisation of the legal frameworks of all 27 EU member states (it also extends to the EEA, which, besides the EU 27, comprises Iceland, Liechtenstein and Norway). The main legally binding instruments used by the Council and the European Parliament as the EU’s legislature are Regulations and Directives. These legislative instruments are used to harmonise existing rules at the EU level or to establish new legislation where national rules do not exist but are deemed necessary.

Some of the legal acts and legislative initiatives relevant to the ECB’s sphere of competence are referred to below. The ECB takes a close interest in these legal acts, particularly through its advisory role in the EU’s legislative process.

### **1.2.1 The Settlement Finality Directive**

The Settlement Finality Directive<sup>3</sup> has harmonised the laws of the member states so as to ensure the operations of payment and settlement systems, also in case of bankruptcy of a participant, during daytime and night-time settlement. The Directive provides that netting and transfer orders entered into a system prior to the opening of insolvency proceedings against a participant in that system are binding and enforceable against third parties. Collateral in favour of other participants and central banks can be realised in accordance with the terms of the relevant agreement, notwithstanding the opening of insolvency proceedings against the collateral provider. The rights and obligations of participants in connection with the system are subject to the law governing that system. Rights to collateral securities recorded in an account, registry or CSD are governed by the law of the member state where the account, registry or CSD is located. Interoperable systems are required to coordinate the rules on the moment of entry and irrevocability in the systems they operate.

The main achievements of the Settlement Finality Directive are: (i) elimination of the main risks incurred in payment and settlement systems; (ii) smooth functioning of a system even after the application of a foreign insolvency law; and (iii) legal certainty for collateral enforcement (also to the benefit of ESCB credit operations).

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<sup>3</sup> Directive 98/26/EC of 19 May 1998 on settlement finality in payment and securities settlement systems, OJ L 166, 11.6.1998, pp 45–50, as amended.

### **1.2.2 The Financial Collateral Directive**

The Financial Collateral Directive<sup>4</sup> has harmonised the laws regarding the provision and enforcement of collateral in the EU. The Directive applies to public sector bodies, central banks and international financial institutions, supervised financial institutions, CCPs, settlement agents and clearing houses regarding collateral in the form of financial instruments, credit claims and cash. The Directive abolishes all formalities for the creation and perfection of collateral. If an enforcement event occurs, the financial collateral will be realised by sale or appropriation (if agreed) of the financial instruments and by setting off the amount or applying it in discharge of the relevant financial obligation. The Directive recognises close-out netting and setoff rights and applies the law of the place where the relevant account is maintained to all collateral in the form of book-entry securities.

The main achievements of the Financial Collateral Directive are: (i) the protection, validity and enforceability of credit claims and collateral agreements, which are to be executed in accordance with their terms also in the event of the opening of insolvency proceedings against a counterparty; (ii) the limitation of administrative burdens, formalities and cumbersome procedures; and (iii) the creation of a clear legal framework.

### **1.2.3 The Markets in Financial Instruments Directive**

The MiFID<sup>5</sup> has established a comprehensive regulatory framework governing the organised execution of investor transactions by exchanges, other trading systems and investment firms. The MiFID imposes a “best execution” obligation to ensure that investment firms execute client orders on the terms that are most favourable to the client. This obligation should apply to firms with contractual or agency obligations vis-à-vis their clients. A review launched in late 2010 will update the MiFID in the light of recent developments.

A major achievement of the MiFID relates to clearing and settlement systems, as member states are required to grant: (i) local regulated markets access to a CCP, clearing house or settlement system from another member state; (ii) investment firms from other countries access to a CCP and clearing and settlement systems in their territory; and (iii) local investment firms access to a CCP, clearing house or settlement system of another member state.

### **1.2.4 The Winding-up Directive**

The Directive on the reorganisation and winding-up of credit institutions<sup>6</sup> introduced the principle of home control for the winding-up and reorganisation proceedings of a credit institution with branches in other member states. Such credit institutions are subject to a single proceeding in the home member state in which the credit institution has its registered office, governed by that country’s law. Reorganisation and winding-up measures are fully effective in all the member states and against third parties in particular. The administrative or judicial authorities of the home member state are required without delay to inform the competent authorities of the member state in which the branch is established of their decision to open winding-up proceedings.

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<sup>4</sup> Directive 2002/47/EC of 6 June 2002 on financial collateral arrangements, OJ L 168, 27.6.2002, p 43, as amended.

<sup>5</sup> Directive 2004/39/EC of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC, OJ L 145, 30.4.2004, p 1, as amended.

<sup>6</sup> Directive 2001/24/EC of 4 April 2001 on the reorganisation and winding up of credit institutions, OJ L 125, 05.05.2001, p 15.

The Directive also contains provisions concerning conflicts of law relating to collateral arrangements, setoffs, repurchase agreements (repos) and netting agreements in an insolvency situation. It provides for the recognition of setoffs in the event of credit institutions becoming insolvent. As regards the enforcement of proprietary rights for collateral security recorded in a register, account or CSD, the Directive confirms that the national legislation to be applied is that of the member state where the relevant register, account or CSD is held or located. Furthermore, it stipulates that netting agreements and repos are governed solely by the national law indicated in the contract governing the relevant agreement.

### **1.2.5 The Payment Services Directive**

The Payment Services Directive<sup>7</sup> creates a harmonised legal framework for payments and establishes a common legal basis for SEPA, thereby ensuring that payments (particularly credit transfers, direct debits and card payments) can be made safely and securely within and between the various member states. It also establishes the concept of “payment institutions” – licensed payment service providers which can provide payment services across the EU under a lighter supervisory regime than banks. By opening up the market in this way, the European legislator allows new service providers to compete with existing participants on a level playing field, thereby facilitating greater competition.

The Directive introduces transparent conditions and a series of harmonised information requirements applying to all payment service providers, irrespective of whether they offer SEPA payment products or those already in existence at the national level. Moreover, the Directive aims to establish clarity and certainty with regard to the principal rights and obligations of users and providers of payment services. It seeks to bring about greater efficiency (for example, by ensuring that payments initiated by the payer are completed a maximum of one day after the payment order is given),<sup>8</sup> increased levels of consumer protection and greater legal certainty (through rules on liability and provisions on the revocability of payments). These measures aim to extend the rights and protection enjoyed by users of payment services (consumers, retailers, large and small undertakings, public institutions, etc).

### **1.2.6 The Regulation on cross-border payments in the Community**

The Regulation on cross-border payments in the Community entered into force in November 2009, repealing Regulation (EC) No 2560/2001 on cross-border payments in euros.<sup>9</sup> The Regulation provides that charges applied to cross-border payments in euros up to an amount of €50,000 must be the same as those levied by the payment service provider in question for corresponding national payments of the same value and in the same currency.

The Regulation extends the principle of equal charges for national and cross-border payments to cover direct debits, as well as credit transfers, electronic payments (including card transactions) and cash withdrawals at ATMs which were already covered by the previous regulation. It strengthens the role of the competent national authorities in the areas of supervision and the resolution of complaints and provides for the establishment of out-of-court redress procedures. For transfers of up to €50,000, it also removes the payment-based

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<sup>7</sup> Directive 2007/64/EC of 13 November 2007 on payment services in the internal market, OJ L 319, 5.12.2007, pp 1–36.

<sup>8</sup> Until 1 January 2012, a payer and its payment service provider can agree on a period of no more than three business days. These periods may be extended by a further business day for payment transactions initiated in paper form.

<sup>9</sup> Regulation (EC) No 924/2009 of 16 September 2009 on cross-border payments in the Community and repealing Regulation (EC) No 2560/2001, OJ L 266, 9.10.2009, pp 11–18.

statistical reporting obligations for banks that used to hinder the smooth flow of cross-border transactions.

To facilitate the use of the SEPA direct debit scheme, the Regulation introduces a “reachability” requirement for direct debits and temporary rules on multilateral interchange fees for direct debit transactions. These temporary rules are intended to give the payment industry time to develop a long-term business model for direct debits which fully respects the rules on competition. In addition, a payment service provider must, where applicable, inform its customers of their IBAN and the institution’s BIC. If a payment user initiating a transaction fails to inform its payment service provider of the beneficiary’s BIC or IBAN, the bank is entitled to charge additional fees. Member states which have not adopted the euro have the option to apply the Regulation to their own currency, provided that the European Commission is informed accordingly.

### **1.2.7 Regulation on information on the payer accompanying transfer of funds**

Regulation (EC) No 1781/2006 on information on the payer accompanying transfers of funds<sup>10</sup> provides that payment service providers must, at every stage of the payment process, forward complete information concerning the payer. The information includes the name, address and account number of the payer and should be verified by the payer’s payment service provider prior to the transfer of funds. Where the payment service providers of both the payer and the payee are located within the EU, payments can simply be accompanied by the account number of the payer or a unique identifier, which allows the transaction to be traced back to the payer.

The aim of this measure is to prevent, investigate and detect money laundering and the financing of terrorism. The Regulation transposes Special Recommendation VII of the Financial Action Task Force into EU law, as well as forming part of the EU’s action plan on combating terrorism.

### **1.2.8 The E-Money Directive**

The original E-Money Directive<sup>11</sup> sought to regulate market access for a new type of payment service provider. Under its provisions, issuers of electronic money – ie claims against an issuer which are stored on an electronic device capable of being used as a means of payment vis-à-vis third parties – were partially equated with credit institutions. In particular, issuers of electronic money were made subject to authorisation and supervisory requirements with the aim of creating a level playing field for the issuance of e-money and a “single passport” for the provision of such services. The Directive thereby sought to promote the provision of e-money.

The revised E-Money Directive<sup>12</sup> lays down a lighter supervisory regime for e-money institutions, reducing the initial capital requirement from €1 million to €350,000, and introduces new rules on the calculation of e-money institutions’ own funds. The aim is that, in combination with the abolition of the principle of exclusivity, the new rules will make it easier for electronic money institutions active in other sectors (such as the telecommunications

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<sup>10</sup> Regulation (EC) No 1781/2006 of 15 November 2006 on information on the payer accompanying transfers of funds, OJ L 345, 8.12.2006, p 1.

<sup>11</sup> Directive 2000/46/EC of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions, OJ L 275, 27.10.2000, pp 39–43.

<sup>12</sup> Directive 2009/110/EC of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC, OJ L 267, 10.10.2009, pp 7–17.



industry) to develop innovative services in the payment market. Thus the range of activities that e-money institutions are allowed to perform has been broadened and, at the same time, the supervisory framework has been relaxed. In addition, e-money institutions are no longer regarded as credit institutions.

### **1.2.9 Legislative initiatives**

Following the G20 commitment to clear standardised over-the-counter (OTC) derivatives via CCPs and use trade repositories, in September 2010 the Commission proposed a draft regulation, known as the European Market Infrastructure Regulation (EMIR).<sup>13</sup> This is designed to ensure that CCPs comply with high prudential standards, that trade repositories are subject to adequate regulation, and that issues of licensing, ongoing supervision and operational conditions are harmonised EU-wide to stem risks from CCPs' and trade repositories' activities.

In 2009 the Commission launched an initiative to harmonise the laws governing securities holdings and transfers in the EU, aiming at dismantling the legal barriers that impede efficient cross-border securities settlement. A draft legal act on legal certainty of securities holding and transactions, known as the Securities Law Directive, is under preparation to harmonise: (i) the legal framework for holding and transferring book-entry securities; (ii) the conflict of law rules; (iii) the rights and obligations of account providers; and (iv) the rights flowing from book-entry securities. The Commission is in the process of drafting a regulation on CSDs, covering core and ancillary services, licensing, ongoing supervision and the cross-border provision of services and laying down prudential requirements for CSDs, as well as operational conditions to address risks stemming from their activities. The future regulation is expected to introduce a sound legal framework for CSD services, improve legal certainty and foster a level playing field in the EU.

In December 2010 the Commission published a proposal for a regulation establishing technical requirements for credit transfers and direct debits in euros (the SEPA Migration End Date Regulation).<sup>14</sup> The aim is to ensure a quick and smooth migration to pan-European credit transfers and direct debits by phasing out existing national payment instruments. In order to ensure interoperability, it is proposed that the use of certain common standards and technical requirements be mandatory for all credit transfers and direct debits in euros in the EU.

## **1.3 The role of the Eurosystem**

The ECB and the Eurosystem central banks have traditionally been involved in payment, clearing and settlement systems in many different ways: as operators of systems; as providers of central bank money as a settlement asset; as participants in systems; as promoters of an efficient overall payment infrastructure; and as overseers. The smooth functioning of payments, clearing and settlement is of particular concern to the Eurosystem for three main reasons: (i) a major malfunction in the market infrastructure could undermine the stability of financial institutions and markets; (ii) the soundness and efficiency of systems and the security of payment instruments affect the confidence of users and, ultimately, public confidence in the currency; and (iii) payment systems and – as all Eurosystem credit operations need to be fully collateralised – securities clearing and settlement systems represent essential vehicles for implementing monetary policy.

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<sup>13</sup> COM(2010) 484/5.

<sup>14</sup> COM(2010) 775 final.

Safety concerns and the desire to mitigate such risks inevitably lead to costs being incurred by system operators and participants. As a result, a prudent design of payment and settlement systems involves weighing the benefits of risk mitigation against the cost efficiency of operating and participating in such systems.

The Eurosystem considers that achieving the appropriate combination of safety and efficiency in payment and settlement systems may require some form of public involvement to ensure that participants and operators have the right incentives to act prudently, avoid risk and minimise the overall cost to society. To this end, the Eurosystem, like most central banks worldwide, is active in its currency area in an oversight role, as a system operator and in a supporting capacity as a catalyst for the development of private sector solutions.

### **1.3.1 The Eurosystem's operational role**

One way for central banks to promote the safe and efficient functioning of payments and settlements is to operate their own facilities. The main operational role of the Eurosystem lies in the provision of the TARGET2 system, the real-time gross settlement (RTGS) system for the euro. It provides facilities for settlement of euro payments in central bank money, with immediate finality. TARGET2 is an important tool for the Eurosystem, facilitating the implementation of its monetary policy and supporting the functioning of the euro area's money and capital markets. TARGET2 forms the backbone of the arrangements in place for settling interbank obligations arising from financial and economic activities in euros. It settles individual large-value and urgent payments, as well as positions in a wide variety of ancillary systems. TARGET2 is also used by banks in managing their core liquidity (see Section 3.2.1.3).

Another important Eurosystem service contributing to the integration of the money market is the CCBM, which allows the cross-border transfer of collateral within the euro area in Eurosystem credit operations. In the absence of adequate market arrangements for the cross-border mobilisation of collateral, the Eurosystem introduced the CCBM in 1999 as an interim solution, expecting that market solutions would develop over time. However, this service has become the main channel for the use of collateral on a cross-border basis in Eurosystem credit operations (see Section 4.4.4).

Some Eurosystem central banks also provide facilities for handling retail payments or operate in-house SSSs. More detailed descriptions of the respective systems can be found in the relevant descriptive Red Book country chapters.

The integration of securities markets relies on the integration of the underlying infrastructure. Progress in the integration of euro securities infrastructures has not kept pace with that of large-value payment infrastructures. Although a number of important complementary public and private sector initiatives have been proposed, one element missing from such initiatives is the establishment of a common, neutral settlement platform fostering effective interoperability and competition between service providers. Seeking to promote financial integration through the provision of central bank services and drawing on its experience in setting up market infrastructures, in 2006 the Eurosystem launched its T2S project in order to close this gap (see Section 4.4.5).

### **1.3.2 The Eurosystem's oversight role**

Within the euro area, oversight is the responsibility of the Eurosystem. It is conducted on the basis of common policies and practices established by the Governing Council of the ECB. The Eurosystem oversight competence is based on the mandate specified by Article 127(2) TFEU and Articles 3 and 22 of the Statute of the ESCB and the ECB. Ensuring that payment, clearing and securities settlement systems function safely and efficiently is an important precondition for the Eurosystem's ability to contribute to the stability of the financial system in the euro area. The recent global financial crisis has shown that effective market

infrastructures are essential for the proper functioning of financial markets and that oversight helps to ensure that systems are set up such as to minimise the risk potential. In addition, the stability of financial market infrastructures is important for the smooth conduct of the ECB's monetary policy and for maintaining public confidence in the currency.

The Eurosystem defines the oversight of payment, clearing and settlement systems as a central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned systems, assessing them against these objectives and, where necessary, fostering change. The Eurosystem includes payment instruments in this definition, as they are an integral part of the payment system. It does not actively pursue other public policy objectives, such as combating money laundering, data protection, consumer protection or the avoidance of anti-competitive practices in payment and settlement systems, where other authorities have an explicit mandate.

Four important principles are applied in Eurosystem oversight. First, the Eurosystem has high standards regarding transparency. It publishes its oversight policies and provides regular and comprehensive information about its oversight activities. In this way, the Eurosystem can demonstrate the consistency of its approach to oversight and provide a solid basis on which to judge the effectiveness of its policies, thereby ensuring that its oversight activities are performed in an accountable manner. A report providing information on Eurosystem oversight activities is published on a regular basis. Second, within the ECB, oversight is conducted by a dedicated team which is separate from the ECB's operational units. The same principle of the separation of functions is applied by the Eurosystem NCBs. This helps to address the potential for conflicts of interest as a result of the central bank being both the system operator and the oversight authority. Third, in order to ensure equal treatment, the ECB and the Eurosystem NCBs apply the same oversight policies to all systems, ie both private systems and those operated by the central banks themselves. Fourth, systems' owners and operators have primary responsibility for ensuring the reliable functioning of their infrastructures and for providing safe and efficient payment and settlement services.

The objectives, scope, methodology and organisation of the Eurosystem's oversight function, as well as details of the Eurosystem's cooperation with other authorities and central banks, are clearly set out in the document entitled "Eurosystem oversight policy framework", which was published by the ECB in February 2009 and updated in May 2011.<sup>15</sup> The Eurosystem's oversight activities are guided by the objective of promoting the smooth functioning (ie the safety and efficiency) of payment, clearing and securities settlement systems. The current scope of the Eurosystem's oversight activities spans from payment systems and payment instruments, SSSs, CCPs and certain third-party service providers to correspondent banking and trade repositories. The scope and depth of the Eurosystem's oversight activities may change over time, as the systems themselves evolve.

The Eurosystem performs its oversight tasks on the basis of standards and recommendations developed either by itself or in cooperation with other central banks or authorities. These standards and requirements are largely based on international standards developed by the Committee on Payment and Settlement Systems (CPSS), or the CPSS jointly with the International Organization of Securities Commissions (IOSCO). For example, the ESCB and the CESR have published recommendations for SSSs and CCPs in the EU. The Eurosystem applies its policy requirements and standards across all systems (ie both systems run by central banks and private sector operated systems) ensuring that its oversight activities are transparent as well as effectively coordinated and consistently implemented across the euro area, thus ensuring a level playing field.

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<sup>15</sup> Available on the ECB's website at <http://www.ecb.europa.eu>.

The Eurosystem entrusts the role of lead overseer over a specific system to the Eurosystem central bank that is best placed to conduct that oversight, either because of its proximity to the overseen entity (for example, where the system is legally incorporated in its jurisdiction), or where national laws attribute specific oversight responsibilities to the central bank concerned. This is typically the case for systems that are clearly anchored in one particular country. For others, the body entrusted with oversight responsibility is the NCB where the system is legally incorporated, unless the Governing Council of the ECB decides otherwise and assigns primary responsibility for oversight to the ECB (as is the case for TARGET2 and EURO1). For card payment schemes operating in more than one euro area country (ie cross-border schemes), the lead overseer within the Eurosystem coordinates the implementation of an oversight assessment carried out by an assessment group (“college”).

Cooperation with other authorities is an important means of ensuring effective and efficient oversight, as the oversight responsibilities of central banks are closely related to the responsibilities of other prudential supervisors and securities regulators. In the case of securities clearing and settlement systems, the Eurosystem benefits from the oversight powers conferred on the NCBs by national legislation. Each NCB reports on its own oversight assessments, which are conducted in cooperation with the relevant securities regulators, with a view to ensuring the transparent implementation of the recommendations in the various countries. Transparency and consistency are ensured through the application of the ESCB-CESR recommendations for SSSs and CCPs in the EU. In addition to any arrangements that NCBs may have in place governing cooperation with other national authorities, the Eurosystem has concluded Memorandums of Understandings (MoUs) with prudential supervisors and regulators in order to lay down procedures and principles for regulatory cooperation.

Cooperative oversight arrangements at international level (eg those in place for CLS and SWIFT) as well as the Eurosystem’s location policy are instruments to address risk and the growing importance of interdependencies, not the least in a cross-border or cross-currency context. For the Eurosystem, infrastructures processing euro-denominated transactions that may have systemic relevance for the euro area should settle in central bank money and be located in the euro area. The Eurosystem accepts exceptions to this rule only in very specific circumstances and on a case by case basis. However, the Eurosystem recognises that offshore systems and interdependencies with systems and third-party providers create the need for efficient and effective cooperation between the central banks responsible for the oversight of such systems.

### **1.3.3 The Eurosystem’s catalyst role**

The Eurosystem, playing a catalyst role, seeks to facilitate and thus improve the efficiency of the overall market arrangements for payments, clearing and settlement. Financial integration and financial development are two complementary processes facilitating efficiency. The catalyst function complements the oversight function, which aims to ensure the safety and efficiency of individual payment, clearing and settlement systems, as well as the safety of the overall market infrastructure.

While in the euro area the market segment for large-value payments is already well integrated, the Eurosystem has a keen interest in the integration of the market segments for retail payments and securities. The Eurosystem encourages change in these market segments and strives to overcome the problem of fragmentation, which leads to inefficiencies, lower levels of growth and innovation, and unnecessary risks associated with the complexity of the market.

The establishment of efficient and integrated euro area-wide markets for the handling of retail payments and securities where previously there were only fragmented national markets is a complex process involving a large number of infrastructure operators, many thousands of financial institutions and hundreds of millions of different end users. It is therefore not

surprising that coordination challenges occasionally arise, especially given that stakeholder groups and institutions sometimes have divergent interests. Acting as a facilitator, the Eurosystem aims to help the private sector to overcome these problems. Drawing on its position as a public authority and a neutral party, as well as its relationships with market participants and its considerable experience in the areas of payment and settlement, it seeks to assist the market in organising cooperation, defining development strategies, setting milestones and timetables and ensuring the effective sharing of information.

As a monetary authority with responsibilities in the area of payments and settlement, the Eurosystem guides the work of the private sector by defining and clearly communicating the public policy objectives to be achieved. Such guidance is essential in complex projects lasting a number of years and involving a considerable number of stakeholders – eg the SEPA project.

When setting policy objectives, the Eurosystem generally organises discussions regarding strategy or obtains the necessary information by other means, involving all relevant stakeholders. It has, for instance, consulted the banking industry, infrastructure providers and end users (including corporations, merchants, small and medium-sized enterprises, public administrations and consumers) on SEPA-related issues. Similarly, users of securities infrastructures are consulted and involved in discussions on post-trading issues. Thanks to regular and close contact with market participants and their associations, the ECB is able to convey its ideas to the private sector and obtain feedback from the market. Two examples of this cooperation are the Contact Group on Euro Payments Strategy (COGEPS) and the Contact Group on Euro Securities Infrastructures (COGESI).

The establishment of an integrated euro area market requires the existence of common standards for a variety of activities. The Eurosystem attaches great importance to the development and implementation of standards providing the basis for effective communication, interoperability and process automation.

To facilitate the integration of the retail payments market the Eurosystem has supported the development of various technical standards for retail payments. In the context of the SEPA project, it has continuously followed and encouraged the standardisation work carried out by the banking industry. In 2004 the Eurosystem established a set of seven high-level recommendations regarding standardisation work.<sup>16</sup> It asked that the industry formulate and regularly review a strategic vision – complemented by a detailed action plan – setting out the business and technical standards necessary in order to design and implement safe, efficient and fully automated payment services using the best available technology with a view to supporting the SEPA project. Initiatives aimed at strengthening the security of payment services and combating fraud also need to be developed in more detail, as well as work on definition and implementation in forward-looking areas such as e-payments, e-invoicing and m-payments.

The Eurosystem considers that the creation of a single retail payments market is important for the integration of banking markets and European integration in general. The Eurosystem has given the industry considerable guidance in order to ensure that this market is established in the way that best meets the needs of Europe's citizens and corporations.

The objectives of the Eurosystem's catalyst function in the field of securities are broadly similar to those pursued in the field of payments: more transparent, efficient and resilient infrastructures, leading to wider choice and lower costs for users and, ultimately, sustainable growth in the securities markets of the various euro area countries. Efficiency requires the

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<sup>16</sup> *Towards a single euro payments area – third progress report*, Annex 5: Seven high-level recommendations for standards, ECB, December 2004, available on the ECB's website at <http://www.ecb.europa.eu>.

harmonisation of processes and business practices across borders, as well as the removal of barriers to competition and consolidation within the European securities infrastructure. This infrastructure needs to be reshaped to allow all euro area securities to be easily transferred from one part of Europe to another. Over the years, the Eurosystem has held regular meetings with market participants to discuss issues relevant to the harmonisation and integration of the securities market infrastructure.

In the field of securities infrastructure, some consolidation has been achieved in the euro area through mergers and acquisitions involving CSDs. However, this process has been slow and limited in scope, notably owing to significant market-related and regulatory obstacles. Because market-led consolidation seemed unlikely to deliver an integrated market infrastructure for Europe in the foreseeable future, in mid-2006 the Eurosystem, acting in its operational role, decided to launch the T2S project, with a view to establishing a single platform for the settlement in central bank money of securities transactions in Europe. However, in parallel with its work to develop T2S, the Eurosystem continues to act as a catalyst for integration as regards other aspects of post-trading services. Without harmonisation of national market practices, the competition and efficiency benefits of system integration and interoperability cannot be maximised. The ECB is a member of the Expert Group on Market Infrastructures, which since autumn 2010 advises the European Commission on specific issues related to post-trading in the EU and on forthcoming European legislation in this area. The Eurosystem has also been playing a catalyst role through the work of the T2S Advisory Group in the field of securities handling.

The ECB has played an important catalyst role in some major policy initiatives launched by the European Commission. One of these initiatives is the removal of the 15 “Giovannini barriers”<sup>17</sup> to the cross-border integration of clearing and settlement systems in Europe. A second initiative is the Code of Conduct for Clearing and Settlement signed by the European industry associations for exchanges and post-trading infrastructures in 2006. The Code covers issues such as price transparency, access and interoperability, as well as service unbundling and accounts separation.

A further aspect of the catalyst activities relates to the continuous development and sharing of expertise in the field of payments, clearing and settlement. The Eurosystem regularly collects and publishes relevant data, reports on payment, clearing and settlement-related issues, holds frequent bilateral and multilateral meetings with a wide variety of stakeholders, carries out surveys and fact-finding exercises, issues newsletters and produces a large number of publications in this field.

#### **1.3.4 Cooperation with other institutions**

In addition to defining policies and principles on its own, the Eurosystem interacts extensively with other bodies and institutions active in the area of payment and settlement systems.

There are regular contacts and exchanges of information at policy and expert level between the Eurosystem and the European legislator, both at EU level and at the level of individual euro area countries. The Council of the EU and the European Parliament are empowered to adopt legal instruments, while the powers of the European Commission include acting as the guardian of the EU’s treaties and proposing legislation to the Parliament and the Council. The ECB is consulted on any proposed EU or draft national act in its fields of competence. Moreover, the ECB may submit opinions to the appropriate EU institutions on matters in its fields of competence.

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<sup>17</sup> See “Cross-border clearing and settlement arrangements in the European Union”, Giovannini Group, Brussels, November 2001.

In addition to contact on legal and regulatory issues, financial integration is one prominent subject area in which the Eurosystem and the European Commission support each other's work and, where necessary, coordinate their policies. There is regular contact between the ECB and the European Commission's Directorate General Internal Market and Services in order to exchange views on payment- and settlement-related issues. Where necessary, the ECB also interacts with the Directorate General for Competition with a view to providing information on issues surrounding the functioning of market infrastructures. Information is also regularly provided to the European Parliament, particularly its Committee on Economic and Monetary Affairs.

Central banks and banking supervisors have shared responsibility for maintaining financial stability. Central bank overseers will want to be informed in the event that banking supervisors identify a serious problem in an institution participating in a system, while banking supervisors will want to be informed if central bank overseers identify a payment, clearing or settlement-related risk that will potentially affect participants in a system or arrangement. For these reasons, in 2001 the ECB, ESCB central banks and EU banking supervisors concluded an MoU on cooperation and information-sharing.

Activities relating to financial instruments are of common interest to central banks and securities regulators. Cooperation between the NCB and the national securities regulator takes different forms in the various euro area countries, with some countries specifying that cooperation and the division of responsibilities more formally in an MoU. At the EU level, with a view to promoting the development and consistent application of a common framework for regulation, supervision and oversight, the ESCB and the CESR jointly developed recommendations for SSSs and CCPs in the EU in 2009.

A wide variety of arrangements are in place for Eurosystem cooperation and interaction with other market infrastructure stakeholders at the European level. The COGEPS addresses issues and developments in the field of payment systems and services that are relevant for the euro area banking industry and for the Eurosystem. It covers both large-value and retail payment systems and services and comprises representatives of the Eurosystem and of the euro area banking industry (on behalf of commercial banks, EU banking associations and the working groups of the European Payments Council (EPC)). The European Commission attends with observer status, as do four delegates from the non-euro area EU central banks. The COGESI deals with issues that are relevant for the euro securities settlement industry and of common interest to the Eurosystem, market infrastructures and market participants. These include developments in the fields of collateral management and liquidity management, infrastructure developments, issues related to regulation, standards and legal frameworks, and post-trading activities in general. The group comprises representatives of the Eurosystem, market infrastructures (CSDs, international CSDs (ICSDs), CCPs and exchanges) and infrastructure users (mostly banks, including custodians).

The Euro CLS group addresses issues related to the functioning of the CLS system – particularly liquidity management issues arising in the settlement process, with a special focus on euro liquidity issues. As regards retail payments and SEPA-related issues, contact group meetings are complemented by strategic discussions in the SEPA High-level Group, which comprises board members of euro area NCBs, board members from 25 commercial banks, and the Chair and Vice-Chair of the EPC.

In the field of large-value payments, TARGET2-related issues are discussed at the regular meetings of the Eurosystem Working Group on TARGET2 and the private sector TARGET Working Group. At the national level, TARGET user group meetings provide a forum for discussions between the relevant NCB and its banking community.

Close cooperation with all relevant stakeholders is a key objective of the Eurosystem in relation to the T2S project. Work on this project is being carried out with high transparency, and key stakeholders are closely involved in the project's governance arrangements.

Furthermore, public consultations constitute an important tool enabling the Eurosystem to communicate proposed future policies and plans to stakeholders and the general public, giving participants the opportunity to scrutinise and comment on such plans prior to implementation.

At the global level, the most important forum for multilateral central bank cooperation on market infrastructure issues is the CPSS. The CPSS has become known as the main international standard setter in the area of payment, clearing and settlement systems. The ECB and the other CPSS member central banks in the euro area have contributed actively to the joint CPSS-IOSCO review of the three sets of CPSS core principles and CPSS-IOSCO recommendations. Moreover, they also contribute – whether directly or via the CPSS – to work conducted under the auspices of the Financial Stability Board and the work of the OTC Derivatives Regulators' Forum.

Finally, as the central banking system of a major world currency, the Eurosystem is, of course, also involved in a wide range of regular and ad hoc bilateral and multilateral central bank cooperation and technical assistance activities.

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

#### *1.3.5.1 Banking associations and federations*

Most banks in the EU are organised into national federations or associations that represent their members' interests vis-à-vis other public and private institutions. The national federations and associations also cooperate at the European level in the European Association of Co-operative Banks (EACB), the European Savings Banks Group (ESBG) and the European Banking Federation (EBF) – the so-called European Credit Sector Associations. These three organisations act as platforms for exchanging views, for reaching agreement on common business policies and for discussing other matters which require a common understanding at the European level, including payment issues.

#### *1.3.5.2 Other associations, federations and councils*

Market players have organised themselves to consider issues in the field of payment and securities clearing and settlement systems. These bodies act as platforms to promote the interests of their members, to facilitate the exchange of views and to develop common standards and practices.

The most prominent forums in the payments market are the European Payments Council (EPC) (see Section 2.2.2) and the Euro Banking Association (EBA).

The most important organisations with regard to financial instruments are the European Central Securities Depositories Association (ECSDA), the European Association of Central Counterparty Clearing Houses (EACH) and the Federation of European Securities Exchanges (FESE).

Furthermore, in order to address the need for proper governance of the SEPA project and to increase the involvement of end users, the ECB and the European Commission agreed on the creation of the SEPA Council in March 2010. This new overarching body is co-chaired by the ECB and the European Commission and brings together high-level representatives of the supply and demand sides of the payments market. The SEPA Council is scheduled to take place twice a year.<sup>18</sup>

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<sup>18</sup> For further details, please see the SEPA Council website at <http://www.sepacouncil.eu>.



## 2. Payment media used by non-banks

### 2.1 Cash payments

The euro was launched as a currency in its own right on 1 January 1999. Euro banknotes and coins were introduced three years later on 1 January 2002. Since then, citizens of the euro area have been able to make cash payments in all euro area countries using one single currency.

Cash is still the most important instrument for retail transactions in the euro area, although transaction volumes vary considerably from country to country. It should be noted that while the relative importance of cash payments is decreasing, the absolute value of the outstanding stock of cash is expected to continue growing.

### 2.2 Non-cash payments

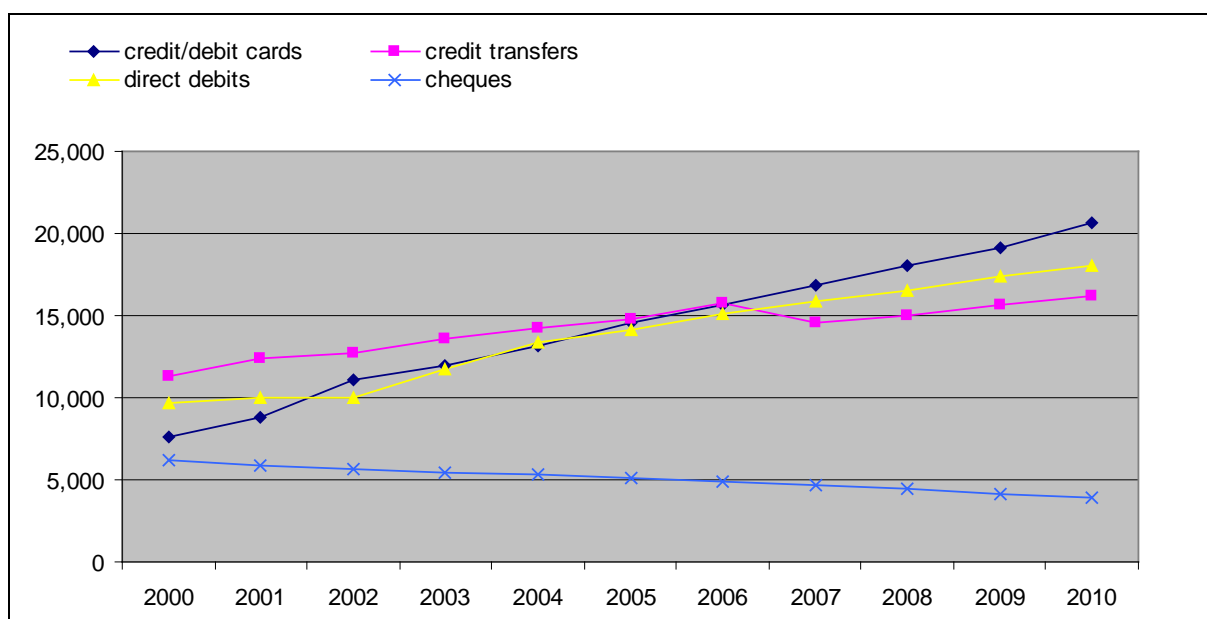
#### 2.2.1 Non-cash payment instruments

Payment cards, direct debits, credit transfers and cheques are the main non-cash payment instruments in the euro area. Over the last 10 years payment cards have displayed the strongest growth, with transaction volumes more than doubling. Consequently, payment cards have overtaken credit transfers as the most widely used non-cash payment instrument in the euro area. Direct debits have also seen steady growth, while the use of cheques has been declining. Indeed, in some euro area countries, cheques have been abolished altogether. E-money payments have remained of marginal importance: they are used only to a very limited extent and several e-money schemes have ceased operating. Trends in the use of the various payment instruments in the euro area from 2000 to 2010 are shown in Chart 1.

Chart 1

#### Main non-cash payment instruments in the euro area

In millions of transactions



Source: ECB.

National preferences vary widely as regards the use of the various instruments for cashless retail payments, as shown in Table 1. Moreover, there are marked differences in the per capita number of non-cash payment transactions, as shown in Chart 2.

Table 1  
**Relative importance of the main payment instruments  
in the euro area<sup>1</sup>**

2010; percentages of total number of transactions

	<b>Credit transfers</b>	<b>Direct debits</b>	<b>Cards</b>	<b>Cheques</b>
Belgium	42.13	10.31	44.71	0.30
Germany	33.86	50.16	15.47	0.28
Estonia <sup>2</sup>	34.23	6.67	59.10	0.00
Ireland	22.62	15.70	48.46	13.22
Greece	34.24	9.20	42.67	12.21
Spain	14.42	42.21	40.82	1.85
France	17.53	20.00	43.33	18.31
Italy	30.65	14.81	37.52	7.88
Cyprus	27.78	8.61	39.01	24.60
Luxembourg <sup>3</sup>	45.22	10.64	44.01	0.13
Malta	19.96	3.97	42.48	33.59
Netherlands	29.57	24.39	42.71	–
Austria	42.31	37.19	18.60	0.09
Portugal	10.85	13.59	67.99	7.42
Slovenia	50.10	14.94	34.90	0.06
Slovakia	55.89	15.41	28.68	0.01
Finland	41.98	4.33	53.64	0.02

– = not applicable.

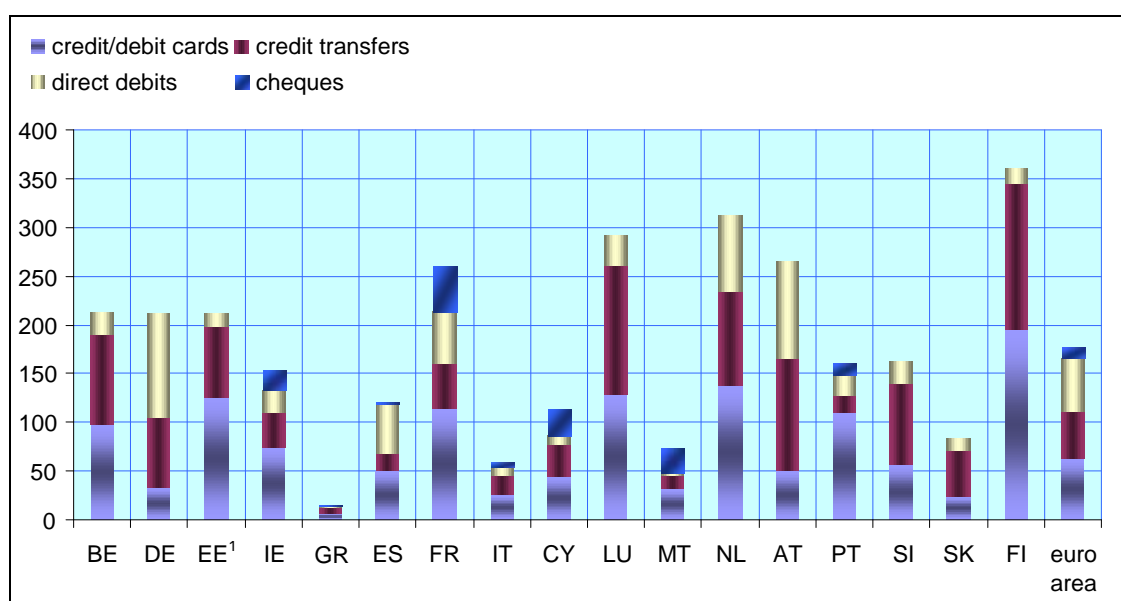
<sup>1</sup> Percentages may not add up to 100% as e-money transactions and other payment instruments are not shown. <sup>2</sup> Estonia joined the euro area in 2011. <sup>3</sup> E-money transactions are excluded from the breakdown for methodological reasons.

Source: ECB.

Chart 2

**Use of main non-cash payments in the euro area**

Number of transactions per capita, 2010



<sup>1</sup> Estonia joined the euro area in 2011.

Source: ECB.

### 2.2.2 The migration to SEPA instruments

With the support of the European public authorities, the European banking industry has launched the Single Euro Payments Area project, a series of initiatives aimed at introducing common instruments, standards and infrastructures for retail payments in euros. The objective is to overcome fragmentation in the retail payments market by transforming the various national markets into one SEPA market. All euro payments in the euro area should thereby become domestic payments. This should allow users to make payments in euros throughout Europe from a single bank account, using a single set of payment instruments, as easily and securely as in the national context today. Citizens, companies and financial institutions will benefit from the streamlined handling of payments throughout Europe.

In June 2002 the banking industry established the EPC, comprising 65 bank delegates representing different types of European bank, the three European Credit Sector Associations and the EBA. The EPC includes stakeholders from the 27 EU member states and from Iceland, Liechtenstein, Monaco, Norway and Switzerland. It is governed by the EPC Plenary, its decision-making and coordinating body. The EPC focuses on payments in euros, and so SEPA is primarily a euro area project. However, the non-euro area countries represented in the EPC have chosen to adopt the SEPA standards and practices for their payments in euros.

The building blocks for a fully integrated European market for retail payment services are the euro, the Payment Services Directive (which provides a common legal basis) and the elements of SEPA discussed below. The EPC has developed a set of rulebooks and frameworks to govern the SEPA instruments.

#### 2.2.2.1 SEPA Credit Transfer (SCT) rulebook

The EPC has established common rules and obligations to be observed by participants in the SCT scheme. The rulebook details the functioning of the scheme and governs the scheme's relationship with processing infrastructures. It stipulates a maximum execution time, guarantees that the full amount will be credited to the recipient's account and places no limit on the value of payments.

The SCT scheme is built on well known international standards: IBAN, BIC and UNIFI (ISO 20022) XML message standards. Under the scheme, the latest possible settlement time for credit transfers is D+3 – ie the payee's account should be credited three business days at the latest after the payment is initiated by the payer. The Payment Services Directive provides that this should be reduced to one business day (ie accounts should be credited D+1) by 2012. The SCT scheme was rolled out on 28 January 2008.

#### 2.2.2.2 SEPA Direct Debit (SDD) rulebook

The SDD rulebook lays down a set of interbank rules, practices and standards enabling the banking industry to provide direct debit services on the basis of uniform conditions throughout SEPA. The SDD scheme is based on the "creditor mandate flow" (where the mandate is given to the creditor, as opposed to the payer's bank). In addition, the business-to-business SDD has been set up, aiming to cover the specific needs of businesses. The rollout of SDD took place on 1 November 2009.

The success of the SDD scheme can only be assured if all banks participate, thereby making all debtors "reachable" for direct debit transactions. Reachability for core direct debit transactions became mandatory on 1 November 2010 for those banks in the euro area that currently offer direct debits in euros at the national level.<sup>19</sup>

#### 2.2.2.3 SEPA Cards Framework (SCF)

In contrast to credit transfers and direct debits, the EPC has not established a "scheme" for card payments, but a framework – ie a set of high-level principles and rules. The SCF will be implemented by individual card schemes, banks and other stakeholders. The objective is to establish an integrated SEPA market where holders of general purpose cards can make payments and cash withdrawals in euros abroad with the same ease and convenience as in their home countries.

#### 2.2.2.4 Framework for the evolution of the clearing and settlement of payments in SEPA

This framework establishes principles on how providers of clearing and settlement mechanisms (CSMs) can support the SCT and SDD schemes. It clearly delineates the roles and responsibilities of the scheme layer and the infrastructure layer. It also classifies the various infrastructure types, which range from pan-European automated clearing houses (ACHs) and intrabank or intergroup arrangements to purely bilateral arrangements such as correspondent banking.

The European Automated Clearing House Association (EACHA) has developed a "Technical Interoperability Framework for SEPA-compliant Giro Payments Processing", which may be used as the basis for interoperability agreements between banks and ACHs (see Section 3.1.2). The aim of both frameworks is to ensure that infrastructures will be able to process SEPA payments and all debtors will be reachable.

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<sup>19</sup> Regulation (EC) No 924/2009 of 16 September 2009 on cross-border payments in the Community and repealing Regulation (EC) No 2560/2001, OJ L 266, 9.10.2009, pp 11–18.

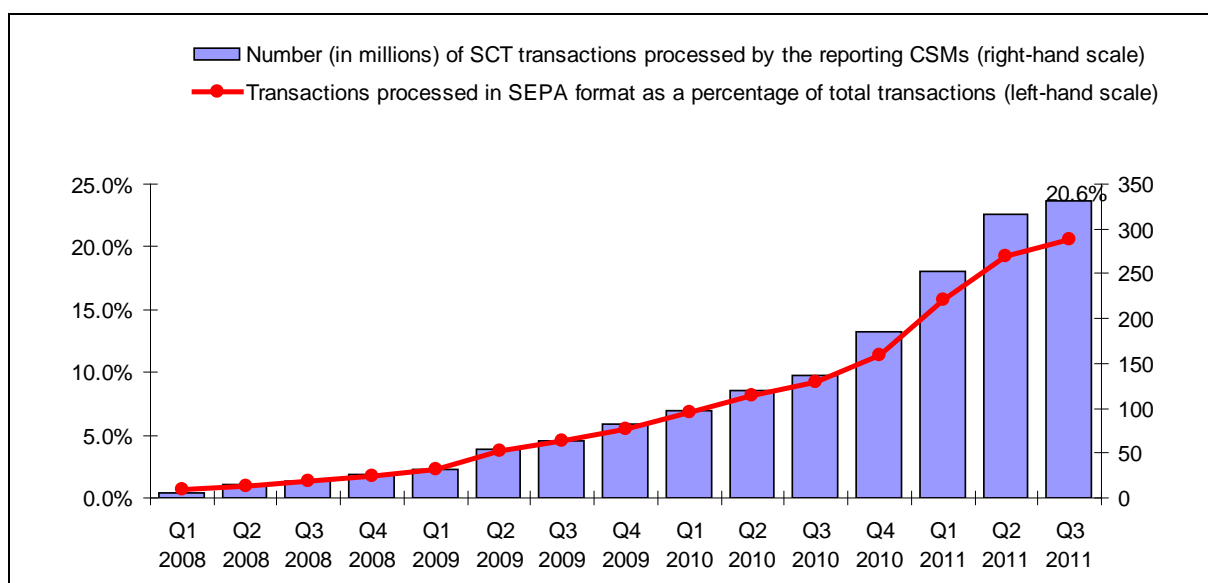
### 2.2.2.5 Single euro cash area

The smooth handling of payments requires a whole range of different instruments, including cash. In order to create a single euro cash area for professional cash handlers, the ECB has agreed on a number of measures aimed at creating a fair competitive environment as regards the cash services provided by the euro area NCBs to the banking industry, which is the Eurosystem's main counterpart for cash services and an intermediary in the provision of cash to the general public. Further steps will be implemented in order to achieve greater convergence as regards the cash services provided by NCBs in the medium term.

### 2.2.2.6 Use of SEPA Credit Transfer and SEPA Direct Debit

To monitor the usage of the new SEPA payment instruments during the migration period, the Eurosystem compiles a number of SEPA indicators. The euro area SCT indicator showed that by September 2011 some 21.1% of all credit transfers had migrated to SEPA. The volume of SCT transactions processed by CSMs in September 2011 amounted to 114.5 million transactions. Chart 3 shows the use of SCT since it was rolled out.

Chart 3  
Migration to SEPA credit transfers



By the end of third quarter of 2011, the migration to SDD remained at a very low level. In September 2011 the euro area SDD indicator reached 0.13%. The volume of SDD transactions processed by CSMs located in the euro area amounted in September 2011 to 0.77 million transactions.

Both the SCT and SDD indicators are based on (aggregated) CSM data and relate to total credit transfers or direct debits processed by CSMs located in the euro area.

These data show that despite reaching a number of milestones, SEPA migration, as a self-regulatory process, did not achieve the desired results. The banking industry's self-imposed deadline of December 2010 for SEPA instruments to be in general usage – which was shared by the Eurosystem and the European Commission – was not met. Obviously, moral suasion only had a limited impact. To ensure the materialisation of SEPA benefits and following intense debate between the Eurosystem, the European Commission and the market, the European Commission in December 2010 launched a proposal establishing technical requirements for credit transfers and direct debits in euros, imposing, by means of an EU Regulation, an end date for migration to SCT and SDD. Subsequently, an agreement

was reached between the European Parliament and the Council, implying – among other things – that the end date for the migration to SEPA credit transfers and direct debits was set to 1 February 2014.

### **2.2.3 Future developments**

In the coming years, two policy issues will gain in importance: security aspects of retail payments and innovation.

#### *2.2.3.1 Security aspects*

The security of retail payments is a key issue if consumers and businesses are to trust and have confidence in SEPA. The ECB's Payment and Settlement Systems Committee (PSSC) took the initiative to create a European forum on the security of retail payments (the SecuRe Pay Forum), which held its first regular meeting in early 2011. The SecuRe Pay Forum is based on voluntary cooperation between authorities and aims to foster common knowledge and understanding – in particular between overseers and supervisors of payment service providers – of the issues at stake in the field of retail payment security. SecuRe Pay will address issues concerning electronic retail payment services and retail payment instruments (excluding cheques and cash) provided within the EU/EEA member states. Its work will cover the whole processing chain independent of the payment channel. The Forum aims to focus on areas where major weaknesses and vulnerabilities are detected and, where necessary, will make recommendations.

In relation to security, in particular that of card payments, the SCF requires that all cards, POS terminals and ATMs in SEPA should be EMV<sup>20</sup> compliant by end-2010. However, the vast majority of SEPA cards are still equipped with a magnetic stripe, which makes them vulnerable to “skimming”, ie unauthorised reading of the data contained on the stripe either via a manipulated ATM or POS terminal or via a handheld reading device. With the payment data from the magnetic stripe, a “cloned” card can be made and subsequently used in non-EMV payment environments and “card-not-present” transactions. Against this background, the Eurosystem considers that all new SEPA cards should, by default, be issued as chip-only cards from 2012 onwards. If the industry decides to retain the magnetic stripe for practical reasons (eg travelling in non-EMV countries) any data enabling magnetic stripe transactions should be removed. Cards with legacy magnetic stripes should only be issued on the cardholder's request as long as non-EMV regions exist.

Finally, in the area of security, cross-sector cooperation as well as the active contribution of all stakeholder groups is essential. The Eurosystem considers that, in particular for remote payments, payment service providers should increase their efforts to implement state-of-the-art security standards and take appropriate actions to protect sensitive customer information. In addition, merchants should recognise that it is in their own interest to offer secure means of payment and therefore adopt the necessary measures. Finally, consumers also have a role to play, eg by keeping their online banking details secret and by using them only within the trusted online environments provided by their payment service providers.

#### *2.2.3.2 Innovation*

Europe is still a patchwork of national online markets and Europeans cannot yet enjoy the benefits of a single digital market. Traditional payment instruments, which have generally not been designed to cope with the needs of the online world and (except for credit card payments) are hardly useable on a cross-border level, still dominate payments for

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<sup>20</sup> EMV is a standard for integrated circuit cards established by Europay, MasterCard and Visa.

e-commerce. Given the strong growth in e-commerce, the corresponding growth of online payments and the rising concerns over the substantial increase in fraud figures for card payments on the internet, there is a genuine need for secure and efficient online payment solutions throughout SEPA. Furthermore, the European Commission's Digital Agenda for Europe<sup>21</sup> requires the definition of a date for moving to a single market for online payments.

The Eurosystem strongly encourages the banking industry to deliver SEPA-wide online e-payment solutions. However, little progress has been made so far. A positive and promising recent development is the "proof of concept" exercise of interoperability in the SEPA market (based on the EPC's work on e-payments) started by three prominent online banking-based e-payment systems (EPS, iDEAL and GiroPay) which other communities/schemes may join.

The m-payments dossier is still in its early stages. The large number of stakeholders to be involved makes the development of widespread m-payment solutions more complex. The Eurosystem expects the EPC's theoretical work to be finalised by mid-2012 at the latest and SEPA-wide customer offerings to emerge thereafter.

#### **2.2.4 Multilateral interchange fees**

In recent years interchange fees have become a controversial issue, subject to regulatory and antitrust investigations. Determining whether the level of multilateral interchange fees (MIFs) restricts competition is an issue for the competition authorities, and the European Commission is closely cooperating with its national counterparts. Certain card schemes have had to cut cross-border MIFs in order to comply with EU antitrust rules. The Commission has proposed to prohibit interchange fees for direct debits in its draft regulation on SEPA migration end dates, with the exception of direct debits resulting in R-transactions,<sup>22</sup> subject to certain conditions. As for cards, the Commission published its decision on MasterCard's interchange fees in December 2007,<sup>23</sup> which was appealed by MasterCard in 2008. The Commission also acknowledged commitments made by MasterCard in 2009<sup>24</sup> and Visa in 2010<sup>25</sup> on reducing their MIFs. Despite the guidance provided by the Commission, the market still claims that further guidance is needed related to interchange fees for cards.

### **3. Payment systems**

#### **3.1 General overview**

##### **3.1.1 Large-value payments**

With the introduction of the euro on 1 January 1999, the principles governing the provision of payment services within the euro area changed. The existence of a single currency meant that cross-border payments within the euro area were, in principle, no different from

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<sup>21</sup> Communication from the European Commission, *A Digital Agenda for Europe*, COM (2010) 245, 19 May 2010.

<sup>22</sup> R-transactions are direct debit transactions that result in exception processing (eg on account of rejection, refusal, return or reversal).

<sup>23</sup> Commission Decision of 19 December 2007 in Cases COMP/34.579 – MasterCard, COMP/36.518 – EuroCommerce and COMP/38.580 – Commercial Cards (2009/C 264/04).

<sup>24</sup> Europa press release, IP/09/515.

<sup>25</sup> Commission Decision of 8 December 2010 in Case COMP/39.398 – Visa MIF (2011/C 79/05).

payments within an individual country. The conduct of a single monetary policy required the establishment of a single money market covering all euro area countries. As a consequence, the reshaping of the payment market landscape has been particularly pronounced in the area of large-value payment systems (LVPSs).

In the euro area the market segment for large-value payments is now served by two area-wide systems. The technically centralised TARGET2 system, owned and operated by the Eurosystem, provides for RTGS of euro payments in central bank money. TARGET2 is an essential vehicle for implementing the Eurosystem's monetary policy and for the functioning of the euro money market (see Section 3.2.1). The EBA's EURO1 system is a privately owned and operated EU-wide payment system in the euro large-value segment (see Section 3.2.2). At the time the euro was introduced in 1999, a total of six LVPSs were operating in euros in the euro area. While TARGET and EURO1 covered the whole euro area, the other four were more localised (although with some foreign participation): EAF in Germany, PNS in France, SPI in Spain and POPS in Finland. EAF and PNS were hybrid systems, combining elements of both gross and net settlement systems; SPI was a multilateral net settlement system; and POPS is a system combining bilateral gross and net settlement. Three of these systems have since ceased operating: EAF (in November 2001), SPI (in December 2004) and PNS (in February 2008).

### **3.1.2 Retail payments: Single Euro Payments Area for infrastructure, processors and links**

The market for retail payments in euros is far less integrated than the large-value payment segment. Retail payments are still based largely on national payment instruments and systems. While national payment systems may be cheap, very efficient and offer their users high levels of service when it comes to domestic payments, this is not yet the case for cross-border retail payments in the euro area, where processing procedures are more complex and levels of service are lower. However, fundamental changes will progressively occur in this area.

The list of euro area-wide retail payment systems is very short at present, but is expected to lengthen in the years to come. The two systems currently available on an area-wide basis, STEP1 and STEP2, were set up to complement the EURO1 system operated by EBA Clearing (see Section 3.2.2). STEP1 has been operational since November 2000 and complements EURO1 by providing a solution for the handling of retail and commercial payments (see Section 3.3.1). The STEP2 system (see Section 3.3.2) began operating in April 2003 and was developed as the first pan-European automated clearing house (PE-ACH) for bulk payments in euros, with a view to enabling cross-border payments in euros to be executed at low cost in compliance with Regulation (EC) No 2560/2001 on cross-border payments in euros.<sup>26</sup>

Retail clearing and settlement are organised differently in the various euro area countries, reflecting their traditions and business preferences. Most national retail payment systems were originally developed using national standards and work well and efficiently within national borders. In some cases, the national clearing and settlement models are specific to the various payment instruments, while in others all transactions are centralised in a single infrastructure (eg in France and Greece). Most multilateral netting systems settle their balances in TARGET2. At the end of 2010 there were 20 retail payment systems in the euro area; in terms of concentration, the three largest systems processed 71% of the total market volume, and the five largest 85% (see Chart 4).

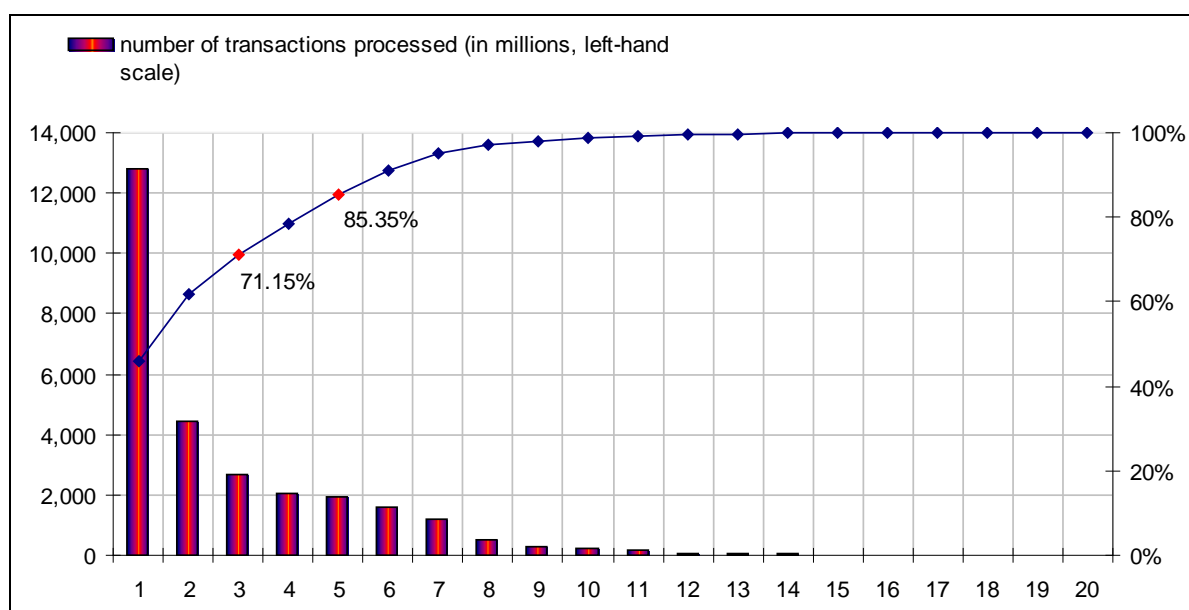
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<sup>26</sup> Repealed by Regulation (EC) No 924/2009 of 16 September 2009 on cross-border payments in the Community.



Chart 4

### Concentration of transactions processing among the 20 euro area retail payment systems, 2010



Source: ECB.

The integration of market infrastructures can be achieved in various ways. New area-wide systems could replace existing national systems, separate platforms could be consolidated to form a single platform, or platforms could be made interoperable. With a view to SEPA compliance, banks which receive and send national payments must also be able to receive and send payments on a euro area-wide basis. All banks must put in place the necessary arrangements, including a link to one or more SEPA-compliant CSMs. Each CSM, in turn, must be in a position to offer its clients euro area-wide reach, which means that it needs to be interoperable with other CSMs.

Interoperability is the ability of an infrastructure – whether directly or indirectly – to process payments between any two banks in the euro area (based on the rulebooks for SCT and SDD). The EACHA has established a technical framework to facilitate the interoperability of infrastructures, particularly as regards message formats, message flows, routing provisions, network and connectivity provisions and the mechanism for the settlement of inter-ACH transactions using TARGET2 as a settlement platform. In addition to the EACHA framework for the interoperability links between CSMs, another kind of connection has been developed for payments processed in STEP2; however, this system requires the direct or indirect participation of financial institutions. Numerous links and connections of these kinds have been set up between processors.

#### 3.1.3 Card schemes

In the euro area, cards are now the most commonly used payment instrument in terms of transaction volumes. In particular, debit card transactions are now of great importance. This development has been supported by the existence of cheap and efficient national debit card schemes (some of which also offer credit card functionality), which are complemented by or co-branded with international card schemes.

While these national card schemes have a very strong market position in their respective countries, their weakness is that they have very little – if any – acceptance outside their

home country. Acceptance of a card in transactions outside the home country is therefore typically achieved by means of co-branding – ie the card bears, in addition to the logo of the domestic card scheme, the logo of one of the international card schemes.

Table 2  
Card schemes operating in the euro area

National card schemes			
Name	Country	Name	Country
Bancontact/Mister Cash	Belgium	Sofinco <sup>1</sup>	France
EAPS (Euro Alliance of Payment Schemes)	Belgium	LaserCard	Ireland
JCC Payment Systems Ltd	Cyprus	CartaSi	Italy
Girocard/ATM	Germany	COGEBAN / PagoBancomat	Italy
4B	Spain	Bancomat	Luxembourg
Euro 6000	Spain	Cashlink	Malta
ServiRed	Spain	Premier	Malta
ACCORD <sup>1</sup>	France	Quickcash	Malta
Cartes bancaires	France	PIN	Netherlands
Cetelem <sup>1</sup>	France	SIBS	Portugal
Cofinoga <sup>1</sup>	France	Activa	Slovenia
Finaref <sup>1</sup>	France	Karanta	Slovenia
Franfinance <sup>1</sup>	France		

<sup>1</sup> Three-party schemes.

#### International card schemes

Four-party schemes		Three-party schemes	
Visa	UK	American Express	US
MasterCard	EU	Diners / Discover	US
China Union Pay	China	JCB	Japan

Many of the national card schemes and some international card schemes offer both debit and/or credit card functionality. Most national schemes offer co-branding with an international scheme.

Euro area citizens and retail merchants have benefited greatly from the availability of efficient and widely accepted debit card schemes. However, since those schemes are national in scope, many of them face great challenges in becoming SEPA-compliant. There is even a danger of schemes being closed down and replaced by card schemes that are more costly for their users. This is one of the reasons why the Eurosystem has recommended that the banking community consider ways to set up a European card scheme.

There are currently three initiatives for the creation of a European card scheme. The Euro Alliance of Payment Schemes is an initiative by selected scheme operators to interlink a number of existing ATM and POS schemes; PayFair is an independent bank and merchant-led initiative to establish a new SEPA-compliant payment card scheme; and Monnet is a

project of some large European banks to set up a new pan-European card scheme. All of the initiatives are still at an early stage.

### **3.1.4 Correspondent banking and group networks**

The role of correspondent banking as a way of making large-value or retail payments has diminished and become more concentrated in the euro area since the launch of the euro. It is used much less than payment systems such as TARGET2. Nevertheless, correspondent banking in euros continues to be of significance, with banks both within and outside the euro area, complementing the use of payment systems in euros. There are signs of banks moving away from correspondent banking arrangements for small-value retail payments and into retail payment systems operating in euros. This is expected to continue with the full implementation of SEPA.

Group networks represent a special kind of correspondent banking service. In the late 1980s and early 1990s groups of banks established networks in order to reach local retail payment systems in a large number of countries and thereby facilitate their customers' cross-border payments. The largest of these networks are Eurogiro and TIPANET.

Eurogiro was established in 1989 as a partnership between postal and giro organisations and was restructured to form a holding company in 2007. It has entered into strategic partnerships with, inter alia, Visa, Western Union and the Federal Reserve System. Eurogiro processes credit transfers and cash transfer orders without any limit on the size of payments. In general, transactions are sent directly from member to member and are settled on a gross basis once a day bilaterally between the members concerned. Since November 2001 it has been possible to settle transactions in euros with a single settlement agent.

TIPANET is a network established in 1993 by cooperative banks and which ensures reach for retail payments destined for Europe, Canada, the United States and northern and sub-Saharan Africa. It processes credit transfers, direct debits and cheques. The local correspondent collects all payment instructions, creates payment batches and sends them to its foreign correspondents, which then process the payments in the relevant local payment systems. The settlement of payments takes place via existing reciprocal accounts.

Moreover, within many countries banking groups have developed their own networks for the exchange of payments between the banks concerned. For example, the savings banks of some countries have set up their own payment clearing networks, into which all (or a large part) of the payments effected between those savings banks are routed. The operation of such a network may be the responsibility of a central institution in the savings bank sector or may be outsourced to a service provider.

## **3.2 Large-value payment systems**

### **3.2.1 TARGET2: the real-time gross settlement system**

TARGET2<sup>27</sup> is the system for large-value and urgent payments in euros owned and operated by the Eurosystem. It plays a pivotal role in implementing the single monetary policy and in the functioning of the euro money market by offering a real-time settlement service in central bank money with broad market coverage. In the absence of any upper or lower value limit it has attracted a variety of other payments.

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<sup>27</sup> Trans-European Automated Real-time Gross settlement Express Transfer system, second generation.

The system is based on a single technical infrastructure, the Single Shared Platform (SSP). Three Eurosystem central banks – the Bank of Italy, the Bank of France and the Deutsche Bundesbank – jointly provide the SSP and operate it on behalf of the Eurosystem.

TARGET2 is the second-generation RTGS system operated by the Eurosystem, replacing the former TARGET system which operated from the beginning of monetary union in 1999 until 2008. Unlike TARGET2, TARGET was based on a decentralised technical structure built by linking together the different RTGS components that existed nationally and defining a minimum set of harmonised features.

The move from a decentralised multi-platform system to a technically centralised platform made it possible for TARGET2 to offer harmonised technical and business services at EU level, ensuring a level playing field for banks across Europe, supported by a single price structure applicable to both domestic and cross-border transactions.

Besides the payment processing functionality offered in the Payment Module and the user-to-application interface called the Information and Control Module, the system also provides a number of optional modules. These modules are used, for example, to operate the standing facilities allowing banks to borrow from and make deposits with their Eurosystem central bank overnight, to manage the mandatory reserves to be held by the banks, or to manage the access of central banks to historical and statistical data. It is left to the individual central banks to decide whether to use the optional SSP modules or instead to offer these services via proprietary applications in their domestic technical environment.

### 3.2.1.1 Institutional framework

The rules governing TARGET2 and its operation can be found in the TARGET2 Guideline, which provides the basis on which the NCBs establish their TARGET2 component systems, governed by their national legislation.<sup>28</sup> It contains the main legal elements of TARGET2, including governance arrangements and audit rules. In addition, to ensure the maximum harmonisation of the rules applicable to TARGET2 participants in all the jurisdictions concerned, the Guideline includes conditions for participation in TARGET2. These conditions have been set out in a way that allows the Eurosystem NCBs to implement them in an identical manner, with certain derogations only in the event that national laws require other arrangements. This approach implements the decision of the Governing Council of the ECB in October 2005 to “legally construct TARGET2 as a multiple system, but aiming at the highest degree of harmonisation of the legal documentation used by the central banks within the constraints of their respective national legal framework”.

While in technical terms the SSP operates as a central platform, in legal terms the structure of TARGET2 is decentralised, ie each central bank operates its own RTGS system using the SSP and is fully responsible for the business and legal relationships with its customers.

A unique feature of TARGET2 is the possibility to extend its payment services beyond the euro area by offering NCBs and banking communities of member states which have not yet adopted the euro the possibility to connect to TARGET2. Such participation is possible on a “no compulsion, no prohibition” basis and subject to certain specific conditions which are defined in a TARGET2 Agreement with the Eurosystem. Under this agreement, such non-euro area member states must follow the rules and procedures of the system as defined in the TARGET2 Guideline. TARGET2 participation as defined in that Guideline becomes mandatory when a member state joins the euro area.

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<sup>28</sup> Guideline of the European Central Bank of 26 April 2007 on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET2), ECB/2007/2.

### 3.2.1.2 Participation

Several options are provided for access to TARGET2. These include direct and indirect participation, “addressable BICs” and “multi-addressee access”.

According to the TARGET2 Guideline and its Annex II, entitled “Harmonised conditions for participation in TARGET2”, only supervised credit institutions which are either established in the EEA or which, if they are established outside the EEA, act through a branch established within the EEA, can be admitted as direct participants. Furthermore, subject to approval by the relevant NCB, the following entities may be allowed to become direct participants:

- treasury departments of central or regional governments active in the money market;
- public sector bodies of member states authorised to hold accounts for customers;
- investment firms established in the EEA and supervised by a recognised authority;
- organisations managing ancillary systems acting in this capacity and supervised by a competent authority.

Credit institutions established in the EEA may enter into a contract with a direct TARGET2 participant in order to submit and/or receive payments and to settle them via the RTGS account of the direct participant. They will be published as indirect participants in the TARGET2 directory, which is available to all direct participants for information and routing purposes.

Other entities (eg correspondents or branches worldwide) holding a valid BIC which can be addressed via a direct TARGET2 participant can be registered as “addressable BICs” in the TARGET2 directory. Although technically there is no difference between an indirect participant and an addressable BIC, in legal terms only indirect participants are recognised as participants in TARGET2 and as such benefit from the protection of the Settlement Finality Directive.

Finally, with “multi-addressee access”, a direct participant is able to authorise branches and other credit institutions belonging to its group and located in the EEA to channel payments through the direct participant’s main account without its involvement, by submitting/receiving payments themselves directly to/from the TARGET2 system, which are settled on the account of the direct participant. This offers a direct participant’s affiliate banks or a group of banks efficient features for liquidity management and payment business.

At the end of December 2010, 866 direct participants held an account in TARGET2. Via these direct participants, 3,585 indirect participants from the EEA could settle their transactions in TARGET2, as well as 12,646 correspondents worldwide. Considering also the branches of direct and indirect participants, a total of 59,496 entities around the world were accessible via TARGET2.

### 3.2.1.3 Types of transactions

TARGET2 handles all payments directly connected with central bank operations where the Eurosystem is involved either as sender or recipient and the settlement operations of large-value net settlement payment systems operating in euros. For these two categories of payments the use of TARGET2 is mandatory. In addition, TARGET2 may be used to settle any other interbank or commercial payment which participants wish to process in real time using central bank money. There is no lower or upper limit placed on the value of payments.

Payments can be settled using the SWIFTNet FIN payment types MT 103/MT 103+, MT 202/MT 202COV and MT 204. Every payment order can be assigned a specific priority: normal, urgent or highly urgent. Participants can reserve liquidity for processing payments in different priorities. In addition, it is possible to provide payment orders with a debit time indicator, allowing a first or latest debiting time to be set.

TARGET2 provides a harmonised set of cash settlement services in central bank money for all kinds of ancillary systems, such as retail payment systems, money market systems, clearing houses, CCPs and SSSs. It offers different settlement models (eg bilateral/multilateral settlement, or batch/real-time processing) and has optional features like the setup of an information period before settlement takes place and the use of a guarantee account mechanism. This functionality, using standardised XML payment messages, is available via a dedicated Ancillary System Interface, part of the SSP Payment Module.

In 2010 TARGET2 settled transactions with a total value of € 593,194 billion, which corresponds to a daily average value of €2,299 billion. This represents an increase of 7.6% compared with 2009. In terms of volumes, a total of 88,591,926 transactions were settled in TARGET2 in 2010. This figure, which is stable compared to 2009, is equivalent to a daily average of 343,380 transactions.

#### *3.2.1.4 Operation of the system and settlement procedures*

TARGET2 is open for daylight processing from 7 am. to 6 pm CET on each of its working days, with a cut-off time of 5 pm for customer payments. In addition, TARGET2 starts the new settlement day in the evening of the current business day with next day's value. This so-called "night-time window" is available from 7.30 pm to 7 am the next day, interrupted by a technical maintenance period of three hours between 10 pm and 1 am. It facilitates the night-time settlement of different ancillary systems in central bank money with finality and supports cross-system DVP.

The system offers liquidity management features that allow banks, in particular multi-country banks, to further consolidate their internal processes, such as treasury and back office functions, and to better integrate their euro liquidity management. For example, participants are able to group some of their accounts and pool the available intraday liquidity for the benefit of all the members of the group. TARGET2 also offers its users liquidity-saving features and features to manage payment flows. Examples include payment queues, gridlock resolution mechanisms and priority and reservation features. Today, managers of cash and collateral want automated processes to optimise payment and liquidity management, as well as appropriate tools to monitor their activities and facilitate accurate funding decisions, preferably with the possibility of managing all of their central bank money flows from a single location.

A dedicated Ancillary System Interface exists for the settlement of ancillary systems. It offers ancillary systems a number of standardised procedures to settle their business in TARGET2. During the day in total six different procedures are available: (i) liquidity transfer, (ii) real-time settlement, (iii) bilateral settlement, (iv) standard multilateral settlement, (v) simultaneous multilateral settlement, and (vi) settlement using dedicated liquidity. Only the latter is available during the night-time settlement window.

Access to the features and information provided in TARGET2 is offered both in a user-friendly "internet-style" communication interface (Information and Control Module) and, for most of the functionality, in application-to-application mode using XML standard messages. Since November 2010 internet-based access to TARGET2 has been possible, which is especially useful for small and medium-sized banks as it offers direct access to the main TARGET2 services without requiring a connection to the SWIFT network.

#### *3.2.1.5 Risk management*

TARGET2 is a systemically important payment system, not only because it is the backbone for the settlement of payments in euros, but also because it contributes to the implementation of monetary policy and the settlement of ancillary systems such as LVPSs, SSSs and CCPs, and hence to overall financial stability. Therefore, in the design and development phase of TARGET2, close attention was paid to aspects of operational risk management and a

comprehensive risk management framework was developed. The framework is based on the internationally recognised standard ISO/IEC 27002 and has a hierarchical, three-layer structure which starts with a high-level information security policy, develops further into detailed security requirements and controls and is implemented in the form of guidelines and procedures.

As an RTGS system, TARGET2 by nature is a powerful tool to reduce settlement risk including, in particular, credit, liquidity, operational and legal risk. Its settlement in central bank money and the immediate finality of its real-time settlement process makes it an important enabler of DVP-based transaction processing (ie by handling the cash leg of securities transactions). Furthermore, by providing standardised settlement procedures for ancillary systems including features allowing for the use of liquidity/collateral pools, it offers systems settling in TARGET2 additional tools to reduce both credit and liquidity risk.

Particular attention has been given to the reduction of operational risk within TARGET2. Besides the establishment of the system based on a “two regions – four sites” concept, with two permanently staffed sites and rotating responsibility for live operation, a full set of operational procedures for normal and abnormal circumstances including business continuity and contingency scenarios has been agreed, and is actively maintained and tested regularly. Finally, for critical participants, dedicated obligations regarding the technical setup and for testing and reporting are in place with the aim of reducing the likelihood of systemic impact on the TARGET2 system as a result of a failure on a (critical) participant’s side.

The way in which TARGET2 was implemented and its institutional framework (see Section 3.2.1.1) contribute to a high level of legal certainty. Sound rules covering, inter alia, payment irrevocability and finality are in place, thus reducing legal risk for the system as a whole and its participants.

TARGET2, like any other euro LVPS, is subject to oversight, based on the CPSS “Core Principles for Systemically Important Payment Systems”<sup>29</sup> and the Eurosystem “Business continuity oversight expectations”.<sup>30</sup>

#### 3.2.1.6 Pricing

The pricing for TARGET services is based on a non-profit-making cost recovery principle for investment, capital, operating and overhead costs, with the exception of a “public good factor” corresponding to the positive externalities generated by the system (ie in terms of reduction of systemic risk). Participants can choose among two pricing schemes: either to have a low monthly fee with a flat transaction fee (Option A) or a slightly higher monthly fee in combination with a (volume dependent) degressive transaction fee (Option B). The latter option will be more favourable for participants generating a large traffic volume. The pricing scheme for the TARGET2 core service for direct participants is set down in Table 3 below.

In addition, direct participants pay a monthly fee for each BIC used for multi-addressee access (in addition to the direct participant’s BIC) and are charged a one-off registration fee of €20 for each registration of an indirect participant and €5 for each registration of an addressable BIC (including BICs of branches of direct and indirect participants) in the TARGET2 directory. Banks using internet-based access and which participate as direct participants use pricing option A, but to recover costs for this access channel their monthly fee is €170.

<sup>29</sup> CPSS Publications No 43, January 2001.

<sup>30</sup> *Business continuity oversight expectations for systemically important payment systems (SIPS)*, ECB, June 2006.

The liquidity pooling service (aggregated liquidity option and consolidated information option) is an optional and separately priced core service. It is charged at €1,200 per account per annum for the consolidated information option and €2,400 per account per annum for the aggregated liquidity option (which includes the consolidated information option). Furthermore, within a group of accounts (with either the consolidated information option or the aggregated liquidity option) group pricing applies, which means the regressive transaction fee is applied to all payments of the group as if they were sent from one account.

A separate pricing scheme applies for ancillary systems interacting with TARGET2.

Table 3

### Fee scheme for TARGET2 core services

<b>Option A</b>			
Monthly fee	€100		
Flat transaction fee	€0.80		
<b>Option B</b>			
Monthly fee	€1,250		
	<b>Volume</b>		
<b>Band</b>	<b>from</b>	<b>to</b>	<b>Price</b>
1	1	10,000	€0.60
2	10,001	25,000	€0.50
3	25,001	50,000	€0.40
4	50,001	100,000	€0.20
5	above	100,000	€0.125

#### 3.2.1.7 Major future projects

The Eurosystem pays close attention to the development and continuous evolution of TARGET2 beyond the annual releases, with the aim to meet market demands and fulfil the objectives of TARGET2 under the principle of full cost recovery. During 2010 the Eurosystem started work on a strategy for increasing the use of the ISO 20022 standard in TARGET2. ISO 20022 has been at the core of discussions in the financial industry for the past few years, as it aims to increase the efficiency and the interoperability of financial institutions, market infrastructures and end users. Besides the general advantages that ISO 20022 may bring in terms of efficiency and interoperability, given the close linkages between TARGET2 and other Eurosystem projects such as T2S, which will also make use of ISO 20022, increasing the use of the standard in TARGET2 would ensure smooth interoperability between those services and TARGET2. The Eurosystem has proposed a number of implementation steps, starting from 2013. Discussions with market participants are ongoing on the detailed technical aspects of implementation.

### 3.2.2 The EURO1 system

#### 3.2.2.1 Institutional framework

The EURO1 system is a privately owned LVPS operating on a multilateral net basis for payments denominated in euros, which settles its end-of-day balances in central bank money via TARGET2-ECB. EURO1 is governed by the EBA Clearing Company, a limited liability



company incorporated under French law in the form of a société par actions simplifiée. EBA Clearing is entrusted with the operation and management of EURO1. It has its registered office in Paris and its shareholders (67 major European and international banks) are the participants in EURO1.

The EURO1 system is governed by the EURO1 system documentation, which includes the EURO1 rules. The EURO1 rules, as well as all other EURO1 system documents, are governed by German law. In particular, the “Agreement for participation and provision of funds transfer services in TARGET2-ECB for settlement of EURO1” is also governed by German law. The EURO1 system is overseen by the ECB.

EURO1 operates on the basis of the legal concept called the “Single Obligation Structure”, which applies at a cross-border level in all jurisdictions relevant to the system. Each participant, at any time during the operating day (and beyond the cutoff time for processing until settlement), has one single claim (in the case of a positive balance) or one single obligation (in the case of a negative balance) towards the community of all other participants.

### 3.2.2.2 Participation

In order to be eligible for admission to or to participate in the EURO1 system, the participant (or applicant) must fulfil certain legal, financial and operational criteria. The applicant or participant must:

- be authorised to conduct banking business;
- have its registered office in a member state of the OECD or in an EU member state;
- participate through a system office which is either its registered office or a branch in the EU;
- have direct access to TARGET2;
- have own funds of at least €1.25 billion (within the meaning of the Banking Directive<sup>31</sup>);
- have a short-term credit rating of at least P2 (Moody’s) or A2 (Standard & Poor’s) or equivalent;
- adhere to and agree to be bound by the provisions of the EURO1 rules and the other EURO1 system documentation;
- provide adequate technical and operational facilities which meet the technical specifications laid down by EBA Clearing and whose operational reliability and robustness should be certified by EBA Clearing;
- notify EBA Clearing of branches, offices and subsidiaries located in the EU when applying to be included as sub-addresses of a EURO1 participant;
- be a member of the EBA, which is an association under French law acting as a forum for exploring and debating all issues of interest to its members, in particular issues related to euro payments and the settlement of transactions in euros.

In addition, the participant (or applicant) should provide a legal opinion to substantiate its ability to participate in the system (capacity opinion) and to confirm that the Single Obligation Structure is recognised and enforceable in the country in which the participant is incorporated and/or its system office is located (country opinion).

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<sup>31</sup> Directive 2006/48/EC of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast), OJ L177 30.6.2006, p.1.

Concerning participation in the system, the EURO1 rules distinguish between two types of participants, namely EURO1 participants and pre-fund participants. EURO1 participants must fulfil all admission criteria and participate in the system's loss-sharing arrangements. Pre-fund participants are not required to fulfil the financial admission criteria and can only have a positive position (ie single claim) in the system. The pre-fund participant status in EURO1 is currently only available for sending and receiving payment messages for the purpose of settlement of certain STEP2 services. Central banks are eligible to be admitted as pre-fund participants.

The system design allows a EURO1 participant to have multiple access points to the system. A EURO1 participant can have up to 99 sub-addresses under its main BIC address which it can assign to its branches or to entities incorporated in the same consolidated accounts as the EURO1 participant. Entities (ie excluding branches) included as sub-addresses are often referred to as "sub-participants".

In mid 2011 there were 67 EURO1 participants and 10 pre-fund participants, of which seven were central banks, and 58 sub-participants.

### 3.2.2.3 *Types of transactions*

EURO1 processes credit and debit transfers. In particular, EURO1 supports the following SWIFT message types: MT103 (CORE, PLUS, REMIT), MT202 (including MT202COV), MT400 and, provided limits authorising receipt have been set by the participants, MT204. Although there are no restrictions as regards the value or the originator of the transactions processed, EBA Clearing, when developing the system, intended EURO1 to focus primarily on processing large-value payments in euros.

In 2010 the daily average volume of payments processed in EURO1 was 230,121, and the daily average value was €240 billion.

### 3.2.2.4 *Operation of the system and settlement procedures*

SWIFT provides the messaging infrastructure for EURO1 and acts as processing agent. Payment messages are sent by the participants to EURO1 via the SWIFTNet FIN network. The EURO1 messages must carry the tag "EBA" in field 103 of the message header. Messages with this tag are automatically copied (Y-copy) to the central computer via SWIFT's FIN copy service. Once the messages are processed they are immediately forwarded via the SWIFTNet FIN network to the receiving bank. The continuous calculation of the single obligation or claim of each EURO1 participant is carried out by the processing system operated by SWIFT.

The EURO1 system operates on weekdays (except TARGET2 holidays) from 7.30 am CET to 4 pm CET. Payment messages are processed on an individual basis. The technical features of EURO1 are such that payment messages are only processed by the central computer after it has been checked that these meet the criteria for being processed. In particular, these criteria include that a payment message can only be processed if this does not lead to a breach of binding intraday limits – corresponding to the debit caps and credit caps of the respective participants – built into the system. Payment messages that cannot be processed at the time they are sent are queued. The queues are revisited each time a payment message in relation to the sending or receiving bank, as applicable, is processed to check whether the adjusted balance allows the further processing of payment messages held in a participant's "on-hold" queue. To that effect, the system follows the principle of "bypassing FIFO". In addition, a circles processing function is available allowing for the simultaneous processing of a number of payment messages from different participants, which, if processed simultaneously, will not breach the applicable debit caps and credit caps.

A payment message can be revoked or cancelled by the sending participant as long as it has not been processed. Once processed, payment messages cannot be revoked. All payment messages that are still on hold at the EURO1 processing cutoff time (4 pm CET) will be

automatically carried over to the next valid value date, unless cancelled by the sending EURO1 participant.

The above operations are monitored and administered by EBA Clearing staff. The hardware and software used by EBA Clearing for the management of EURO1 is duplicated at a parallel-running site located in a different country. At participant level, EURO1 participants have real-time access to their position at any given time in the day, including inter alia the monitoring and management of payments and queues.

The EURO1 system settles the same day in central bank funds via a settlement account opened with the ECB in TARGET2-ECB using the Ancillary System Interface settlement procedure ("ASI4"). Settlement of the EURO1 system concerns the settlement of the single amount, ie the single claim or the single obligation of each participant towards the community of all other participants.

After the cutoff time for processing at 4 pm CET, the EURO1 (short) participants having a single obligation will pay the amount, by means of a transfer via direct debit from their account held in a component system of TARGET2, crediting the settlement account for EURO1. After all amounts have been received, the single claim of each (long) participant is satisfied by means of a transfer from the settlement account for EURO1 to the (long) participant's account in TARGET2. Completion of settlement is notified to all participants upon receipt of confirmation that the TARGET2 account of each of the long participants has been credited. The average settlement completion time from settlement using TARGET2-ASI4 is 4.08 pm CET. In TARGET2-ASI4, a guarantee fund account has been created through which additional liquidity (ie the liquidity pool or, if needed, additional funds transfers by the surviving participants) can be moved to ensure completion of settlement, even in the event of a shortfall owing to the inability of one or more participants to meet their settlement obligations.

### 3.2.2.5 Risk management

Payments sent to EURO1 are processed individually and, once they have been processed by the system, cannot be cancelled. EURO1 provides immediate intraday finality for each payment upon processing; the time of irrevocability of each payment coincides with the point in time at which an irrevocable and unconditional funds transfer takes place. Each processed payment leads to an adjustment of the single claim or obligation of the participant. However, settlement of the single claim or obligation occurs only after the cutoff time at 4 pm CET. In EURO1, the transfer of the settlement asset, ie central bank funds transfers across the settlement account for EURO1 in TARGET2-ECB, takes place after the payments are final. The participants continue to be subject to certain credit and liquidity risks in relation to their single claim or single obligation towards the community of all other participants until final settlement in central bank money is completed. To handle abnormal events in EURO1 that may endanger the smooth functioning of the system and daily settlement, EBA Clearing has put in place a number of risk management procedures and tools:

- Setting of bilateral limits: each participant must establish limits for all other participants individually (varying from a mandatory minimum of €5 million to an additional discretionary limit of up to €25 million, amounting to a maximum of €30 million bilateral risk per participant). Participants can change the discretionary part of the bilateral limits on a daily basis until 6 pm CET on T-1 in accordance with their own risk management policy, eg the assessment of counterparties' creditworthiness. The setting of the mandatory element to zero is valid only if the majority (>51%) of the participants carry out the same action.
- Application of debit and credit limits: on the basis of the bilateral limits, the system determines for each participant the multilateral debit cap (sum of limits received from the other participants) and the multilateral credit cap (sum of limits given to the other participants). These multilateral debit and credit caps per participant, which in order

to limit systemic risk are capped at €1 billion, are binding throughout the operating day.

- Circles processing function: activated by EBA Clearing in the case of threatened gridlock. The process consists of the continuous checking of the sending and receiving participants' positions (ie single obligations/single claims) resulting from the processing of payment messages. Upon activation, the function enables a number of payment messages from different participants to be processed simultaneously, and thereby not breach the applicable multilateral debit or credit caps. No payment order that would cause a breach of a participant's credit or debit limits is processed by the system at any time.
- Liquidity and loss-sharing arrangements: such arrangements have been established to cope with liquidity and credit risk situations that may arise owing to failure by one or more participants to meet its or their obligations on time. First, in order to cope with a failure by a participant to transfer funds for settlement purposes, readily available liquidity has been put in place – in the form of a liquidity pool held with the ECB – to ensure timely completion of settlement. Second, the liquidity pool can be used in the event of multiple failures up to the aggregate amount held therein. Moreover, additional liquidity resources – in the form of same-day liquidity provided by the surviving participants – cover any shortfalls stemming from multiple failures if the amount required exceeds the balance available in the liquidity pool with a view to achieving same day settlement. The system's architecture allows for same day settlement even in the event of multiple failures occurring on the same day (including in the case of a so-called market crisis scenario). The establishment, maintenance and activation of the liquidity pool at the ECB are governed by the deposit agreement between the ECB and EBA Clearing for the benefit of the banks participating in EURO1 as third-party creditors.
- Liquidity bridge: a liquidity management arrangement, which consists of two phases. During the pre-funding phase, each EURO1 participant can inject, at all times during the processing hours (until 3.30 pm CET), additional liquidity from its TARGET2 account to the pre-settlement EURO1 account held at the ECB to increase its position in the system. Payment capacity can be shifted from EURO1 to TARGET2 at six predefined distribution windows (the window distribution phase), namely at 11 am, 12 noon, 1 pm, 2 pm, 3 pm and 3.30 pm CET. The intraday withdrawal of processing capacity from EURO1 to TARGET2 is available only to EURO1 participants that have agreed to receive funds intraday and are entitled to distribution. In order to be entitled, a EURO1 participant has to set a daily distribution limit on the total amount which it accepts to receive intraday on its TARGET2 account, at least one day before settlement. Each entitled EURO1 participant is also required to set a limit on the amount which it accepts to receive on a "per distribution window" basis. Once these two preconditions are met, EBA Clearing calculates the distribution entitlements for the entitled participants so that the maximum number of EURO1 payments on hold (queued) can be processed.

### 3.2.2.6 Pricing

The objective of the pricing policy in EURO1, which has been agreed with its shareholders, is to recover all costs in relation to the processing service provided by SWIFT and the settlement service provided by the ECB. The pricing policy also covers the operational, administrative and depreciation costs incurred at the level of EBA Clearing in relation to the administration of EURO1 and new developments in the system. The annual operating charge of the processing agent (SWIFT) and the operating costs of EBA Clearing are shared among the EURO1 participants on a quarterly basis in accordance with a special distribution key.

The transaction charges in EURO1 are based on the number of payments sent by participants in accordance with a degressive scale, providing an incentive for participants to use the system. The pricing policy applicable to pre-fund participants, whose use of the system typically involves lower volumes, includes a connection fee after admission and a total annual fee per calendar year payable on a quarterly basis. The annual fee also covers the per transaction costs for sending payment messages.

#### *3.2.2.7 Major future projects*

EBA Clearing is currently analysing various proposals for changes to EURO1. These include the migration of payments processing to XML format (ISO 20022) and other changes in the light of lessons learned from the recent financial crisis. With regard to the latter, EBA Clearing is considering moving forward the cutoff time for changes to the discretionary part of the bilateral limit-setting to the morning on day D, and changing the minimum and maximum amounts of the bilateral limits by setting a lower minimum for the mandatory limit and a higher maximum for the discretionary limit. It is also envisaged that the circles processing functionality will be enhanced and partially automated, with automatic circles processing activation at regular intervals in addition to manual activation on monitoring by EBA Clearing.

### **3.2.3 Continuous Linked Settlement**

The CLS system settles gross-value payment instructions related to foreign exchange (forex) transactions with multilateral net funding on a PVP basis. The PVP mechanism ensures the synchronous settlement of the two legs of a foreign exchange trade. Established in 2002, CLS initially settled payment transactions related to the seven most widely traded currencies. Today 17 currencies are eligible for settlement via its infrastructure and it has become the largest cash settlement system in the world. The euro is the currency with the second largest market share in the CLS PVP service.

Given the multicurrency nature and systemic relevance of CLS, a cooperative oversight arrangement has been entered into by the Group of Ten (G10) central banks, the ECB and the central banks whose currencies are settled in CLS. Such cooperative oversight is organised according to a Protocol endorsed in November 2008 whereby the Federal Reserve System acts as primary overseer. The Protocol provides a mechanism for the cooperating central banks to carry out their individual oversight responsibilities in pursuit of the shared public policy objectives of the safety and efficiency of payment and settlement systems and the stability of the financial system. Under the Protocol, the primary forum for the cooperating central banks is the CLS Oversight Committee, which is chaired by the Federal Reserve System. The Eurosystem is represented in the Committee by the ECB – which is the central bank with primary oversight responsibility for the settlement in euros by CLS – and the other G10 euro area NCBs, ie the National Bank of Belgium, the Deutsche Bundesbank, the Bank of France, the Bank of Italy and the Netherlands Bank.

Besides its unique PVP settlement services, CLS also offers settlement services related to single currency transactions (non-PVP transactions), which mainly include non-deliverable forward and credit derivative transactions. The Eurosystem monitors the turnover of non-PVP settlements in euros with regard to CLS's compliance with its location policy. Such turnover on a daily average (calculated over a 12-month period) remains small, far below the threshold set by the Eurosystem for the application of its location policy rules.

The CLS system is described in more detail in the descriptive Red Book chapter on international payment arrangements.

### **3.3 Retail payment systems**

#### **3.3.1 The STEP1 system**

##### *3.3.1.1 Institutional framework*

STEP1 has been developed to handle retail and commercial payments. It is implemented on the same technical platform as the EURO1 system and is based on the use of certain processing functionalities of EURO1. The STEP1 arrangement entered into operation on 20 November 2000. It is managed and operated by EBA Clearing.

Since its implementation STEP1 has enabled the execution time and the cost of domestic and cross-border retail and commercial payments in euros to be reduced. Furthermore, STEP1 has fostered the use of industry standards for messaging in order to enhance straight through processing (STP) within banks, as well as the adoption of harmonised business practices in the execution of retail and commercial payments in euros.

##### *3.3.1.2 Participation*

The STEP1 arrangement is open to all banks that have an office located in an EU member state from where they connect to STEP1 (a “system office”) and that are either EURO1 banks or have appointed a EURO1 bank to act as their settlement agent within EURO1. For a bank to become a STEP1 participant, it must also be a member of the EBA. There is neither a minimum credit rating nor a minimum own funds requirement. STEP1 participants may include their branches and subsidiaries as sub-addresses, which are often referred to as “sub-participants” in the system.

As at mid-2011, 93 banks were participating in the STEP1 arrangement as participants, and 47 as sub-participants.

##### *3.3.1.3 Types of transaction*

STEP1 can be used for the processing of credit and debit transfers. The following SWIFT payment messages are used in STEP1: (i) MT103 (Core, PLUS and REMIT), (ii) MT202 (including MT202COV), (iii) MT204 and (iv) MT400. Use of the MT103 REMIT is subject to a bilateral agreement between the sending STEP1 participant and the receiving STEP1 participant. The capacity transfer messages – which are credit transfer messages or direct debit messages sent between a settlement bank and its STEP1 bank for the purpose of increasing the sending and receiving capacity of the STEP1 bank – are SWIFT message types MT202 and MT204 respectively.

In 2010 the daily average volume of payments processed in STEP1 was 18,346 and the daily average value of these payments was €894 million.

##### *3.3.1.4 Operation of the system and settlement procedures*

STEP1 is set up such that a STEP1 bank (ie a STEP1 participant which is not at the same time a participant in the EURO1 system) is able to submit payments to and receive them from other STEP1 participants directly, using sending and receiving capacity provided by a EURO1 participant, which is termed its “settlement bank”. A credit cap is allocated by the settlement bank to the STEP1 bank, and the amount of the STEP1 bank’s credit cap is deducted from the amount of the credit cap of the settlement bank in EURO1 during the STEP1 processing day (ie until the processing of all STEP1 payment messages for the STEP1 bank is completed). The sending capacity of a STEP1 bank is created by incoming payment messages and by the transfer of liquidity by an MT202 transfer from the settlement bank to the position of the STEP1 bank. Additional receiving capacity for a STEP1 bank, as and when needed to reduce its position below the amount of its credit cap, is created by an MT202 liquidity transfer by the STEP1 bank to its settlement bank or by an MT204 direct debit transfer by the settlement bank from the position of the STEP1 bank.

STEP1 uses the technical platform of EURO1 for the processing of payments. In order to distinguish STEP1 payments from EURO1 payments, the former carry a specific three-letter tag in field 103 of the SWIFT message (“ERP” for euro retail payment). A payment with an ERP tag is automatically captured by SWIFT, which forwards a partial copy of the message to the EURO1 platform.

The processing of STEP1 payments is carried out according to the same technical processing principles as for EURO1. However, for STEP1 banks, processing relies on the use of sending and receiving capacity that is provided by EURO1 participants acting as settlement banks. STEP1 operates on weekdays (except TARGET2 holidays) from 7.30 am CET to the close of processing at 4 pm CET. The cutoff time for sending is 2.30 pm CET. Shortly after 2.30 pm CET, SWIFT informs each STEP1 bank, and its settlement bank, of its potential net balance. This is the total value of payments to be received on day T minus the total value of payments to be sent on day T for which processing is pending at 2.30 pm CET. A capacity transfer between the settlement bank and the STEP1 bank must take place before 4 pm CET to allow processing of the remaining STEP1 payment messages. Normally, processing of STEP1 payment messages ends with all STEP1 banks having a zero position and no STEP1 payment messages still on hold. If, in exceptional circumstances (eg major technical failures or unavailability of sufficient sending or receiving capacity at the end of the STEP1 operating day), STEP1 payments cannot be processed by 4 pm CET on day T, unprocessed STEP1 payment messages are automatically carried over to the next settlement day.

#### *3.3.1.5 Risk management*

STEP1 messages are irrevocable as soon as they are processed. Payments exchanged in STEP1 are for amounts that do not create the need for systemic risk protection. However, to mitigate risk, sending and receiving capacity limits are set for each participant in the system. A credit cap applies with a minimum of €2 million and a maximum of €50 million. If STEP1 messages exceed the sending capacity of the sending bank, or the receiving capacity of the addressee, they are queued by the system.

A debit cap also applies, which is always set at zero. Therefore, a STEP1 bank’s position resulting from processed payment messages cannot be negative.

Finally, for STEP1 payment messages not yet processed at the cutoff time for sending, a capacity transfer must be made to allow them to be processed before the close of the STEP1 operating day.

#### *3.3.1.6 Pricing*

STEP1 banks pay a fee for connection to the system. Transaction charges are based on an incremental scale according to the number of payments sent. A minimum quarterly transaction fee applies for very low volumes.

#### *3.3.1.7 Major future projects*

No major changes to STEP1 are envisaged for implementation in the near future.

### **3.3.2 The STEP2 system**

#### *3.3.2.1 Institutional framework*

STEP2 is a PE-ACH for retail payments in euros. It is managed and operated by EBA Clearing. The first cross-border credit transfer service (XCT service) was launched in 2003 for processing credit transfers that comply with the convention on credit transfers in euros in accordance with the requirements of Regulation (EC) No 2560/2001 on cross-border payments in euros. With the launch of the SEPA Credit Transfer Scheme in January 2008

and the SEPA Direct Debit (SDD) Scheme in November 2009, STEP2 started new services processing SEPA Credit Transfers (SCT service) and SEPA Direct Debit payments (SDD services). In addition, since 2006 STEP2 has offered a service for the processing of domestic credit transfers which is currently used by major Italian banks, namely the STEP2 Italian credit transfer service (ICT service). A STEP2 Irish transfer service (IET) is expected to commence operation by end-2011. Each STEP2 service has its own set of service documentation with separate technical and legal provisions.

Depending on the services used, the final settlement of the payments takes place either in EURO1 (XCT service) or TARGET2 (SCT and SDD services). The final settlement of payments for the ICT service takes place both in EURO1 and in BI-COMP (the clearing system managed by the Bank of Italy). The settlement of payments is in all cases protected by the Settlement Finality Directive, either indirectly via the designation of the EURO1 system under the Directive or directly via the designation of the STEP2-T system, ie the technical and legal component of STEP2 which processes transactions that are finally settled in TARGET2.

Like the other payment systems operated by EBA Clearing (EURO1 and STEP1), STEP2 is subject to the oversight of the ECB. The ECB classifies STEP2 as a prominently important retail payment system in accordance with the Eurosystem's oversight standards for euro retail payment systems and, consequently, STEP2 has to comply with six Core Principles.

### 3.3.2.2 *Participation*

Depending on the STEP2 services that they use, participants must meet different requirements. In all cases, only credit institutions and central banks can become participants of STEP2. As well as direct participation, indirect participation is also possible. Direct participants have the right to send and receive STEP2 files and are obliged to pay fees and provide settlement accounts and funds. Indirect participants, which may be credit institutions or institutions authorised to conduct money transfers, are, upon inclusion in the STEP2 directory, recognised by the STEP2 system as addressees of payment instructions. The relationship between a direct participant and an indirect participant is exclusively governed by their bilateral arrangements, and direct participants are responsible for ensuring that the indirect participants comply with the STEP2 system rules. While the term "indirect participants" is currently used, indirect participants are not actually participants in STEP2 but are recognised by the system as reachable, ie through given direct participants and, in the case of the STEP2 SEPA services, also through a network of over a dozen interoperable CSMs.

Admission as a participant to the STEP2 SCT and SDD services is reserved for credit institutions that have the status of a direct or indirect participant in TARGET2 and have access to the necessary accounts for the TARGET2 Ancillary System Interface settlement procedures which are initiated by STEP2, and for central banks that have the status of a TARGET2 direct participant. Participants must have a registered office or branch within SEPA. Moreover, they must sign the adherence agreements for admission to the SEPA schemes and successfully complete the testing programme. As at mid-2011 there were 123 direct participants using the SCT service and 4,516 indirect participants. The STEP2 SDD services – the Core and B2B services (see below) – had 89 (3,825) and 66 (3,287) direct (indirect) participants respectively in mid-2011.

### 3.3.2.3 *Types of transaction*

STEP2 processes different kinds of retail payments. The STEP2 XCT service processes credit transfers bearing, among other information, the IBAN of the beneficiary and the BIC of the beneficiary's bank. In July 2011 the daily average volume of XCT transactions was 150,237 with an average daily value of €713 million (the XCT service is planned to be withdrawn in December 2011).



The STEP2 ICT service processes credit transfers in the same format as XCT transactions and also in the Italian domestic technical format. Both formats are based on the SWIFT MT103+ message structure.

The STEP2 SCT service offers financial institutions an interbank processing service which routes, delivers, clears and settles SEPA Credit Transfers to all banks in Europe, using a secure and reliable framework that complies with the EPC SCT Scheme Rulebook and Implementation Guidelines as well as with the CSM Framework, using standard banking interfaces and global ISO XML standards.

STEP2 also processes on its platform direct debits that comply with the SDD Core and SDD B2B Scheme Rulebooks and the Implementation Guidelines of the EPC respectively. These services are the SEPA Core Direct Debit Service for consumer direct debits and the SEPA B2B Direct Debit Service for business-to-business direct debits.

The technical standard used for SEPA transactions is the UNIFI ISO 20022 XML message schema.

As well as basic services for the processing of SEPA transactions, if requested by national or other banking communities STEP2 also offers tailored services for the clearing of payments.

#### *3.3.2.4 Operation of the system and settlement procedures*

For the technical operation of STEP2's central system, EBA Clearing makes use of SWIFT and Italian payment and network services provider SIA. SWIFT provides calculation services and the interface with TARGET2-ECB for settlement. SIA acts as a processing agent. Two systems are provided: a primary system and a secondary system. Both systems benefit from business continuity arrangements. A changeover from the primary to the secondary site can take place with no risk of undetected data loss or duplication. Direct participants can exchange files with the STEP2 central system and perform enquiries over two secure network connections: SWIFTNet and SIANet. The business operation of the system is controlled by EBA Clearing. A secure business control terminal is provided at EBA Clearing's operational centres, allowing EBA Clearing to monitor and control the business processing of the system. The technical operation of the system is controlled by SIA using terminals directly connected to the STEP2 central system. Multiple language helpdesks are provided by EBA Clearing as well as SIA to assist direct participants with business and technical enquiries. The operating days of STEP2 are the days on which the TARGET2 system is open for business.

The STEP2 platform is scalable and is thus capable of processing more than 50 million payments per day. It is built using the latest technology as well as global ISO XML standards and it features interactive web services. STEP2 processing includes the STP validation of payment instructions, their routing to the beneficiary banks and automated settlement.

STEP2 is designed to ensure one or more settlement cycles per value date. Each settlement cycle consists of a sending cutoff time, a settlement time and a settlement cutoff time. Different STEP2 services have different numbers of settlement cycles, settlement times and settlement procedures. For example, the STEP2 SCT service has two daytime cycles. Cycle 1 allows participants to send files up to 1 am CET for overnight processing and settlement at 7.30 am CET in TARGET2, and to receive incoming payment files by 9 am CET on day D. Cycle 2 is an intraday cycle allowing participants to send files up to 1 pm CET for settlement at 2 pm CET, and to receive incoming payment files by 3 pm CET on day D. In addition to the two daytime cycles, STEP2 SCT offers an optional night-time clearing and settlement cycle, which enables banks to send their payments until 1 am CET, with settlement being completed at 1.45 am CET and file delivery ending at 2.45 am CET. Additional cycles can be added as and when there is demand, and there are plans to add additional daytime and night-time cycles at the beginning of 2012. In February 2011 the daily average volume of SCT transactions was 1,401,328 with an average daily value of €4.96 billion.

### 3.3.2.5 Risk management

EBA Clearing applies several different measures to avoid or mitigate potential risks to the system or the system participants. Many of the risk management measures, ie those directly related to oversight requirements, are also assessed by the ECB. Thus financial risks (credit and liquidity risks) are managed by the admission requirements for the system – namely only banks that are subject to banking supervision and central banks are allowed to become participants in STEP2 and only risk-free central bank money can be used to settle all transactions. Operational risk is managed by using two operational systems that provide backup for each other and by the clear description and application of operational procedures. To avoid legal risks, EBA Clearing provides comprehensive documentation of the system and its procedures, including a clear description of the responsibilities of the parties involved.

### 3.3.2.6 Pricing

The fees charged in connection with participation in the STEP2 SEPA services are: a connection fee, fees for membership changes, an annual fee and a fee for incoming and outgoing transactions. Information on these fees is made available to each applicant for direct participation in the services and fees are typically set on a yearly basis. Since EBA Clearing has no contractual or direct relationship with indirect participants, who only have a contractual relationship with a direct participant, all fees in relation to indirect participants are invoiced to and payable by the corresponding direct participants. The inclusion of indirect participants is subject to a connection fee and an annual fee to cover administrative costs, which are invoiced to the direct participant.

### 3.3.2.7 Major future projects

EBA Clearing announced that the Irish banking community has decided to use the STEP2 platform for processing its domestic payments in the future. This move to EBA Clearing's PE-ACH, which is envisaged for autumn 2011, should facilitate the Irish banks' migration to SEPA. The service for the Irish banking community will involve the introduction of clearing and settlement for "bilateral file exchanges", ie the files processed in STEP2 will contain the information required to settle amounts resulting from the exchange of underlying payment transactions, which occurs bilaterally between the banks concerned (ie they are not processed on the STEP2 central platform). Moreover, the Finnish banking community, which already uses STEP2 for part of its domestic traffic, also plans to fully migrate to SEPA formats and to STEP2. In that context, STEP2 is considering the development of a new feature for Finnish banks that would enable urgent payments to be processed within one hour.

## **4. Systems for post-trade processing, clearing and settlement of securities and derivatives**

### **4.1 General overview**

#### **4.1.1 Towards more integration**

Most market infrastructures for post-trade processing, clearing and settlement of financial instruments in the euro area were originally created to meet domestic needs. Thus, the euro area infrastructure has suffered from fragmentation, resulting in inefficiencies and high costs, especially for cross-border transactions. In short, the euro area market infrastructure for financial instruments has not yet reached a level of efficiency, integration and soundness compatible with the requirements of the single market and the single currency.

There are various ways of achieving a more integrated and efficient European financial market. On a conceptual level, the establishment of euro area-wide integrated services for payments and financial instruments means that participants: (i) are subject to a single set of rules; (ii) have equal and open access to the services in question; and (iii) are treated equally when using those services.

This means that integration concerns issues such as standardisation, harmonisation (ie common rules, standards and business practices), interoperability and/or the consolidation of systems. Among other things, financial integration typically facilitates competition and creates economies of scale.

Financial development involves a process of financial innovation and organisational improvement that renders markets more complete, increases agents' options when engaging in financial transactions, improves market transparency, reduces transaction costs and increases competition.

The Eurosystem's statutory task of promoting the smooth operation of payment systems means that it has a keen interest in furthering the integration of the euro area market infrastructure for payments and post-trading services for financial instruments. It does so in its complementary roles as operator, overseer and facilitator.

As owner and operator, the Eurosystem provides the TARGET2 system, which has become the benchmark for the processing of euro payments in terms of speed, reliability, opening times and service levels. Counterparties throughout the euro area can transfer central bank funds directly to each other with immediate intraday finality. Another important Eurosystem service contributing to the integration of the money market is the CCBM, which allows the cross-border transfer of collateral within the euro area in Eurosystem credit operations. Moreover, with its T2S initiative, the Eurosystem is setting up a neutral single settlement platform with a view to fully integrating all settlement activities and thereby making cross-border settlement as cheap and efficient as domestic settlement.

As overseer, in order to ensure equal treatment, the ECB and the Eurosystem as a whole apply the same oversight policies to all systems – ie both private systems and those operated by the central banks themselves. In this context, reference can be made to the ESCB-CESR recommendations for SSSs and CCPs in the EU which are used by authorities with a view to ensuring both the soundness and efficiency of the relevant infrastructures and the existence of a level playing field. Particular attention is given to the systemic consequences of increasing integration, in particular with regard to concentration and interdependencies.

As a catalyst, the Eurosystem seeks to facilitate the efficiency of the overall market arrangements for payments, clearing and settlement. It facilitates integration of the retail payments market and of the securities infrastructures, inter alia, by promoting harmonisation and technical standardisation and by sharing the Eurosystem's expertise. It cooperates closely with the payments and securities industry and with the European Commission.

Further information on the Eurosystem's work on financial integration is available in the ECB's reports on "Financial Integration in Europe", published annually.

#### **4.1.2 Trading and post-trade processing**

The MiFID distinguishes between three kinds of trading venue: (i) traditional exchanges (called "regulated markets" in the MiFID); (ii) MTFs, a new category of trading platform created by the MiFID in order to compete with exchanges; and (iii) "systematic internalisers" – ie firms which, on an organised, frequent and systematic basis, deal on their own account by executing client orders outside regulated markets and MTFs. In some cases, traditional exchanges hold licences as regulated markets in certain market segments (eg equities and derivatives) and in parallel own and/or operate MTFs. At the end of 2009 there were

62 regulated markets in the euro area (a single stock exchange may maintain several regulated markets) and 51 MTFs.<sup>32</sup>

### 4.1.3 The clearing landscape

Globally, as well as in the euro area, CCPs initially provided services relating to derivatives traded on exchanges. Recently they have begun to be used more often for equities and bond transactions, as well as for some OTC derivatives transactions. In 2009 the euro area securities and derivatives markets were served by nine officially registered CCPs located in the euro area (according to the official register maintained by ESMA, ie the CESR MiFID database). In addition, some other entities not registered as independent CCPs provided central clearing services, sometimes as part of an exchange. While there were 13 entities providing CCP services when the euro was introduced in 1999, as a result of consolidation the number then fell to seven, before increasing again from 2007 following the establishment of new CCPs, partly as a consequence of the emergence of new MTFs competing with exchanges, as made possible by the MiFID; see Table 4.

Table 4  
Euro area central counterparties, end-December 2009

Member state of incorporation	Name	Ownership	Asset focus	Market coverage
Austria	CCP.A	Exchange-owned <sup>1</sup>	Securities and derivatives	Domestic
Germany	ECC (European Commodity Clearing)	Exchange-owned <sup>2</sup>	Commodity/energy derivatives (incl OTC derivatives)	Cross-border
Germany	Eurex Clearing	Exchange-owned	Securities and derivatives (incl OTC derivatives)	Cross-border
Spain	MEFFClear <sup>3</sup>	Exchange-owned	Securities (bonds)	Domestic
France	LCH.Clearnet SA	User-owned	Securities and derivatives (incl OTC derivatives)	Cross-border
Greece	ADECH (Helex)	Exchange-owned	Derivatives	Domestic
Italy	CC&G (Cassa di Compensazione e Garanzia)	Exchange-owned	Securities and derivatives	Domestic
Netherlands	EMCF	Owned by a bank and NASDAQ	Securities (equities)	Cross-border
Portugal	Omiclear	Exchange-owned	Commodity/energy derivatives	Cross-border

This list of CCPs is based on the CESR MiFID database and does not include clearing houses that are not registered independently of the exchange that operates them.

<sup>1</sup> Jointly owned by the Vienna Stock Exchange and the Austrian CSD, OeKB (Oesterreichische Kontrollbank).

<sup>2</sup> Owned by more than one exchange. <sup>3</sup> Derivatives are cleared by MEFF (a CCP within the derivatives exchange).

Sources: CESR MiFID database; CCP websites.

<sup>32</sup> Information on European trading venues can be found in the ESMA MiFID database at [www.esma.europa.eu](http://www.esma.europa.eu).

The MiFID and the Code of Conduct on Clearing and Settlement (an industry self-regulation initiative), by opening up various markets and trading and post-trading activities to greater competition, have launched a market development process that could fundamentally change the landscape for CCP services in the euro area (a process on which the EMIR will also have an impact – see Section 1.2 above).

In addition to infrastructures located in the euro area, euro-denominated financial instruments are cleared by, or institutions located in the euro area participate in, CCPs located outside the euro area. Important examples are LCH.Clearnet Ltd (UK), ICE Clear Europe (UK) and SIX x-clear (Switzerland).

#### **4.1.4 Securities settlement**

In mid-2011 there were 25 CSDs operating SSSs in the euro area, four more than 10 years earlier. However, it should be noted that the period in question has seen both consolidation and, following enlargement, the entry into the euro area of new EU member states and their respective CSDs. For example, in 2008 alone Cyprus and Malta and their local CSDs joined the euro area, VP LUX (an affiliate of the Danish CSD) was established in Luxembourg and the Irish NTMA ceased operating.

Of these 25 SSSs (including the three regional CSDs in Spain), 23 are eligible for the delivery of securities to the Eurosystem as collateral in central bank credit operations.

All euro area CSDs offer settlement in central bank money, whereas the ICSDs offer settlement in commercial bank money. Given the large-value securities transactions settled, the related cash flows are, of course, also of a considerable size. In fact, many of the payment systems embedded in SSSs are comparable in size to payment systems processing large-value payments in euros.

Euro area CSDs have established a network of 54 eligible bilateral links and seven eligible relayed links for the purposes of transferring securities between them (including the delivery of eligible collateral in Eurosystem monetary policy and intraday credit operations). The total number of links may in fact be even higher, as CSDs may have established additional links for other instruments that are used for market purposes, but not for delivering collateral to the Eurosystem. However, although there are a large number of direct and relayed links, relatively few are used extensively.

For more information on CSDs and links, see Section 4.5.2.

## **4.2 The REGIS-TR trade repository**

### **4.2.1 Institutional framework**

The trade repository REGIS-TR was launched in December 2010 as a joint initiative of Clearstream Banking S.A. and Bolsas y Mercados Españoles/Iberclear to comply with EU regulations requiring OTC derivative transactions to be reported to trade repositories from end-2012. The company, headquartered in Luxembourg, is co-owned by the two founding partners, who hold equal stakes of 50%.

The trade repository complies with all the new proposals for regulatory requirements that have been made public in the context of the European Commission's proposed European Market Infrastructure Regulation and that aim at increasing safety and transparency in the OTC derivatives market.

### **4.2.2 REGIS-TR participation and types of transaction**

REGIS-TR is a European central registry and trade repository which enables market participants to register derivatives contracts in a variety of financial instruments traded OTC.

Initially the service was only offered for interest rate OTC derivatives, but REGIS-TR plans to broaden the range of contracts and underlying assets it covers in the coming years (eg forex derivatives coverage is planned from mid-2011). REGIS-TR aims at covering both standardised and customised contracts.

Any type of institution, whether financial or non-financial, can use REGIS-TR. The registry is flexible and allows both eligible participants and participants' clients to have access. There are two types of participation in REGIS-TR: direct<sup>33</sup> and indirect participation.<sup>34</sup>

REGIS-TR is designed to support its customers in capturing transaction information and fulfilling reporting obligations vis-à-vis relevant regulatory and supervisory authorities.

It gives market participants, regulators and supervisors access to a consolidated global view of these OTC derivative positions, thus facilitating compliance with future transparency requirements arising from the EMIR.

Additionally, REGIS-TR provides its customers with tools which facilitate administrative tasks for the users of the registry, such as data management, certification, confirmation, matching and position reconciliation.

### **4.2.3 Operation of the system**

The REGIS-TR system has been developed and is maintained by Bolsas y Mercados Españoles (BME). It is open for registration, matching and confirmation processes from 8.30 am CET to 6.30 pm CET every business day in accordance with the TARGET2 calendar.

Users can access REGIS-TR via a secure web access to input data manually and raise queries at any time, on any day. REGIS-TR also supports XML and SWIFT technology for file transfers and reporting purposes.

## **4.3 Central counterparties and clearing systems**

### **4.3.1 LCH.Clearnet SA**

#### *4.3.1.1 Institutional framework*

The French CCP LCH.Clearnet SA is registered and operates under French law, which stipulates that clearing houses must either be authorised credit institutions or be operated by a credit institution (Article L. 440–1 of the French Monetary and Financial Code).

LCH.Clearnet SA is thus by law a credit institution within the meaning of the Banking Directive and operates as a clearing house and settlement system for financial instruments.

As a credit institution, LCH.Clearnet SA is licensed and supervised by the Autorité de contrôle prudentiel (Article L. 613–1 et seq of the French Monetary and Financial Code).

As a clearing house and SSS, LCH.Clearnet SA is regulated by the Autorité des marchés financiers (Article L. 621 et seq of the French Monetary and Financial Code).

As a financial instruments clearing and settlement system, LCH.Clearnet SA is overseen by the Bank of France. Pursuant to the Act of 11 December 2001, codified as Article L. 141–4 II of the

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<sup>33</sup> Direct participants can register contracts and transactions on their own behalf and on behalf of their clients and are able to match trades with other direct participants.

<sup>34</sup> Indirect participants are clients of direct participants.

Monetary and Financial Code (the Statute of the Bank of France), the Bank of France is in charge of the oversight of clearing and settlement systems for financial instruments.

LCH.Clearnet SA also owns branches in Amsterdam and Brussels, as well as a representative office in Portugal, related to the clearing of the Euronext markets. Since LCH.Clearnet SA is the CCP for transactions executed on Euronext Amsterdam, Euronext Brussels and Euronext Lisbon, it is also subject to supervision by the Dutch, Belgian and Portuguese regulatory authorities. An MoU has been signed between those authorities for the coordinated regulation, supervision and oversight of the clearing activities of LCH.Clearnet SA related to the Euronext markets. A joint committee has been set up for this purpose (the Co-ordination Committee on Clearing). Cooperation among these authorities is coordinated by a Permanent Secretariat, currently provided by the Bank of France.

In the context of its business development and, more specifically, in order to provide clearing services to UK-based trading platforms, LCH.Clearnet SA requested and obtained in 2010 Recognised Overseas Clearing House (ROCH) status from the UK Financial Services Authority.

LCH.Clearnet SA, as well as its sister company, the London-based clearing house LCH.Clearnet Ltd, is a wholly owned subsidiary of LCH.Clearnet Group Limited incorporated in the United Kingdom, which is a financial holding company as defined in the Banking Directive. According to the Banking Directive, the supervision of LCH.Clearnet SA as a credit institution has to be based on the consolidated financial situation of the holding company and this supervision on a consolidated basis is exercised by the Autorité de contrôle prudentiel. An MoU has been signed between the authorities in charge of the supervision of LCH.Clearnet SA and those in charge of the supervision of LCH.Clearnet Ltd (the UK Financial Services Authority and the Bank of England), for the exchange of information at the group level. A joint initiative has been set up for this purpose (the Joint Regulatory Authorities). The cooperation among these authorities is coordinated by a Permanent Secretariat, currently held by the Bank of France.

In November 2009 LCH.Clearnet Group completed a voluntary share redemption. As a result of the redemption, 83% of LCH.Clearnet is owned by the users of its services and 17% is owned by the exchanges.

#### *4.3.1.2 Participation*

In France, pursuant to Article L. 440–2 of the French Financial and Monetary Code, credit institutions and investment firms, and legal entities whose sole or main purpose is to provide financial instrument clearing services, can, under the conditions set out in the General Regulation of the Autorité des marchés financiers, be admitted as members of a clearing house. Additional criteria, such as minimum capital requirements, contributions to a clearing fund, disclosure of financial information and rating, need to be fulfilled in order for a market participant to become a clearing member of LCH.Clearnet SA.

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 only clears its own trades). The capital requirements for general and individual clearing members differ.

Compliance with financial and operational access criteria is reviewed before applicants are granted participant status. Moreover, participants' continued compliance with the access criteria is monitored on a regular basis.

#### *4.3.1.3 Types of transaction*

LCH.Clearnet SA acts as a CCP for a wide range of financial instruments: exchange-traded cash equities, exchange-traded equity and index options, exchange-traded commodity futures and options, and OTC sovereign debt securities (cash and repo transactions).

Since March 2010 LCH.Clearnet SA has also provided a clearing service for OTC European credit default swap index (iTraxx) contracts.

#### 4.3.1.4 Operation of the system

LCH.Clearnet SA acts as a CCP for the instruments that it covers in its operations. Once a trade is submitted to the clearing house, it is registered and LCH.Clearnet SA becomes the counterparty of both the seller and the buyer. The guarantee provided by LCH.Clearnet SA includes the cash value of clearing members' positions, but also a procedure to deliver, where necessary, securities to the purchaser on behalf of a defaulting seller. While acting as a CCP, LCH.Clearnet SA contributes to the reduction of credit and liquidity risks associated with the trading and delivery of Euronext instruments.

In December 2010 LCH.Clearnet SA improved its processing capacity by bringing the Universal Clearing System into operation. This is a new equity clearing platform which is able to process up to 6 million transactions per day (twice the capacity of the previous platform).

#### 4.3.1.5 Risk management

In order to perform its guarantee function, LCH.Clearnet SA implements a wide range of risk control measures, such as strict access criteria, marked-to-market valuation of its clearing members' exposures, margin calls and default funds.

There are two types of daily margin requirements:

- initial margins cover the upcoming risk on the open positions registered with the clearing house,
- variation margins cover the price difference between the original price of the registered position and the marked-to-market price.

In addition, in the derivatives and the fixed income (sovereign debt securities) segments, intraday margins are called when an intraday price variation limit is breached.

Additional margins can also be called for positions when risk exposures appear to be insufficiently covered by existing deposits in the default funds, which are recalculated each month.

Regarding the management of payment and settlement risk, the vast majority of payments involving the CCP are made in central bank money via TARGET2. Securities are settled on a DVP basis, and the vast majority of settlements are executed in the Euroclear Settlement of Euronext-zone Securities system (see Section 4.4.1) and in Monte Titoli (for the settlement of Italian sovereign debt securities).

As a credit institution, LCH.Clearnet SA has regular access to central bank facilities. In the management of the Lehman Brothers default, the fragmentation and heterogeneity of the SSSs in the EU further complicated matters for LCH.Clearnet SA because of the importance of its activity for various European markets, not just the Euronext markets. In particular, the liquidation of the defaulting participant's positions resulted in increased liquidity needs. In those circumstances, access to liquidity facilities with the Bank of France was used.

#### 4.3.1.6 Links to other systems

A link between LCH.Clearnet SA and the Italian CCP, Cassa di Compensazione e Garanzia, was activated in August 2004 for the clearing of Italian sovereign debt securities.

French and Italian regulatory authorities signed an MoU in February 2003 concerning the activities covered by the agreement between MTS S.p.A., Cassa di Compensazione e Garanzia S.p.A. and LCH.Clearnet SA.

The credit risk management systems set up within the framework of this clearing link proved to be efficient during the management of the Lehman Brothers default. Nevertheless, some



improvements have been implemented taking into account the lessons learnt from this episode. LCH.Clearnet SA worked in close partnership with the Italian infrastructures in order to facilitate the management of its settlement activities in the Italian market.

#### *4.3.1.7 Pricing*

For the cash equities markets, a fixed fee structure is in place with a €0.05 clearing fee for blue chip stocks postings and a €0.10 clearing fee for other stocks. Periodic fees consist of membership fees for cash markets participants.

For the fixed income market, a fixed fee of €0.40 per million nominal is charged.

For the credit default swap clearing service, the clearing fee is a percentage of the value of the cleared contract. This percentage is degressive and is based on the value of the contract. The fee is capped at €100 for an individual transaction.

Technical fees are in place, linked to the provision of IT devices for secured access.

#### *4.3.1.8 Major current and future projects*

Current projects include the improvement of the solution for the clearing of Spanish government bonds and repos, launched in December 2010 with settlement in the Spanish CSD, Iberclear. LCH.Clearnet SA is also planning to offer a clearing solution linked to BondMatch, the MTF for a secondary market for corporate bonds launched by NYSE Euronext. The service will cover euro-denominated international corporate, financial and covered bonds traded on this MTF.

Several projects are foreseen in the medium term, including functional, legal and governance changes in relation to the credit default swap service, in order to build an attractive solution for the main participants in the credit default swap market.

New developments are also expected concerning the platform of the Universal Clearing System, which should clear equity derivatives by the end of 2011. LCH.Clearnet SA also plans to upgrade its operational capacity through the launch of a new clearing platform for bonds and repos.

### **4.3.2 Eurex Clearing**

CCP Eurex Clearing AG is registered and operates under German law, under which CCP clearing is defined as banking business. Thus, Eurex Clearing AG has a banking licence according to Article 1 Section 1 (12) and Section 31 of the German Banking Act.

As a credit institution, Eurex Clearing AG is licensed by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht – BaFin) and supervised by BaFin and the Deutsche Bundesbank. Supervision is carried out according to the general principles of allocation of supervisory tasks between BaFin and the Deutsche Bundesbank laid down in the Banking Act and in agreements between those authorities. As a financial instruments clearing and settlement system, Eurex Clearing AG is overseen by the Deutsche Bundesbank based on Article 3 of the Bundesbank Act. Furthermore, BaFin, as an integrated financial supervisory authority, takes into account the special role of the CCP for financial markets. The Deutsche Bundesbank and BaFin use the overall risk management provision of the Banking Act to require Eurex Clearing AG to meet the CPSS/IOSCO and ESCB-CESR Recommendations.

Eurex Clearing AG clears for several trading facilities under the umbrella of the Deutsche Börse Group, but also for off-exchange trades (OTC trades). Products cleared comprise a wide range of cash, repo and derivatives products. The Eurex Group is owned by the German and Swiss exchange holding companies following the merger of Deutsche Terminbörse and SOFFEX in 1998. In legal terms, the derivatives markets in Zurich and Frankfurt am Main are separate and subject to market supervision by the respective national

market supervision authorities. As Eurex Clearing AG clears for both markets, an MoU has been signed by BaFin, the Deutsche Bundesbank, the Swiss National Bank and the Swiss Financial Market Supervisory Authority FINMA. Eurex Clearing AG also provides clearing for the Dublin stock market. It has obtained ROCH status from the UK Financial Services Authority. It is also subject to supervision by the US Commodity Futures Trading Commission as a Multilateral Clearing Organization as well as by the US Securities and Exchange Commission.

For further details, see the descriptive Red Book country chapter on Germany.

#### **4.3.3 European Multilateral Clearing Facility**

The European Multilateral Clearing Facility NV (EMCF) was incorporated in the Netherlands in March 2007 under Dutch law. EMCF is a CCP for transactions in cash equities. It delivers CCP services for 19 European equities markets through the trading platforms of Chi-X, NASDAQ OMX Nordics, BATS Europe, Quote, Burgundy, First North and The Order Machine (TOM).

The shares of EMCF are held by ABN AMRO Bank NV (78%, of which 1% is held directly and 77% is held through its subsidiary ABN AMRO Clearing Bank) and by NASDAQ OMX AB (22%).

EMCF is overseen by the Netherlands Bank and supervised by the Netherlands Authority for the Financial Markets. It has ROCH status in the UK (where it is supervised by the Financial Services Authority).

Since its establishment EMCF has expanded rapidly. At the end of 2010 EMCF, as a CCP, was guaranteeing an average of 3.5 million transactions a day, which means that EMCF is responsible for approximately 35% of the transactions in European blue-chip shares.

EMCF uses the private settlement bank model. It uses several (international) settlement and paying agents and has several (indirect) relationships with (international) CSDs.

EMCF is designated as a “system” within the meaning of Section 212a of the Dutch Bankruptcy Act by the Dutch Ministry of Finance. It is therefore a system protected by the provisions of the Settlement Finality Directive.

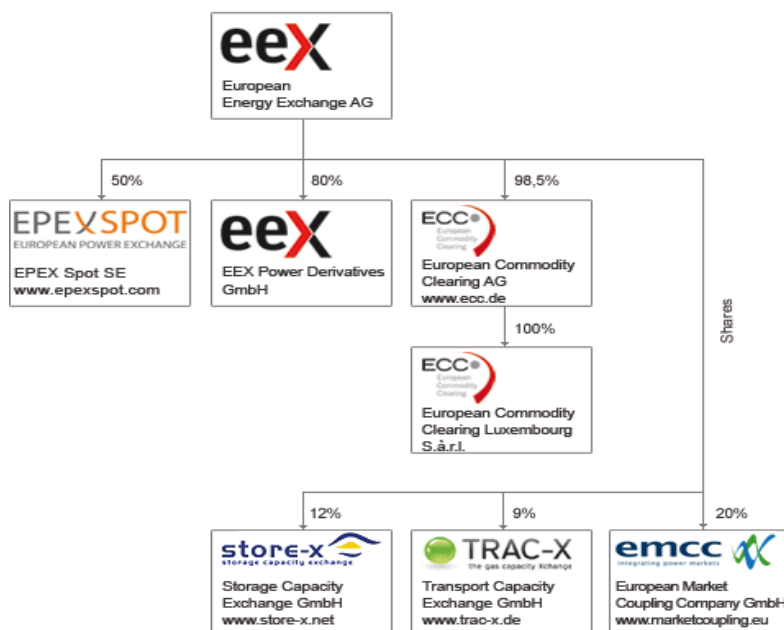
For further details, see the descriptive Red Book country chapter on the Netherlands.

#### **4.3.4 European Commodity Clearing AG**

European Commodity Clearing AG (ECC) is a clearing house providing clearing and settlement services for exchange and OTC transactions in energy and commodity products. ECC is registered and operates under German law, which defines CCP clearing as banking business. Thus, ECC has a banking licence according to Article 1 Section 1 (12) and Section 31 of the German Banking Act. As a credit institution, ECC is licensed by BaFin and is jointly supervised by BaFin and the Deutsche Bundesbank. Supervision is carried out according to the general principles of the allocation of supervisory tasks between BaFin and the Deutsche Bundesbank laid down in the German Banking Act and in agreements between the two authorities.

ECC is a subsidiary of the European Energy Exchange AG (EEX). EEX was founded in 2002 as a result of the merger of the two German power exchanges, in Leipzig and Frankfurt am Main. EEX provided clearing services until the establishment of ECC in 2006. The current structure of EEX is shown in the chart below.

Chart 5

**ECC as part of the European Energy Exchange AG**

Source: EEX website [www.eex.com](http://www.eex.com).

Currently ECC provides clearing services for EEX, the Anglo-Dutch exchange APX-ENDEX, the Hungarian HUPX, the French Powernext SA and EPEX SE, and the Austrian Central European Gas Hub. ECC also clears OTC trades which are registered via those exchanges.

In cooperation with ECC, the primary CCP of EEX, Eurex Clearing AG, provides clearing services for transactions in certain markets and in certain products (cooperation products) as a sub-CCP on the basis of the CCP-Sub-CCP Agreement. Physical settlement of all transactions for which ECC undertakes clearing is provided through European Commodity Clearing Luxembourg S.a.r.l. (ECC Lux), a subsidiary of ECC.

For further details, see the descriptive Red Book country chapter on Germany.

#### 4.4 Securities settlement

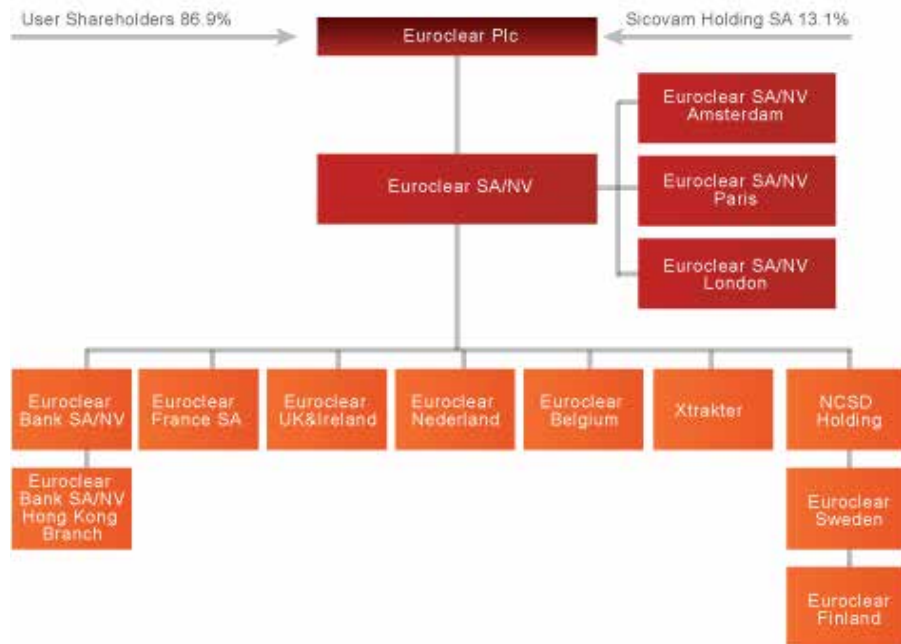
##### 4.4.1 Euroclear Group

###### 4.4.1.1 Institutional framework

Euroclear SA/NV is the parent company of the ICSD Euroclear Bank and the CSDs Euroclear UK and Ireland, Euroclear France, Euroclear Nederland and Euroclear Belgium. Moreover, at the end of 2008 Euroclear SA/NV acquired the Nordic Central Securities Depository (NCSD), encompassing the CSDs of Finland and Sweden. Euroclear also owns Xtrakter, which operates the TRAX trade matching system.

Euroclear SA/NV is incorporated in Belgium, with branch offices in Amsterdam, London and Paris, Euroclear Plc being the ultimate holding company of the group. The current structure of the Euroclear group is presented in the chart below.

Chart 6  
Company structure of the Euroclear group



As at mid-2011 NCSD Holding directly owned Euroclear Finland. Moreover, NCSD Holding was in the process of being wound up, with both Euroclear Sweden and Euroclear Finland becoming direct subsidiaries of the Euroclear Group.

Source: Euroclear group website [www.euroclear.com](http://www.euroclear.com).

The features that are common to all the Euroclear group (I)CSDs are presented below. The operation of the system, participation, links to other systems and pricing are, in general, system-specific for each Euroclear group (I)CSD. The characteristics of each Euroclear group (I)CSD are covered in the relevant descriptive Red Book chapters: Euroclear Bank in the international chapter, Euroclear Belgium, Euroclear France and Euroclear Nederland – whose systems are consolidated in the Euroclear Settlement of Euronext-zone Securities (ESES) system – in Section 4.4.2 and, finally, Euroclear UK & Ireland and NCSD Holding in the descriptive Red Book country chapters covering the United Kingdom and Sweden respectively.

#### 4.4.1.2 Oversight and prudential supervision

The group's (I)CSDs are separate legal entities and are in separate regulatory environments, as described in the relevant descriptive Red Book country chapters.

A cooperative oversight framework, based on an MoU, exists between the Euroclear group regulators, ie the overseers and securities regulators of Belgium, France, the Netherlands, the United Kingdom and Ireland, Sweden and Finland. This framework is based on the lead oversight and lead supervision principle and aims at allowing each authority to fulfil its responsibilities, while promoting the efficiency of the controls through a homogeneous approach that avoids redundancies.

#### 4.4.1.3 Governance

Euroclear plc – and hence the Euroclear group – is user-owned and user-governed. The capital of Euroclear plc is for the most part held by user-shareholders. The remainder of the share capital is held by Sicovam Holding SA, a holding company that brings together the

former shareholders and/or users of Euroclear France, which is the largest shareholder of Euroclear plc.

Both Euroclear plc and Euroclear SA/NV have independent boards of directors that make the strategic decisions for the group.

In the general meeting, shareholders take decisions by majority voting. Voting rights are allocated to each shareholder in proportion to their holding of voting shares. However, a single shareholder's voting right is limited to 5% of the share capital.

#### 4.4.1.4 Risk management

Euroclear SA/NV owns and operates most of the IT infrastructure of the Euroclear group. It also offers a broad range of services to the (I)CSDs of the group, such as audit, financial, risk management, legal, human resources and product management services.

An enterprise risk management (ERM) framework has been established across the Euroclear group. Responsibility for the maintenance and development of the ERM framework rests with the Operational Risk Management team. The ERM framework helps ensure that decisions by members of the group are in line with the Euroclear group's risk appetite.

An Operational Risk Policy is in place, which defines a number of processes to ensure a sound operational control environment. The objectives of this policy are to: (i) effectively identify, measure, manage and control operational risk factors; (ii) develop operational risk mitigation strategies; (iii) reduce the likelihood and impact of loss events; and (iv) define the roles and responsibilities for operational risk management. An important cornerstone of the Operational Risk Policy is the group's IT resilience strategy. It is based on an infrastructure comprising three data centres that is designed to cope with local or regional disasters. Two data centres are load-balanced and updated synchronously. Tasks can be quickly switched from one to the other. They alternate on a monthly basis as the active primary data centre. A third remote data centre – the hot standby site – is able to take over the processing of the full production volume in the event of a regional disaster affecting both of the other data centres. It replicates data asynchronously, but aims to ensure complete settlement within the business day. Full data mirroring between the three data centres ensures that identical data exist at the backup data centre. The Euroclear group also operates a dual-office strategy whereby critical teams are located across two distant sites, aiming to ensure client services and operations following a major metropolitan-wide event.

All entities of the Euroclear group regularly perform detailed impact analyses to identify and monitor their critical activities and recovery time objectives. Business continuity plans have been harmonised at the corporate and departmental levels throughout the group. Finally, each element of the business continuity strategy is regularly maintained and tested.

#### 4.4.1.5 Major current and future projects

The Euroclear group will further develop its (I)CSDs' platforms according to the needs of the markets concerned. There is a group-wide focus on collateral management services. For example, a "Term DBV"<sup>35</sup> service was introduced in the United Kingdom in June 2011; solutions for collateral management (both for interbank operations and for refinancing operations with the central bank) will be delivered to the French, Dutch and Belgian markets. Further details can be found in the respective descriptive Red Book country chapters.

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<sup>35</sup> Euroclear UK & Ireland modified its delivery by value (DBV) service – providing a method of settling term repo instructions as a series of overnight instructions – by incorporating a term DBV functionality including some automated ability to substitute collateral.

#### **4.4.2 ESES securities settlement systems**

The Euroclear Settlement of Euronext-zone Securities (ESES) system was launched on 19 January 2009. Since then Euroclear has provided for the French, Dutch and Belgian Euronext-zone market CSDs an operationally integrated settlement solution, for both stock exchange and OTC trades. The ESES platform integrates the settlement activity of the SSSs of Euroclear Belgium, Euroclear France and Euroclear Nederland, which are all part of the Euroclear group. However, Euroclear Belgium, Euroclear France and Euroclear Nederland remain three legally separate SSSs.

##### *4.4.2.1 Institutional framework*

Each of the three ESES SSSs is operated by its domestic CSD: Euroclear Belgium, Euroclear France and Euroclear Nederland. All three operators are subsidiaries of Euroclear SA/NV, the Euroclear group holding company, and outsource the IT platform operations to Euroclear SA/NV (see Section 4.4.1.1). Euroclear SA/NV also delivers common services, such as risk management, internal audit, legal and human resources services, to its subsidiaries, including the ESES CSDs. The three CSDs and SSSs share a common IT platform, rely on harmonised settlement and custody services, and apply a harmonised pricing framework.

The delivery of this integrated ESES solution has required strong coordination mechanisms between the CSDs. For this purpose, the ESES CSDs have streamlined governance since March 2009. Basically, the board and management structure in each CSD is retained, but their membership composition has been aligned. The composition of each CSD's board of directors is the same, with the same person being chairman of all three CSDs. Moreover, the composition and the chairman of the audit committee is the same for all three CSDs. Furthermore, the three CSDs have the same chief executive officer and the composition of their management committees is identical.

Integration has been further enhanced by a new operating model introduced in March 2011, which applies a matrix organisation across the ESES CSDs. As a result, each area of activity across all three CSDs is headed by a single manager, while the management remains ultimately accountable for the performance of each individual CSD.

##### *4.4.2.2 Participation*

Participation in the CSDs is governed by a set of terms and conditions. Book I contains the terms and conditions for ESES and Book II contains the terms and conditions for each national component of ESES.

In order to be admitted as a client in accordance with the terms and conditions of ESES, an applicant must belong to one of the following categories:

- i. credit institutions;
- ii. investment firms;
- iii. CSDs;
- iv. national central banks;
- v. public institutions;
- vi. any other category listed in the terms and conditions of the system (Book II). These categories differ across the three CSDs and accommodate national differences.

According to the Terms and Conditions of ESES, the access criteria that apply to any participant in the SSS, excluding issuers, include:

- i. technical and operational capability;
- ii. reputation in the market;

- iii. anti-money laundering programme;
- iv. risk assessment.

ESES memberships overlap, with many participants being a member of more than one ESES CSD and/or SSS.

#### 4.4.2.3 *Types of transaction*

ESES provides settlement services for a wide range of securities in the Belgian, Dutch and French markets. It handles all transactions executed on the Paris, Amsterdam and Brussels Euronext stock exchange cash markets. These on-exchange trades are centrally cleared by the Paris-based LCH.Clearnet SA (see Section 4.3.1) before they are settled on the ESES platform. In addition, ESES settles bilaterally concluded OTC trades. The platform offers a large variety of services for the securities held on the accounts, including repo settlement. Links are maintained with several SSSs (see Section 4.4.2.6).

#### 4.4.2.4 *Operation of the system*

ESES offers DVP book-entry settlement in central bank money (DVP model 1), providing immediate settlement finality and high settlement efficiency. Transactions are settled in central bank money on cash accounts legally held with the National Bank of Belgium, the Bank of France and the Netherlands Bank. The accounts are operated by Euroclear Belgium, Euroclear France and Euroclear Nederland. Moreover, ESES enables a participant to use just one central bank account to settle its transactions in all three CSDs/SSSs. ESES' connection to TARGET2 offers maximum flexibility for monetary policy operations and for access to central bank liquidity (for further details, see below).

The ESES system relies on IT services provided by Euroclear SA/NV. This outsourcing arrangement, approved by the competent authorities, is governed by the Shared Service Agreement between Euroclear SA/NV and the ESES CSDs.

Within the framework of the matrix organisation applied across the ESES CSDs/SSSs, the settlement activities of Euroclear Belgium and Euroclear Nederland have been outsourced to Euroclear France (from March 2011).

#### 4.4.2.5 *Risk management*

Risk management in ESES entails several aspects. First, ESES participants have to follow strict participation criteria and access procedures which include a risk assessment. Second, ESES ensures real-time gross settlement (DVP model) in central bank money, minimising settlement risk. Third, ESES allows the use of intraday credit with the central banks. This is easily transferred to and from the ESES platform to ensure a smooth settlement process. In France, the auto-collateralisation facility provided by Euroclear France to French settlement banks helps to ensure timely settlement because, should the participant with the largest obligation be unable to settle, timely settlement would be completed by using a "pension livrée conservatoire" (PLC) or auto-collateralisation repo. The PLC procedure is designed to provide additional intraday liquidity against eligible collateral to participants for settlement purpose in ESES. For securities lending facilities, ESES does not manage a dedicated programme. ESES participants have to use the facilities available, eg in their local market.

As regards the ESES risk management practices, an enterprise risk management framework has been established across the Euroclear group (see Section 4.4.1.4).

#### 4.4.2.6 *Links to other systems*

ESES CSDs have international links with CSDs in 16 countries, as well as with Euroclear Bank and Clearstream Banking Luxembourg. The Euroclear Nederland link, the Euroclear Belgium link and several of the Euroclear France links are relayed links through Euroclear Bank. Euroclear France also maintains eight direct links with several foreign CSDs.

#### 4.4.2.7 Pricing

ESES tariffs are harmonised across the ESES CSDs. There are additional tariffs for services which are specific to each ESES CSD. Up-to-date tariff schedules are available on the respective websites.

### 4.4.3 Clearstream Group

#### 4.4.3.1 Institutional Framework

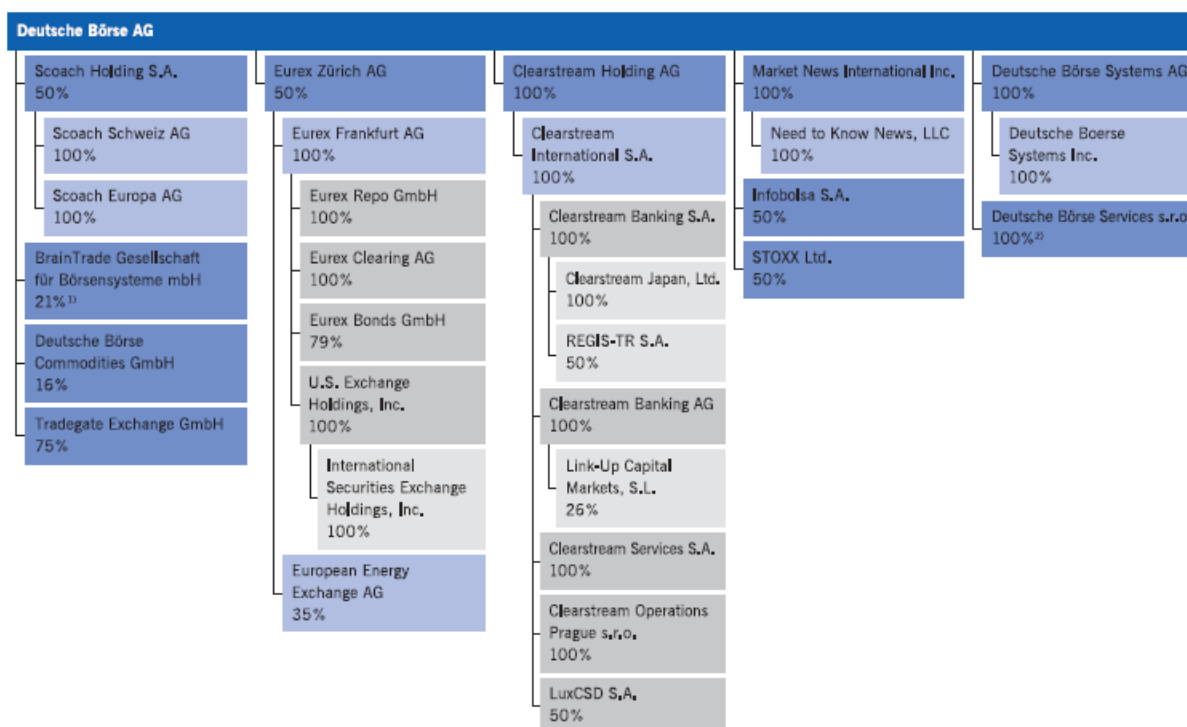
The corporate framework of the Clearstream Group has undergone a number of changes in the last few years. Currently Deutsche Börse AG, in Frankfurt am Main, is the parent company of the newly established Clearstream Holding AG, Frankfurt am Main, which owns Clearstream International S.A., Luxembourg. Clearstream International S.A. is the holding company for the ICSD Clearstream Banking S.A., Luxembourg (CBL), the German CSD Clearstream Banking AG, Frankfurt am Main (CBF), and for other related companies.

Clearstream International S.A. is an international clearing and settlement organisation providing extensive services for equities and bonds for both domestic and international business. It provides two basic services to the industry: (i) an ICSD through CBL and (ii) a CSD through CBF.

Chart 7

### Structure of the Deutsche Börse Group

Simplified shareholding structure of Deutsche Börse Group as at 1 January 2011



Source: Deutsche Börse Group, 2010 Annual Report.

CBL, as an ICSD, offers clearing, settlement and asset servicing facilities for the Eurobond market and for securities in some 50 countries. It also provides dedicated securities lending, collateral and cash management services to its customers.



In addition, CBL operates LuxClear, a service which offers all the securities services required to link the Central Bank of Luxembourg to both Luxembourg-domiciled banks and foreign banks in accordance with the CCBM.

CBL has also jointly created with the Central Bank of Luxembourg a new CSD in Luxembourg, LuxCSD, which will provide settlement in central bank money and aims to be a local access to T2S when it is implemented in 2014. LuxCSD is co-owned with equal stakes of 50% held by the two founding partners.

More information on CBL is provided in the international chapter of the descriptive Red Book.

CBF, as a CSD, offers clearing and settlement facilities for the German securities markets. Information on CBF is provided in the country chapter of the descriptive Red Book covering Germany.

#### *4.4.3.2 Oversight and prudential supervision*

The group's ICSD and CSD remain separate legal entities in separate regulatory environments. The regulatory environments for the ICSD and the CSD are described in the international chapter of the descriptive Red Book and the chapter covering Germany.

#### *4.4.3.3 Governance*

Deutsche Börse AG is a German Aktiengesellschaft (company limited by shares) and is listed on the German stock exchange. At the end of 2010 95% of the shares were held by institutional investors and 5% by private investors. The investors are based in Germany (18%), the United Kingdom (16%), the United States (32%) and other countries (34%).

#### *4.4.3.4 Risk management*

Deutsche Börse AG and Clearstream Services SA own and operate the IT infrastructure of the Clearstream Group. They also offer a broad range of services such as audit, financial, risk management, legal, human resources and product management services.

The Clearstream Group's business continuity arrangements cover all sites, network control centres and business sites. The Deutsche Börse Group has a Group Risk Management team that defines its overall objectives and monitors its overall risk profile. It also has a comprehensive Business Continuity Management policy. The policy ensures that the risk framework is implemented group-wide so that all risks are identified, centrally recorded and systematically assessed. Contingency plans and backup facilities are regularly tested in cooperation with market participants and relevant parties, and are maintained to ensure their resilience.

#### *4.4.3.5 Major current and future projects*

The Clearstream Group will further develop its platforms according to the needs of the market concerned and the scope of the Eurosystem's T2S. In the context of T2S, value added services such as collateral management and securities lending services will become even more prominent than they currently are. In the field of OTC derivatives transactions, the Clearstream Group and the Spanish CSD Iberclear are currently developing trade data registry services using a separate legal entity (see Section 4.2).

### **4.4.4 The correspondent central banking model (CCBM)**

Article 18.1 of the Statute of the ESCB requires all Eurosystem credit operations to be based on adequate collateral. Consequently, all Eurosystem liquidity-providing operations are based on underlying assets provided by the counterparties either in the form of the transfer of ownership of assets (in the case of outright transactions or repurchase agreements) or in the form of a pledge, an assignment or a charge granted over relevant assets (in the case of

collateralised loans). With the aim of protecting the Eurosystem from incurring losses in its monetary policy operations and of ensuring the equal treatment of counterparties, as well as of enhancing operational efficiency and transparency, underlying assets have to fulfil certain criteria in order to be eligible for Eurosystem monetary policy operations. In particular, underlying assets must be usable on a cross-border basis throughout the euro area. This means that Eurosystem counterparties may obtain credit from the NCB of the member state in which they are established (their home central bank (HCB)) by making use of eligible assets located in another euro area country.

When the euro was introduced, European securities market infrastructures were highly segmented and there were no adequate market arrangements available that could ensure the fulfilment of this criterion. Indeed, the network of links between SSSs was incomplete and thus unable to ensure the use of collateral assets throughout the euro area. The CCBM was introduced in January 1999 in order to ensure that all assets eligible for use in Eurosystem credit operations could be used as collateral by all Eurosystem counterparties, regardless of the location of those assets or counterparties. The model was designed to facilitate the cross-border use of collateral as an interim solution until adequate market solutions became available throughout the euro area. Although the network of CSD links has become more dense, there is still a gap; consequently, the CCBM is no longer considered to be an interim solution.

#### *4.4.4.1 Institutional framework*

Under Eurosystem rules, counterparties can obtain credit only from their HCB – ie there is no remote access to Eurosystem credit. Counterparties can use assets located in another country by transferring such assets to a correspondent central bank (CCB), typically the NCB of the country where the assets are issued. In order for the CCBM to function, market participants must make arrangements with the SSSs where the collateral is deposited for the delivery of the marketable assets. The CCB then holds the collateral on behalf of the HCB, acting as a custodian for the HCB. The credit can be released by the HCB once the CCB notifies it that adequate collateral has been received.

The use of the CCBM in Eurosystem credit operations is based on internal Eurosystem agreements. Under these agreements, each NCB agrees to act as the local agent for each other and the ECB, and responsibilities are allocated to the HCB and the CCB. The terms applicable to the collateral operations of counterparties are set out in the respective contractual or regulatory arrangements of the HCB. In particular, these documents specify whether the HCB will base its operations on assignments, repos, pledges or floating charges. The CCBM has been designed to ensure that, if possible under the relevant national legal systems, the HCB's choice of collateralisation technique should be respected for the mobilisation of both domestic and cross-border assets.

As, in many cases, custodian banks play an important role in the CCBM processing chain by delivering the marketable assets to the CCB on behalf of the counterparty, the major European credit sector associations (the EBF, the ESG and the EACB) have established best practices for custodian banks involved in CCBM transactions which entered into force in May 2005. These best practices help market participants to make the CCBM more efficient.

The CCBM has made a substantial contribution to the increased use of cross-border collateral, which – setting aside the effects of the global financial turmoil – reflects the growing integration of the euro area's banking and financial markets, with increased diversification in collateral portfolios and the emergence of banking groups operating in multiple countries. Since the CCBM was introduced, it has been the main channel for the cross-border use of collateral. In 2010 collateral submitted to the Eurosystem via the CCBM represented 24% of the total collateral provided. This figure is remarkable when compared with the 5% of collateral held in custody through link arrangements between SSSs, the alternative to the CCBM for transferring cross-border collateral.

#### 4.4.4.2 Participation

All Eurosystem NCBs are party to the CCBM agreement. The CCBM initially also included the NCBs of non-euro area countries as CCBs (namely the National Bank of Denmark, Sveriges Riksbank and the Bank of England). However, in 2003 the settlement location criterion for eligible assets was reviewed, resulting in a requirement that the settlement of assets take place in an SSS located in the euro area. Consequently, non-Eurosystem NCBs no longer provide CCB services for assets issued and settled in their local CSDs. The only exception is the Bank of England, acting as a CCB for the Euro-market and international issues in the two ICSDs where the issuer is the government of the United Kingdom or a company incorporated in the United Kingdom.

#### 4.4.4.3 Types of transaction

The CCBM is used exclusively for the transfer of collateral to and from the Eurosystem – ie it does not support collateral transactions between market participants of the Eurosystem.

The types of transaction concerned are the collateralisation of Eurosystem monetary policy operations as well as intraday credit operations in TARGET2.

#### 4.4.4.4 Operation of the mechanism

All NCBs maintain securities accounts with each other for the purpose of the cross-border use of eligible assets. For marketable assets, the general rule is that the CCB is the NCB of the country of the issuing SSS (which is usually the domestic SSS of the country in which the assets are issued – ie registered and/or deposited). In general, each eligible asset has only one CCB. However, there are a few exceptions. First, for Euro-market and international assets issued simultaneously in Euroclear Bank and Clearstream Banking Luxembourg, the National Bank of Belgium acts as the CCB for holdings in Euroclear Bank and the Central Bank of Luxembourg acts as the CCB for those in Clearstream Banking Luxembourg. Second, for Irish government bonds deposited in Euroclear Bank, the Central Bank of Ireland acts as the CCB and, third, for Euro-market and international issues in Euroclear Bank and Clearstream Banking Luxembourg, where the issuer is the government of the United Kingdom or a company incorporated in the United Kingdom, the Bank of England acts as the CCB. For non-marketable assets, the general rule is that the CCB is the NCB of the country whose law governs the assets.

The specific procedure of the CCBM depends on the type of eligible asset involved as well as whether the eligible assets are earmarked for each individual transaction or whether they are held in a pool of underlying assets.

In an earmarking system, as soon as a counterparty's bid for credit is accepted by the NCB of the member state in which the counterparty is established (ie the HCB), the counterparty instructs (via its own custodian, if necessary) the SSS in the country in which its marketable assets are held to transfer them to the central bank of that country for the account of the HCB. Once the HCB has been informed by the CCB that the collateral has been received, it transfers the funds to the counterparty. Central banks do not advance funds until they are certain that the counterparty's marketable assets have been received by the CCB. Where necessary to meet settlement deadlines, counterparties may be able to pre-deposit assets with CCBs for the account of their HCB using the CCBM procedures.

In a pooling system, the counterparty is able at any time to provide the CCB with marketable assets for the account of the HCB. Once the HCB has been informed by the CCB that the marketable assets have been received, it will add these marketable assets to the pool account of the counterparty.

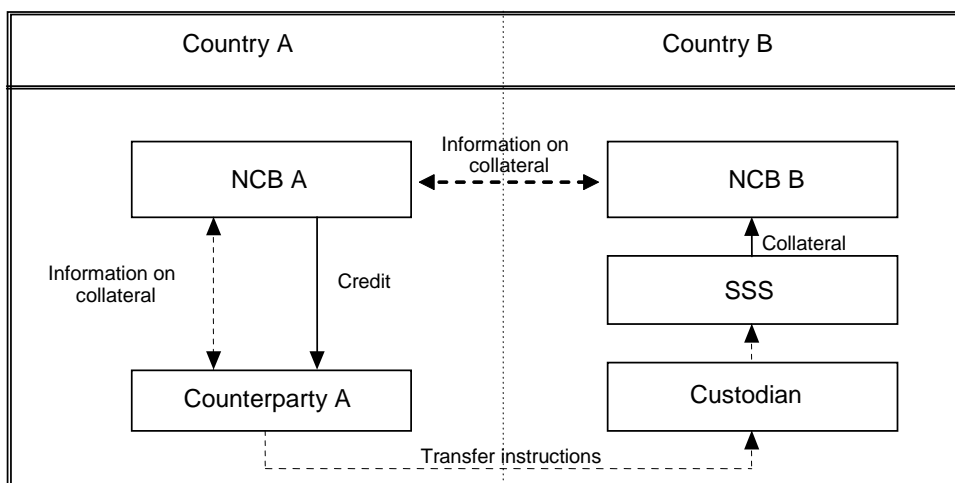
In the case of non-marketable assets, ie credit claims and non-marketable retail mortgage-backed debt instruments, which are not governed by domestic law, specific CCBM solutions have been implemented for their mobilisation. These specific assets can be used through the

CCBM using a transfer, assignment, pledge or floating charges on behalf of and in the name of the HCB. An ad hoc variant has been implemented to allow the cross-border use of Irish mortgage-backed promissory notes.

The CCBM is available to counterparties (for both marketable and non-marketable assets) from 9 am to 4 pm CET on each Eurosystem business day. A counterparty wishing to make use of the CCBM must advise the NCB from which it wishes to receive credit – ie its HCB – before 4 pm CET. Furthermore, the counterparty must ensure that the collateral for monetary policy operations is delivered to the account of the CCB by 4.45 pm CET at the latest. Instructions or deliveries not respecting this deadline will only be considered for credit on the following business day. When the counterparties foresee a need to use the CCBM late in the day, they should, where possible, deliver the assets in advance (ie pre-deposit them). In exceptional circumstances or when required for monetary policy purposes, the ECB may decide, subject to the availability of the CSDs and/or SSSs concerned, to extend the CCBM's closing time until the TARGET2 closing time.

Chart 8

### The correspondent central banking model



To improve the level of service provided by the CCBM, the ECB's Governing Council decided that from January 2004 the HCB and the CCB should each aim to carry out their internal procedures within 30 minutes. This assumes, however, that counterparties (and their custodians) submit their instructions correctly and that some allowance is made for possible delays at peak times.

#### 4.4.4.5 Pricing

Counterparties which make use of collateral on a cross-border basis must pay a transaction fee of €30 for each delivery of assets to their HCB through the CCBM. In addition, a combined custody and administration fee of 0.0069% per annum is charged on the nominal value of the assets – or the market value of assets without a nominal value. The fees have been set to cover the costs of the CCB and are charged by the HCB on a monthly basis. HCBs may also charge local fees.

#### 4.4.4.6 Major future projects

The increased integration of the euro area's banking and financial markets and the importance of the cross-border use of collateral have increased the markets' demand for more efficient collateral mobilisation solutions. Despite the achievements of the CCBM, Eurosystem counterparties have identified a number of shortcomings, mainly linked to the fact that the service was initially designed as an interim solution. These shortcomings relate eg to the differences between domestic and cross-border procedures (owing to different procedures at the NCBs and CSDs) and lack of standardisation in the legal techniques and methods used for collateralisation, as well as in communication channels and messages.

In response to these market concerns, the Governing Council of the ECB decided in March 2007 to review the Eurosystem's collateral management procedures – particularly the CCBM. Two market consultations were launched, the first in April 2007 and the second in February 2008, which confirmed the business case for a harmonised collateral management system for the Eurosystem. Subsequently, in July 2008 the Governing Council of the ECB decided to launch the Collateral Central Bank Management project.

The main objectives of the project are to increase the efficiency of the Eurosystem's collateral management and address the drawbacks identified by market participants with regard to the current CCBM framework, to the extent that such issues fall within the remit of central banks. In this regard market participants requested in particular that the requirement to repatriate assets from investor CSDs to issuer CSDs before mobilisation as collateral through CCBM would be removed and that tri-party collateral management services could be used also on a cross-border basis.

The Collateral Central Bank Management will cater for transactions to mobilise both domestic and cross-border collateral. It will support all the currently existing collateralisation techniques and methods (pledges, repos, assignments, pooling and earmarking).

The Eurosystem Collateral Central Bank Management will be implemented in accordance with the principle of decentralised access to credit. This means that all Eurosystem central banks continue to grant credit to their local counterparties and remain responsible for all business relationships with them.

#### 4.4.5 Major project: TARGET2-Securities

The integration of bond and equity markets relies on the integration of the underlying infrastructure, particularly that of SSSs and CCPs. However, in the euro area, progress on the integration of securities post-trading infrastructures has not kept pace with that of large-value payment infrastructures. This is largely because securities are inherently very complex, which has led to cross-country differences in terms of market practices and legal, regulatory and fiscal regimes.

The post-trading infrastructure for equities is even more fragmented than that for bonds. Cross-border settlement for bonds is largely concentrated in the two ICSDs, whereas the cross-border settlement of equities relies heavily on national CSDs. In both cases, a varying number of intermediaries (banks, local custodians, global custodians, etc) may be involved in the settlement process, adding further processing services and related costs. This high degree of fragmentation results in substantial post-trading costs for EU cross-border securities transactions, reduces the potential for economies of scale and is an obstacle to the emergence of a level playing field in Europe in this area. Although Europe is comparable to the United States in terms of its economic size, it lags behind it in terms of both the volume and cost of securities transactions. The price gap is particularly large for cross-border settlement.

An important element in the integration of securities infrastructures within the single market is the establishment of a common, neutral securities settlement service that will foster effective interoperability and competition between service providers. Consequently, with a view to

promoting financial integration and overcoming the fragmentation of the securities settlement infrastructure through the provision of central bank services, the Eurosystem has launched its T2S initiative in order to provide this missing element. T2S will be a future pan-European service to be used by CSDs for the settlement of securities transactions in central bank money. The project is currently in the development phase and live operations are scheduled to begin in June 2015.

According to a cost-benefit analysis prepared by the ECB together with market participants, T2S will bring some major benefits to European financial markets: It should bring down settlement fees by fully exploiting the economies of scale resulting from the use of a single IT settlement platform; it will remove the need to post collateral at multiple clearing houses, facilitating considerable collateral savings; it will be a catalyst for harmonisation across Europe, helping to remove the current barriers and inefficiencies that prevent straight-through processing; and it will have a positive impact on financial stability by settling exclusively in central bank money and offering high standards of resilience, availability, business continuity and security. Together with forthcoming European legislation, T2S will foster competition by facilitating user choice over which CSDs to use for settlement.

#### *4.4.5.1 Institutional framework*

The T2S initiative builds on the fact that the securities settlement services of CSDs and the cash settlement services of central banks are closely linked. A securities trade typically results in the delivery of securities (the securities leg) in exchange for the transfer of cash funds (the cash leg). In T2S the cash leg is settled in central bank money. To avoid credit risk in the T2S settlement process, the completion of one leg is carried out simultaneously with the completion of the other leg with immediate finality (DVP). While this method of settling securities trades is very effective within individual countries, it is so far hardly available at all at a cross-border level in Europe.

Holding securities accounts and central bank cash accounts on the same platform and thereby enabling integrated settlement is considered the most efficient way of settling the two legs of securities trades. With the launch of TARGET2, the Eurosystem now offers a single platform for the settlement of payments (the cash leg) in central bank money. However, securities are still held and settled on multiple platforms (ie individual CSDs). Outsourcing the central bank cash accounts to multiple CSDs would have reversed the gains from bringing central bank accounts together on TARGET2's single platform, while outsourcing to only a small number of CSDs would have given those CSDs a competitive advantage. Furthermore, the outsourcing of central bank cash accounts could pose a threat to the Eurosystem's ability to maintain full control over the provision of central bank money in all circumstances.

Consequently, with its T2S initiative, the Eurosystem has invited European CSDs to outsource their securities accounts to a single platform, which the Eurosystem will build and operate. The legal basis for the Eurosystem to build T2S is derived from Articles 17, 18 and 22 of the Statute of the ESCB.

The main aim of T2S is to bring all securities and cash accounts together on one technical platform with a view to settling nearly all securities transactions in Europe on that platform. T2S will not, however, constitute a CSD or an SSS in the legal sense, as for example defined in the Settlement Finality Directive. It is purely an IT platform to be used by CSDs to settle their securities transactions with immediate legal validity in T2S. CSDs will maintain their legal relationships with their customers and will continue to perform their custody and notary functions.

#### *4.4.5.2 Participation*

The CSDs will be the legal "counterparties" of the Eurosystem, ie the entities to which the Eurosystem's T2S services will be provided on the basis of standardised contractual arrangements. In early 2011 30 CSDs from 27 countries took part in negotiations with the

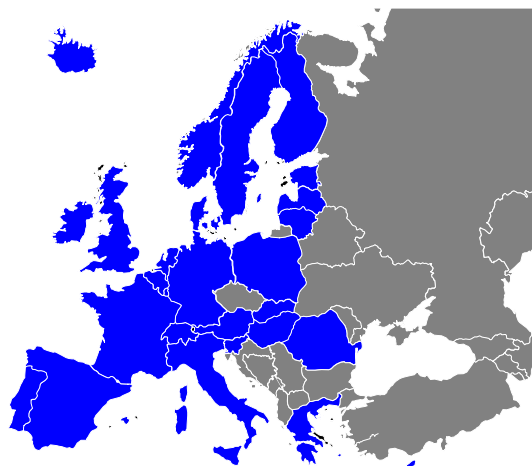
Eurosystem on participating in T2S. They included almost all CSDs in the EU, as well as three CSDs from outside the EU (from Iceland, Norway and Switzerland – see Figure 1).

Furthermore, one of the unique features of T2S is that it will be a multicurrency central bank money settlement platform. Non-euro area central banks that decide to provide their currency for settlement in T2S will thus also be legal counterparties of the Eurosystem, including on the basis of standardised arrangements. A number of central banks have expressed an interest in allowing securities transactions denominated in their national currency to be settled in central bank money in T2S, including the National Bank of Denmark, the Central Bank of Norway and Sveriges Riksbank.

Financial market participants, such as banks, brokers, investment banks and central clearing counterparties, will not be legal counterparties of T2S, but from a technical perspective they will be able to connect directly with T2S. This means they will be able to send their own settlement instructions directly to T2S, as well as receive queries and reports on their positions directly from T2S. For larger banks operating in multiple countries, this could bring significant benefits, enabling them to centralise and/or rationalise their back office processes.

Figure 1

### Countries in which the CSD has signed the T2S MoU



#### 4.4.5.3 Types of transaction

It will be possible to settle practically all bonds and equities transactions in T2S. The only restrictions are that the securities must have an ISIN code, be held in book-entry form and thus be fungible. The bulk of such transactions in T2S are expected to be DVP transactions, but FOP and payment-free-of-delivery transactions will of course also be possible. T2S will also be able to settle the outcome of corporate actions, eg cash or securities dividend payments, bonus issues, etc.

For the cash leg of a transaction, T2S will only settle in central bank money. T2S will facilitate access to central bank money for settlement purposes via T2S dedicated cash accounts. They are exclusively central bank money accounts opened on the books of an NCB, according to the access criteria defined by the NCB. Only T2S dedicated cash accounts can be used for the cash leg of securities settlement (in both the daytime and night-time settlement cycles). Liquidity can be transferred between RTGS accounts and T2S dedicated cash accounts via liquidity transfer orders.

Participants who are not eligible for central bank accounts or T2S dedicated cash accounts will be able to nominate a settlement bank which does have a T2S dedicated cash account to

settle the cash leg of transactions on clients' behalf. For this purpose, T2S will offer a "credit memorandum balance" functionality, which is a limit monitoring function in T2S that could be used by cash settlement banks to set limits at the client level and monitor their use.

#### 4.4.5.4 Operation of the platform

T2S will operate in a real-time mode, processing transactions according to the order in which they are received and what priority they have been given. In the night-time settlement period, it is intended there will be several separate settlement cycles. However, T2S follows the CPSS Model 1 for DVP settlement (ie real-time gross settlement with immediate finality during both daytime and night-time settlement periods) and the booking of settlement instructions will occur only on a gross basis, although settlement optimisation procedures, such as technical netting, auto-collateralisation and partial settlement, may be used to reduce the resources needed for a set of transactions that are submitted together for settlement.

For settlement of DVP transactions in euros, the opening days of T2S will be those set out in the TARGET2 calendar; and for settlement of DVP transactions against payment in non-euro currencies, the opening days are in accordance with the opening days of the RTGS system of the respective non-euro central bank. For FOP transactions, T2S will be open for settlement from Monday to Friday every week of the year. Settlement of FOP transactions will therefore also be possible on days when the central bank's RTGS payment system is closed.

In terms of operating hours, the schedule of the settlement day in T2S will apply to all participating CSDs and will therefore allow interoperability across the systems of the participating CSDs. Given that the project is still at an early stage, the operating hours are still indicative and the daily schedule of events will be subject to further discussions with T2S stakeholders for the further definition of details. Nevertheless, according to the current indicative timetable, the change of settlement date occurs at 6.45 pm CET. The first night-time settlement cycle of the settlement day will begin at 7.30 pm CET on the previous day (T-1) and the last night-time cycle will finish at around 3 am CET. Once the last night-time cycle is complete, there will be a maintenance window from 3 am to 5 am CET before real-time settlement automatically begins, lasting until 6 pm CET. Between 6 pm and 6.45 pm CET, end-of-day procedures take place.

#### 4.4.5.5 Risk management

A comprehensive information security framework has been developed and is in the process of being agreed with the CSDs and NCBs. It consists of an information security policy (specifying the scope of the service and stakeholders' roles and responsibilities), a threat catalogue (identifying threats that are relevant for T2S) and a set of security requirements and controls. In addition to this framework, a T2S Information Security Management Guide will be developed explaining in detail which activities will be conducted by whom, in what circumstances. In particular, this Guide will describe two processes (a core process and a review process) in order to ensure that information security risks are identified, monitored, assessed and mitigated and/or accepted, in full compliance with the applicable governance arrangements. It should be noted that the T2S platform is being built on the TARGET2 platform and therefore all the operational risk policies developed for the latter have been used as the basis for establishing the T2S policies. These tools and procedures therefore already have an excellent track record of providing a very high level of security.

In terms of resilience, T2S will also have state-of-the-art disaster recovery plans and procedures in place, which will – even in the most extreme cases – ensure a restart of T2S operations at the standby location, at the latest two hours after the failover decision has been made. T2S will have four data centres located in two regions, which are approximately 1,500 km away from each other, hence eliminating and/or minimising the risk that all data



centres could be affected by the same natural disaster. At any point in time, one region will be the active T2S region, while the other will be on standby.

#### 4.4.5.6 Links to other systems

In T2S, the settlement of cross-CSD DVP transactions, for the CSDs participating in T2S, will be as efficient as domestic DVP settlement. This is achieved by the integration of securities accounts of multiple CSDs and T2S dedicated cash accounts on a single technical platform. To that end, T2S will book securities transfers between participants with different CSDs simultaneously with the corresponding cash movements. It will also automate the realignment process between CSDs on a real-time basis.

Cross-border transactions involving external CSDs, ie involving one or more CSDs that do not participate in T2S, will also benefit from the T2S architecture. The aim in this context is to achieve real-time settlement wherever feasible, but the need to interact with external CSDs and/or platforms will make the settlement procedure more complex in some cases. Specific procedures have been designed, including a conditional securities delivery functionality to address scenarios in which CSDs outside T2S are involved in the settlement process.

#### 4.4.5.7 Pricing

Owing to the current fragmentation of settlement over a multitude of platforms run by different CSDs, settling across borders today still costs many times more than settling within the same country. With T2S, cross-border and domestic transactions will be processed in the same way and therefore at the same cost. Furthermore, all users, large and small, wherever they are located, will benefit from these cost reductions to the same extent.

In November 2010 the Governing Council of the ECB decided that the DVP price for T2S will be set at €0.15 per instruction,<sup>36</sup> This price will be fixed for the period when T2S goes live to December 2018, provided that the following conditions are fulfilled:

- the securities settlement volume in the EU is not more than 10% lower than the volumes projected by the T2S Programme Office, which in turn are based on market advice;
- tax authorities confirm that the Eurosystem will not be charged value added tax for T2S services (this condition has already been fulfilled);
- non-euro currencies add at least 20% to the euro settlement volume.

In November 2011, it was also decided to acknowledge the higher testing efforts of CSDs that migrate to T2S early. In that respect settlement fees will be waived for the first three months of T2S operation. After three months of T2S operation and until the last regular migration wave, settlement fees will be reduced by one third. As of the last regular migration wave, the full T2S fees will apply.

These pricing decisions remain consistent with the principle of full cost recovery, while also coinciding with the objective that T2S has always pursued, ie to achieve a settlement fee that is lower than any current domestic fee.

The T2S fees will be only one part of the end-to-end costs of a standard settlement of a securities transaction. On top of the T2S fees for DVP, matching, reporting, etc, CSDs will also need to add on their own fees. Users will also be charged by the network service providers for all messages sent to and from the T2S platform.

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<sup>36</sup> Two instructions per transaction will be charged.

## **4.5 Use of the securities infrastructure by the Eurosystem**

### **4.5.1 General information**

The Eurosystem makes use of SSSs for the collateralisation of its credit operations related to the implementation of monetary policy and the operation of payment systems. It has an interest in the smooth operation of securities settlement arrangements throughout the euro area, since any significant disturbance in the SSSs may not only have a serious impact on the operation of the whole of the euro area's financial markets, but may also jeopardise the collateralisation process of Eurosystem credit operations.

In order to be eligible as collateral for Eurosystem credit operations, assets must comply with the eligibility criteria defined in the General Documentation on Eurosystem Monetary Policy Instruments and Procedures. This requires that eligible assets be transferable in book-entry form and be held and settled in the euro area through an account with the Eurosystem or, in the case of marketable assets, with an SSS that fulfils the standards established by the ECB, so that perfection and realisation are subject to the law of a euro area country. If the CSD where the asset is issued and the SSS where it is held are not identical, the two institutions must be connected by a link approved by the ECB's Governing Council or the counterparty must use the CCBM.

Such links can be either: (i) direct links, which take the form of an omnibus account opened by an SSS (the investor SSS, ie the SSS where securities are used) in another SSS (the issuer SSS, ie the SSS where securities are issued) and which allow counterparties to hold securities issued in any other SSS and to use these securities within their own country; or (ii) relayed links, whereby one SSS acts as an intermediary on behalf of another SSS for the settlement of international business. The Governing Council of the ECB decided in 2005 that such relayed links between SSSs could be used for the cross-border transfer of securities to the Eurosystem in response to growing demand by market organisations for the acceptance of securities transferred through relayed links.

### **4.5.2 User assessments of SSSs and links by the Eurosystem**

The Eurosystem has set standards for the use of SSSs in its credit operations.<sup>37</sup> They were first developed in 1998 and were defined from the user's perspective, thus they were not intended as oversight standards. These user standards aim to ensure that the settlement procedures for collateral provided in Eurosystem credit operations are conducted in a safe and sound manner, thereby preventing the Eurosystem from taking on inappropriate levels of risk.

In order to ensure efficient and consistent execution of the user assessments, the Eurosystem has developed specific methodologies for the assessment of SSSs, links and relayed links. There are many common elements in these methodologies which apply to all assessments, but they also contain specific features in order to detect and mitigate specific risks that relate mainly to the legal and operational setup of systems, links or relayed links.

The final decision as to whether an SSS, a link or a relayed link can be considered eligible for Eurosystem credit operations is taken by the Governing Council of the ECB. Should an SSS not comply fully with the standards, the Eurosystem can issue recommendations to the operator of the system, with the implementation of these recommendations being monitored by the Eurosystem. A continuously updated list of eligible systems and links is available on the website of the ECB.

The first SSS assessment was completed before the start of Stage Three of EMU in 1998, and 29 SSSs qualified at that time. The Eurosystem has stopped using and assessing SSSs

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<sup>37</sup> Standards for the Use of EU Securities Settlement Systems in ESCB Credit Operations, January 1998.

located in Denmark, Sweden and the United Kingdom, since from 1 July 2003 only securities issued and held in an SSS located in the euro area have been eligible for Eurosystem credit operations. In 2010 there were 23 SSSs eligible for use in Eurosystem credit operations (see Table 5).

Table 5  
**Eligible SSSs in the euro area**  
As at August 2009

<b>SSS (country)</b>	<b>Procedures used for Eurosystem credit operations</b>	<b>Other procedures not used by the Eurosystem</b>
NBB SSS (Belgium)	FOP multiple-batch settlement	DVP multiple-batch settlement
Euroclear Bank (Belgium)	FOP real-time settlement	DVP real-time settlement in commercial and central bank money
Clearstream Banking Frankfurt-CASCADE (Germany)	FOP multiple-batch settlement, FOP real-time procedure	DVP real-time settlement
Clearstream Banking Frankfurt am Main-CREATION (Germany)	FOP real-time settlement for daytime and night-time settlement	DVP settlement in commercial bank money
Iberclear (CADE) (Spain)	DVP real-time settlement	–
Iberclear (SCLV) (Spain)	Pre-depositing of securities	DVP multiple-batch settlement
SCL Barcelona (Spain)	DVP real-time settlement	DVP single-batch settlement
SCL Bilbao (Spain)	Pre-depositing of securities	DVP single-batch settlement
SCL Valencia (Spain)	Pre-depositing of securities	DVP single-batch settlement
Euroclear France	FOP real-time settlement	DVP real-time settlement
Monte Titoli (Italy)	FOP real-time settlement. DVP real-time settlement	DVP multiple-batch settlement
Clearstream Banking Luxembourg	FOP real-time settlement for daytime and night-time settlement	DVP settlement in commercial bank money
VP Lux S.à r.l. (Luxembourg)	FOP real-time settlement	DVP real-time settlement
Euroclear Nederland (Netherlands)	FOP real-time settlement	DVP real-time settlement.
OeKB (Austria)	FOP real-time settlement, plus 8 batches for netting purposes	DVP real-time settlement, plus 7 batches for netting purposes
Siteme (Portugal)	DVP real-time settlement	DVP real-time settlement.
Interbolsa (Portugal)	DVP real-time settlement (specifically for Eurosystem operations)	Intraday batch, overnight batch, RTGS (both DVP and FOP) and FOP real-time securities transfers
Euroclear Finland Oy-RM System (Finland)	FOP real-time settlement	DVP real-time settlement
BOGS (Greece)	DVP real-time settlement	DVP multiple-batch settlement
KDD (Slovenia)	FOP real-time settlement	DVP real-time settlement
CDCR (Cyprus)	FOP settlement, pre-depositing of securities	DVP settlement in commercial bank money
MaltaClear (Malta)	FOP settlement, pre-depositing of securities	DVP settlement
CDCP (Slovakia)	FOP real-time settlement	DVP real-time settlement

The first link assessment was completed in May 1999 and 26 links qualified at that time. Several other links were assessed in subsequent years. Currently 54 direct links are eligible for use in Eurosystem credit operations (see Table 6). As far as relayed links between SSSs in the euro area are concerned, the first assessment report was approved in July 2007. Currently there are seven relayed links eligible for use in Eurosystem credit operations (Table 6).

The Eurosystem periodically reviews the level of compliance of eligible systems, links and relayed links with its User Standards, and carries out ad hoc assessments of new links nominated by the market (following contacts between the investor SSS and the relevant NCB).

Although there are a large number of direct and relayed links, relatively few are used extensively. The links which have been assessed so far are used by the Eurosystem for the cross-border transfer of securities on an FOP basis.

Table 6  
**Eligible direct and relayed links in the euro area**

As at 14 August 2009

Country	Eligible direct links
Belgium	Euroclear Bank to the SSS of the National Bank of Belgium (Belgium) Euroclear Bank to Clearstream Banking S.A. (Luxembourg) Euroclear Bank to Clearstream Banking Frankfurt-CASCADE (Germany) Euroclear Bank to OeKB (Austria) Euroclear Bank to Euroclear Nederland (the Netherlands) Euroclear Bank to Euroclear France (France) Euroclear Bank to Monte Titoli (Italy), operated by UniCredito Italiano
Germany	Clearstream Banking Frankfurt-CASCADE to Euroclear France (France) Clearstream Banking Frankfurt-CASCADE to Euroclear Nederland (the Netherlands) Clearstream Banking Frankfurt-CASCADE to OeKB (Austria) Clearstream Banking Frankfurt-CASCADE to Euroclear Finland Oy-RM System (Finland) Clearstream Banking Frankfurt-CREATION to Clearstream Banking S.A. (Luxembourg) Clearstream Banking Frankfurt-CASCADE to Iberclear-CADE (Spain) Clearstream Banking Frankfurt-CASCADE to Monte Titoli (Italy)
Spain	Iberclear-CADE to Clearstream Banking Frankfurt-CASCADE (Germany) Iberclear-CADE to Euroclear France (France) Iberclear-CADE to Monte Titoli (Italy) Iberclear-CADE to Euroclear Nederland (the Netherlands) Iberclear-SCLV to Euroclear France (France) Iberclear-SCLV to Monte Titoli (Italy) Iberclear-SCLV to Euroclear Nederland (the Netherlands)

Table 6 (cont)  
**Eligible direct and relayed links in the euro area**

As at 14 August 2009

Country	Eligible direct links (cont)
France	Euroclear France to Clearstream Banking Frankfurt-CASCADE (Germany) Euroclear France to Monte Titoli (Italy) Euroclear France to OeKB (Austria) Euroclear France to the SSS of the National Bank of Belgium (Belgium) Euroclear France to Iberclear-CADE (Spain) Euroclear France to Euroclear Finland Oy-RM System (Finland) Euroclear France to Clearstream Banking S.A. (Luxembourg) Euroclear France to Iberclear SCLV Spain Euroclear France to Euroclear Bank (Belgium)
Italy	Monte Titoli to Euroclear Bank (Belgium) Monte Titoli to Clearstream Banking Frankfurt-CASCADE (Germany) Monte Titoli to Euroclear France (France) Monte Titoli to OeKB (Austria) Monte Titoli to Iberclear-SCLV (Spain) Monte Titoli to Iberclear-CADE (Spain) Monte Titoli to Clearstream Banking S.A. (Luxembourg)
Luxembourg	Clearstream Banking S.A. to Euroclear Bank (Belgium) Clearstream Banking S.A. to Clearstream Banking Frankfurt-CASCADE (Germany) Clearstream Banking S.A. to SSS of the NBB (Belgium), operated by ING Belgium Clearstream Banking S.A. to OeKB (Austria), operated by Erste Bank Clearstream Banking S.A. to Euroclear Nederland (the Netherlands), operated by BNP Paribas Clearstream Banking S.A. to Monte Titoli (Italy), operated by Banca Intesa S.p.A. Clearstream Banking S.A. to Euroclear France (France) Clearstream Banking S.A. to KDD
Netherlands	Euroclear Nederland to Euroclear Bank (Belgium)
Austria	OeKB to Euroclear Bank (Belgium) OeKB to Clearstream Banking Frankfurt-CASCADE (Germany) OeKB to Euroclear France (France) OeKB to Monte Titoli (Italy) OeKB to Euroclear Nederland (the Netherlands) OeKB to Clearstream Banking S.A. (Luxembourg)
Finland	Euroclear Finland Oy-RM System to Clearstream Banking Frankfurt-CASCADE (Germany) Euroclear Finland Oy-RM System to Euroclear France (France)

Table 6 (cont)  
**Eligible direct and relayed links in the euro area**

As at 14 August 2009

Country	Eligible relayed links
Germany	<p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to Euroclear Nederland (the Netherlands)</p> <p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to the SSS of the National Bank of Belgium (Belgium)</p> <p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to Oesterreichische Kontrollbank (Austria)</p> <p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to Monte Titoli (Italy)</p> <p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to CASCADE (Germany)</p> <p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to Euroclear France (France)</p> <p>Clearstream Banking Frankfurt-CREATION (Germany) via CBL (Luxembourg) to KDD (Slovenia)</p>

For more information on the euro area payments system and the role of the Eurosystem, see the ECB publication entitled “The payment system – payments, securities and derivatives, and the role of the Eurosystem” as well as other information available on the ECB’s website under [Payments & Markets](#).