## 4. Financial market infrastructures – (I)CSD sector overview

The NBB is responsible for the prudential supervision – including the issuance of authorisations – vis-à-vis settlement institutions and equivalent settlement institutions that are established in Belgium. Settlement institutions with credit institution status, such as Euroclear Bank, are also regulated and supervised as credit institutions.

Due to their critical role in the financial system in the settlement of monetary and other financial transactions, (I)CSDs could be potential sources of systemic risk or might act as channels for risk contagion in the event of financial turbulence, if they are not secure and efficient.

This section focuses on Financial Market Infrastructures (FMIs), in particular Central Securities Depositories (CSDs), which have a prominent position in the Belgian and EU financial system. These FMIs will henceforth be a standard part of the FSR overview. This time, a didactic approach is taken to introduce the various relevant actors.

CSDs play a central role in the financial system for the settlement and registration of securities transactions such as repos. A CSD provides securities deposit accounts for its participants to hold securities. Physical securities may be held in custody in immobilised form by the CSD, or securities may be dematerialised to exist only as electronic records. CSDs are considered as the "top of the pyramid" of the securities custody chain as they are – in their role as notaries – contractually connected with the issuers of securities and responsible for the integrity of the issuance. An International CSD (ICSD) acts as the notary for international private and public debt securities such as Eurobonds.

Many countries have only one (I)CSD[1] within their jurisdiction. Belgium, however, hosts three (I)CSDs: the securities settlement system operated by the NBB (NBB-SSS), Euroclear Belgium (formerly CIK[2]) and Euroclear Bank[3]. Although each Belgian (I)CSD has a distinct business profile, their common feature is that they are all considered as critical infrastructures for the Belgian financial system. The impact of international regulatory and technological changes is expected to lead to a gradual transformation of the (I)CSD sector in the EU.

Given the proportion of foreign participants in their systems, the proper functioning of the Belgian (I)CSDs is not only relevant for the domestic market. Moreover, the level of systemic risk of an (I)CSD, including cross-border, will also depend on the interconnections between an (I)CSD and other securities markets and FMIs, its settlement volumes, and its role in the provision of critical services such as collateral management.

Euroclear Bank is by far the largest (I)CSD in Belgium (and in Europe) in terms of settlement volumes. The number of links Euroclear Bank has established with other securities markets to allow its participants to hold and settle securities issued in those markets gives rise to legal and operational risks. Moreover, as a single purpose bank, Euroclear Bank can grant credit to its participants to support settlement in more than 50 currencies.

The risk profiles of NBB-SSS and Euroclear Belgium, operating in central bank money and in a single currency context, differ substantially from Euroclear Bank's risk profile. The potential systemic cross-border impact of a failure of either NBB-SSS or Euroclear Belgium is considered smaller. However, whereas Euroclear Belgium has a large number of foreign participants, NBB-SSS (as an issuer CSD) is also eligible to transfer and mobilise collateral for Eurosystem monetary policy and credit operations for both Belgian and foreign financial institutions.

The (I)CSDs have to comply with requirements for a sound and comprehensive risk management framework for managing legal, credit, liquidity, operational and other risks. FMIs need to identify scenarios that may potentially prevent them from being able to provide critical operations and services, and have to assess the effectiveness of a full range of options for recovery or orderly wind-down. In that context, the NBB is analysing the recovery plan for the Euroclear Group, in cooperation with the other Euroclear Group regulators.

Since all (I)CSDs established in Belgium are considered as critical infrastructures, operational reliability and information security are key in their risk management. Business continuity plans should aim for timely recovery of operations and fulfilment of the FMI's obligations. In that regard, cyber resilience continues to be one of regulators' priorities.

The remainder of this section is organised as follows. Sub-section 1 clarifies the roles of the relevant actors in the post-trade environment. Sub-section 2 considers the various characteristics of the (I)CSDs established in Belgium. Sub-section 3 provides an overview of the development of the Belgian (I)CSDs' main business activities. Sub-sections 4 and 5 deal with the future challenges and opportunities for the (I)CSD sector, and how it may respond to them. Finally, sub-sections 6 and 7 cover the regulatory agenda of the NBB, as overseer and prudential supervisor.

## 4.1 Typology: CSDs, ICSDs, custodians and CCPs

CSDs and ICSDs can be distinguished according to the securities for which they act as notary. In general, CSDs act as the register of securities issued in their domestic market. As a result, CSDs have until now been able to operate as natural monopolies. This situation may change due to the impact of new EU legislation (see further). The current practice is different in the case of international securities such as Eurobonds, for which issuers can choose the currency or country of issue. In this case, a duopoly exists as there are two ICSDs in the EU which act as notary for Eurobonds; i.e. Euroclear Bank established in Belgium and Clearstream Banking Luxembourg. Both ICSDs have a banking status.

Another distinction between CSDs and ICSDs can be made based on the range of securities that they accept and hold in their systems. Whereas CSDs, as a rule, have so far been operating in a rather domestic environment, ICSDs are – by the

(1) The term (I)CSD is used to cover both CSDs and ICSDs.
(2) Caisse Interprofessionnelle de Dépôts et de Virements de Titres.
(3) A new CSD was established in Belgium by Bank of New York Mellon (BNYM) in December 2012. This infrastructure, BNYM-CSD, is reviewing its strategy and business case in accordance with forthcoming regulatory changes in the EU.

nature of their business model – internationally oriented. They aim to provide their participants with a single gateway to access many local foreign markets (i.e. foreign CSDs which act as notary for securities issued in the local foreign market). When (I)CSDs offer their participants access to foreign securities markets, they are considered as "investor (I)CSDs", whereas the foreign (I)CSDs are referred to as "issuer (I)CSDs".

Investors in domestic or international securities can access (I)CSDs directly (direct holding) or indirectly via intermediaries that participate in a (I)CSD. Such intermediaries are often custodian banks that provide custody and settlement services for their clients. Like investors, (I)CSDs can choose to access foreign securities markets directly or via custodian banks.

In the EU, (I)CSDs operate securities settlement systems (SSS) which transfer or settle financial instruments between the securities accounts of the counterparties held with the CSD to register a buy or sell transaction. Settlement is the last phase in the processing chain of a transaction in a financial instrument, concluded on a stock exchange or over-the-counter. With settlement, the transaction is completed through a final transfer of securities and funds between the buyer and the seller on their respective accounts in an SSS. By organising "delivery versus payment" (DVP), principal risk [(1)] in the settlement process is eliminated. The successive stages of trading, clearing and settlement are explained in the thematic article *"The role of central clearing in systemic risk reduction"* in this FSR.

Apart from the settlement of securities transactions, an (I)CSD typically provides asset servicing activities, for example the settlement of income and redemption payments. Due to often specific local market practices in asset servicing, (I)CSDs may also choose to use custodian banks for that purpose. Some (I)CSDs and custodian banks have developed collateral management services, which have grown in importance and will continue to do so due to the impact of new regulations (see further).

The cash leg of a securities buy or sell transaction processed by an (I)CSD can be settled in "central bank money" or "commercial bank money". In the former, cash is transferred between accounts of both counterparties at the central bank. In the latter, cash is transferred in the books of the (I)CSD which for that purpose has a banking status. When settlement takes place in central bank money, cash settlement is typically limited to the currency of issue of the central bank. Settlement in different currencies requires an (I)CSD to offer multicurrency cash accounts to settle transactions in its own books.

Custodian banks offer similar safekeeping and settlement services to their own clients. Securities settlement can also be internalised in the custodian bank's own books if the counterparties in a buy or sell transaction are both clients of that bank. In that case, settlement is by definition in commercial bank money.

(I)CSDs with a banking licence can provide credit to their participants to enhance settlement efficiency. Credit extended by (I)CSDs to fund securities purchases is typically short-term (intraday), as such credit exposures are reimbursed in the course of the day by the settlement proceeds of other securities transactions. As a rule, any lending by (I)CSDs is subject to credit limits which can be revised (downward) by the (I)CSDs when deemed necessary. There are only a limited number of (I)CSDs with banking status in the EU: Euroclear Bank, Clearstream Banking Luxembourg and Clearstream Banking Frankfurt, CSD Austria (OeKB) and Keler (Hungary). As those (I)CSDs provide credit only in order to facilitate securities settlement, they are referred to as "single-purpose banks". As custodian banks can provide many additional banking or other services to their clients, they are not considered as "single-purpose banks".

Central Counterparties (CCPs) usually participate in one or more (I)CSDs to settle transactions with their members or to collect margin collateral. Unlike (I)CSDs which, in contrast, facilitate the settlement of securities transactions without legally interposing themselves between participants, a CCP becomes a counterparty to every participant transaction, as it guarantees the settlement of obligations. CCPs are exposed to credit risk should a clearing participant fail to comply with a financial or contractual obligation. Therefore, any CCP, with or without a banking licence, does provide credit for its members. Such exposures can be very long term, for example, because of the length of derivative positions. Moreover, outstanding exposures can be impacted by market volatility in the price of the security or commodity after trade execution and, as a result, could therefore change daily. CCPs with a banking licence may have access to routine credit at their home central bank for their own liquidity purposes.

(1) Principal risk is the risk that a seller delivers a security, but does not receive the corresponding payment.

Under the European Market Infrastructure Regulation (EMIR), market participants are obliged to clear positions via a CCP in the case of standardised OTC derivatives. However, no similar obligation has been introduced in the settlement layer of the post-trade process. Indeed, there is no obligation for market participants to settle in an (I)CSD. Settlement could occur in the books of an intermediary (custodian bank) without any involvement of an (I)CSD.

The main differences between CSDs, ICSDs, custodians and CCPs are summarised in Table 10 below.

**TABLE 10** TYPOLOGY: CSDs, ICSDs, CUSTODIANS AND CCPs

| Post-trade actors / Activities | CSD (1) without banking status | (I)CSD (2) with banking status | Custodian | CCP with/without banking status (3) |
|---|---|---|---|---|
| Notary function | √ | √ | | |
| Settlement | √ | √ | √ | |
| Securities lending | √ | √ | √ | |
| Asset servicing | √ | √ | √ | |
| Collateral management services | √ | √ | √ | |
| Banking services<br>– Credit provision (single purpose)<br>– General banking | | √ (credit provision) | √ (general banking) | √ (credit provision) |
| Clearing | | | | √ |

Source: NBB.
(1) NBB-SSS, Euroclear Belgium, Euroclear France, Euroclear Nederland, etc.
(2) Euroclear Bank, Clearstream Banking Luxembourg, Clearstream Banking Frankfurt, CSD Austria and Keler (HU).
(3) LCH.Clearnet SA / Ltd, Eurex, EuroCCP, etc.

## 4.2 (I)CSDs in Belgium

At an aggregate level, the Belgian (I)CSD sector represents a significant share of the EU (I)CSD landscape which comprises 40 (I)CSDs in total. Based on 2013 data (1), securities deposits held in Belgian (I)CSDs represent more than 25 % of total securities deposits reported by the EU (I)CSDs. Box 3 shows data for the ICSDs Euroclear Bank and Clearstream Banking Luxembourg, as well as for the top-20 CSDs in the EU, by the value of securities deposits held in each (I)CSD. Euroclear Bank is by far the largest entity among the EU (I)CSDs.The (I)CSDs NBB-SSS, Euroclear Belgium and Euroclear Bank can be characterised according to the following parameters: governance structure, participants, type of eligible financial instruments and settlement model.

### GOVERNANCE STRUCTURE

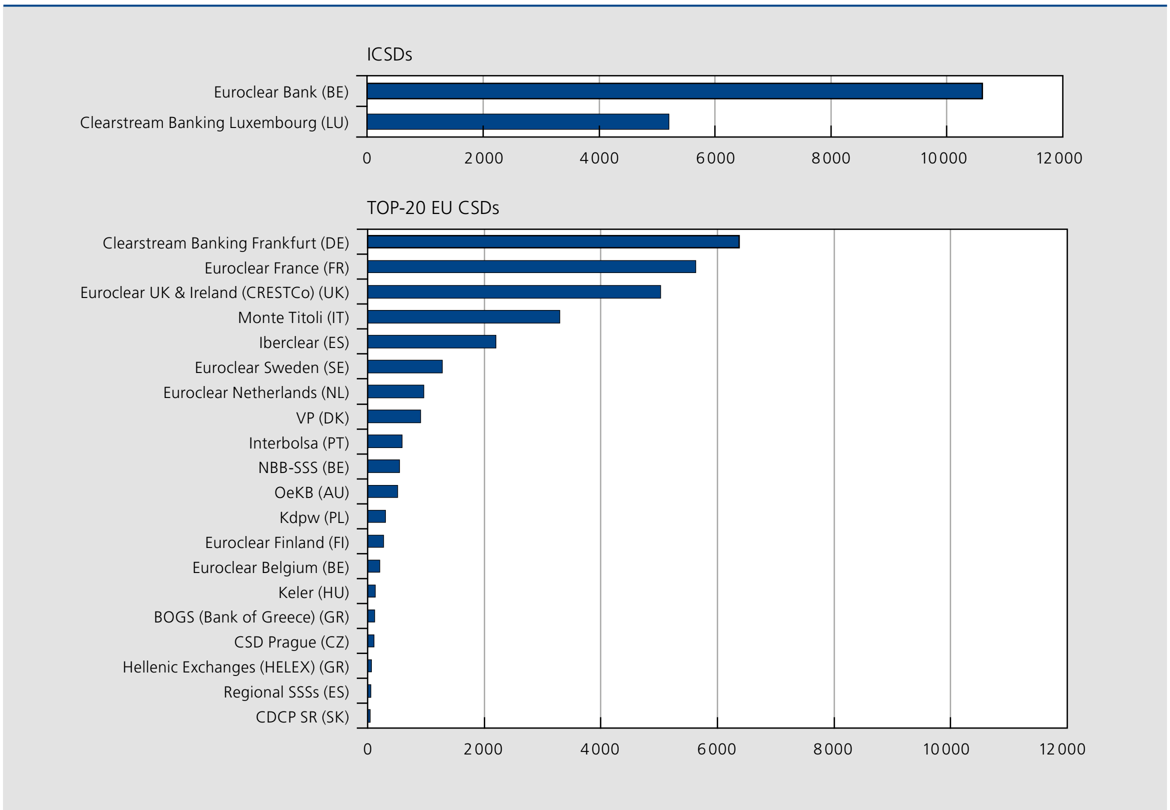
The governance structure of the Belgian (I)CSDs varies significantly. NBB-SSS is operated by the NBB. Euroclear Bank and Euroclear Belgium are part of the Euroclear Group which also includes the CSDs Euroclear UK and Ireland, Euroclear France, Euroclear Netherlands, Euroclear Sweden and Euroclear Finland. Euroclear plc, the ultimate holding company of the Euroclear Group, is user-owned and user-governed. The current structure of the Euroclear Group, as well as the relevant importance of each Euroclear Group (I)CSD within the Group in terms of business activity, are presented in Box 4 below.

(1) ECB, Blue Book.

## Box 3 – Size of the (I)CSD sector in the EU in terms of securities deposits

The ECB Blue Book publishes key data for all EU (I)CSDs[1]. The graph below ranks the ICSDs Euroclear Bank and Clearstream Banking Luxembourg and the top-20 EU CSDs in terms of securities deposits in value reported to be held by the (I)CSDs at the end of 2013.

**ICSDS AND TOP 20 – EU CSDS: SECURITIES DEPOSITS**
(in € billion, at the end of 2013)




Source: ECB, Blue Book.

(1) Blue Book methodology can be consulted at http://sdw.ecb.europa.eu/reports.do?node=1000003511.

### PARTICIPANTS[1]

Based on the analysis conducted by the European Central Securities Depositories Association (ECSDA)[2], European CSDs, outside the ICSDs, have, on average, slightly above 110 participants in their systems, of which about 23 % are non-domestic participants. In NBB-SSS and Euroclear Belgium the number of participants is smaller at 81 and 78 respectively. As shown in Chart 29 below, almost 75 % of Euroclear Belgium participants are foreign, whereas NBB-SSS has a majority of participants established in Belgium. According to ECSDA, CSDs operating in small countries or markets

(1) Data provided refers to direct participants, not of the underlying clients of those participants.
(2) ECSDA, CSD Factbook 2013.

## Box 4 – Euroclear Group corporate structure and group key statistics

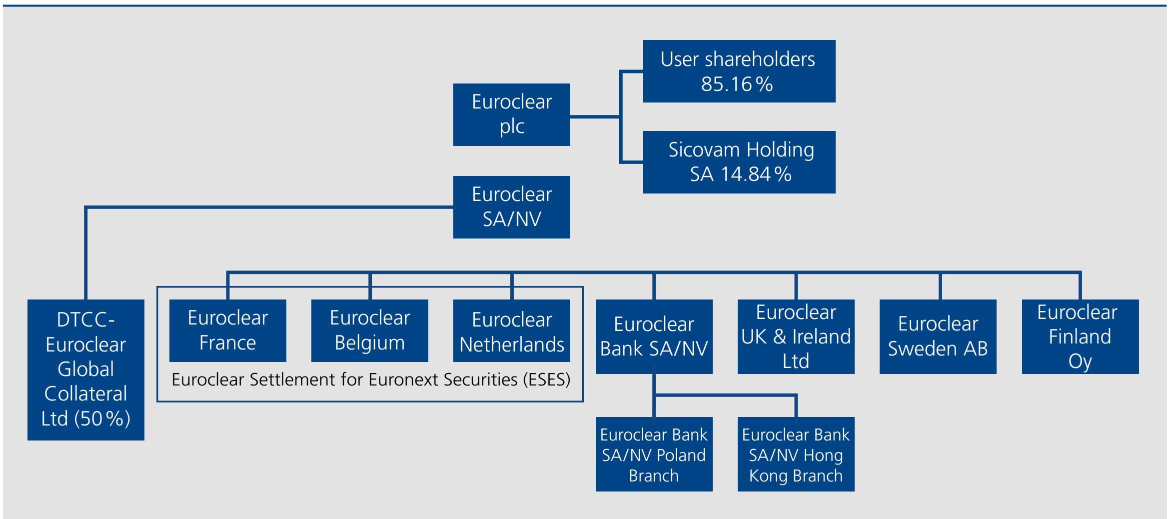
The capital of Euroclear plc, the ultimate holding company of the Euroclear Group, is for the most part held by user-shareholders. The remainder is held by Sicovam Holding SA, a holding company that brings together the former shareholders of Euroclear France, which is the single largest shareholder of Euroclear plc.

Euroclear SA/NV (ESA) is the parent company of the Euroclear Group (I)CSDs; i.e. the CSDs in Belgium, Finland, France, the Netherlands, Sweden, the UK & Ireland, and of the ICSD Euroclear Bank. The latter has branches in Poland and Hong Kong. Euroclear Group (I)CSDs have outsourced the IT platform operations to ESA. ESA also delivers common services, such as risk management, internal audit, and legal and human resources services to the Group (I)CSDs.

Euroclear Belgium, Euroclear France and Euroclear Netherlands are operating a common settlement platform; i.e. the Euroclear Settlement of Euronext-zone Securities system (ESES). Besides a common IT platform, these ESES CSDs share harmonised settlement and custody services, and apply a harmonised Euroclear services pricing model. Daily settlement operations of Euroclear Belgium and Euroclear Netherlands are outsourced to Euroclear France.

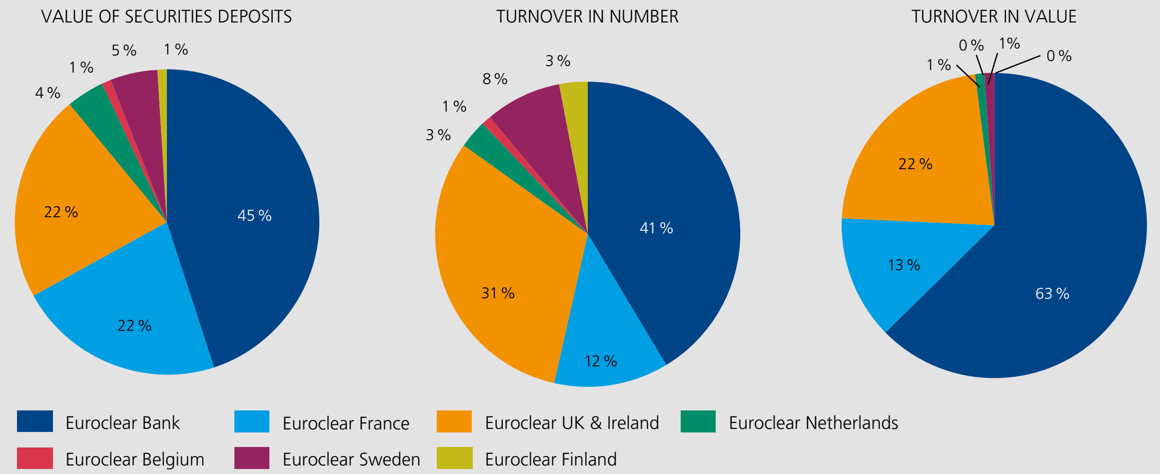
In September 2014, ESA and the US Depository Trust & Clearing Corporation (DTCC) set up the joint venture DTCC-Euroclear Global Collateral Ltd. The ultimate aim of this entity is to create a joint collateral processing service whereby mutual clients of DTCC and Euroclear Bank manage collateral held at both depositories as a single pool, to meet obligations in both the European and the North American time-zone.Euroclear Bank represents the largest share in terms of business activity within the Euroclear Group. At year-end 2014, the Euroclear Group held close to € 26 trillion in euro equivalent of securities deposits under custody, of which 45 % was held by Euroclear Bank. The Euroclear Group covers more than 60 % of outstanding eurobond holdings worldwide, more than 50 % of European domestic fixed-income debt securities, and 65 % of Eurotop-300 equity holdings. The yearly total number of securities transactions settled in 2014 in the Euroclear Group was nearly 182 million, whereas their value represented 633.6 trillion in euro equivalent. The share of Euroclear Bank in the Group's total turnover in number and value was 41 % and 62 % respectively.

EUROCLEAR GROUP CORPORATE STRUCTURE
(simplified, situation at the end of 2014)




Source: Euroclear.

RELEVANT SHARE OF EUROCLEAR GROUP (I)CSDS IN BUSINESS ACTIVITIES OF THE GROUP (FY 2014)[1]

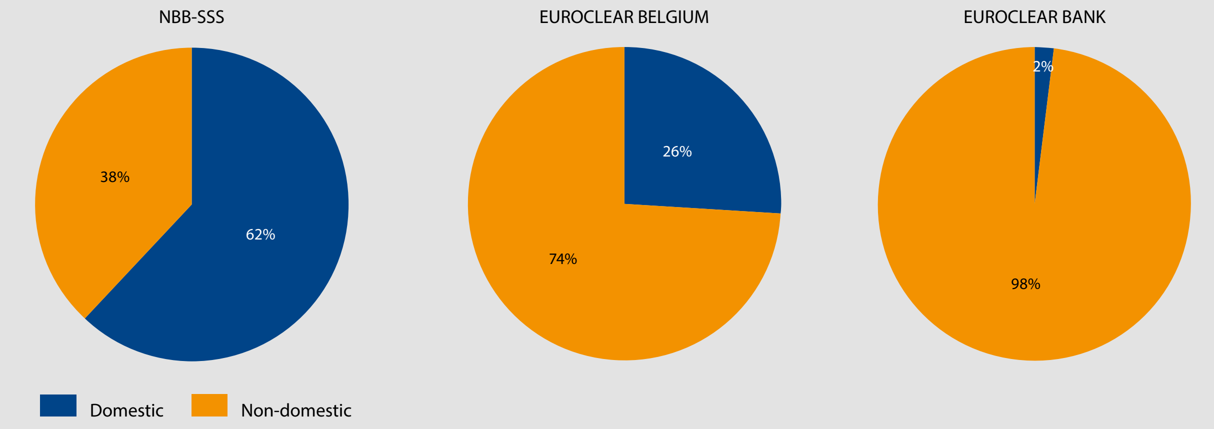



Source: Euroclear.
(1) Data for Euroclear UK & Ireland excludes self-collateralised repos; Data for Euroclear France excludes 'pensions livrées' with the central bank of France.

within the EU tend to have a higher share of non-domestic participants, compared to CSDs operating in larger countries or markets. The level of regional integration (e.g. Euronext markets) is also put forward as a factor for the high proportion of non-domestic participants.

Euroclear Bank is by far the largest (I)CSD in Belgium (and in the EU) in terms of participants. It comprises about 1,500 participants, including more than 100 central banks. Its participant base consists mainly of non-domestic participants, including CCPs, CSDs, broker-dealers and investment banks. As concluded by the ECSDA analysis, the

**CHART 29** PERCENTAGE OF DOMESTIC VERSUS NON-DOMESTIC PARTICIPANTS IN BELGIAN (I)CSDS




Sources: NBB-SSS, Euroclear.

nature of its business model means that Euroclear Bank, acting as an ICSD and issuer CSD of Eurobonds, does not operate in a purely domestic environment, and that explains the high proportion of non-domestic participants.

### ELIGIBLE FINANCIAL INSTRUMENTS

NBB-SSS and Euroclear Belgium focus on the Belgian securities market. NBB-SSS is the CSD for government and other fixed income securities in Belgium. Euroclear Belgium primarily holds equities, but it also holds warrants and rights, corporate bonds and commercial paper as well as exchange-traded funds.

Euroclear Bank, together with Clearstream Banking Luxembourg, is an issuer ICSD for international securities such as Eurobonds. As international investors are among its main participants, it has also established links with other securities markets to allow its participants to hold and settle domestic securities issued in those markets. Currently, it is connected with 46 markets worldwide, typically for government and other fixed income securities, but also for equities, warrants, investment funds and other types of securities.

Insofar as (I)CSDs hold and settle securities in their system that are part of the ECB list of eligible marketable assets and those (I)CSDs are assessed by the Eurosystem central banks according to a specific assessment framework, they can be used to transfer and mobilise collateral for Eurosystem monetary policy and credit operations (1). In Belgium, NBB-SSS and Euroclear Bank can be used for such collateral operations by both Belgian and foreign financial institutions. As Euroclear Belgium mainly settles equities, which are not ECB eligible marketable assets, it is not used for Eurosystem monetary policy purposes.

### SETTLEMENT MODEL

Participants of the Belgian (I)CSDs can settle securities transactions against payment. Chart 30 shows how transactions are settled by the (I)CSDs in Belgium in "central bank money" or in "commercial bank money". The payment leg of securities transactions in NBB-SSS is settled in the books of the NBB and therefore only in EUR. Since 2009, Euroclear Belgium's settlement activity has been integrated in the ESES system, the joint platform with Euroclear France and Euroclear Netherlands, for both stock exchange and OTC trades. The central banks of the Euronext markets provide a dedicated cash account on the ESES platform to carry out settlement against payment. NBB-SSS and Euroclear Belgium settle in "central bank money".

Euroclear Bank provides cash accounts for its participants, accepts more than 50 settlement currencies in its system, and provides settlement against payment in its own books. Settlement therefore occurs in "commercial bank money". The resulting payment flows generated by participants' settlement activity are processed via Target2 (EUR) or via Euroclear Bank's network of cash correspondents. Euroclear Bank operates with a banking licence and has an AA+ (Fitch) and AA (S&P) rating.

## 4.3 Activity of (I)CSDs in Belgium

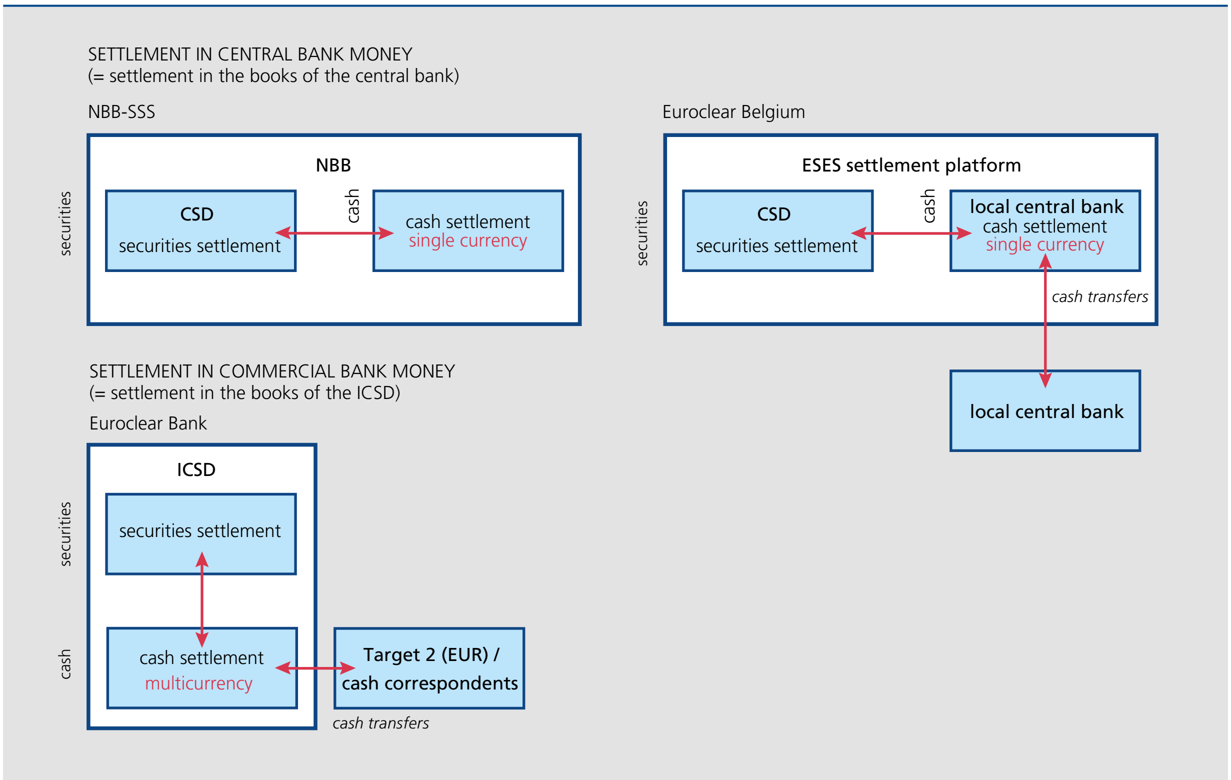
The sub-section below provides an overview of the Belgian (I)CSDs' activities in terms of securities deposits, new issue activity, and settlement turnover. The value of securities deposits is measured at the end of the reporting year (unless annotated otherwise), while new issue activity and settlement turnover is aggregated for the full reporting year.

### 4.3.1 NBB-SSS

Both public and private sector fixed-income debt is held and settled in NBB-SSS. Public sector debt includes securities issued by the Belgian federal government and by regional or local governments. Private sector debt eligible in NBB-SSS can be issued by corporates, credit institutions or other entities.

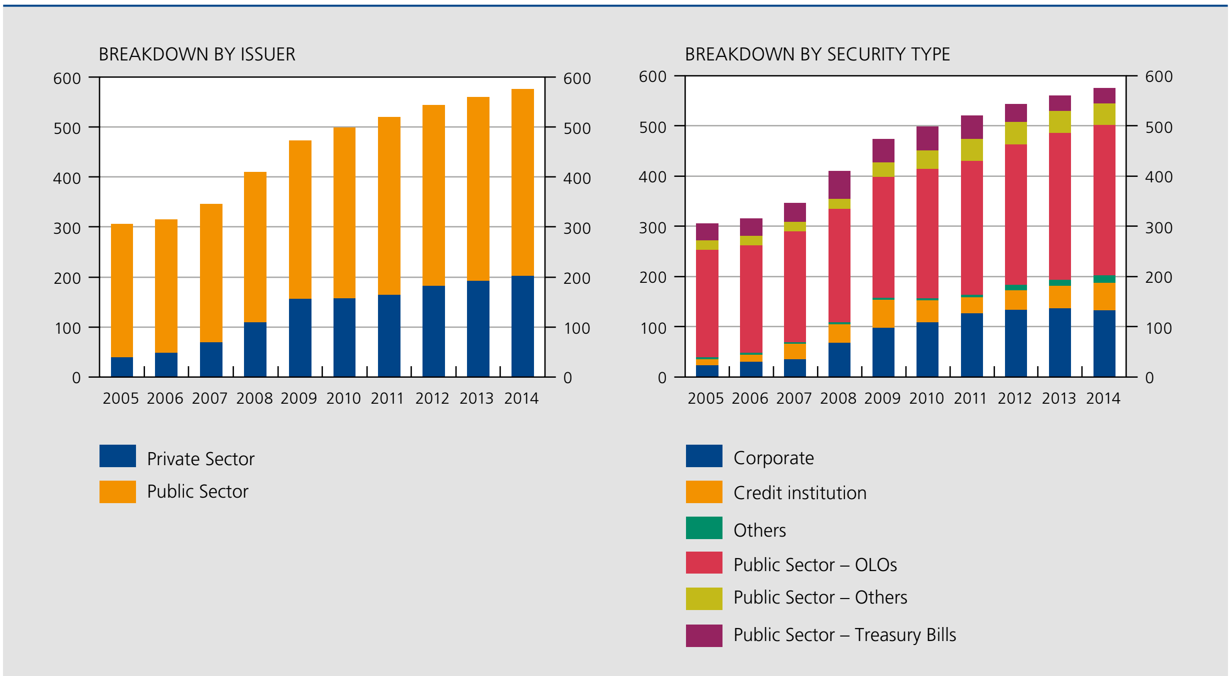
(1) For the purposes of the assessment framework, the Eurosystem central banks are viewed as "users" of the SSS in conducting their monetary policy. The list of "eligible" CSDs is published on the website of the ECB http://www.ecb.europa.eu/paym/coll/coll/eligiblesss/html/index.en.html.

CHART 30 SETTLEMENT IN CENTRAL BANK MONEY VERSUS COMMERCIAL BANK MONEY




Source: NBB.

CHART 31 VALUE OF SECURITIES DEPOSITS IN PRIVATE AND PUBLIC SECTOR DEBT
(in € billion)




Source: NBB-SSS.

## SECURITIES DEPOSITS

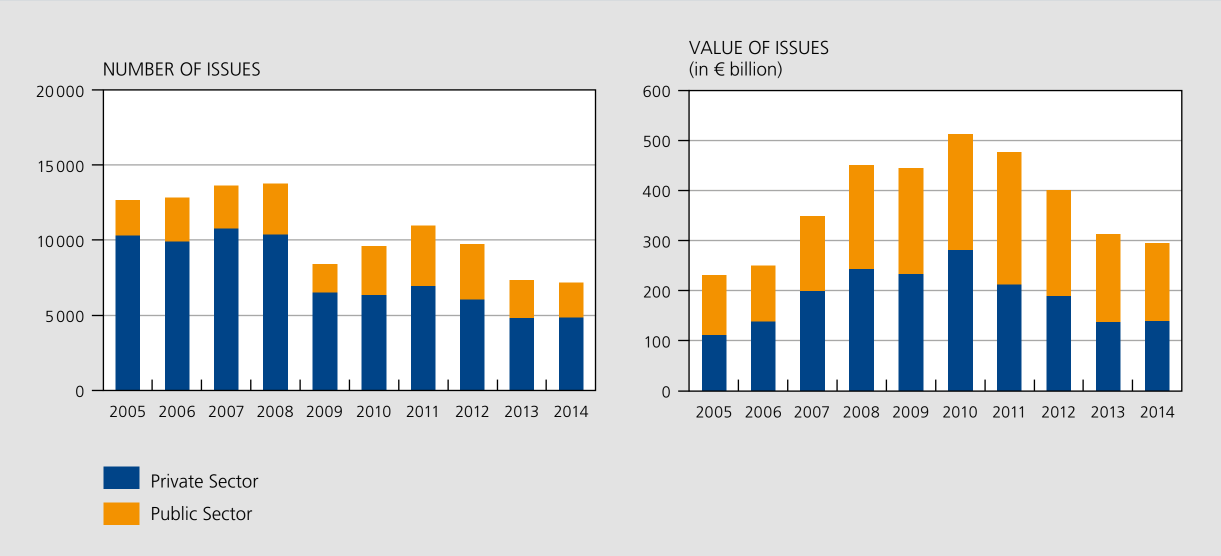
More than 2 000 different fixed-income debt securities are held in the system of NBB-SSS. The total outstanding amount in value of securities held in NBB-SSS increased from € 560 billion in 2013 to € 576 billion in 2014 (nearly +3 %). Chart 31 provides more details on the trend in the value of the outstanding securities deposits held in NBB-SSS, both for public and private sector debt, and gives a breakdown between the main issuer categories and security types.

At the end of 2014, 65 % of outstanding securities deposits in NBB-SSS were public sector debt securities. The outstanding amount of such securities has increased steadily over the years, but the pace has quickened since the Belgian banking crisis in 2008. To some extent, the dematerialisation of State Bonds also increased the outstanding amount. Linear bonds (OLOs) represent 80 % of total public sector debt, compared to about 8 % for Treasury Bills (or Certificates). Fixed-income securities issued by regional and local governments account for 3.7 % of total public sector debt. Outstanding securities deposits in these securities amount to € 13.6 billion. Public sector debt is mainly issued in euro; i.e. only a small part (1.4 %) is issued in foreign currencies. In 2005, private sector debt represented only about 13 % of total outstanding securities deposits held in NBB-SSS. At year-end 2014, the figure was about 35 %, the majority being issued by corporates (66 %) and credit institutions (27 %).

## NEW ISSUE ACTIVITY

Chart 32 illustrates new issue activity in NBB-SSS in number and value. Although the number of new private sector debt issues generally exceeds the number of public sector issues, since 2011 the total value of new issues in public sector debt has exceeded the figure for private sector debt.

**CHART 32** NEW ISSUE ACTIVITY IN PRIVATE AND PUBLIC SECTOR DEBT




Source: NBB-SSS.

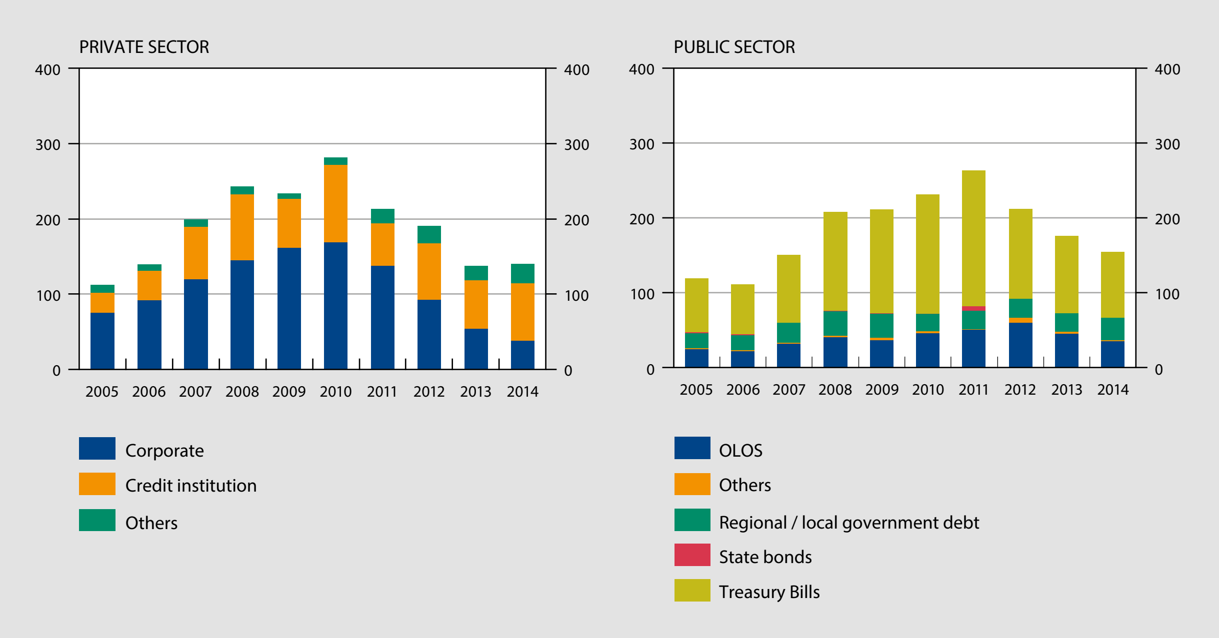
### New issue activity in private sector debt

The value of new issue activity in private sector debt held in NBB-SSS peaked in 2010 but then declined until 2013. In 2014, as Chart 33 illustrates, the level of new issue activity was more or less stable. Private sector debt issued by credit institutions has grown steadily in relative importance; i.e. it currently represents the major share of private sector debt (i.e. about 55 % in 2014). This rise has been at the expense of new issue activity in corporate debt which continued to decline in 2014, dropping below pre-crisis levels. In 2014, the largest issuance programmes by private sector issuers or credit institutions were those of Anheuser-Bush INBEV SA, Belfius Bank, EANDIS and KBC.

New issue activity in public sector debt

Chart 33 shows that the majority of public sector debt is issued by the Belgian federal government; i.e. about 80 % in 2014. The remainder is issued by regional and local governments. Total new issue activity by Belgian federal government increased in 2008 and peaked in 2011. Since 2012, that activity has been decreasing. The exceptional peak in state bonds, issued in December 2011 and totalling € 5.7 billion, relates to the favourable conditions prevailing at the time in terms of yield and withholding tax (i.e. the so-called "Leterme" state bonds).

**CHART 33** NEW ISSUE ACTIVITY PER SECURITY TYPE
(in € billion)




Source: NBB-SSS.

## SETTLEMENT TURNOVER

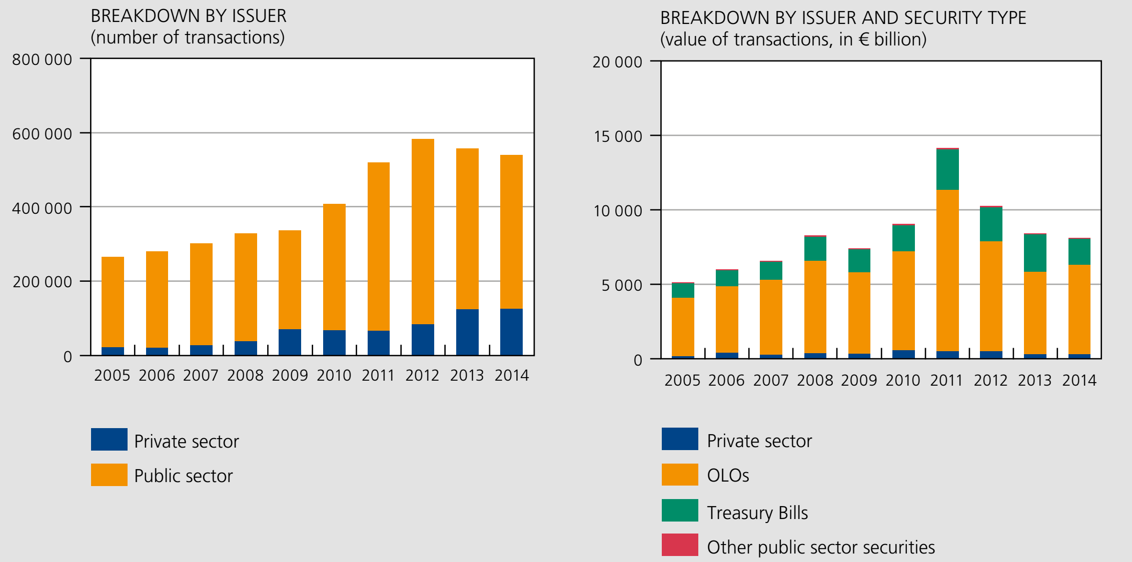
Chart 34 shows the settlement turnover between direct participants of NBB-SSS, both in number and in value. In 2014, daily average settlement in fixed-income debt securities held in NBB-SSS amounted to 2 100 in number and € 31.9 billion in value. Public sector debt accounts for more than 75 % of the number of transactions settled in NBB-SSS and 96 % in terms of value. In terms of number, settlement turnover in private sector debt held in NBB-SSS has increased during recent years. Nevertheless, in value terms, settlement in private sector debt is typically much lower.

Settlement turnover in public sector debt primarily concerns OLOs. In 2014, about 77 % of settlement related to OLOs and 22 % to Treasury bills. The historical peak in NBB-SSS settlement activity in 2011 coincided with the euro area sovereign debt crisis and the Belgian government crisis. In that year, market turbulence hit the OLO market with (10-year) OLO rates peaking at up to 5.51 %.

### 4.3.2 Euroclear Belgium

Nearly all activity in Euroclear Belgium, in terms of both securities deposits and settlement, is in equities. New issue activity in Euroclear Belgium is limited, and this section will therefore not go into further detail on the subject.

CHART 34 SETTLEMENT TURNOVER IN PRIVATE AND PUBLIC SECTOR DEBT




Source : NBB-SSS.

### SECURITIES DEPOSITS

Euroclear Belgium holds about 1 000 different securities in its system. At the end of 2014, the value of securities deposits held by Euroclear Belgium totalled nearly € 225 billion, an increase of almost 10 % compared to 2013. As 99 % of securities deposits are in equities and are valued at market prices, the value of securities deposits is strongly influenced by market volatility. As illustrated in Chart 35, the value of securities deposits in Euroclear Belgium tracks the BEL-20 index (in which financial institutions represent a significant share). BEL-20 equities account for about 80 % of total securities deposits in Euroclear Belgium. The value of securities deposits dropped sharply in 2008 and reached their lowest level in 2011, but has increased since 2012 as the equity markets have recovered.

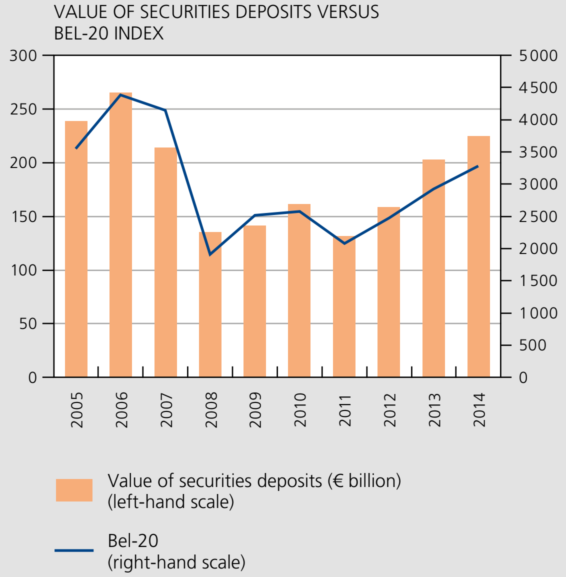
### SETTLEMENT TURNOVER

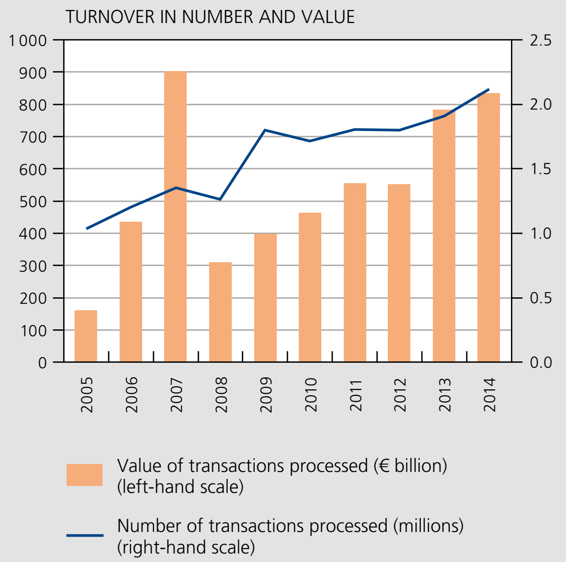
In 2014, Euroclear Belgium settled on average about 8 300 transactions on a daily basis, for a value of € 3.3 billion. The main part of the settlement value (70 % in 2014) comes from over-the-counter (OTC) trades. Stock exchange transactions are settled in Euroclear Belgium only after netting; i.e. after the central clearing by the Paris-based CCP LCH.Clearnet SA. As the securities settled are nearly all equities, the value of the settlement turnover also depends on the market value of the securities. The 2007 peak shown in Chart 35 was due not only to the rise in number of transactions but also to the rise in equity prices at that time.

## 4.3.3 Euroclear Bank

Euroclear Bank is an issuer ICSD for international securities, but it also acts as an investor ICSD by connecting with 46 securities markets worldwide. Due to these links with domestic markets, Euroclear Bank's participants can hold and settle domestic securities issued in all those markets, typically government bonds and other fixed-income securities.

**CHART 35** SECURITIES DEPOSITS AND SETTLEMENT TURNOVER




Source: Euroclear.

## SECURITIES DEPOSITS

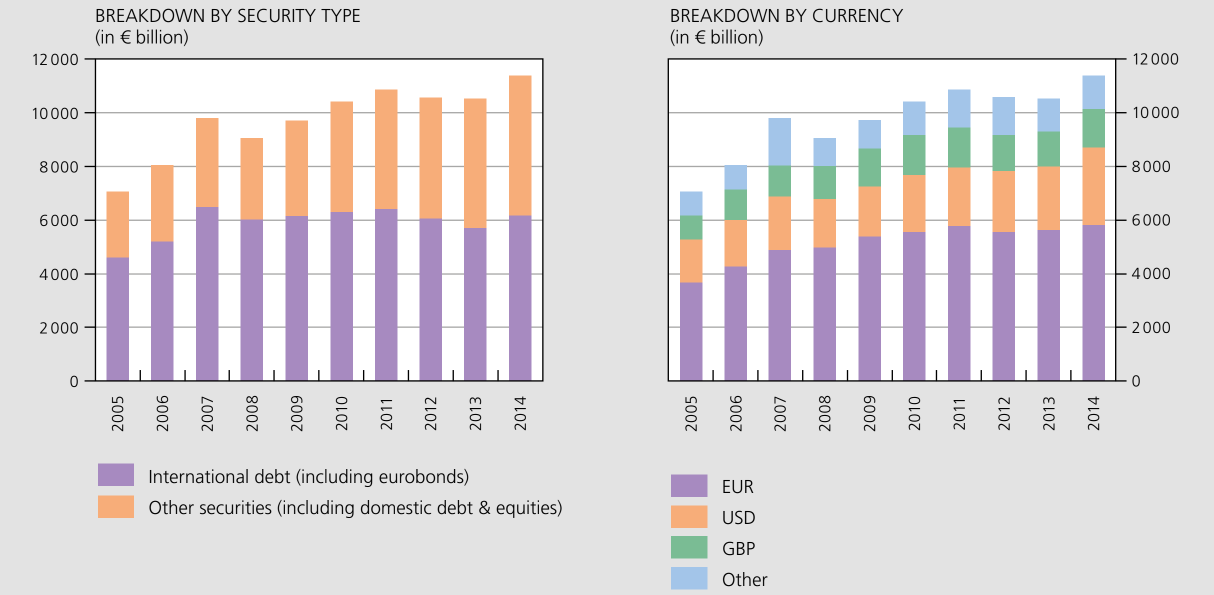
More than 200 000 different securities, both international and domestic, are held as securities deposits in the books of Euroclear Bank. The total value of outstanding securities deposits at year-end 2014 amounted to nearly € 11.4 trillion equivalent. In 2014, Euroclear Bank participants could obtain Panamanian government bonds, Mexican corporate bonds, Taiwanese-issued RMB bonds, Russian municipal and corporate bonds, as well as equities, via new or extended Euroclear Bank links to the respective domestic CSDs. As a result, these domestic capital markets have increased access to global investors that are participants in Euroclear Bank.

Chart 36 illustrates that in 2014 about 55 % of securities deposits in Euroclear Bank were international securities. In 2005, the share of international securities was still around 65 %. Most of such securities deposits are denominated in EUR, USD and GBP. Those currencies represent about 90 % of total securities deposits in value. This share has been more or less stable over the years. Although the increase in securities deposits still mainly concerns the three major currencies, deposits in other currencies are also growing rapidly (e.g. CNY/RMB). Euroclear Bank claims to represent 44 % of total off-shore RMB-denominated securities holdings.

## NEW ISSUE ACTIVITY

Together with Clearstream Banking Luxembourg, Euroclear Bank is the issuer ICSD for international securities, such as Eurobonds. Since the issuers can originate from different countries, trends in new issue activity depend on the extent to which Euroclear Bank can attract new issue activity (or market share vis-à-vis Clearstream Banking Luxembourg), as well as on the economic situation of those markets in which issuers of international securities operate. New issue activity in Euroclear Bank rose slightly from € 2.14 trillion equivalent in 2013 to almost € 2.18 trillion in 2014. International securities can be issued in various currencies. In 2014, EUR represented around 45 % of all new issues. EUR, USD and GBP are the major currencies in which international securities are issued in Euroclear Bank, representing more than 90 % of total new issue activity. However, other currencies are gaining in importance. For example, in December 2014, an offshore RMB bond worth RMB 12 billion was issued with Euroclear Bank.

**CHART 36** VALUE OF SECURITIES DEPOSITS (1)




Source: Euroclear.
(1) 2005-2011: value at the end of December, 2012-2014: average value in December; Currency = denomination currency; EUR excludes "in-currencies" (BEF, DEM, FRF, etc.).

### SETTLEMENT TURNOVER

On average, Euroclear Bank settled almost 300 000 transactions a day in 2014, for an amount of nearly € 1.5 trillion equivalent. For the full year, turnover increased by about 8.5 % in number (up to 75.2 million) and 13 % in value (up to € 395 trillion). As shown in Chart 37, the number of transactions settled in Euroclear Bank almost tripled between 2005 and 2014. 2008 and 2009 were the only years in which the number of transactions did not rise.

The main driver of settlement turnover in value has been the increase in domestic securities. This type of securities represented about 75 % of settlement turnover in 2014. Settlement turnover in international securities has also risen gradually since 2012. In 2014, the value of settlement turnover was more than 2.5 times higher than 10 years ago. From a currency perspective, Chart 37 illustrates that the main denomination currencies are EUR, USD and GBP, representing about 95 % of total settlement turnover. The share of these major currencies has been stable over the years.

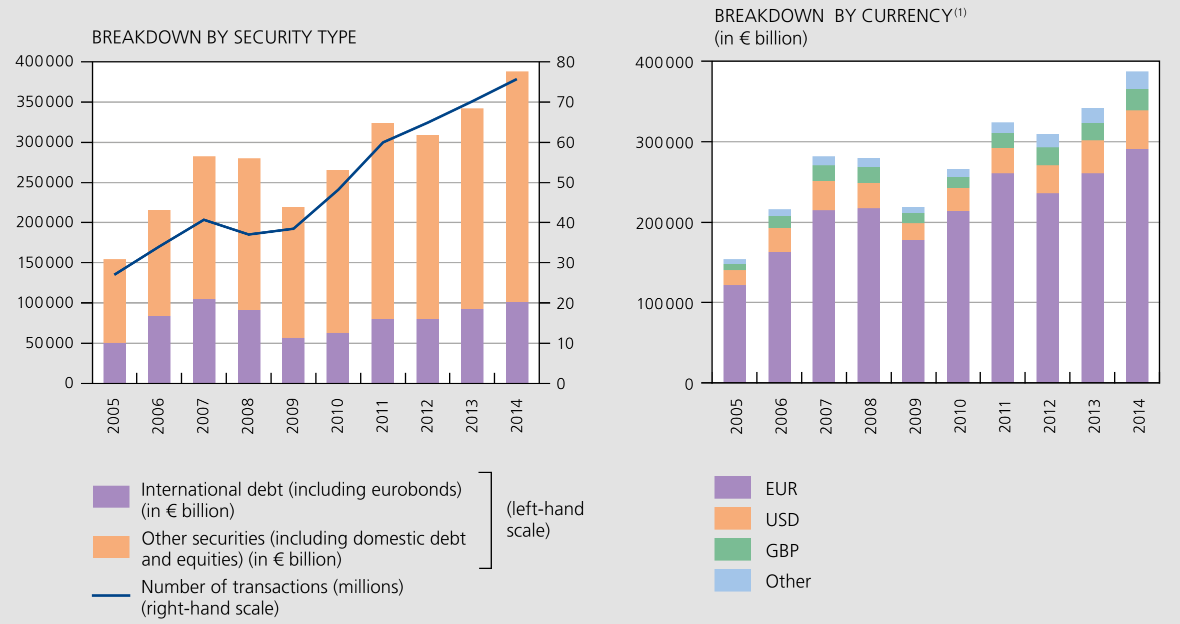
New developments have been initiated for other currencies, in particular for the offshore RMB market. In 2014, Euroclear Bank and the Taiwan Depository & Clearing Corporation (TDCC) launched a new service allowing international investors that are clients of Euroclear Bank to settle Taiwanese-issued RMB bonds.

Settlement turnover includes internal settlement (i.e. both counterparties to a securities transaction are Euroclear Bank participants) as well as external settlement (i.e. one of the counterparties to a securities transaction is a Euroclear Bank participant, the other is a participant of another (I)CSD). Due to its large participant base, a significant proportion of securities transactions can be handled internally, which creates economies of scale. About 85 % of settlement turnover is currently settled internally in the books of Euroclear Bank.

## 4.4 Future challenges and opportunities in a changing landscape

(I)CSDs in the EU are facing a number of possible challenges and opportunities for their business models in the short to medium term. Their operating landscape is changing due to new regulations such as the CSD Regulation or public

**CHART 37** SETTLEMENT TURNOVER




Source : Euroclear.
(1) Currency = denomination currency ; EUR excludes "in-currencies" (BEF, DEM, FRF, etc.).

initiatives such as TARGET2-Securities. As explained above, there are many differences between CSDs and ICSDs, as well as between CSDs themselves, in terms of business size, the range of services provided, or the level of internationalisation of their activities. Due to such distinct business profiles, some (I)CSDs will be better prepared than others to adapt to the new landscape. Economies of scale may prove to be a decisive factor for (I)CSDs to maintain or gain market share in the future.

## CSD REGULATION

The CSD Regulation (CSDR) lays down new standards for the safe and efficient functioning of CSDs in the EU [1]. While the CSDR came into force in September 2014, its technical regulatory standards are expected to be published in the third quarter of 2015. Some requirements of the CSDR will have an impact on the business model of (I)CSDs. The CSDR aims to set the rules for an EU-wide passport for the provision of (I)CSD services beyond an (I)CSD's home country. Also, the CSDR offers issuers the freedom to issue their securities in any (I)CSD of their choice in the EU, while fair and open access should be ensured for EU (I)CSDs to any other EU (I)CSD or market infrastructure (such as trading venues or CCPs) regardless of the country where they are based. The implementation of the CSDR will therefore affect the natural monopoly of national CSDs in Europe. They will have to compete with each other in attracting new issues as the issuer (I)CSD, and in attracting investors via an investor (I)CSD approach by linking with other infrastructures. With the CSDR, the current national CSDs may become more "international" – or at least European – CSDs reaching out to issuers from different countries.

(1) http://eur-lex.europa.eu/legal-content/EN/TXT/?uri = OJ:JOL_2014_257_R_0001.

## TARGET2-SECURITIES

Nearly 10 years after the decision of the ECB Governing Council to evaluate the feasibility of building a common platform for the settlement of securities transactions in Europe, TARGET2-Securities (T2S) is expected to be launched in 2015 (1). T2S is focused on the harmonisation of the settlement function in central bank money. Initially, only EUR will be accepted as the settlement currency. T2S is expected to bring benefits to the market, as cross-border settlement will be internalised within the T2S platform at a lower cost. Market participants can also use a single gateway to T2S, eliminating the operational burden of accessing and maintaining multiple relationships with CSDs and/or custodians.

However, the "commoditisation" of settlement by T2S creates a challenge for European CSDs' business models. The loss of CSDs' revenues generated from settlement fees will have to be compensated and, for that purpose, alternative revenues will have to be found. While the national CSDs will still organise the custody function, they will have to compete on the basis of other value-added activities, such as asset servicing or collateral management services, which are at the same time provided by custodian banks which may have direct access to T2S themselves.

## NEED FOR HIGH QUALITY COLLATERAL

In the aftermath of the financial crisis, new sets of regulations have been issued to promote financial stability. The G20 regulatory agenda focused initially on the OTC derivatives markets which led to new regulations in the US (Dodd-Frank Act) and the EU (EMIR). EMIR lays down rules regarding the mandatory use of a CCP to clear standardised OTC derivative contracts. In that regard, CCPs will manage the initial and variation margins (collateral) collected from their members that CCPs are obliged to hold with an (I)CSD. For non-centrally cleared (i.e. non-standardised) OTC derivative contracts, EMIR also requires counterparties to provide sufficient margin. Both for centrally and non-centrally cleared OTC derivative contracts, collateral posted by market participants should be high-quality collateral, with minimum credit and market risk, to mitigate the risks for CCPs or counterparties. To comply with this set of EMIR rules, market participants will have to mobilise or source the collateral matching the EMIR criteria from custodians or (I)CSDs where the collateral is located.

Other prudential regulation requirements will also intensify the search for high quality collateral. Under new Basel III/CRD IV requirements, the Liquidity Coverage Ratio (LCR) requires banks to have sufficient high quality liquid assets to withstand stress scenarios.

## FUTURE PERSPECTIVE

As the launch date of T2S is approaching, national European CSDs are preparing their migration to the new common settlement platform. This often requires considerable investments in their own systems in order to be compatible with T2S system features. The new rules of the CSDR will also demand from the EU (I)CSDs the necessary investments to achieve compliance with the new regulatory requirements and to obtain their authorisation under the CSDR.

For many national European CSDs, there will be major hurdles to overcome in absorbing the technical migration to T2S plus the implementation of the CSDR. As T2S will affect current CSD revenues, it is expected that CSDs' natural monopolies will erode, and that will put further stress on traditional revenue sources in a post-CSDR environment. Competition between CSDs will occur in other value-added activities, such as collateral management services, for which regulations such as EMIR or CSDR can provide new business opportunities. However, larger (I)CSDs that can benefit from economies of scale are expected to be better positioned to address the future challenges in an increasingly competitive market and to capitalise on the business opportunities that might emerge.

Since national CSDs will need to invest in developing value-added services, while costs will need to be cut because of lower revenues, a further consolidation among (smaller) CSDs in the EU cannot be ruled out. However, CSDs may also decide to form alliances with other market infrastructures – for example with the ICSDs for collateral management services – instead of developing their own proprietary systems (see further in this article).

(1) The migration of CSDs to the T2S platform is planned in four waves. NBB-SSS and Euroclear Belgium (together with the other ESES CSDs) are expected to join T2S in the second wave currently scheduled for some time in 2016. The ICSDs, Euroclear Bank and Clearstream Banking Luxembourg, decided not to join T2S.

## 4.5 Development of collateral management services

In order to exploit market participants' greater need for high quality collateral, and since it is becoming more complex for them to allocate the right collateral to the right place (while definitions of high quality collateral may differ depending on the applicable regulatory framework), (I)CSDs have invested in (further) developing their collateral management services. One of the core common elements in their strategies is to take over some of the collateral management tasks of the market counterparties.

As collateral has to cover the risk between two counterparties during the life span of the transaction, it needs to be valued regularly to make sure risks are still covered. This requires active collateral management including (at least) daily marked-to-market valuation techniques, the application of agreed eligibility criteria and haircuts, or the processing of margin calls to collect additional collateral. Counterparties could agree to manage all administrative obligations regarding the valuation of collateral between themselves on a bilateral basis, or they could opt to appoint a triparty collateral management agent. In that case, counterparties outsource collateral management tasks during the life of the transaction, such as the selection and valuation of the collateral based on the eligibility conditions and limits agreed by the underlying counterparties. Such a triparty agent acts on behalf of the collateral giver and taker while remaining neutral in regard to the underlying transactions; i.e. the triparty agent does not change the relationship (and obligations) between the two counterparties (1).

Since 2014, Eurosystem central banks have also been able to use triparty agents for the conduct of their monetary policy and credit operations. In this context, Eurosystem counterparties serve as collateral givers, and Eurosystem national central banks act as collateral takers. In practice, the latter outsource their collateral management services to the triparty agent. Euroclear Bank, Clearstream Banking Luxembourg and other large European CSDs are eligible triparty agents for the Eurosystem (2).

The focus of new collateral management services is generally on two areas: collateral optimisation and collateral sourcing (3).

### COLLATERAL OPTIMISATION

Collateral optimisation covers a wide range of services which basically aim at optimum matching of collateral supply and demand for a market participant. A fragmented approach to collateral management leads to a sub-optimal use of collateral by market participants, as securities are often 'locked' in a particular local market, entity or time zone. Based on an ECB publication, around 25 % of the overall supply of high-quality assets are so-called "idle" securities; i.e. securities held in non-actively managed collateral portfolios (1). New services being developed by FMIs and custodians aim to unblock these collateral sources and to enhance collateral management efficiency in view of the increased demand for collateral since the financial crisis, and to anticipate future needs due to new regulations.

Key for the collateral service provider is to have sufficient information on an individual market participant's collateral supply and the range of obligations faced by that client. Collateral optimisation processes should ensure that the right collateral (based on eligibility criteria defined by the market participants) is mobilised at the right time. Other processes that aim to optimise the use of collateral assets include collateral substitution (i.e. replacing collateral needed elsewhere with other collateral meeting the initial eligibility criteria), collateral re-use (i.e. enabling the collateral receiver to re-use collateral for another transaction), or collateral transformation services (i.e. exchanging lower quality assets for higher quality collateral).

Such collateral optimisation services are not necessarily new, but are being further enhanced by collateral management service providers in order to meet increased demands from market participants to optimise the usage of their available collateral, thereby maximising their access to sources of liquidity while minimising their overall cost of funding. Over

(1) In Belgium, Euroclear Bank and the custodian BNYM SA/NV are critical players in international triparty collateral management services. According to the International Capital Market Association (ICMA) (www.icmagroup.org), between 10 and 12 % of the estimated European repo market is managed by triparty agents. This is relatively low compared to the US, where the triparty agents (Bank of New York Mellon and JP Morgan) represent 2/3 of the repo market.

(2) The list of eligible triparty agents is published on the ECB website http://www.ecb.europa.eu/paym/coll/coll/triparty/html/index.en.html.

(3) See also CPMI, Developments in collateral management services, September 2014.

time, Euroclear Bank has developed a set of collateral optimisation features in its triparty collateral management environment. In some cases, instead of developing their own proprietary systems, national CSDs may form alliances with other collateral management service providers to rely on their advanced technology. Euroclear France and Euroclear Netherlands, for example, provide collateral management services for their participants, using the Euroclear Bank triparty collateral management system.

### SOURCING OF COLLATERAL

The sourcing of collateral, in particular cross-border, often implies that linkages need to be created between different FMIs. As an example, the Euroclear Group launched its "Collateral Highway" concept that aims to provide an open global market infrastructure allowing market participants to mobilise pools of assets more efficiently for the purpose of their collateral management, in cases where the assets are fragmented across various holding locations. Collateral supply can be aggregated by sourcing collateral from other (I)CSDs and custodian banks where the assets are held (i.e. highway "entries"). Once collateral is sourced into the Euroclear system, participants can allocate it to their counterparties to support a range of transactions, including central bank operations, repos, securities lending or margins for CCPs or bilaterally cleared OTC derivatives trades (i.e. highway "exits"). CCPs and central banks participating in the Euroclear system contribute to an aggregation of the collateral demand side as well. Other CSDs can also plug into the "Collateral Highway" to gain access to a large pool of collateral assets held in the Euroclear Group. In early 2015, the Euroclear Group announced that it managed collateral assets amounting to more than 1 trillion euro equivalent. Other (I)CSDs and custodians are also developing similar collateral management services for their clients.

## 4.6 Regulatory perspective

The NBB is responsible for the prudential supervision – including the issuance of authorisations – vis-à-vis settlement institutions and equivalent settlement institutions established in Belgium. The NBB also acts as the overseer of Belgian securities settlement systems operated by Belgian settlement institutions or equivalent settlement institutions to ensure that the clearing and payment systems operate properly and that they are efficient and sound. Settlement institutions that have credit institution status, such as Euroclear Bank, are also regulated and supervised as credit institutions.

The NBB has adopted the CPMI-IOSCO Principles for Financial Market Infrastructures (PFMIs) that were issued in April 2012. Due to their critical role in the financial system in settling monetary and other financial transactions, (I)CSDs could be potential sources of systemic risk or possibly act as channels for risk contagion in the event of financial turbulence, if they are not safe and efficient. The PFMIs have therefore strengthened the applicable international standards for systemically important payment systems, (I)CSDs, SSSs and CCPs.

The Belgian (I)CSDs are considered as critical infrastructures for the Belgian financial system. As summarised in Table 11, the key features of these (I)CSDs vary greatly, resulting in different risk profiles. Given the proportion of foreign participants in their systems, the proper functioning of the Belgian (I)CSDs is not only relevant for the domestic market. Moreover, the level of systemic risk of an (I)CSD, including cross-border, will also depend on the interconnections between an (I)CSD and other securities markets and FMIs, its settlement volumes, and its role in the provision of critical services such as collateral management.

Euroclear Bank is by far the largest (I)CSD in Belgium (and in Europe) in terms of settlement volumes. The number of links that Euroclear Bank has established with other securities markets to allow its participants to hold and settle securities issued in those markets gives rise to legal and operational risks. Moreover, as a single purpose bank, Euroclear Bank can grant credit to its participants to support settlement in more than 50 currencies. Euroclear Bank needs to have sufficient liquidity sources to meet its minimum liquidity requirements in case of default by a borrower participant. Such liquidity sources need to fulfil certain criteria specified in the PFMIs in order to ensure that Euroclear Bank can still rely on them in exceptional but plausible circumstances. Credit and liquidity risks in Euroclear Bank continue to be monitored closely

(1) ECB, Collateral eligibility and availability, Follow-up to the report on "Collateral eligibility requirements – a comparative study across specific frameworks" dated July 2013, July 2014.

by the NBB, in particular the multi-currency dimension. From a prudential supervision perspective, the implementation of new Basel III regulatory requirements such as the Liquidity Coverage Ratio (LCR) is also being analysed.

Euroclear Bank acts as a source of interdependencies due to its linkages with other security and currency markets, as mentioned above. In addition, many other FMIs such as CCPs and CSDs are participants in Euroclear Bank. Other interdependencies arise from its role in the provision of collateral management services. In that context, the Euroclear-DTCC project dedicated to collateral management services, involving the establishment of mutual links between Euroclear and DTCC together with interconnected collateral management platforms, is subject to authorisation by the NBB.

The risk profiles of NBB-SSS and Euroclear Belgium, operating in central bank money and in a single currency context, are very different from Euroclear Bank's risk profile. The potential systemic cross-border impact of a failure of either NBB-SSS or Euroclear Belgium is considered smaller. However, whereas Euroclear Belgium has a large number of foreign participants, NBB-SSS (as an issuer CSD) is also eligible to transfer and mobilise collateral for Eurosystem monetary policy and credit operations for both Belgian and foreign financial institutions.

Due to the international scope of Euroclear Bank's activities and its resulting interdependencies, the NBB will be further engaged in international cooperation arrangements with other authorities in line with CPMI-IOSCO Responsibility E that

**TABLE 11** KEY FEATURES OF (I)CSDS IN BELGIUM, RELEVANT RISKS AND REGULATORY FOCUS

| Risks | Euroclear Bank (EB) | NBB-SSS | Euroclear Belgium |
|---|---|---|---|
| Legal risk (conflict of laws) | 97 % foreign participants<br>46 investor links | 38 % foreign participants<br>0 investor link | 74 % foreign participants<br>1 investor link (to EB) |
| Operational risk | 46 investor links<br>Daily avg transactions (1):<br>±290 000<br>EUR 1.5 trillion equiv. | 0 investor link<br>Daily avg transactions:<br>±2 100<br>EUR 31.9 billion | 1 investor link<br>Daily avg transactions:<br>±8 300<br>EUR 3.3 billion |
| Credit / liquidity risk | Commercial bank money<br>(Multicurrency)<br>Single purpose bank | Central bank money (EUR) | Central bank money (EUR) |
| Interdependencies | 46 investor links<br>9 CCP/21 (I)CSD participants<br>Multicurrency<br>Collateral management for Eurosystem monetary policy & credit operations (2)<br>Triparty agent | 0 investor link<br>2 CCP/6 (I)CSD participants<br>Single currency<br>Collateral management for Eurosystem monetary policy & credit operations (3) | 1 investor link (to EB)<br>1 CCP/5 (I)CSD participants<br>Single currency |

Interest in cooperating with other authorities in line with CPMI-IOSCO Responsibility E.

Systemic risk

| Smaller cross-border impact | Larger cross-border impact | Systemic cross-border impact |
|---|---|---|

Source: NBB.
(1) Settlement turnover, excluding new issue activity.
(2) Both as issuer and as investor CSD.
(3) As issuer CSD.

requires authorities to cooperate in promoting the safety and efficiency of FMIs. This will also be relevant in connection with the CSDR implementation, with the designation of competent and relevant authorities of (I)CSDs.

As all (I)CSDs established in Belgium are considered as critical infrastructures, operational reliability and information security are key in their risk management. According to the PFMIs, business continuity plans should aim for timely recovery of operations and fulfilment of the FMI's obligations. In that regard, cyber resilience continues to be one of regulators' priorities. The NBB is analysing Belgian FMIs' policies and procedures designed to withstand cyber threats, and participates in international policy fora on cyber resilience (see article "Cyber resilience in FMIs" by Filip Caron in this FSR). In addition, developments concerning the migration by NBB-SSS and Euroclear Belgium to T2S, envisaged in 2016, are being monitored closely, including their related project management. As Euroclear Belgium is part of the ESES platform, such analysis is conducted together with the regulators of the ESES CSDs.

The PFMIs also specify the requirements for a sound and comprehensive risk management framework for managing legal, credit, liquidity, operational and other risks. FMIs need to identify scenarios that may potentially prevent them from being able to provide their critical operations and services, and assess the effectiveness of a full range of options for recovery or orderly wind-down. In that connection, the NBB is analysing the recovery plan for the Euroclear Group, in cooperation with the other Euroclear Group regulators.

The NBB ensures that the Belgian CSDs/SSSs are periodically assessed against the PFMIs and, as a rule, makes the assessment results public (1). In the case of ESES, each ESES authority ensures that its own CSD/SSS is periodically assessed against the PFMIs. The results of the coordinated assessment of the ESES CSD/SSS are summarised in section 7.

Finally, the NBB is involved in different policy fora to discuss the CSDR (which is based on the CPMI-IOSCO Principles) as well as recovery and resolution schemes. A new CPMI-IOSCO workstream is also focusing on the review of the 2011 CPSS-IOSCO market-wide recommendations intended to cover risks in asset servicing (advanced income and redemption proceeds) provided by (I)CSDs and custodians.

## 4.7 Assessment of the ESES CSDs/SSSs against the CPMI-IOSCO Principles for FMIs

The ESES CSDs/SSSs (central securities depositories/securities settlement systems) comprise Euroclear Belgium (EBE), Euroclear France (EF) and Euroclear Netherlands (ENL), and belong to the Euroclear Group. Since 19 January 2009, the ESES CSDs have operated an integrated settlement platform, the Euroclear Settlement of Euronext-zone Securities (ESES) platform.

The ESES CSDs/SSSs have been assessed against the 2012 CPMI-IOSCO Principles for Financial Market Infrastructures (FMIs), in as far as they are applicable to a CSD or SSS. The assessment does not constitute a direct assessment of their direct holding company Euroclear SA (ESA). However, as ESA is both the parent company of the ESES CSDs/SSSs and their service provider, ESA is partially within the scope of the assessment. ESA is also the parent company of the other Euroclear Group entities (i.e. the CSDs in Finland, Sweden, the UK & Ireland and of the ICSD Euroclear Bank) but these (I)CSDs and their respective securities settlement systems are outside the scope of this assessment.

The assessment of ESES was conducted jointly by the French, Dutch and Belgian securities commissions and central banks; i.e. the Autorité de Marchés Financiers (AMF), the Banque de France (BdF), the Autoriteit Financiële Markten (AFM), De Nederlandsche Bank (DNB), de Financial Services and Markets Authority (FSMA) and the National Bank of Belgium (NBB). Nonetheless, the opinion on the compliance of each respective national ESES CSD/SSS with the CPMI-IOSCO Principles for FMIs is that of their respective central bank and/or securities commission that supervises and/or oversees that CSD/SSS, in accordance with its supervisory and oversight competency.

The assessment report was finalised in March 2015 on the basis of information available up to mid-2014, and in some specific cases – as regards the ESES CSDs' recovery plans – up until the end of October 2014. The following sections

(1) The results of the assessment of Euroclear Bank against the PFMIs were published in the FSR of 2013.

present a high-level overview of the Belgian, Dutch and French settlement landscape, together with the key findings of the assessment of the ESES CSDs against the CPMI-IOSCO Principles for FMIs.

## OVERVIEW OF THE BELGIAN, DUTCH AND FRENCH SETTLEMENT LANDSCAPE

The ESES platform settles not only transactions executed on the Paris, Amsterdam and Brussels Euronext stock exchange cash markets, cleared centrally by the Paris-based LCH.Clearnet SA, but also bilaterally concluded over-the-counter (OTC) trades, including fixed income transactions and repo trades.

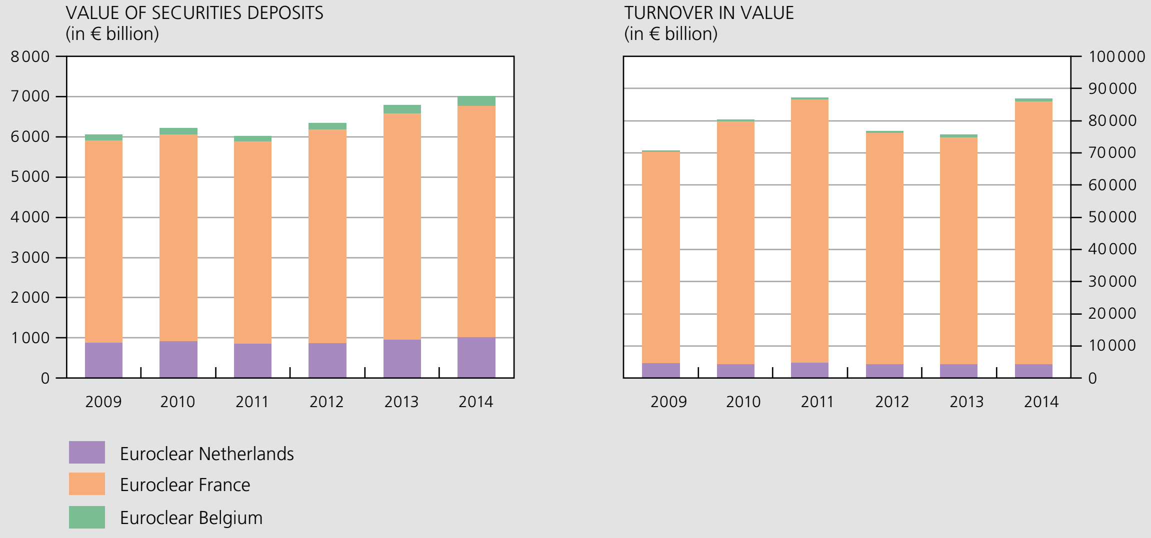
The ESES settlement system offers Delivery Versus Payment (DVP) book-entry settlement in central bank money (DVP model 1), providing real-time settlement. The transactions are settled in central bank money, on cash accounts legally held with the NBB, the BdF and DNB, and operated respectively by EBE, EF and ENL. For their settlement in central bank money, the ESES CSDs are linked with TARGET2, which is a real-time gross settlement (RTGS) system owned and operated by the Eurosystem.

The ESES CSDs also maintain direct and indirect (or relayed) international links for the settlement of cross-border transactions in foreign securities. The majority of foreign securities are held with Euroclear France as an investor CSD, via relayed links through the ICSD Euroclear Bank. Moreover, each ESES CSD has a direct link with Euroclear Bank.

The core business services offered by the ESES CSDs/SSSs include settlement and custody services. EBE is the only ESES CSD/SSS that holds and settles primarily equities.

Chart 38 provides an overview of the value of securities deposits held in the ESES CSDs as well as their settlement turnover. In 2014, the value of securities held in custody amounted to € 225 billion for Euroclear Belgium, € 1 033 billion for Euroclear Netherlands and € 5 757 billion for Euroclear France. The value of settlement turnover in ESES amounted to € 835.5 billion for EBE, € 4 366 billion for ENL and € 81 722 billion for EF.

**CHART 38** RELEVANT SHARE OF SECURITIES DEPOSITS AND SETTLEMENT TURNOVER PER ESES CSD




Source: Euroclear.

(1) EBE, EF and ENL are subject to the regulation and oversight of their respective national competent authorities. The competent Belgian, Dutch and French central banks and securities commissions signed a Memorandum of Understanding (MoU) in October 2009 that sets out principles for the co-ordination of their respective responsibilities for regulating and overseeing Euroclear SA (ESA), the parent company of the ESES CSD. This ESA MoU was also signed by the other central banks and securities regulators which regulate and oversee Euroclear entities in the UK, Sweden, and Finland. The ESA MoU was also, at the level of ESES, complemented in March 2010, when working arrangements were agreed between the ESES authorities on the co-operation and co-ordination of oversight and supervisory activities related to the ESES CSD/SSS.

SUMMARY ASSESSMENT

This section summarises the key findings of the detailed assessment of principles (Table 12), and sets out the recommendations to the ESES CSDs (Table 13).

**TABLE 12** SUMMARY OF THE RESULTS OF THE PRINCIPLE-BY-PRINCIPLE ASSESSMENT OF OBSERVANCE

(ratings summary for principles: ESES CSD)

| Assessment category | Principles |
|---|---|
| Observed | 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 21, 22 |
| Broadly observed | 19, 20, 23 |
| Partly observed | None |
| Not observed | None |
| Not applicable | 5, 6, 14, 24 |

## General organisation (Principles 1 to 3)

**Principle 1 – Legal basis** – The ESES CSDs have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of their activities in all relevant jurisdictions. However, in as far as the stipulation of the operational details of the contractual framework via Detailed Service Descriptions (DSDs) and Newsletters is concerned, it is not always clear for both the CSDs and the clients which of the rules are binding, given that the Newsletters do not always state precisely which DSDs should be changed and how that should be done, given that DSDs are not updated promptly.

**Principle 2 – Governance** – The ESES CSDs' governance arrangements are deemed to be clear and transparent. The description of the governance arrangements is clear and they have been made available via the Euroclear website as well. The governance arrangements also clearly promote the safety and efficiency of the ESES CSDs through the Board objectives. The objectives support the role of the ESES CSDs in the broader financial system and take into account public interest considerations and the objectives of relevant stakeholders.

**Principle 3** – Framework for the comprehensive management of risks – The ESES CSDs have a sound risk-management framework in place for comprehensively managing legal, credit, liquidity, operational, and other risks. The ESES CSDs devised an operational recovery plan. However, this assessment does not include compliance with the CPMI-IOSCO guidance on FMI recovery, issued in October 2014. Euroclear should check the ESES CSDs' recovery plan for compliance with this guidance.

## Credit and liquidity risk management (Principles 4 to 7)

**Principle 4 – Credit risk** – The ESES CSDs have a risk framework in place that includes credit exposure monitoring. However, since the ESES CSDs activities do not include any activity that generates credit exposure to their participants, apart from the monthly invoicing, such a risk is deemed acceptable, since it relates only to revenues stemming from their activities.

**Principle 5 – Collateral** and **Principle 6 – Margin** are not applicable as regards the ESES CSDs.

**Principle 7 – Liquidity risk** – The ESES CSDs are not directly exposed to liquidity risk stemming from their settlement activity. Liquid resources are held by each of the ESES entities to cover their general business risk. Throughout the operating day, participants are provided with reports and messages so that they can effectively manage their cash positions.

## Settlement (Principles 8 to 10)

**Principle 8 – Settlement finality** – The ESES CSDs do provide clear and certain final settlement, either during the night batch that precedes the intraday settlement window, or in real time in the course of the settlement day. While the legal soundness of the settlement finality rules is backed by legal opinions, the ESES CSDs should establish a formal policy for updating these legal opinions.

**Principle 9 – Money settlements** – The ESES CSDs conduct their money settlements in central bank money. The ESES participants are able to use their single central bank cash account with their respective ESES country central bank to settle transactions of securities held in each ESES CSD.

**Principle 10 – Physical deliveries** – The ESES CSDs clearly state their obligations with respect to the delivery of physical instruments. The ESES CSDs country laws no longer allow the withdrawal of physical instruments. Furthermore, the ESES CSDs identify, monitor, and manage the risks associated with holding physical paper or global note securities.

## Central securities depositories and exchange-of-value settlement systems (Principles 11 and 12)

**Principle 11 – Central securities depositories** – The ESES CSDs have appropriate rules and procedures to ensure the integrity of securities issues and to minimise and manage the risks associated with the safekeeping and transfer of securities. While not all securities are dematerialised as yet, new issuances are to be in book-entry form. Adequate controls prevent the unauthorised creation or deletion of securities, and the ESES settlement system prohibits debit balances in securities accounts. The rights of securities holders are safeguarded in the relevant jurisdictions

**Principle 12 – Exchange-of-value settlement systems** – The ESES CSDs settle transactions that involve two linked obligations on a Delivery-versus-Payment basis. In that case, securities are exchanged against cash, thereby eliminating principal risk.

## Default management (Principles 13 and 14)

**Principle 13 – Participant-default rules and procedures** – The ESES CSDs have effective and clearly defined rules and procedures to manage participant insolvency procedures. While the participant insolvency procedures are updated regularly, the ESES CSDs should establish a formal policy for reviewing the rules and procedures related to the handling of a participant's insolvency. ESES tests the default procedures internally, but not with its participants. The ESES CSDs should engage in testing and reviewing the default procedures with their participants.

**Principle 14 – Segregation and Portability** – is not applicable for CSD/SSS.

## General business and operational risk management (Principles 15 to 17)

**Principle 15 – General business risk** – The ESES CSDs identify, monitor and manage their general business risk. They hold sufficient liquid net assets to cover potential general business risks, and to ensure a recovery or an orderly winding down of the critical operations and services.

**Principle 16 – Custody and investment risks** – Participants' assets are protected and are held with other (I)CSDs. Legal opinions back the protection of the participants' ownership rights in regard to securities. The ESES CSDs' investment policy as regards their own cash deposits is sound. The ESES CSDs safeguard their own assets and minimise the risk of loss and delay in access to these assets. Nonetheless, the ESES CSD should document and formalise the fact that their cash deposits can be withdrawn on demand in case of need.

**Principle 17 – Operational risk** – The operational risk management framework, system set-up and business continuity management framework of Euroclear are sound and adequate. The risk management framework allows the ESES CSD to identify the plausible sources of operational risk, both internal and external, and manage and mitigate their impact. The systems used ensure a sufficient level of security and operational reliability and have adequate, scalable capacity. The business continuity management framework allows for timely recovery of operations and fulfilment of the ESES CSDs' obligations, including in the event of a widespread or major disruption.

## Access (Principles 18 to 20)

**Principle 18 – Access and participation requirements** – The ESES CSDs allow fair and open access to their services, based on reasonable risk-related participation requirements. All rules are stated clearly and publicly on the ESES CSDs' website. The ESES participants' admission criteria give the ESES CSDs unnecessary discretionary power to decide on additional conditions or requirements regarding a participant's technical and operational capability. The ESES CSDs should review this aspect of their contractual framework. Furthermore, the sponsorship review should be executed on a more regular basis than every five years.

**Principle 19 – Tiered participation arrangements** – The ESES CSDs have no formal tiered participation arrangements since they enter into a contractual relationship only with their direct participant, and they monitor and manage risks at an aggregate level. Information about indirect participants that the ESES CSDs have available is dependent on the level of segregation that a direct participant has chosen for its clients' assets. No contractual right is in place to gather basic information on tiered participation from the direct participant. There is no sufficient guarantee that the information available to the ESES CSDs is complete and correct, while the collection of information on tiered participation is useful to detect dependencies relevant to the sound and smooth functioning of the securities settlement system. The ESES CSDs should collect basic information about indirect participation, and potential material dependencies between direct and indirect participants should be identified on the basis of all available information.

**Principle 20 – FMI links** – ESES CSDs have established links with foreign (I)CSDs. Where they act as investor CSDs, these links are mostly relayed links via Euroclear Bank. While external legal opinions are available, the legal and operational risk reviews of the links where an ESES CSD acts as an investor CSD are not adequately documented by the ESES CSDs. The ESES CSDs should perform and document the risk reviews that are said to be performed before establishing a new link.

The ESES CSDs are responsible for selecting with due care the foreign CSDs with which they establish links as well as for identifying, monitoring and managing the risks of these links. Nevertheless, Euroclear Bank actually carries out much of this task, while no outsourcing arrangement is in place between the ESES CSDs and Euroclear Bank. Where the diligences are outsourced to Euroclear Bank, the ESES CSDs should formalise this both for the direct links and for the relayed links that they maintain. After formalisation, the ESES CSDs should be able to get all relevant information derived from the outsourcing of activities.

## Efficiency (Principles 21 and 22)

**Principle 21 – Efficiency and effectiveness** – The ESES CSDs are efficient and effective in meeting the requirements of their participants and the markets they serve.

**Principle 22 – Communication procedures and standards** – The ESES CSDs use internationally accepted communication procedures and standards to facilitate settlement and recording. Like other Euroclear group entities, they apply international ISO 15022 communication standards, procedures and recommendations. Furthermore, automatic interaction with the ESES platform occurs via two channels, either EuroclearConnect for straight-through-processing applications, or EuroclearConnect for screen-based applications. The services offered via both of these channels are reachable through BT/Radianz and SWIFT.

## Transparency (Principles 23 and 24)

**Principle 23 – Disclosure of rules, key procedures, and market data** – The ESES CSDs adopt clear and comprehensive rules that are fully disclosed to the participants via their website. These include the ESES CSDs' contractual framework, consisting of the ESES CSDs' Terms and Conditions, Operating Manuals and Detailed Service Descriptions. The ESES CSDs consult with clients on changes that may have a material effect on them. The ESES CSDs also disclose on their website the system's design and operations, as well as the CSD's and participant's rights and obligations, and the fees for the services provided. ESES participants can assess the risks and costs they incur by participating in ESES. In regard to the stipulation of the operational details of the contractual framework via Detailed Service Descriptions (DSDs) and Newsletters, it is not always clear for both the CSDs and the clients which of the rules are binding. When updating their contractual framework, the ESES CSDs should ensure, via adequate references, that the Newsletters and DSDs are always coherent, so that all the information disclosed to clients is fully transparent, comprehensible, and unambiguous.

**Principle 24** is not applicable for CSD/SSS.

**TABLE 13** PRIORITISED LIST OF RECOMMENDATIONS FOR THE ESES CSDs/SSSs

| Principle | Issue of concern or other gap or shortcoming | Recommended actions and comments | Time frame for addressing recommended action |
|---|---|---|---|
| 19 | There is no guarantee that the information available to the ESES CSDs about indirect participation is complete and correct. The collection of information on tiered participation remains useful to detect dependencies relevant to the sound and smooth functioning of the securities settlement system. | Basic information about indirect participation should be gathered and potential material dependencies between direct and indirect participants should be identified on the basis of all available information. | By the end of 2015. |
| 20 | While external legal opinions are available, the legal and operational risk review of the links where an ESES CSD acts as an investor CSD is not adequately documented by the ESES CSDs.<br>The ESES CSDs are responsible for selecting with due care the foreign CSDs with which they establish links as well as for identifying, monitoring and managing the risks of these links. Nevertheless, Euroclear Bank actually carries out much of this task, while no outsourcing arrangement is in place between the ESES CSDs and Euroclear Bank. | The ESES CSDs should perform and document the risk reviews of the links.<br>As some of the diligences are outsourced to Euroclear Bank, the ESES CSDs should formalise this both for the direct links and the relayed links that they maintain. After formalisation, the ESES CSDs should be able to get all relevant information derived from the outsourcing of activities. | Before the migration of the ESES CSDs to the Target2Securities platform. |
| 23, 1 | Regarding the stipulation of the operational details of the contractual framework via Detailed Service Descriptions (DSDs) and Newsletters, it is not always clear for both the CSDs and the clients which of the rules are binding, given that the Newsletters are not always precise on what DSD should be changed and how the DSD is changed, given that DSDs are not updated promptly. | When updating their contractual framework, the ESES CSDs should ensure, via adequate references, that the Newsletters and the DSDs are always coherent, so that all the information disclosed to clients is fully transparent, comprehensible and unambiguous. | By the end of Q2, 2015.<br>The ESES CSDs started to include precise references to the DSDs in the newsletters that update the contractual framework. |
| 3, 15 | This assessment does not include compliance with the CPMI-IOSCO guidance. This point will be followed-up further in 2015 by the ESES authorities. | The ESES CSDs' recovery plan should be checked on its compliance with the CPMI-IOSCO guidance on recovery of FMIs. Among other things, it should be verified whether each of its recovery tools exhibits the five criteria of appropriateness to the greatest extent possible. | By the end of 2015. |

**TABLE 13** PRIORITISED LIST OF RECOMMENDATIONS FOR THE ESES CSDs/SSSs (continued)

| Principle | Issue of concern or other gap or shortcoming | Recommended actions and comments | Time frame for addressing recommended action |
|---|---|---|---|
| 8, 1 | No formal policy for updating the legal opinions on settlement finality is in place.<br>In particular, the legal opinion covering EBE as regards the nature and governing law of entitlements in securities, liability of the SSS and finality, was delivered on 4 September 2008. | The ESES CSDs should formalise their policy for updating the legal opinions relevant for their sound and adequate operation. Even if no material changes seem to have occurred after this period, it is appropriate to provide regular updates. | By the end of 2015. |
| 13 | Although the participant insolvency procedures are updated regularly, there is no formal policy determining the review of the internal plans.<br>ESES does not test and review the default procedures with its participants. Testing the procedures raises awareness and may detect possible shortcomings in the procedures. | The ESES CSDs should formalise the policy they have in place for reviewing the internal plans and governance arrangements related to the handling of a participant's insolvency.<br>The ESES CSDs should engage in testing and reviewing the default procedures with their participants. | By the end of 2015. |
| 16 | The investment policy as regards cash deposits is not always clearly articulated. | The ESES CSDs should further document how the investment policy will be safeguarded, in particular as regards their ability to withdraw cash deposits on demand when necessary. | By the end of 2015. |
| 18 | The ESES participants' admission criteria give the CSDs discretionary power to decide on additional conditions or requirements regarding technical and operational capability. | The related Article in the contractual framework should be adapted so as to avoid discretionary powers that are not based on risk considerations. | By the end of 2015. |