

Annexes

Annex 1 : Regulatory framework

<p>FMI</p>	<p>CPMI-IOSCO Principles for Financial Market Infrastructures (PFMIs) (April 2012): International standards for payment systems (PS), central securities depositories (CSDs), securities settlement systems (SSSs) and central counterparties (CCPs). They also incorporate additional guidance for over-the-counter (OTC) derivatives CCPs and trade repositories (TRs). (http://www.bis.org/cpmi/publ/d101a.pdf)</p> <p>CPMI-IOSCO Principles for Financial Market Infrastructures, Disclosure framework and assessment methodology (December 2012): Framework prescribing the form and content of the disclosures expected of FMIs, while the assessment methodology provides guidance to assessors for evaluating observance of the principles and responsibilities set forth in the PFMI. (http://www.bis.org/cpmi/publ/d106.pdf)</p> <p>CPMI-IOSCO Recovery of financial market infrastructures (October 2014): Guidance for FMIs and authorities on the development of comprehensive and effective recovery plans. (http://www.bis.org/cpmi/publ/d121.pdf)</p> <p>CPMI-IOSCO Guidance on cyber resilience for financial market infrastructures (June 2016): Requires FMIs to instil a culture of cyber risk awareness and to demonstrate ongoing re-evaluation and improvement of their cyber resilience posture at every level within the organisation. (http://www.bis.org/cpmi/publ/d146.pdf)</p>
<p>CCPs</p>	<p>European Market Infrastructure Regulation (EMIR): Regulation (EU) No 648/2012 of 4 July 2012 on OTC derivatives, CCPs and TRs: EMIR sets a clearing obligation for standardised OTC derivatives and strict CCP risk management requirements, and requires the recognition and ongoing supervision of CCPs. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R0648&from=EN)</p> <p>CPMI-IOSCO Public quantitative disclosure standards for CCPs (February 2015): Public quantitative disclosure standards that CCPs are expected to meet. These standards complement the Disclosure framework published by CPMI-IOSCO in December 2012. (http://www.bis.org/cpmi/publ/d125.pdf)</p> <p>EMIR Regulatory Technical Standards (August 2015): Regulation (EU) 2015/2205 of 6 August 2015 supplementing Regulation (EU) No 648/2012 with regard to regulatory technical standards on the clearing obligation. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R2205&from=EN)</p>

CCPs	<p>CPMI-IOSCO Resilience of CCPs: Further guidance on the PFMI (July 2017): Guidance providing further clarity and granularity on several key aspects of the PFMI to further improve CCP resilience. (https://www.bis.org/cpmi/publ/d163.pdf)</p>
CSDs	<p>CSD Regulation (CSDR): Regulation (EU) No 909/2014 of 23 July 2014 on improving securities settlement in the EU and on CSDs and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012: Prudential requirements on the operation of (I)CSDs, as well as specific prudential requirements for (I)CSDs and designated credit institutions offering banking-type ancillary services. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0909&from=en)</p> <p>Regulation (EU) 2017/389 of 11 November 2016 supplementing Regulation (EU) No 909/2014 as regards the parameters for the calculation of cash penalties for settlement fails and the operations of CSDs in host Member States. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0389&from=EN)</p> <p>Regulation (EU) 2017/390 of 11 November 2016 supplementing Regulation (EU) No 909/2014 with regard to regulatory technical standards on certain prudential requirements for CSDs and designated credit institutions offering banking-type ancillary services. (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0390&from=EN)</p> <p>Regulation (EU) 2017/392 of 11 November 2016 supplementing Regulation (EU) No 909/2014 with regard to regulatory technical standards on authorisation, supervisory and operational requirements for CSDs. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0392&from=EN)</p>
Custodians	<p>Regulation (EU) 2017/391 of 11 November 2016 supplementing Regulation (EU) No 909/2014 with regard to regulatory technical standards further specifying the content of the reporting on internalised settlements: Reporting obligation for settlement internalisers when settlement instructions are executed in their own books, outside securities settlement systems. (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0391&from=EN)</p> <p>Belgian law of 31 July 2017: Law introducing a new category of credit institutions with activities exclusively in the area of custody, bookkeeping and settlement services in financial instruments, as well as non-banking services relating thereto, in addition to receiving deposits or other repayable funds from the public and granting credit for own account where such activities are ancillary or linked to the above-mentioned services. (http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&cn=2017073111&table_name=wet/language=fr&la=F&cn=2017073111&table_name=loi)</p> <p>ESMA Guidelines on Internalised Settlement Reporting under Article 9 of CSDR (March 2018) (https://www.esma.europa.eu/press-news/esma-news/esma-finalises-guidelines-how-report-internalised-settlement)</p>
Payment Systems	<p>ECB Regulation (EU) No 795/2014 on oversight requirements for systemically important payment systems (July 2014): Regulation, based on the CPMI-IOSCO PFMI, covering systemically important payment systems in the eurozone, large-value and retail payment systems. (https://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2014_217_r_0006_en_txt.pdf)</p>

Payment Systems	<p>Revised oversight framework for retail payment systems (RPS) (February 2016): Revised framework (replacing the one from 2003) identifying RPS categories and clarifying the oversight standards applicable to each category. It also provides guidance on the organisation of oversight activities for systems of relevance to more than one central bank. (https://www.ecb.europa.eu/pub/pdf/other/revisedoversightframeworkretailpaymentsystems201602.en.pdf?bc332d9a718f5336b68bb904a68d29b0)</p>
PIs & ELMIs	<p>EMD2 (September 2009): Directive 2009/110/EC of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of ELMIs amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC, <i>OJ</i>. 10 October 2009, L. 267, 7-17. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0110&from=EN)</p>
	<p>PSD2 (November 2015): Directive (EU) 2015/2366 of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC. (http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2366)</p>
	<p>Belgian Law of 11 March 2018 transposing the PSD2, <i>Belgian Official Gazette</i> 26 March 2018. (http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&cn=2018031107&table_name=wet / language=fr&la=F&cn=2018031107&table_name=loi)</p>
Payment Processors	<p>Belgian Law of 24 March 2017 on supervision of payment transactions processors, <i>Belgian Official Gazette</i> 24 April 2017. (https://www.nbb.be/doc/cp/moniteur/2017/20170424_opp_wet_loi.pdf)</p>
Card Payment Schemes	<p>Eurosystem Oversight Framework for Card Payment Schemes (CPSs) – Standards (January 2008): Common oversight policy to promote the reliability of CPSs operating in the euro area, public confidence in card payments and a level playing field across the euro area in a unified market. (https://www.ecb.europa.eu/pub/pdf/other/oversightfwcardpayments200801en.pdf)</p>
	<p>Guide for the assessment of CPS against the oversight standards (February 2015): Assessment guide based on the Eurosystem Oversight Framework for CPSs targeting both governance authorities responsible for ensuring compliance and overseers of CPSs It has been updated by taking into account the January 2013 “Recommendations for the security of internet payments”, as well as the February 2014 “Assessment guide for the security of internet payments”. (https://www.ecb.europa.eu/pub/pdf/other/guideassessmentcpsagainstoversightstandards201502.en.pdf?499089f7f3aab273925ef6d80767b4a5)</p>
	<p>Regulation (EU) 2015/751 of 29 April 2015 on interchange fees for card-based payment transactions (<i>OJ</i>. 19 May 2015, L. 123, 1-15): This regulation contains (i) the definition of a cap for the interchange fees applicable to payment transactions by means of debit or credit cards, (ii) the separation to be put in place between payment card scheme governance activities and processing activities, (iii) measures granting more autonomy to merchants regarding the choice of payment instruments for their clients. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0751&from=EN)</p>
	<p>Belgian law of 1 December 2016 transposing the EU Regulation 2015/751 of 29 April 2015, entitled “Interchange fees for card based payment transactions” (December 2016): <i>Belgian Official Gazette</i> 15 December 2016, 86.578. (http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&cn=2016120112&table_name=wet / language=fr&la=F&cn=2016120112&table_name=loi)</p>

<p>Card Payment Schemes</p>	<p>Regulation (EU) 2018/72 of 4 October 2017 supplementing Regulation (EU) 2015/751 on interchange fees for card-based payment transactions with regard to regulatory technical standards establishing the requirements to be complied with by payment card schemes and processing entities to ensure the application of independence requirements in terms of accounting, organisation and decision-making process, <i>OJ</i>. 18 January 2018, L. 13/1-7. (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0072&rid=3)</p>
<p>SWIFT</p>	<p>High level expectations (HLE) for the oversight of SWIFT (June 2007): The SWIFT Cooperative Oversight Group developed a specific set of principles that apply to SWIFT. (https://www.nbb.be/en/financial-oversight/oversight/critical-service-providers#oversight-of-swift-)</p>
	<p>PFMIs, Annex F: Oversight expectations applicable to critical service providers (April 2012): Expectations for an FMI's critical service providers in order to support the FMI's overall safety and efficiency. (http://www.bis.org/cpmi/publ/d101a.pdf)</p>
	<p>Assessment methodology for the oversight expectations applicable to critical service providers (December 2014): Assessment methodology and guidance for regulators, supervisors and overseers in assessing an FMI's critical service providers against the oversight expectations in Annex F. (http://www.bis.org/cpmi/publ/d123.pdf)</p>

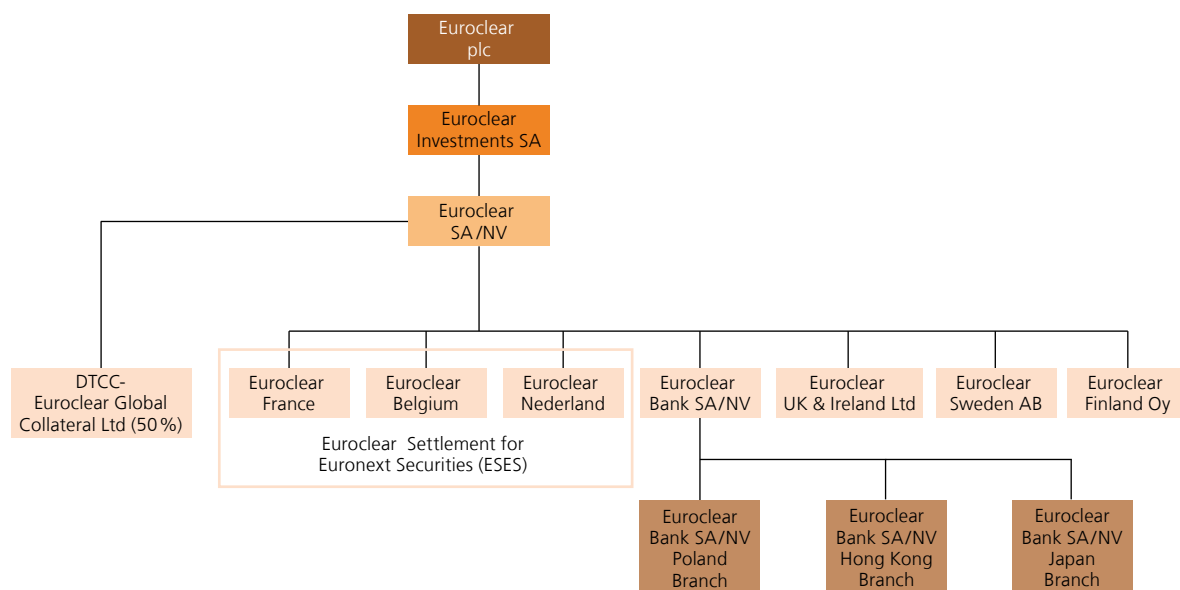
Annex 2 : FMIs established in Belgium with an international dimension

Euroclear

Euroclear SA/NV (ESA), a Belgian financial holding company, is the parent company of the Euroclear Group (I)CSDs: i.e. the CSDs in Belgium, Finland, France, the Netherlands, Sweden, UK & Ireland, and of the ICSD Euroclear Bank. The latter has branches in Poland, Hong Kong and Japan. Euroclear Group (I)CSDs have outsourced the IT production and development to ESA. ESA also delivers common services, such as risk management, internal audit, and legal and human resources services to the Group (I)CSDs. The issued share capital of Euroclear plc, the ultimate holding company of the Euroclear Group, is held mainly by user-shareholders. Euroclear Belgium, Euroclear France and Euroclear Nederland are operating a common settlement platform: i.e. the Euroclear Settlement of Euronext-zone Securities system (ESES). Apart from being owned by the users of its services, the Euroclear Group is also governed

EUROCLEAR GROUP CORPORATE STRUCTURE

(simplified diagram)



Source : NBB.

by its users via their representation on the (Euroclear plc and ESA) Boards. Being user-owned and user-governed, the interests of the user community are represented in the decision-making process of the Euroclear Group. Users can also influence the Euroclear Group's decision-making bodies through the Market Advisory Committees established for each market where an entity of the Euroclear Group acts as CSD, as well as the ESES and Cross-Border Market Advisory Committees. They act as a primary source of feedback and interaction between the user community and Euroclear management on significant matters affecting their respective markets. The Euroclear Group believes this governance structure allows to meet the needs of its participants and markets it serves, taking into account the competitive environment in which it operates.

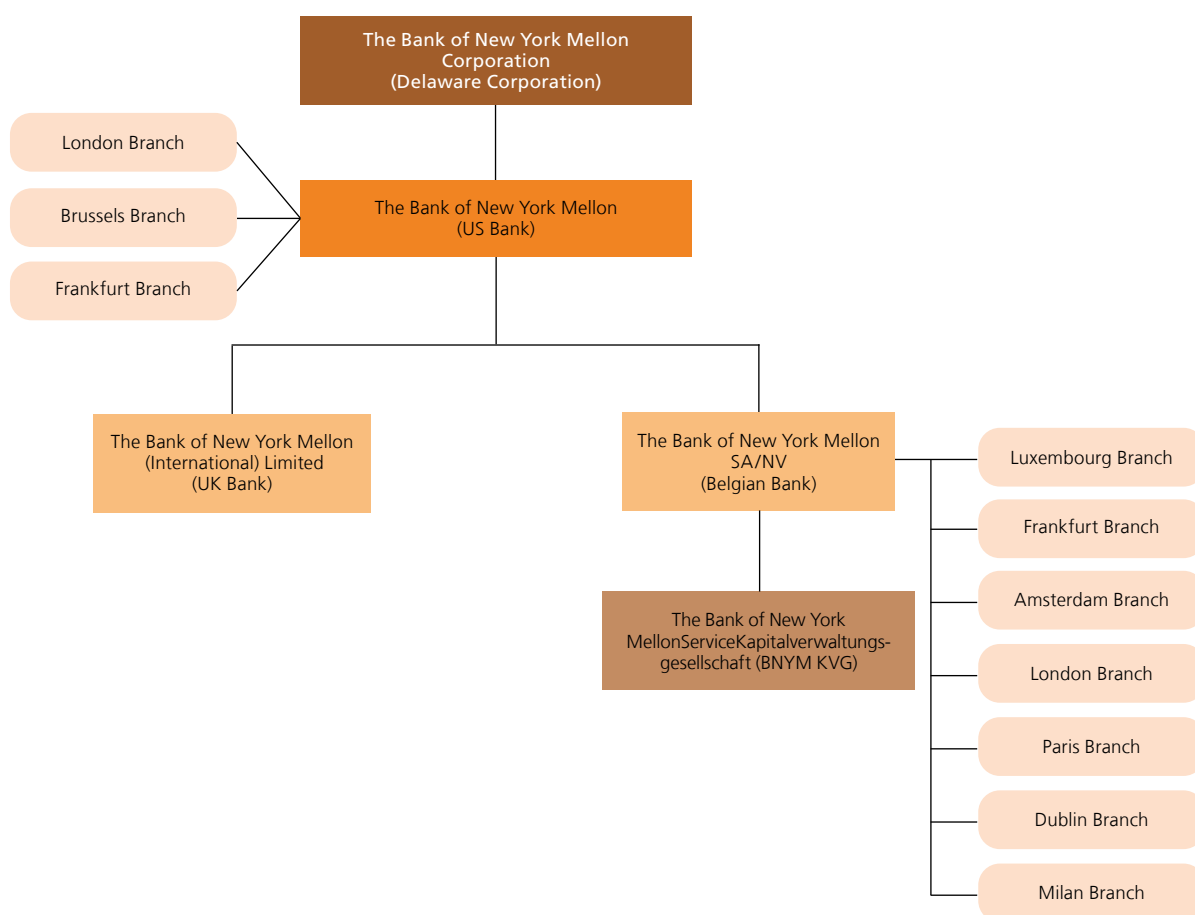
In September 2014, ESA and the US Depository Trust & Clearing Corporation (DTCC) set up the DTCC-Euroclear Global Collateral Ltd. joint venture. The ultimate aim of this entity is to create a joint collateral processing service whereby mutual clients of DTCC and Euroclear Bank manage collateral held at both depositories as a single pool, to meet obligations in both the European and the North American time zone.

Bank of New York Mellon

The Bank of New York Mellon SA/NV (BNYM SA/NV), established in Belgium, is the European subsidiary of BNY Mellon, a US based global systemic bank, which in turn is a subsidiary of the US holding company BNY Mellon Corporation. BNYM SA/NV is the global custodian of the group (i.e. providing investment services on 100+ markets outside the US) and its European gateway to the euro area markets and payment infrastructures. BNYM SA/NV has a non-bank subsidiary in Germany and branches in Luxembourg, Germany, the Netherlands, the UK, France and Ireland and Italy, through which it operates in the local markets. This is the result of the BNYM Group's strategy to consolidate its legal entity structure into the so-called "Three Bank Model" (i.e. US/UK/EU). The BNYM group is also present in Belgium through a branch of the US parent company.

BNYM GROUP STRUCTURE AND BNYM SA/NV POSITION

(simplified diagram)



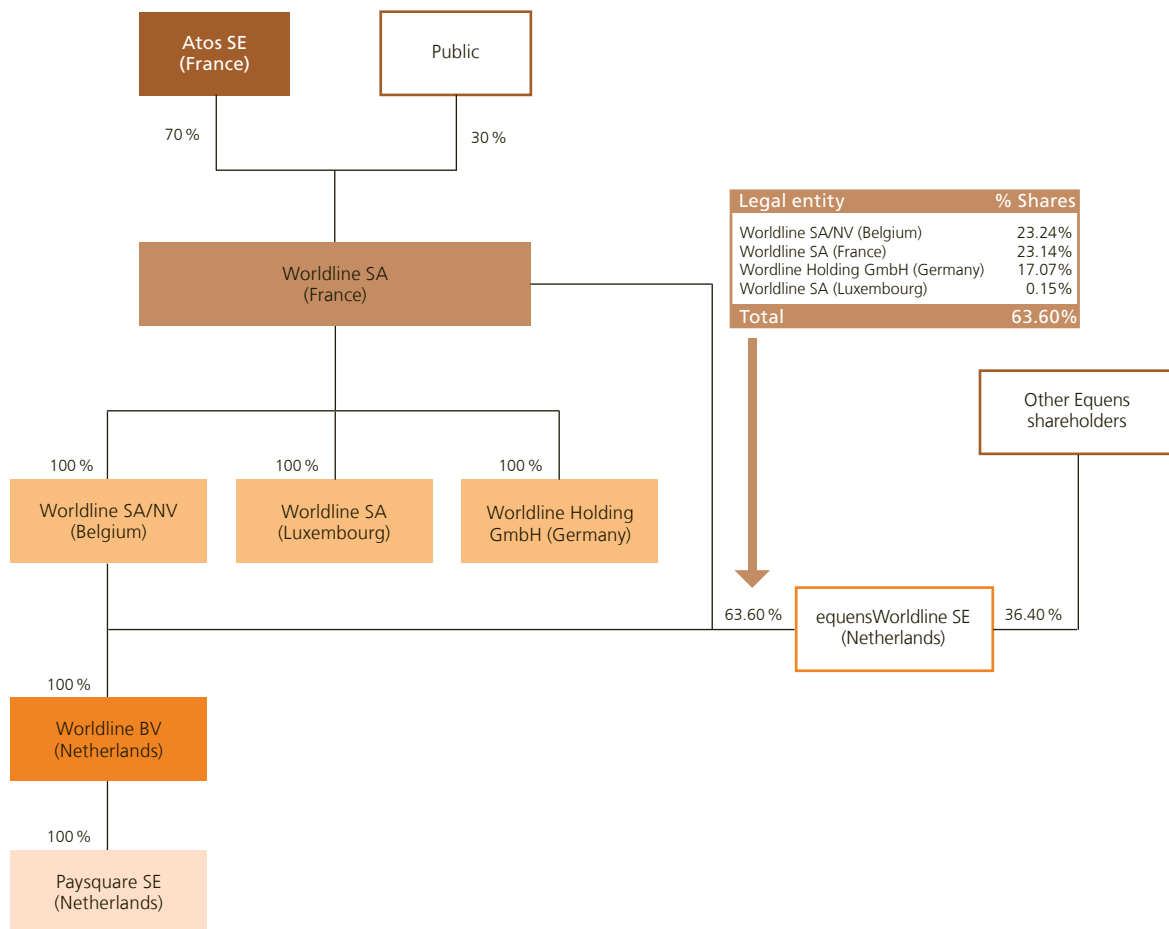
Source : NBB.

Worldline

Worldline, a division of the European IT services corporation Atos, provides electronic payment and transactional services in about 29 countries. It is one of the European leaders in that domain. Worldline SA is listed on Euronext Paris. In 2016, Worldline SA/NV, the Belgian entity of the group merged with the Dutch company Equens. The processing activities were carved out in a new entity called equensWorldline SE. equensWorldline SE is a partial subsidiary of several Worldline entities (Belgium, Luxembourg, France and Germany) with its historic shareholders now as minority shareholders.

STRUCTURE OF WORLDLINE, A DIVISION OF THE ATOS GROUP

(simplified diagram, part of the group relevant for Belgium)



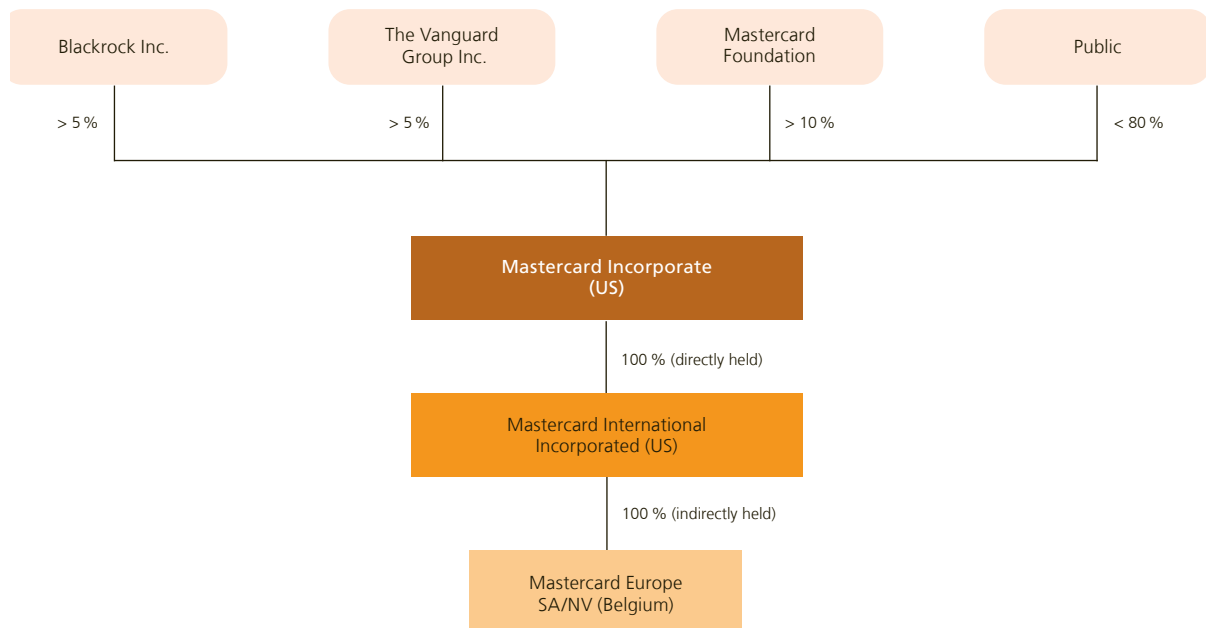
Source: NBB.

Mastercard Europe

Mastercard is a payment services company with a global reach. Mastercard Europe SA/NV (MCE) incorporated in Belgium, a subsidiary of Mastercard Incorporated (US, listed on the New York Stock Exchange), runs the company's business in the European region.

MASTERCARD GROUP STRUCTURE

(simplified diagram)



Source: NBB.

Annex 3 : Statistics

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TABLE 1 SECURITIES CLEARING, SETTLEMENT AND CUSTODY
(notional value cleared, yearly total in € trillion equivalent)

	2013	2014	2015	2016	2017
A. Central Counterparties (CCPs) (selected)					
LCH.Clearnet Ltd (UK)					
Swapclear (including Interest Rate Swaps, Forward Rate Agreements)	362	503	489	626	807
RepoClear (repos)	40	41	40	37	44
LCH.Clearnet SA (FR)					
Credit Default Swaps (CDSClear)	0.2	0.1	0.2	0.4	0.6
RepoClear (repos)	35	33	33	34	48
Eurex Clearing AG (DE)					
Interest Rate Swaps	0.0	0.1	0.2	0.9	1.4
Repos	97	102	89	65	48

Sources: CCP websites, NBB calculations.

TABLE 1 SECURITIES CLEARING, SETTLEMENT AND CUSTODY (continued)
(yearly total in € billion equivalent, unless otherwise stated)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
B. Euroclear Bank										
Value of securities deposits (end of period)	9 135.9	9 832.2	10 453.8	10 766.3	10 837.2	10 834.2	11 765.3	12 393.7	12 698.4	12 834.2
Number of transactions (in millions)	42.0	39.3	47.7	59.4	64.2	69.5	75.2	83.3	84.1	95.4
Value of transactions	282 484.9	219 904.5	265 819.6	328 475.9	307 109.8	336 784.6	394 569.3	442 563.0	451 698.3	498 181.0
Source: Euroclear.										
C. NBB-S5S										
Value of securities deposits (end of period)	408.3	469.3	494.0	513.3	531.2	541.7	557.3	575.4	612.5	625.3
Number of transactions (in millions)	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.5	0.5	0.5
Value of transactions ⁽¹⁾	8 299.9	7 408.1	9 049.6	14 133.9	10 250.1	8 428.0	8 209.0	8 766.5	8 714.3	9 069.8
Source: NBB.										
(1) Secondary market turnover.										
D. Euroclear Belgium										
Value of securities deposits (end of period)	161.4	139.9	162.0	130.4	156.8	202.7	222.1	269.4	235.1	237.7
Number of transactions (in millions)	2.2	1.9	1.8	1.9	1.9	1.9	2.1	2.5	2.4	2.5
Value of transactions	335.0	398.5	497.7	588.0	563.6	799.8	714.8	944.6	963.8	946.0
Source: Euroclear.										
E. TARGET2-Securities										
Number of transactions (in millions)	nap ⁽²⁾	nap	nap	nap	nap	nap	nap	7.6	36.3	125.6
Value of transactions	nap	nap	nap	nap	nap	nap	nap	43 706.8	112 066.0	192 175.0
Source: ECB.										
(2) T2S was launched in 2015.										
F. BNYM SA/INV										
Value of assets held under custody (end of period)	nap ⁽³⁾	2 480.8	2 928.9	2 667.8	2 861.9	2 905.2	3 454.0	3 216.4	3 476.5	3 608.8
Source: BNYM.										
(3) BNYM SA/INV was established in 2009.										

TABLE 2**PAYMENTS**

(yearly total in € billion equivalent, unless otherwise stated)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
A. TARGET2										
Value of payments	611 134.5	536 027.1	631 440.0	651 274.9	711 025.8	559 696.0	498 726.5	508 982.3	485 811.8	432 780.7
of which: TARGET2-BE	27 123.0	20 835.2	20 199.7	22 163.2	18 712.6	16 177.3	16 247.9	15 627.4	16 957.9	19 732.4
Number of payments (in millions)	89.0	87.8	87.2	89.0	89.6	91.3	87.8	88.6	89.0	89.3
of which: TARGET2-BE	2.7	2.1	2.4	2.6	2.5	2.3	2.5	2.3	2.2	2.3
Source: ECB Payment Statistics. Last year's figures from https://www.ecb.europa.eu/stats/payment_statistics/large_value_payment_systems/html/index.en.html .										
B. CLS Bank										
Value of payments	700 382.6	607 499.9	781 426.9	893 590.4	878 469.0	897 145.6	1 042 062.3	1 118 933.9	1 162 359.8	1 193 728.3
of which: EUR payments	145 636.6	131 665.9	161 791.1	182 482.0	185 881.3	182 305.8	191 170.5	208 555.8	204 370.7	219 924.6
Number of payments (in millions)	136.4	150.1	198.1	206.9	176.6	205.0	204.7	219.1	209.5	198.5
of which: EUR payments	28.1	31.8	42.2	45.5	37.4	36.9	34.4	40.9	34.3	34.0
Sources: ECB Payment Statistics, CLS.										
C. Centre for Exchange and Clearing (CEC)										
Value of payments	803.0	804.9	846.9	886.7	909.1	911.6	870.7	883.4	920.6	941.8
Number of payments (in millions)	1 063.4	1 122.9	1 170.2	1 224.9	1 295.1	1 365.6	1 272.2	1 402.2	1 387.1	1 312.0
Sources: ECB Payment Statistics, NBB.										

TABLE 2 PAYMENTS (continued 1)

(end of period, in cumulative number, unless otherwise stated)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
D. Payment Institutions (Pis) – Electronic Money Institutions (ELMIs)										
Pis										
Belgian Pis	0	0	1	9	9	11	15	17	21	24
Foreign Pis with Belgian branch	0	0	0	0	2	2	3	3	3	2
Passport notifications for cross-border services										
Belgian Pis towards other EEA countries	0	22	47	104	133	184	262	273	379	421
Foreign EEA Pis towards Belgium	0	0	11	19	19	26	41	65	162	218
ELMIs										
Belgian ELMIs	3	4	6	6	6	10	10	10	8	8
Foreign ELMIs with Belgian branch	0	0	0	0	0	0	1	1	1	1
Passport notifications for cross-border services										
Belgian ELMIs towards other EEA countries ...	2	12	15	18	19	43	45	69	70	72
Foreign EEA ELMIs towards Belgium	4	7	8	14	28	40	54	53	102	156
Source: NBB.										
E. Payment processors										
Worldline SA/NV										
Number of transactions (yearly total, in millions)	1 175.8	1 230.1	1 295.5	1 387.6	1 473.7	1 553.9	1 665.8	1 790.0	1 964.6	2 149.6
Source: Worldline.										

TABLE 2 PAYMENTS (continued 2)

	2011	2012	2013	2014	2015	2016	2017
F. Card transactions							
Number of cards issued by resident payment service providers – Cards with a cash function							
Number of cards (in thousands of numbers, end of period)	20 005.19	20 647.08	20 041.34	21 396.54	21 870.76	22 593.13	nav
Number of cards per capita (end of period)	1.82	1.87	1.80	1.92	1.95	2.00	nav
POS transactions at terminals provided by resident PSPs							
Number of payment transactions per card – With cards issued by resident PSPs (yearly total)	52.41	54.2	60.2	58.4	61.8	67.4	nav
Value of payment transactions per card – With cards issued by resident PSPs (yearly total, in €)	2 752.94	2 838.92	3 091.49	2 906.16	2 948.40	3 094.6	nav
Transactions per capita							
Number of card payments – With cards issued by resident PSPs ⁽¹⁾ (yearly total)	105.15	111.0	120.0	135.2	138.9	151.0	nav
Value of card payments – With cards issued by resident PSPs ⁽¹⁾ (yearly total, in € thousands)	5.77	6.1	6.4	6.6	6.9	7.1	nav
Source: ECB Payment Statistics. (1) Except cards with an e-money function only.							
G. Card schemes							
Bancontact – Number of transactions (yearly total, in millions)							
of which:	1 076.4	1 136.4	1 180.4	1 241.8	1 306.7	1 389.5	1 441.6
Retail payments	973.4	1 028.9	1 068.4	1 125.9	1 190.9	1 272.8	1 325.2
ATM	103.0	107.5	111.9	115.9	115.9	116.8	116.3
Source: Bancontact.							

TABLE 3**SWIFT**

(yearly total, in millions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of messages	3 854.6	3 760.3	4 031.9	4 433.9	4 589.1	5 065.7	5 612.7	6 106.6	6 525.8	7 076.5
of which:										
Payment messages	1 978.6	1 933.9	2 041.4	2 157.5	2 314.4	2 524.5	2 737.2	2 930.2	3 139.3	3 485.2
Securities messages	1 604.3	1 583.5	1 723.2	1 945.9	1 975.3	2 215.6	2 545.2	2 829.1	3 019.1	3 232.3
Other messages	271.7	242.9	267.3	330.5	299.4	325.6	330.3	347.3	367.3	359.0

Source: SWIFT.