



EUROPEAN CSD INDUSTRY FACTBOOK

2018-2019 UPDATE

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Introduction

This document provides an overview of trends of the evolution of the CSD industry over the years 2018 and 2019. It is a *European CSD Industry Factbook*. In the upcoming weeks, it will be complemented by a Global CSD industry factbook, the publication of which is currently in the making by the five regional CSDs associations forming the World Forum of CSDs.

The World Forum of CSDs has launched the collection of data from the global CSD community, starting with the data for 2017. For this year, European Central Securities Depositories Association (ECSDA) has collaborated with the CSD community in other regions to produce the joint overview of the trends and produce individual data factsheets, including for ECSDA Members.

This time, our report covers two years to align with the recently conducted exercise of the global community. The individual factsheets of the European CSDs will be included in the Global factbook.

Ahead of the publication of the Global document, we would like to make available: (i) the collected data for individual European CSDs and the figures for the European industry for 2018-2019, as well as (ii) the analysis of the trends of evolution and the overview of the activities and regulatory framework of the European CSD community during these years. Point (i) related to the data, can be found already published on the [ECSDA website here](#). Point (ii), the analysis of the trends and overview of CSD activities framework is provided in this Document, the European CSD Industry Factbook for 2018-2019.

The Factbook provides for an overview of the Central Securities Depository (CSD) landscape in Europe. The analysis is based on the data received by the ECSDA from its Members and briefly details the different aspects of CSD activities and ECSDA focus. These include:

- I. Legal framework;
- II. Corporate governance;
- III. CSD Participants;
- IV. CSD services; and
- V. CSD securities transactions.

For the purpose of this report, and in line with the legislation, the term ‘CSD’ covers both national and international central securities depositories (ICSDs), unless otherwise specified. CSDs are mostly referred by their short names (See Table 1). It includes all effective ECSDA Members on 31 December 2019.

Table 1. List of ECSDA Members in 2019

For ease of reading, individual CSDs are described with an acronym or short name, as follows:

	Country of est.	Market	Short Name	Full Name
1	AT	Austria	OeKB CSD	OeKB CSD GmbH
2	BA	Bosnia-Herzegovina	CR HoV RS	Central Registry of Securities JSC Banja Luka
3	BA	Bosnia-Herzegovina	RVP	Registry of Securities of the Federation of Bosnia and Herzegovina
4	BE	Belgium	EB	Euroclear Bank
5	BE	Belgium	EBE	Euroclear Belgium
6	BG	Bulgaria	CDAD	Central Depository AD

7	CH	Switzerland	SIX SIS	SIX SIS Ltd
8	CY	Cyprus	CSE	Cyprus Stock Exchange
9	CZ	Czech Republic	CSD Prague	Central Securities Depository Prague
10	DE	Germany	CBF	Clearstream Banking AG
11	DK	Denmark	VP	VP Securities
12	ES	Spain	Iberclear	Iberclear
13	FI	Finland	EFI	Euroclear Finland
14	FR	France	EF	Euroclear France
15	FR	France	ID2S	ID2S
16	GR	Greece	ATHEXCSD	Hellenic Central Securities Depository SA
17	HR	Croatia	SKDD	Central Depository & Clearing Company Inc.
18	HU	Hungary	KELER	KELER Ltd.
19	IS	Iceland ¹	NCSDI	Nasdaq CSD Iceland
20	IT	Italy	Monte Titoli	Monte Titoli S.p.A.
21	KZ	Kazakhstan	AIX CSD	Astana International Exchange
22	LU	Luxembourg	CBL	Clearstream Banking Luxembourg
23	LU	Luxembourg	LuxCSD	LuxCSD SA
24	LV/EE/LT/IS	Latvia/Estonia/ Lithuania/Iceland ¹	Nasdaq CSD SE	Nasdaq Central Securities Depository
25	ME	Montenegro	CSD&CC - Montenegro	Central Securities Depository and Clearing Company of Montenegro (CSD&CC - Montenegro)
26	MK	North Macedonia	CSD AD Skopje	Central Securities Depository AD Skopje
27	MT	Malta	MSE	Malta Stock Exchange
28	NL	The Netherlands	ENL	Euroclear Nederland
29	NO	Norway	VPS	The Norwegian Central Securities Depository
30	PL	Poland	KDPW	The Central Securities Depository of Poland
31	PT	Portugal	Interbolsa	Interbolsa
32	RO	Romania	DC	Depozitarul Central
33	RS	Serbia	CR HoV	Central Securities Depository and Clearing House
34	RU	Russia	NSD	National Settlement Depository
35	SE	Sweden	ESE	Euroclear Sweden
36	SI	Slovenia	KDD	Central Securities Clearing Corporation
37	SK	Slovakia	CDCP SR	Central Securities Depository of the Slovak Republic
38	TR	Turkey	MKK	Central Securities Depository of Turkey
39	UA	Ukraine	NDU	National Depository of Ukraine
40	UK	United Kingdom	EUI	Euroclear UK & Ireland

¹ Nasdaq CSD Iceland was incorporated into Nasdaq CSD SE as from May 2020. Therefore, it was not yet effective during the year of reference of the Factbook. Although, due to this change some figures for this CSD may not be available in the report.

Key figures of the industry in 2018-2019

Between January of 2018 and December 2019, the European CSD industry has evidenced the following volumes in the key parameters for the industry:

- As of 31 December 2019, Members held securities valued at EUR 62.5 Trillion, which is 5.9% increase in comparison with 2018. In 2018, the decrease was of 1.4%.
- In 2019, the CSD industry delivered 23.4% more securities instructions than during 2018. In total, the deliveries of securities represent an impressive amount of EUR 1.61 Quadrillion.
- The EU CSDs only delivered instructions representing EUR 1.463 Quadrillion in 2019.

I. Legal Framework

Countries Covered in the Report

This report provides an overview of the CSD industry as it stood on 31 December 2019. At that moment, ECSDA had 40 Members, headquartered in 36 countries across geographical Europe.

Belgium and Czech Republic are the European States having the highest number of CSDs.

These countries house the highest number of CSDs, totalling at three in each of them. Amongst, European countries, Bosnia-Herzegovina, Bulgaria, France, Greece, Iceland, Luxembourg, Poland, Romania and Slovakia have two CSDs, as opposed to the average of having a single CSD per country. For historical reasons, some CSDs in these countries service different types of assets. In some cases, the second CSD in the country may not be an ECSDA member yet. Later, in this report, we will focus on the ECSDA Members data only.

Providing core CSD services from another jurisdiction is becoming more frequent.

In 2019, all countries in the European Union had a CSD headquartered on their territory, except for Ireland, Lithuania and Estonia. Core CSD activities for these jurisdictions are provided by CSDs operating from other locations. Euroclear UK and Ireland, which is headquartered in London, offered CSD services for Irish as well as UK securities².

In 2017, Nasdaq CSD SE was established through a merger of the Estonian, Latvian and Lithuanian CSDs. During 2019, the CSD has pursued its work in leveraging its legal framework and

² As from March 2021, the services for Irish corporate securities will no longer be offered by Euroclear UK and Ireland, but by Euroclear Bank. More information on the migration of these securities can be found on [the Euroclear group website](#).

operational platform for other markets and started working on the migration of the Icelandic CSD, NSDI, services³.

In 2019, ECSDA welcomed the accession of one new Member, headquartered in Kazakhstan, the recently established AIX CSD⁴. Kazakhstan is partly located in Europe. ECSDA Articles of Association allow for accepting European and non-European Members as Associate members, which was the case for this new ECSDA Member, qualifying positively based on all ECSDA Membership criteria.

Regulatory Environment

CSDs are highly regulated institutions across the globe. Their regulatory framework is provided at the global and either European or national levels.

At the global level, all European CSDs are subject to the Principles for Financial Market Infrastructures (PFMIs) covering all aspects of CSD activities such as the (i) legal framework, (ii) governance, (iv) risk management and (v) efficiency. These are international oversight standards elaborated by the Committee on Payment and Market Infrastructures (CPMI) and the technical committee of the International Organization of Securities Commissions (IOSCO), represent central banks and securities regulators respectively.

In Europe, the regulatory framework of CSDs is incorporated in the broader national securities laws, or (a) dedicated to CSDs legal act(s).

As of 2019, amongst ECSDA members, 30 CSDs were established in the European Economic Area (EEA). These CSDs are, therefore, subject to the European legislation, including most notably, Regulation (EU) 909/2014 on central securities depositories and securities settlement (CSDR). Seven Members (the Austrian OeKB CSD, the Belgian Euroclear Bank, the Hungarian KELER, the German CBF, the Luxembourg CBL, the Russian NSD, the Swiss SIX SIS) operate with a banking license and, therefore, are also subject to the relevant banking laws and, where relevant, CSDR articles on providing banking services.

By the end of 2019, 19 CSDs have been authorised to provide services in EEA under CSDR.

All EEA CSDs are designated Securities Settlement Systems (SSSs) under the European Settlement Finality and Financial Collateral Directives Revised EU Directive 98/26/EC (SFD). This EU Directive helps to reduce counterparty risk in transactions and guarantees that transfer orders and collateral movements that enter into such systems are effectively settled with finality and are irrevocable. This must occur regardless of whether the sending participant has become insolvent or the transfer orders have been requested by a counterparty would be revoked in the meantime.

³ The migration was concluded in May 2020. As from that moment, Nasdaq CSD SE serves Estonian, Latvian, Lithuanian and Icelandic securities. Due to this merger, the information reported for Iceland will therefore only be included when specifically mentioned.

⁴ ECSDA Articles of Association allow for a CSD to become an ECSDA full member, a.o. if it is based in a country from the European continent. A non-European CSD, under certain conditions, may become an ECSDA Associate Member.

Most CSDs established in a euro area country are also Eligible securities settlement systems under the Eurosystem assessment framework. Although the term ‘Securities Settlement System’ is the same, the Eurosystem designation is made for different purposes. This designation means that the CSD can be used by their participants for mobilising collateral to secure central bank credit in the context of Eurosystem monetary policy operations. Therefore, CSDs designated by the Eurosystem are compliant with additional requirements for that purpose.

Table 2. Main European and international rules governing CSD activities

Rules	Author	Year of issuance
<u>Settlement Finality and Financial Collateral Directives</u>	European Union	1998/2009 (last amended by the CSD Regulation in 2014)
<u>Principles for Financial Market Infrastructures</u>	CPMI, IOSCO	2012
<u>Eurosystem Assessment Framework for SSSs and links</u>	Eurosystem	2014
<u>CSD Regulation (909/2014) and its Standards</u>	European Union	2014 - 2018

Settlement Systems

All Members that have well-established operations offer Delivery-versus-Payment (DvP) settlement as a core service. This means that the transfer of securities from the seller to the buyer only occurs if the payment has been made from the buyer to the seller (and vice versa). The DvP process is essential because it reduces market risk. As a result of the simultaneous and irrevocable transfer of securities and cash, CSD participants have the guarantee that they will not pay for securities without receiving them, and that they will not deliver securities without receiving the corresponding payment.

19 Members have signed the T2S framework agreement, which means that they have outsourced or will outsource⁵ settlement for central bank money to a joint technical platform operated by the Eurosystem. T2S delivers harmonised DvP settlement in central bank money for most European securities. Among the Members participating in T2S, four Members which are not established in the eurozone use T2S for settlement of transactions in euros: the Swiss SIX SIS, the Hungarian KELER, the Romanian DC and the Danish CSD, VP. In addition to transactions in euro, in 2019, T2S started to settle in Danish Kroner (DKK).

In addition to ECSDA members, two other CSDs (the National Bank of Belgium CSD NBB-SSS and the Greek Central Bank CSD BOGS) are using the T2S platform. More details on the T2S project can be found on at www.t2s.eu.

⁵ Euroclear Finalnd is expected to join T2S in November 2022. The information about it is available at https://www.euroclear.com/newsandinsights/en/press/2019/2019_mr-28-Euroclear-Finland-set-to-join-T2S-in-November-2022.html

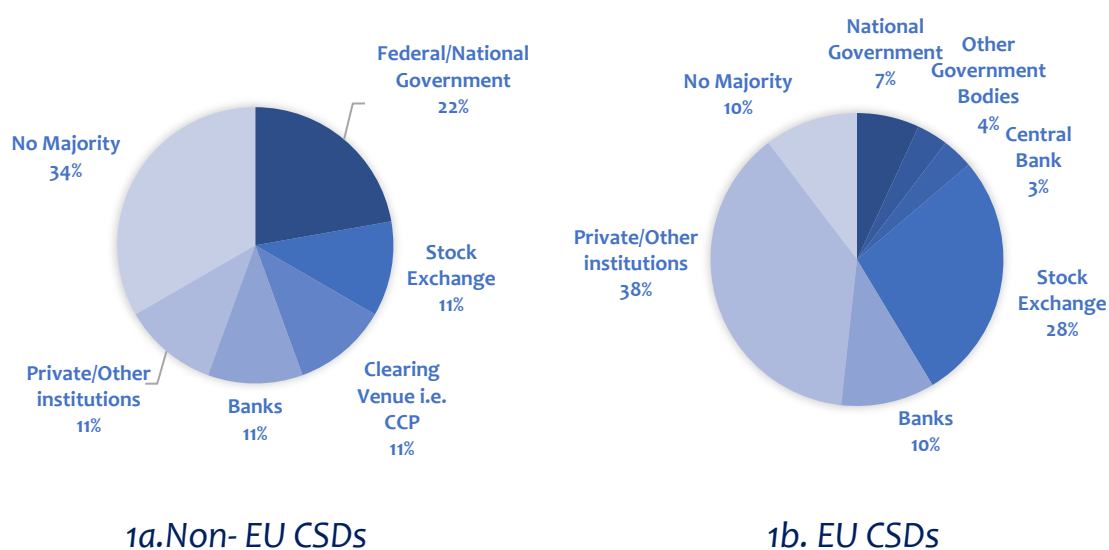
II. Corporate Governance

Ownership Models

CSDs display a vast diversity of corporate structures and ownership models. To aggregate the information on the ownership models, ECSDA collected the data on the proportion of CSD shares owned by the following seven types of entities: state authorities (the Ministry of Finance, for example), central banks, trading venues, clearing venues, banks, private investors (including, for example, institutional investors like sovereign funds, pension funds and insurers), and other entities.

Based on this information, one method to assess the CSDs' (group) ownership across Europe is to sum up the ownership stakes of the different categories of entities as of 2019 and see how an average CSD would look based on this approach. Chart 1 illustrates the proportion of shareholders from different categories in a theoretical CSD, contrasting the prevalent shareholder types in the EU and outside the EU.

Chart 1. Main shareholders types in the EU and on-EU CSDs



The stock exchanges have with an average of 28% within the ownership structure of EU CSDs. Whereas in non-EU CSDs, stock exchanges control a vastly lower stake. It is the National Governments that control the largest take of 22%. Non-EU CSDs typically have a stronger involvement of state authorities, private investors and even CCPs in CSDs' share capital. In both EU and non-EU CSDs, CSD participants represent a little less than a third of CSD owners. Furthermore, 34% of non-EU CSDs do not have a clear majority, as opposed to 10% in EU CSDs.

Another way to compare CSD (group) ownership models is to look at the majority shareholder(s) in each CSD, as is done in Table 3. This allows us to group CSDs in five categories and to make a few observations.

Table 3. Members Organised by Majority Shareholder Type - 2019

Majority Shareholders		CSDs	Total
National Government		CSE (100%), MSE (100%), CR HoV (100%), RVP (75%)	4
Other Government Bodies		SKDD (56.62%),	1
Central Bank		KELER (53.33%)	1
Stock Exchange		CSD Prague (100%), CBF (100%), ATHEXCSD (100%), Interbolsa (100%), CBL (100%), NSD (100%), CDCP SR (100%), Monte Titoli (98.88%), AIX CSD (100%), Depozitarul Central (69%)	9
Clearing Venue		MKK (64.9%)	1
Banks		OeKB CSD (100%), SIX SIS (91.7%), CSD AD Skopje (90.83%), VP Securities (60%),	4
Private/Other Institutions		Euroclear Bank (100%), Euroclear Belgium (100%), Iberclear (100%), Euroclear France (100%), Euroclear Nederland (100%), EURONEXT VPS (100%), Euroclear Sweden (100%), KDD (100%), Euroclear Finland (100%), EUI (100%), Nasdaq CSD (99.84%) ID2S (85%),	12
No Majority		CROV RS (33.5% National Government, 31% Banks, 24.5% Stock Exchange, 11% Brokers), CDAD (43.7% National Government, 35% Banks, 20.96% Brokers, 0.3% Insurance Companies, 0.04% Private/Other Institutions), LuxCSD (50% Central Bank, 50% Stock Exchange), CSD & CC Montenegro (35% Central Bank, 31% Private/Other Institutions, 19% Brokers, 15% Banks), KDPW (33.33% National Government, 33.33% Central Bank, 33.33% Stock Exchange), NDU (34.98% Banks, 25% Other Government Bodies, 25% Central Banks, 15.02% Private/Other Institutions)	6

When **trading venues** are shareholders in a CSD, it is usually as full owners, and often as part of an integrated corporate group including one or more exchange(s), CCPs and CSD(s). Among the 40ECSDA Members:

- eight CSDs are fully owned by an exchange;
- two CSDs are majority-owned by an exchange; and
- Exchanges hold minority stakes in seven CSDs (the Hungarian KELER, the Polish KDPW, the Turkish MKK, the Bosnian and Herzegovinian CR HoV RS, the Croatian SKDD, the Luxembourgish LuxCSD (50%) and the Latvian/Estonian/Lithuanian Nasdaq CSD (incl. later NCSDI) (0.16%).

Looking at **user ownership** more in detail, it appears that:

- the seven Euroclear group (I)CSDs are entirely user-owned;
- one CSD, the Swiss SIX SIS is almost entirely user-owned (91.7 %) but is part of a corporate group, the SIX group, which includes a securities exchange; and
- two CSDs are primarily owned by CSD participants (the Danish VP, the North Macedonian CSD AD Skopje).

State-owned CSDs include different variants, from full state ownership to mixed models. In particular:

- three CSDs are fully owned by the State (two of which, the Maltese MSE and the Cyprian CSE are departments of the Stock Exchange, which in turn, is fully-owned by the national government);
- four CSDs have the government, the central bank or the Ministry of Finance as the majority shareholder (the Hungarian KELER, the Polish KDPW, the Bosnian and Herzegovinian RVP, the Croatian SKDD); and
- two CSDs are owned with a 50% stake by a government or agency, the Luxembourgish CSD (50% Central Bank) and the Ukrainian NDU (25% of a government body and 25% of a central bank).

Five CSDs are primarily owned by a selection of **banks or private investors**:

- the Austrian OeKB CSD is the only CSD fully owned by banks;
- Norwegian VPS' main shareholders include various national and international financial institutions, including asset management and insurance companies; and
- Turkish MKK is majority-owned by Takasbank-Istanbul Settlement and Custody Bank, which offers CCP and other post-trade services in the Turkish market.

Finally, six CSDs have a hybrid ownership structure with no single majority shareholder type.

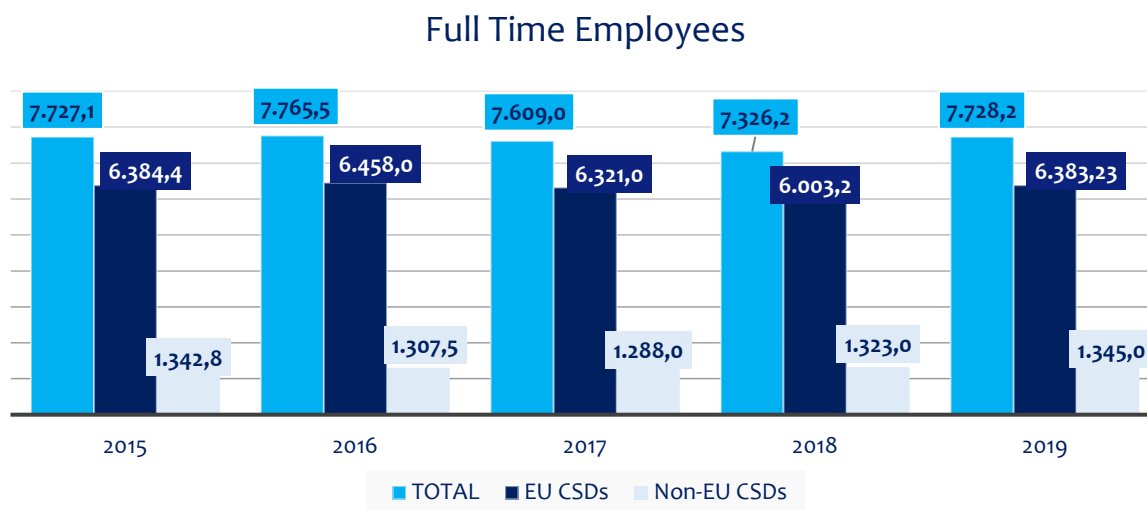
From 2016 to 2019, the dominance of stock exchanges either fully owning (from twelve to seven) or majority owning (fifteen to nine) has fallen quite considerably. These figures should not be considered in isolation from the events at the group level, such as further consolidation.

Irrespective of their ownership models, 95 % of European CSDs operate as for-profit entities. Although frequently, these are *de facto* profit-moderated companies. Although two CSDs operate as officially registered not-for-profit companies (Cyprian CSE and Polish KDPW) and are fully or partially state-owned.

Employment

In 2019, Members collectively employed 7,728 people, among which 82.5 % were employed by CSDs established in the EU. Overall, this represents an increase of 1.5 % compared to 2017, and a 5.2% increase compared to 2018, therefore, correcting the overall positive trend which was negative since 2015. These statistics include the Icelandic NCSDI.

Chart 2. Total Number of CSD Employees



Excluding the two ICSDs (CBL and Euroclear Bank), the average CSD has 101 employees. This illustrates that the CSD business, unlike the retail banking business, for example, is more IT-intensive than labour-intensive, and many CSDs indeed qualify as small or medium businesses in their respective countries. The range of the figures is broad. While the smallest CSDs are run by no more than seven full-time employees (the Icelandic NCSDI) the largest CSD employed 2,900 people (Euroclear Bank).

It is important to note that the data on employees reflects various corporate structures and arrangements, and in cases where the CSD is not a separate entity (e.g. when the CSD is a department of the exchange or when the CSD is part of an integrated corporate group with shared services among the different businesses of the group), the reported figures show the actual number of full-time equivalent staff dedicated to the CSD activity rather than the actual number of employees reported in the financial statements of the corporate entity.

III. CSD Participants

Participants

CSD participants are typically wholesale financial firms. For the CSDs based in the European Economic Area, the CSD Regulation applicable to them requires a thorough risk assessment to be performed before accepting a participant. The global Principles for Financial Market Infrastructure (Principle 18) similarly require the establishment of “objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access”.

The number of participants is largely dependent on the market organisation and the definition of the term ‘participant’. Therefore, the figures cannot be compared in a meaningful way without taking these elements into account. However, it ranges from 20 or less (for eight CSDs) to 250 or more (for seven CSDs). In respect to the two ICSDs, Euroclear Bank has 1657 participants whereas CBL has 1339 participants. The highest number of participants is, however, in the UK and Irish EUI - 8,397 participants. Excluding the ICSDs and EUI, the CSDs with the highest number of participants are the Russian NSD (with 2,388), the Swiss SIX SIS (with 330), the German Clearstream Banking (with 261) and the Hungarian KELER (with 251). Chart 3 below showcases the number of participants per CSD. Due to the disparity between CSDs, the chart below excludes the above-mentioned CSDs.

Chart 3. Proportion of non-domestic participants per CSD

Domestic vs non-domestic participants (Excl. ICSDs)

■ Domesitc ■ Non-Domesitc

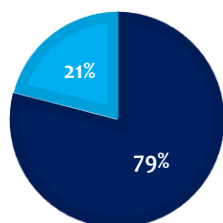


Chart 3 reveals important differences regarding the balance between domestic and non-domestic participants. On average, leaving the ICSDs aside (since they are by nature not operating in a domestic environment), 21 % of participants at European CSDs were non-domestic ones in 2019. Interestingly, CSDs operating in small countries within the EU tend to have a higher share of non-domestic participants than CSDs operating in larger markets and outside the EU. The level of regional economic proximity (such as in Benelux countries plus France, Nordics) is also a factor explaining a high proportion of non-domestic participants.

The CSDs with the highest proportion of foreign participants in 2019 (excluding the ICSDs) were Euroclear Belgium (81 %) and Euroclear Nederland (79 %) that are operating on the Euroclear ESES platform, functioning for the three markets Belgium, France and the Netherlands. On the other hand, seven Members had fewer than 11 % of foreign participants, and nine CSDs had exclusively domestic institutions as participants.

CSD Account Structures

It is wholesale financial institutions that are typically eligible to have an account with the CSD. In some cases, however, CSDs maintain end-investor accounts in their books as well. In these so-called 'direct holding markets', end-investor accounts serve to record the ownership rights directly at the level of the CSD and are managed through the intermediation of CSD participants (acting as account operators). In contrast, in the 'indirect holding model', end-investor accounts serving for proof of ownership rights are maintained at a lower level in the securities holding chain, e.g. at the level of the CSD participant.

Most frequently, 23 ECSDA Members allow their users to segregate client assets flexibly. This flexibility is frequently dependent on the national legislation. Despite that, CSDs do not always have direct access to the information on the identity of end-investors, which is kept by the relevant intermediary(ies) of investors. For EEA countries, based on CSDR, the clients of CSD participants have a choice between a fully-segregated account at the level of CSD or a common account for all CSD participant clients' assets (separated from the own CSD participant assets).

There are great variations at the level of individual CSDs with regard to the holding model and number of accounts, depending on the historic development of the market and its CSD, the number of end-investors in the market and whether end-investor accounts are commonly used or not, etc. CSDs with the highest number of securities accounts are the Turkish MKK - with an impressive figure of ~47.2 Million accounts, the Romanian DC - with ~8.4 Million, the Serbian CR HoV - with ~7.7 Million, the Bulgarian - CDAD with ~6 Million and Danish VP Securities - with ~3 Million. The CSDs with the lowest number of accounts are the Euroclear Belgium with 638, the Austrian OeKB CSD with 480, Euroclear Finland with 35, the Luxembourgish LuxCSD with 28 and, lastly, the French ID2S with 20 accounts.

A CSD may provide varying account structures to its clients. The first possibility is an omnibus account and the second is a beneficial owner account. The former is a securities account in which the securities belong to multiple clients of a CSD participant, including or excluding a CSD participant's own securities. A 'beneficial owner account' is an account in which all the securities belong to a single end investor. Even if the end investor account is maintained by a CSD participant, the CSD has access to information about the identity of end investors. A CSD is also able to provide a hybrid structure, which offers both omnibus and segregated securities accounts for individual investors.

In 2019, the Greek ATHEXCSD was the only EU CSD providing for a beneficial ownership account for domestic participants. Whereas six CSDs have reported to be providing mostly omnibus accounts even to domestic participants. These include the Belgian Euroclear Bank, the Swiss SIX SIS, the Italian Monte Titoli, the Luxembourgish LuxCSD, the Portuguese Interbolsa and the Austrian OeKB CSD.

IV. Specific Services and Instruments

Financial Instruments Accepted for Settlement

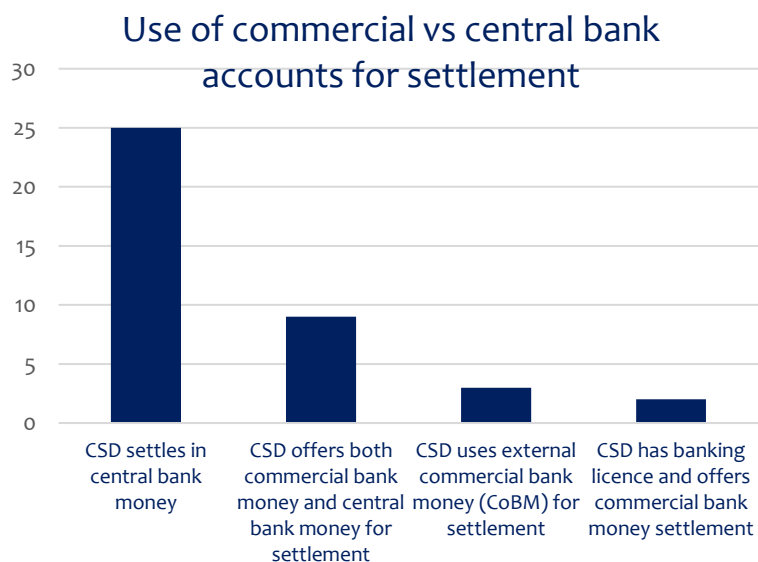
CSDs accept a wide variety of financial instruments for deposit and/or settlement. All but one European CSD settle equities transactions (ID2S being the exception) and all CSDs settle corporate debt. A significant majority of CSDs, amongst ECSDA Members, settle government debts with the exclusion of Euroclear Belgium and the French ID2S. (In those countries where government securities are not settled by the CSD, it may be among others because there is another dedicated National CSD/Securities Settlement System for such securities.

List of financial instruments accepted for settlement in European CSDs by order of frequency

1. Corporate debt,
2. Equities,
3. Government debt,
4. Collective investment funds,
5. Others.

Use of Commercial vs Central Bank Accounts for Settlement

Chart 4. Settlement cash accounts



25 European CSDs enable settlement of securities transactions in central bank money. The options providing both Central Bank and Commercial Bank Money is available in several CSDs. On the other hand, CSDs which have a banking licence and do not offer Central bank money accounts but only commercial bank money for settlement are the least common among Members. In 2019, these were the ICSDs, the Luxembourgish CBL and the Belgian Euroclear Bank. The latter has however recently announced that it will joint T2S platform providing settlement in EUR and DKK central bank money settlement.⁶

⁶ More information is provided on Euroclear website https://www.euroclear.com/newsandinsights/en/press/2019/2019_mr-30-Euroclear-Bank-to-join-ECBs-T2S.html.

Other CSD Services

For EEA CSDs, most of their services are explicitly listed in the annexe to the CSDR. Any entity that performs at least two of ‘the core CSD services’ (including the settlement of securities transactions and either the central maintenance of securities accounts or the notary service) qualifies as a CSD and, therefore, shall comply with the CSDR. As of 2019, CSDs continued to prepare for the compliance with the CSDR and 20 Members have obtained their CSD license under CSDR. It will permit authorised CSDs to benefit from ‘the passport’ allowing to provide services within the entire area.

In addition to core services, CSDs provide ancillary services that generally include custody, fund order routing, collateral management service, data and information provision and other related activities. As mentioned above, **banking services of EEA CSDs are subject to banking regulation** as well as to the additional CSDR requirements and a capital add-on. CSDR allows CSDs to provide banking activities that are directly related to the non-banking CSD activities only. This *de facto* limits EEA CSD licence and risk profile in comparison with other institutions having a banking licence.

Most European CSDs (28 out of 38) act as **National Numbering Agencies (NNAs)**, which means that they are responsible for allocating International Securities Identification Numbers (ISIN Codes) to new securities. This function reflects the central role played by CSDs in financial markets and the issuance process in particular.

30 CSDs provide information service, which makes it the most commonly provided ancillary service of Members. This service entails the collection of securities, corporate actions, issuers and registers information from different sources and distributes it via an online database or through the website of the CSD.

As of 2019, fifteen CSDs are authorised to allocate Legal Entity Identifiers (LEIs) in their market, a sharp difference from only six CSDs which were able to allocate LEIs in 2016. The global LEI initiative aims to allow for the identification of financial counterparties to securities and derivatives transactions⁷. It was reported to us that, this year, the Slovenian KDD has also started issuing LEIs for the Slovenian market.

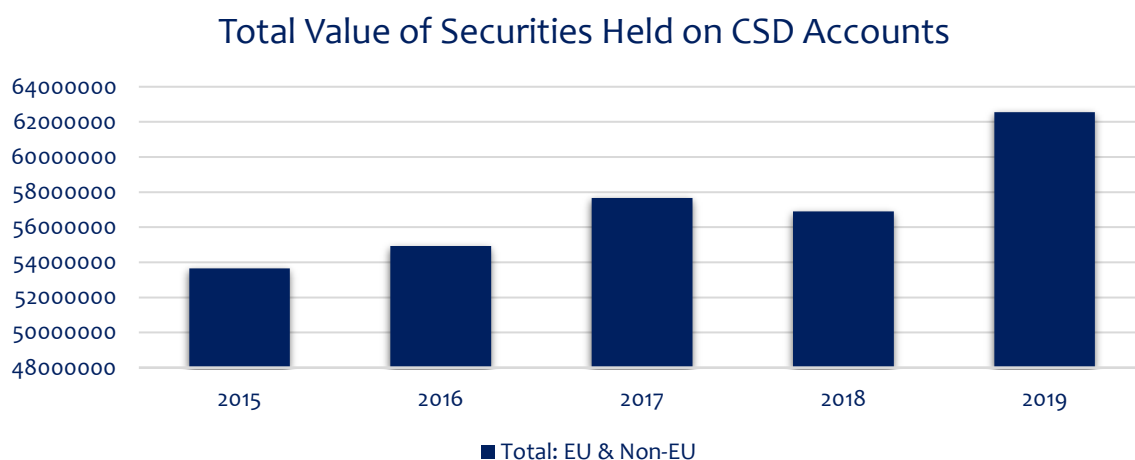
⁷ More details can be found on the website of the Global LEI Foundation at: <https://www.gleif.org>

V. Securities and Transactions

Securities Held in CSDs

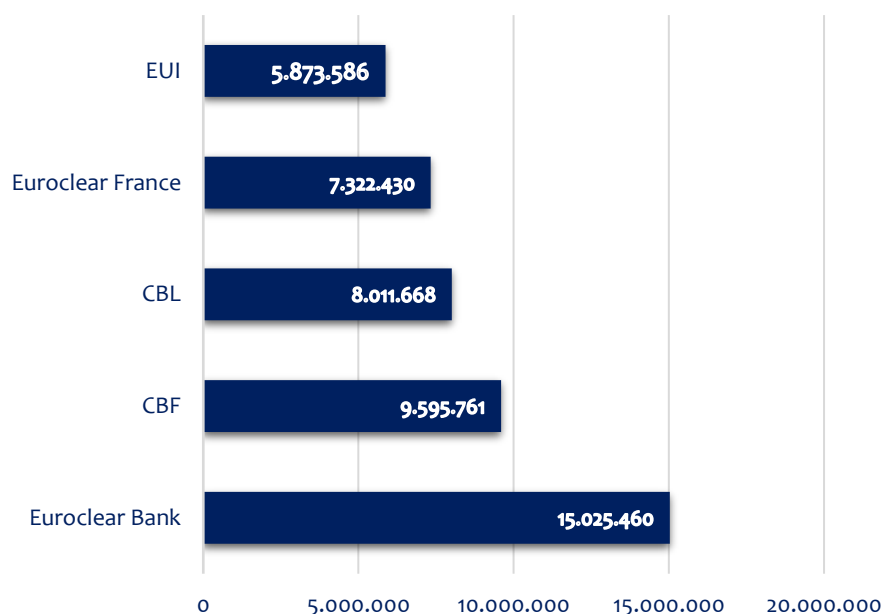
During the last two years, the total value of all securities held at ECSDA member CSDs increased by 7.8%, adding to the upward trend correcting the slight downturn which was noted for 2018 (1.3% decline from 2017 to 2018). Over the past five years, more than EUR 8.9 Trillion worth of securities were added in accounts held at European CSDs.

Chart 5. Total value of securities held on CSD accounts (in EUR Million)



European CSDs collectively held client securities worth EUR 62.5 Trillion. EU CSDs represent about 92% of this amount, with EUR 57.6 Trillion.

Chart 6. Holdings at the five largest Members (in EUR Millions)



The top ten CSDs hold on behalf of their participants EUR 57.2 Trillion. The five largest Members hold for clients more than EUR 6 Trillion each. On average, CSDs hold for clients EUR 1.6 Trillion. However, in ten CSDs, the total value of securities held on accounts is less than EUR 135 Billion (representing 0.2%).

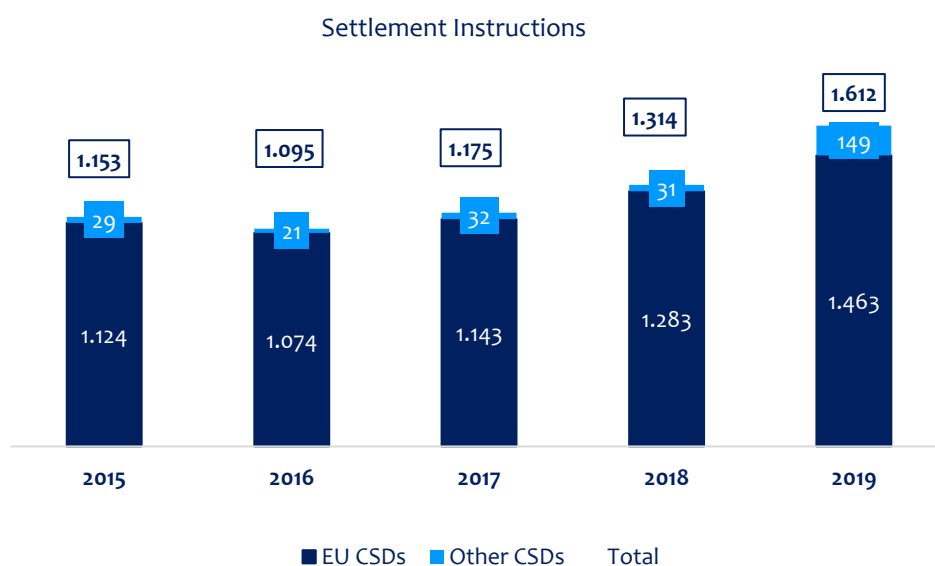
Number of Securities Deliveries

In 2019, European CSDs collectively processed around 680 Million delivery instructions. A quarter of these deliveries (25 %) were processed by the Turkish MKK which maintains more than 47.2 Million securities accounts. The average number of deliveries at European CSDs amounted to 17.8 Million. If we assume 255 (business) days per year, this translates into an average of 69 thousand instructions per day of operation.

Value of Deliveries

In terms of value, the delivery instructions processed annually by European CSDs represent EUR 1.61 Quadrillion, an impressive increase of 22.7 % compared to 2018. Three CSDs account for 70% of this amount: Euroclear Bank, the UK and Irish EUI, and Luxembourgish CBL.

Chart 7. Delivery instructions processed by ECSDA Members



Looking at the EU CSDs only, 448 Million securities deliveries were processed in 2019, worth EUR 1.463 Quadrillion. This translates into an average of EUR 40.311 Trillion worth of deliveries per CSD.

Annexe I

The Bank for International Settlement (BIS)⁸ identifies three DvP models, as illustrated in Table 4. All BIS models are in use, and it is common for a CSD to use more than one model depending on the market it serves. BIS model 1 is also called Real-Time Gross Settlement (RTGS) and is used by 34 Members out of 38, either alone or in combination with model 2 or 3. The Russian NSD uses all three models.

Following the migration to the TARGET2-Securities (T2S) platform, some CSDs have stopped using net settlement models, adopting Model 1 on an exclusive basis. This is the case for 15 Members.

Table 4. BIS Settlement Models

	SECURITIES TRANSFER	CASH TRANSFER
MODEL 1	Gross	Gross
MODEL 2	Gross	Net
MODEL 3	Net	Net

In cases where more than one model is used, Model 1 is typically used for over-the-counter (the 'OTC') transactions. On-exchange transactions frequently involve some form of netting and are thus settled according to Model 2 or 3. It is interesting to note that the Russian NSD uses either of the three models for OTC transactions. Four CSDs (the Bulgarian CDAD, the Czech CSD Prague, the Norwegian VPS and the Serbian CR HoV) settle exclusively with Model 2.

⁸ BIS (1992), *Delivery versus Payment in Securities Settlement Systems*, available at: <http://www.bis.org/publ/cpss06.pdf>.



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