1. The Bank’s role in oversight and prudential supervision of financial market infrastructures, custodians, payment service providers and critical service providers

To provide more insight in the systems and institutions providing payment, clearing, settlement, custody and other services, either from a wholesale or a retail market perspective, section 1.1 provides an overview of the structure and interdependencies between them. Relevant processes and flows are more explained in detail in the next parts of this Report (i.e. chapters 2, 3 and 4). Section 1.2 explains the Bank’s mandate and role in the oversight and prudential supervision of this sector, either on a national or international basis.

1.1 Critical nodes in the functioning of financial markets and payment services

The systems and institutions covered in this Report can be ranked in three categories according to the type of service provided : (i) securities clearing, settlement and custody, (ii) payments and (iii) critical service providers to the financial infrastructure. Through their activities or services provided to the financial industry, these systems and institutions are the critical nodes in the functioning of financial markets and payment services as well as the real economy. If designed safely and managed properly, they are instrumental in reducing systemic risks and contagion in the event of financial crisis. At the same time, they are interlinked with FMIs, financial intermediaries and other actors such as merchants or retail customers. These interdependencies are briefly presented below and illustrated in chart 1

Securities clearing, settlement and custody

A trade in a financial instrument is concluded between a buyer and a seller by agreeing the price and the contract terms. Trading can be on-exchange (i.e. on a centralised platform designed to optimise the price-discovery process and to concentrate market liquidity) or bilaterally on an over-the-counter (OTC) basis (i.e. where the counterparties make the bid and accept the offer to conclude contracts directly among themselves). In both cases, buyer or seller are usually banks or investment firms. They could rely on other intermediaries (e.g. brokers) to conduct trades. Trade exchanges such as Euronext Brussels are supervised by securities regulators and are not covered in the Report.

FMIs and financial institutions that provide securities clearing, settlement and custody services are considered part of the post-trade securities landscape. The clearing of a trade via a central counterparty (CCP) generally means that the CCP becomes the buyer counterparty for the seller and the seller counterparty for the buyer. Both original counterparties to the trade then have a claim on the CCP. The direct participant of a CCP – usually a bank or an investment firm – is called a clearing member. A clearing member may clear not only its own trades via the CCP, but also those of its clients.

Whereas there are no CCPs established in Belgium, CCPs in other countries can be systemically important due to their clearing activities for the Belgian securities market.

After clearing, the settlement of a trade results in the transfer of cash and/or of a financial instrument between the parties in the books of a central securities depository (CSD). CSDs generally act as the register of securities issued in their domestic market. In the case of international securities, such as Eurobonds, issuers can choose the currency or country of issue. These securities are held in international CSDs (ICSDs) (1). When a CCP has intervened to clear a trade, settlement takes place on the books of (I)CSDs (2) between the buyer and the CCP, and between the seller and the CCP. There are three (I)CSDs established in Belgium: Euroclear Bank (ICSD), Euroclear Belgium and NBB-SSS (both CSDs). The cash leg of securities settlement takes place either in payment systems operated by central banks (i.e. central bank money, for example TARGET2) or on the books of an (I)CSD with banking status providing (multicurrency) cash accounts (i.e. commercial bank money, for example Euroclear Bank).

Financial institutions that facilitate their clients' access to securities investment markets are referred to as custodians. In that capacity of intermediary, custodians can offer their clients safekeeping and settlement services. A local custodian primarily focuses on serving a single securities market. If a custodian has access to multiple markets, it is considered a global custodian. The Bank of New York-Mellon SA/NV (BNYM SA/NV), established in Belgium, is the global custodian of the BNYM group providing investment services to more than 100 securities markets.

Payments

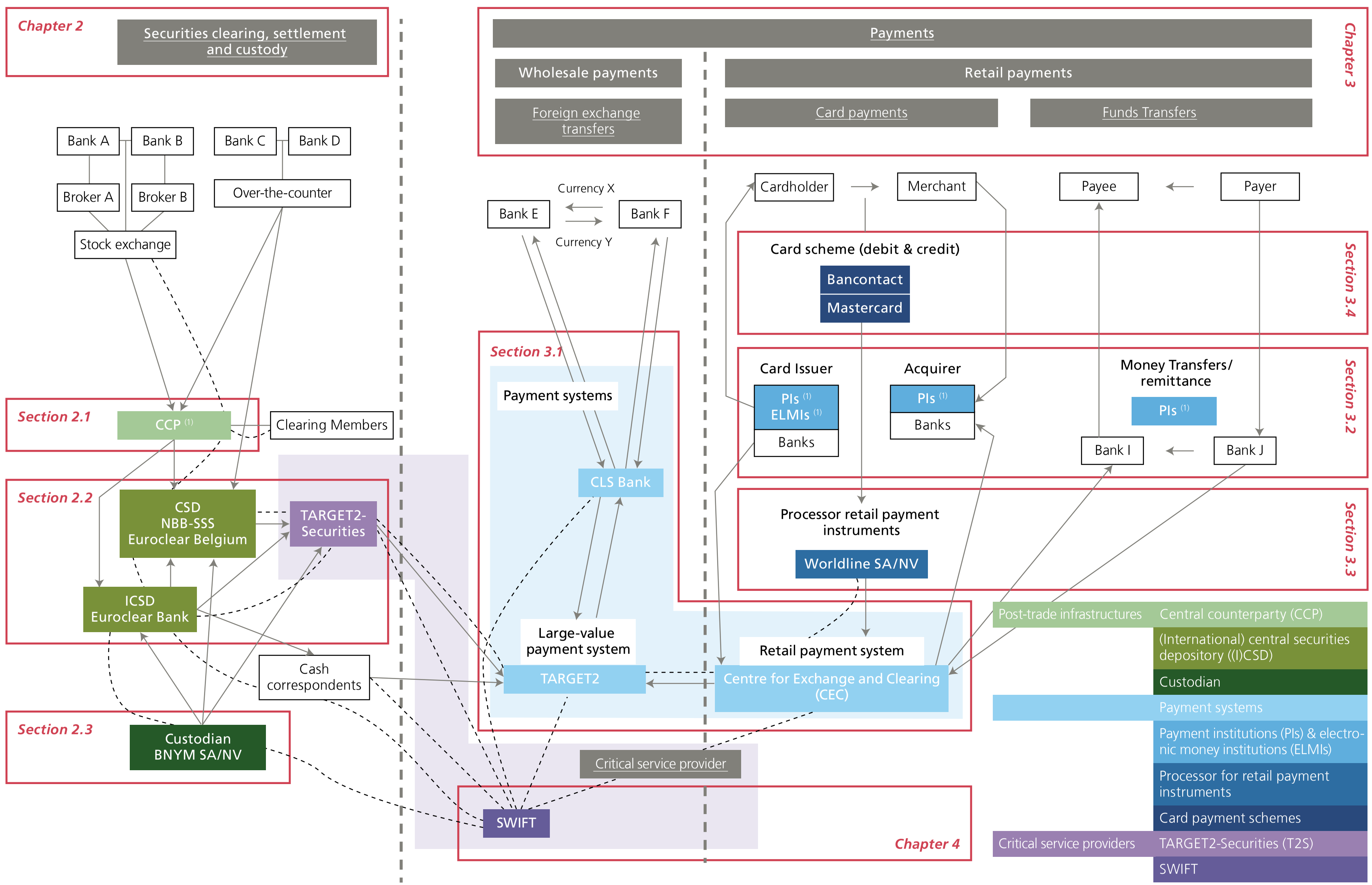
The payments landscape covers both wholesale (i.e. transactions between institutional investors) and retail payments segments (i.e. transactions between retail customers), and includes payment systems, payment service providers (PSPs) such as payment institutions (PIs) and electronic money institutions (ELMIs), processors of payment transactions and card payment schemes.

Payment systems cover both large-value payment systems (LVPS) and retail payment systems (RPS). While LVPSs generally exchange payments of a very large amount, mainly between banks and other participants in the financial markets, RPSs typically handle a large volume of payments of relatively low value such as credit transfers and direct debits. In Belgium, most payments are processed by TARGET2, the large-value payment system connecting Belgian with other European banks, and by the Centre for Exchange and Clearing (CEC), which is the domestic retail payment system processing intra-Belgian domestic payments.

Card payments typically involve a "four-party scheme", i.e. cardholder, card issuer, merchant and acquirer. The card of the person on the purchase side of a transaction (cardholder) with a merchant is issued by an institution (card issuer) which was traditionally always a bank, but can, nowadays, also be a PI or ELMI. The acquirer is in charge of acquiring the transaction on behalf of the merchant (i.e. performing for the merchant all the steps necessary for the buyer's money to be paid into the merchant's account). The role of PIs and ELMIs in the retail payments area is multiple. For instance, in the case of card payment transactions, PIs and ELMIs can issue the payment cards to the user and/or acquire the funds for the payment on behalf of the merchant. The acquiring business has gradually become a market whereby, alongside banks, PIs are playing a growing role. The relevant rules and features according to which card payments – either debit or credit – can take place are defined by card payment schemes. The Belgian domestic (debit) card payment scheme is Bancontact. Mastercard Europe (MCE) is an international (credit) card payment scheme established in Belgium. One processor provides the underlying network and services for virtually all card payments, namely Worldline SA/NV. After processing card payments, transactions are sent to the CEC for clearing and settlement. As well as card payments, PIs have a major role in providing money transfer/remittance services (fund transfers) allowing retail customers to transfer cash from Belgium to a third party in different locations around the world and vice versa.

(1) In this case, a duopoly exists as there are two ICSDs in the EU which act as "issuer CSD" for Eurobonds; i.e. Euroclear Bank established in Belgium and Clearstream Banking Luxembourg.
(1) The term (I)CSD is used to cover both CSDs and ICSDs.

CHART 1 INTERLINKAGES THROUGH & BETWEEN FINANCIAL MARKET INFRASTRUCTURES, CUSTODIANS, PAYMENT SERVICE PROVIDERS AND CRITICAL SERVICE PROVIDERS



Source: NBB.
(1) Individual institutions are listed in Table 1.

CLS Bank, a US-based settlement system for foreign exchange (FX) transactions is linked to the LVPS systems operated by central banks of 18 currencies (including TARGET2 for EUR), making it possible to settle both legs of the FX transaction at the same time. CLS Bank eliminates FX settlement risk when – due to time zone differences – one party wires the currency it sold but does not receive the currency it bought from its counterparty.

Critical service provider

TARGET2-Securities (T2S) and SWIFT are considered critical service providers in this Report. T2S is the common settlement platform for European CSDs. Although SWIFT is neither a payment system nor a settlement system, a large number of systemically important systems depend on it for their daily financial messaging.

1.2 FMIs, custodians, payment service providers and critical service providers subject to oversight and prudential supervision by the Bank

The Bank has responsibilities in both oversight and prudential supervision of FMIs, custodians, PSPs, such as PIs and ELMIs, and critical service providers. Oversight and prudential supervision of FMIs differ in a number of areas, ranging from the object of the function, the authority being responsible, the topics covered, as well as the regulatory framework and tools used. However, both oversight and prudential supervision activities, and the framework they are relying on, evolve over time.

Central banks have always had a close interest in the safety and efficiency of payment, clearing and settlement systems. One of the principal functions of central banks is to be the guardian of public confidence in money, and this confidence depends crucially on the ability of economic agents to transmit money and financial instruments smoothly and securely through payment, clearing and settlement systems. These systems must therefore be strong and reliable, available even when the markets around them are in crisis and never themselves be the source of such crisis. FMI oversight pursues these objectives by monitoring systems, assessing them and, where necessary, inducing change. It is now generally recognised as a core responsibility of central banks.

The Bank's oversight of payment, clearing and settlement infrastructures is based on Article 8 of its organic law [(1)] and focuses on systems established in, or relevant for Belgium. Although SWIFT is neither a payment, clearing or settlement infrastructure, many of such systems use SWIFT which makes the latter a critical service provider of systemic importance. SWIFT is therefore subject to a (cooperative) central bank oversight arrangement.

The Bank is also micro-prudential supervisory authority for individual financial institutions [(2)], including the operators of clearing and settlement systems, such as CCPs and CSDs, as well as custodians and PSPs like PIs and ELMIs. As of November 2014, a substantial part of the Bank's prudential responsibilities for credit institutions were transferred to the ECB under the single supervisory mechanism (SSM) Regulation [(3)]. Significant institutions, such as Bank of New York Mellon SA/NV (BNYM SA/NV), are directly supervised by the SSM. However, less significant institutions remain under the prudential supervision of the Bank as national competent authority.

Some FMIs are subject to both oversight and prudential supervision, typically if an FMI is operated by a bank (as is the case for Euroclear Bank). The oversight activity and prudential supervision are, in such situations, complementary in nature: while the oversight activity focuses on the sound functioning of the settlement system (by assessing compliance with oversight standards such as the 2012 CPMI-IOSCO Principles for FMIs (PFMIs)), the prudential supervision focusses on the financial soundness of the operator (by assessing compliance with banking regulations). As a result, oversight and

(1) Article 8, Law of 22 February 1998 establishing the Organic Statute of the National Bank of Belgium, *Belgian Official Gazette* 28 March 1998, 9.377.

(2) The foundations of the 'twin peaks' model were laid by the Law of 2 July 2010 amending the Law of 2 August 2002 on the supervision of the financial sector and financial services, and the Law of 22 February 1998 establishing the Organic Statute of the National Bank of Belgium, and containing miscellaneous provisions, Belgian Official Gazette, 28 September 2010, 59.140. See in particular Article 26, § 1, of the said Law. The new supervision model was established by the promulgation of the Royal Decree of 3 March 2011 on the evolution of the supervisory architecture of the financial sector, *Belgian Official Gazette* 9 March 2011, 15.623. This Royal Decree entered into force on 1 April 2011.

(3) Regulation (EU) No. 1024/2013 of the Council of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions, *OJ*. 29 October 2013, L. 287, 63–89 (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1024&from=en).

prudential supervision, typically cover different topics. One of the main priorities of oversight relates to the prohibition and containment of any transmission of financial or operational risks through an FMI or critical service provider. Typical areas oversight is focussing on cover the functioning of the system and how its organisation and functioning minimises or avoids risks for itself but – just as importantly – for its participants. Examples thereof include settlement finality rules reducing risks linked to the insolvency of participants (which prevent automatic unwinding of other participants' previous transactions with a bankrupt participant), delivery versus payment or payment versus payment mechanisms eliminating principal risks in transactions between participants, fair and open access for participants, and stringent requirements on business continuity plans ensuring continuity of services for participants. Oversight also takes into account risks related to system interdependencies (either via connected systems or participants) that could provoke contagion risks in financial markets. Prudential supervision intends to ensure that institutions are financially robust at micro-prudential level, thus helping to maintain the trust of the institution's counterparties and, in this way, promoting financial stability. For credit and liquidity risk in particular, oversight looks at intraday credit use and liquidity needs, while banking supervision rules are usually targeting end-of-day positions.

As a consequence of such divergences in scope, oversight and prudential supervision are relying on different frameworks. For oversight, the PFMIs cover payment systems, securities settlement systems, CSDs, CCPs and trade repositories. For the implementation of these principles, further clarity is provided by relevant guidelines such as the CPMI-IOSCO guidance on cyber resilience for FMIs or guidance on resilience and recovery of CCPs. In addition, the CPMI has also published an analytical framework for distributed ledger technology in payment, clearing and settlement. If FMIs have banking status, or for other types of institutions such as custodians, prudential supervision is based on applicable banking legislation (Capital Requirements Directive, Bank Recovery and Resolution Directive, etc.).

The tools to conduct oversight and prudential supervision may differ too. Oversight is generally based on principles and guidelines designed in international fora (Eurosystem, CPMI, CPMI-IOSCO). The traditional approach for enforcing them was to urge FMIs and critical service providers to adhering to them via central bank moral suasion (so-called "soft law" approach). Prudential supervision on the other hand, has laid down its requirements in a formal legal framework enacted through EU Directives, Regulations and local laws ("hard law" approach). Relatively recently, however, central bank oversight has become more formal, owing to the expanding role of the private sector in providing payment and settlement systems, as well as the growing criticality of these systems' proper functioning. In a growing number of cases, oversight is evolving into a hard law approach as illustrated, for example, by the fact that the ECB has laid down its expectations in the ECB Regulation on oversight requirements for systemically important payment systems, or by the 2017 Belgian law on systemically relevant processors of payment transactions. Also, the EU transposed the PFMIs for CCPs and CSDs through a Regulation. EMIR (1) sets out the clearing obligations and requirements for CCPs whereas CSDR (2) introduces prudential requirements for the operation of CSDs, banking-type ancillary services provided by CSDs or designated credit institutions. In both cases, the Bank has been assigned as the competent supervisory authority for Belgian (I)CSDs, and is, as overseer, also considered as relevant authority under CSDR (3).

Apart from (I)CSDs and CCPs, another institution that is subject to both prudential supervision and oversight is Worldline SA/NV, respectively due to its role as acquirer and processor of retail payment instruments. In order to pool expertise and reinforce the synergies between the oversight function and that of prudential supervision, these two functions have been integrated into the same department within the Bank to ensure that its prudential supervision and oversight approach are aligned.

Table 1 below provides an overview of the systems and institutions supervised and/or overseen by the Bank. In addition to the type of services provided, they have been further grouped according to: (i) the type of regulatory role of the Bank (i.e. prudential supervisor, overseer or both) and (ii) the system/institution's international dimension (the Bank as solo authority, international cooperative arrangement with the Bank as lead or in another role). For the systems and institutions established in Belgium which are systemically relevant in other jurisdictions' financial markets or for the

(1) Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, *OJ*. 27 July 2012, L. 201, 1-59.

(2) Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012, *OJ*. 28 August 2014, L. 257, 1-72.

(3) The FSMA is assigned, together with the Bank, as national competent authority for CCPs under EMIR.

TABLE 1 THE BANK'S OVERSIGHT AND PRUDENTIAL SUPERVISION OF FINANCIAL MARKET INFRASTRUCTURES, CUSTODIANS, PAYMENT SERVICE PROVIDERS AND CRITICAL SERVICE PROVIDERS

	International supervisory college / cooperative oversight arrangement		NBB solo authority
	NBB lead authority	NBB takes part, other authority is lead	
Prudential supervision		Custodian Bank of New York Mellon SA (BNYM SA/NV)	Custodian BNYM Brussels branch
			Payment Service Providers (PSPs) Payment Institutions (PIs) *Card acquiring and processing: Alpha Card, Alpha Card Merchant Services, Bank Card Company, B+S Payment Europe, Instele, Rent A Terminal, Worldline SA/NV* *Money Remittance: Africash, Belmoney Transfert, Gold Commodities Forex, HomeSend, MoneyGram International, Money International, MoneyTrans Payment Services, Travelex* *Direct Debit: EPBF* *Hybrid: BMCE EuroServices, Cofidis, eDebex, FX4BIZ, Oonex, PAY-NXT, Santander CF Benelux* Electronic Money Institutions (ELMIs) *Buy Way Personal Finance, Fimaser, HPME, Imagor, Ingenico Financial Solutions, Ingenico Payment Services, Loyaltek Payment Systems, RES Credit*
Prudential supervision & Oversight	CSD Euroclear Belgium (ESES) ICSD Euroclear Bank SA/NV	CCPs LCH.Clearnet Ltd (UK), ICE Clear Europe (UK) LCH.Clearnet SA (FR), Eurex Clearing AG (DE), EuroCCP (NL), Keler CCP (HU), CC&G (IT)	
	Assimilated settlement institution Euroclear SA/NV (ESA)		Processor for retail payment instruments Worldline SA/NV
Oversight	Critical service provider SWIFT	Critical service provider TARGET2-Securities (T2S) [1]	CSD NBB-SSS
		Payment systems TARGET2 (T2) [1] CLS Bank	Card payment schemes Bancontact [1] MasterCard Europe [1]
			Payment system Centre for Exchange and Clearing (CEC) [1]

Post-trade infrastructures	Securities clearing	Payments	Payment systems
	Securities settlement		Payment institutions & electronic money institutions
	Custody		Processor for retail payment instruments
Critical service providers	TARGET2-Securities		Card payment schemes
	SWIFT		

Source: NBB.
(1) Peer review in Eurosystem/ESCB.

financial industry as a whole, the Bank has established cooperative arrangements with other authorities [1]. This may involve multilateral cooperative arrangements, in which the Bank acts as lead overseer (Euroclear, SWIFT). The Bank also takes part in a number of international cooperative arrangements (CCPs, BNYM SA/NV, TARGET2, TARGET2-Securities and CLS Bank) in which another national authority acts as lead overseer/supervisor. Domestically, the Bank cooperates with the FSMA which has responsibilities in the supervision of financial markets with regard to conduct of business rules. Annex 2 illustrates the organisation structure of FMIs with an international dimension established in Belgium.

(1) In line with CPMI-IOSCO Responsibility E (cooperation between authorities). The Bank intends – through this report – to inform other authorities with whom the Bank does not have a formal cooperation but that may be interested in understanding the applicable framework, the regulatory approach and the main supervisory priorities.