

# Pillar 3 Disclosure Report of Clearstream Group

Disclosure as of 31 December 2020

June 2020

## Pillar 3 Disclosure Report of Clearstream Group 2020 – According to Part 8 of the Regulation (EU) No. 575/2013 (Capital Requirements Regulation, CRR) in conjunction with § 26a German Banking Act (Kreditwesengesetz, KWG).

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Clearstream Holding AG

July 2021

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## Part 8 CRR - Disclosure Overview

Requirement outlined in CRR Article:	Reference sections in CH Pillar 3 Report 2020
<i>Title I. General Principles</i>	
Article 431. Scope of disclosure requirements	1.1.1. Objective of the report (Article 431 & 432 CRR)
Article 432. Non-material, proprietary or confidential information	1.1.1. Objective of the report (Article 431 & 432 CRR)
Article 433. Frequency of disclosure	1.1.3. Frequency and means of Disclosure (Article 433, 434 & 450 CRR)
Article 434. Means of disclosures	1.1.3. Frequency and means of Disclosure (Article 433, 434 & 450 CRR)
<i>Title II. Technical criteria on transparency and disclosure</i>	
Article 435. Risk management objectives and policies	
Article 435 (1)(a) the strategies and processes to manage those risks	4.1.1. Risk strategy (Article 435 (1)(a) CRR) 5.1. Strategy and process (Article 435 (1)(a) CRR) 6.1. Strategy and process (Article 435 (1)(a) & Article 454 CRR) 7.1. Strategy and process (Article 435 (1)(a) CRR) 8.1. Strategy and processes (Article 435 (1)(a) CRR)
Article 435 (1)(b) the structure and organisation of the relevant risk management function including information on its authority and statute, or other appropriate arrangements	5.2. Structure and organisation (Article 435 (1)(b) CRR) 6.2. Structure and organisation (Article 435 (1)(b) CRR) 7.2. Structure and organization (Article 435 (1)(b) CRR) 8.2. Structure and organisation (Article 435 (1)(b) CRR)
Article 435 (1)(c) the scope and nature of risk reporting and measurement systems	5.3. Assessment (Article 435 (1)(c) CRR) 6.3. Assessment (Article 435 (1)(c) CRR) 7.3. Assessment (Article 435 (1)(c) CRR) 8.3. Assessment (Article 435 (1)(c) CRR)
Article 435 (1)(d) the policies for hedging and mitigating risk, and the strategies and processes for monitoring the continuing effectiveness of hedges and mitigants	5.4. Mitigation and control (Article 435 (1)(d) & 453 CRR) 6.4 Mitigation and control (Article 435 (1)(d) CRR) 7.4 Mitigation and control (Article 435 (1)(d) CRR) 8.4. Mitigation and control (Article 435 (1)(d) CRR)
Article 435 (1)(e) a declaration approved by the management body on the adequacy of risk management arrangements of the institution providing assurance that the risk management systems put in place are adequate with regard to the institution's profile and strategy	4.1.5.5. Risk monitoring and reporting (Article 435 (1)(e))
Article 435 (1)(f) a concise risk statement approved by the management body succinctly describing the institution's overall risk profile associated with the business strategy. This statement shall include key ratios and figures providing external stakeholders with a comprehensive view of the institution's management of risk, including how the risk profile of the institution interacts with the risk tolerance set by the management body.	4.1.6. Concise Risk Statement (Article 435 (1)(f) CRR)

Article 435 (2)(a) the number of directorships held by members of the management body	3. Governance arrangements (Article 435 (2) CRR) 3.1. Clearstream Banking S.A. 3.2. Clearstream Banking AG 3.3. Clearstream Holding AG
Article 435 (2)(b) the recruitment policy for the selection of members of the management body and their actual knowledge, skills and expertise	3. Governance arrangements (Article 435 (2) CRR) 3.1. Clearstream Banking S.A. 3.2. Clearstream Banking AG 3.3. Clearstream Holding AG
Article 435 (2)(c) the policy on diversity with regard to selection of members of the management body, its objectives and any relevant targets set out in that policy, and the extent to which these objectives and targets have been achieved	3. Governance arrangements (Article 435 (2) CRR) 3.1. Clearstream Banking S.A. 3.2. Clearstream Banking AG 3.3. Clearstream Holding AG
Article 435 (2)(d) whether or not the institution has set up a separate risk committee and the number of times the risk committee has met	3. Governance arrangements (Article 435 (2) CRR) 3.1. Clearstream Banking S.A. 3.2. Clearstream Banking AG 3.3. Clearstream Holding AG
Article 435 (2)(e) the description of the information flow on risk to the management body	3. Governance arrangements (Article 435 (2) CRR) 3.1. Clearstream Banking S.A. 3.2. Clearstream Banking AG 3.3. Clearstream Holding AG
Article 436. Scope of application	1.1.2. Scope of application (Article 436 CRR)
Article 437. Own Funds	2.1. Capital components (Article 437 (1) CRR)
Article 438. Capital requirements	
Article 438 (1)(a) a summary of the institution's approach to assessing the adequacy of its internal capital to support current and future activities	4.1.1 Risk strategy (Article 435 (1)(a) CRR)
Article 438 (1)(c) the risk- weighted exposure amounts for each of the exposure classes specified in Article 112	272.2.1. Capital requirements for credit risk positions (Article 438 (1)(c) CRR)
Article 438 (1)(e) own funds requirements calculated in accordance with points (b) and (c) of Article 92(3)	2.2.3. Capital requirements for market risk positions (Article 438 (1)(e) CRR)
Article 438 (1)(f) own funds requirements calculated in accordance with Part Three, Title III, Chapters 2, 3 and 4 and disclosed separately	2.2.4. Capital requirements for operational risk (Article 438 (1)(f) CRR)
Article 439. Exposure to counterparty credit risk	5.10. Disclosure of counterparty credit risk (CCR) (Article 439 CRR)

Article 440. Capital buffers	2.3. Countercyclical capital buffer (Article 440 CRR) Annex 2. (Article 440 CRR)
Article 441. Indicators of global systemic importance	n/a
Article 442. Credit risk adjustments	5.9. Disclosure on credit risk exposures (Article 442, 444, 453 (f) CRR)
Article 443. Unencumbered assets	5.12. Asset encumbrance (Article 443 CRR)
Article 444. Use of ECAs	5.9. Disclosure on credit risk exposures (Article 442, 444, 453 (f) CRR)
Article 445. Exposure to market risk	7.6. Disclosure exposures for market risk (Article 445 CRR)
Article 446. Operational risk	6.6.6. Disclosure on operational risk (Article 446 CRR)
Article 447. Exposures in equities not included in the trading book	5.11. Disclosure of equities not included in the trading book (Article 447 CRR)
Article 448. Exposure to interest rate risk on positions not included in the trading book	7.7. Disclosure exposures on interest rate risk on positions not included in the trading book (Article 448 CRR)
Article 449. Exposure to securitisation positions	n/a
Article 450. Remuneration policy	1.1.3. Frequency and means of Disclosure (Article 433, 434 & 450 CRR)
Article 451. Leverage	2.4. Leverage ratio (Article 451 CRR)
<i>Title III. Qualifying requirements for the use of particular instruments or methodologies</i>	
Article 452. Use of the IRB Approach to credit risk	n/a
Article 453. Use of credit risk mitigation techniques	5.4. Mitigation and control (Article 435 (1)(d) & 453 CRR) 5.9. Disclosure on credit risk exposures (Article 442, 444, 453 (f) CRR)
Article 454. Use of the Advanced Measurement Approaches to operational risk	6.1. Strategy and process (Article 435 (1)(a) & Article 454 CRR)
Article 455. Use of Internal Market Risk Models	n/a

*Table 1. Part 8 CRR - Disclosure Overview*

# 1. Introduction

## 1.1. Regulatory framework

In 2004, the Basel Committee on Banking Supervision (“BCBS”) published its standards governing the capital adequacy of internationally active banks (“Basel II”). The Basel framework consists of three mutually reinforcing pillars, as outlined below.

- Pillar 1 concerns the minimum quantitative (capital) requirements related to credit, operational and market risks. In addition, when the Basel III framework was translated into European law, requirements to calculate a Leverage Ratio as well as Liquidity Coverage Ratio and Net Stable Funding Ratio came into force.
- Pillar 2 requires banks to integrate the risks of Pillar 1 and further significant and substantial risks into integrated capital management and risk management considerations. Additionally, the interaction between the banks’ own assessments and the banking supervisors’ review is prescribed.
- Pillar 3 promotes market discipline through disclosure and thereby transparency to the public.

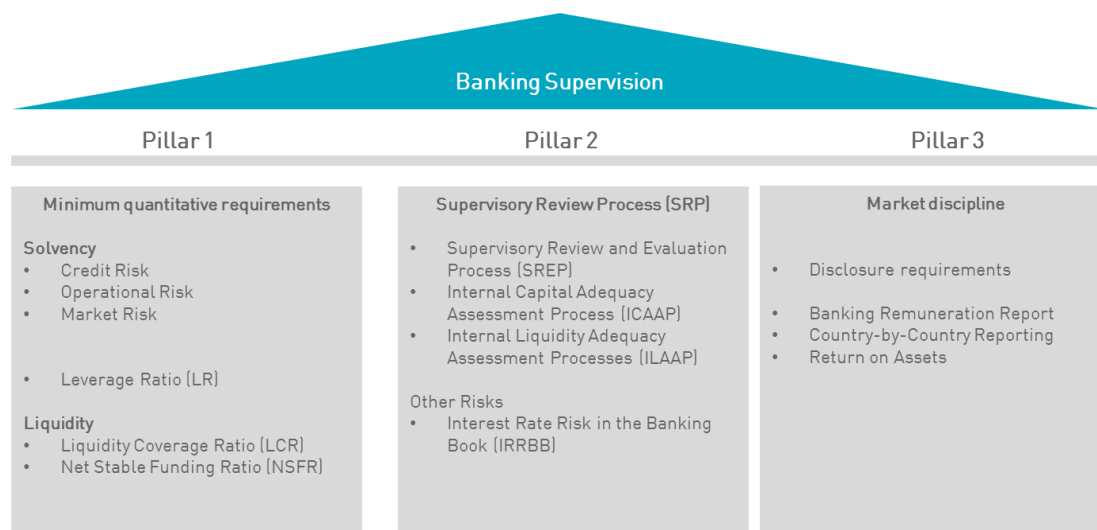


Figure 1. Overview of Regulatory Framework

In December 2010, the Basel Committee on Banking supervision published the global regulatory framework on capital and liquidity, commonly known as Basel III, a set of standards aiming at strengthening the stability and resilience of the banking system. The first elements of the Basel III standards were introduced in European law by the Capital Requirements Regulation (EU) No 575/2013 (CRR) and the Capital Requirements Directive 2013/36/EU (CRD). This report provides the Pillar 3 disclosures on consolidated level of Clearstream Group as set out in Part Eight of the CRR. In Germany, the CRD disclosure requirements were transposed in § 26a of the German Banking Act (Kreditwesengesetz).

In May 2019, a reformed prudential regulation package was introduced, further transposing the Basel III standards into European law through amended versions of the CRR (through Regulation (EU) 2019/876 or CRR 2) and the CRD (through Directive (EU) 2019/878 or CRD5). In addition, the EU banking package also contains a revised Banking Recovery and Resolution Directive (BRRD, amended as per Directive (EU) 2019/879 – BRRD2), reflecting changes related to legislation on the Minimum Requirement for own funds and Eligible Liabilities (MREL) and the Total Loss-Absorbing Capacity (TLAC) for global systemically important institutions.

The key elements of the CRR 2 and CRD 5 that are relevant to Clearstream Holding AG and the Clearstream Group include:

- The obligation to apply for authorisation as a financial holding company according to Article 21a CRD 5;
- Revised remuneration requirements, including the obligation to have a gender-neutral Remuneration policy and the introduction of an extended deferral period for variable remuneration.
- The introduction of eligible liabilities as a new category alongside own funds;
- The consideration of step-in risk for determining the scope of prudential consolidation;
- The exclusion of software assets from CET1 deduction items;
- A binding leverage ratio of 3% of total exposure measure (unweighted) serving as backstop requirement (excluding CSD's banking type ancillary services from exposure measure);
- The introduction of a binding Net Stable Funding Ratio (NSFR) on a consolidated basis, requiring a stable funding profile in relation to on- and off-balance sheet exposures;
- An amended Standardized Approach for Counterparty Credit Risk (SA-CCR);
- Changes to the large exposure regime;
- Extended reporting and disclosure requirements; and

The Basel III standards are not yet fully transposed into European Law. Revisions to rules on the calculation of own funds for credit risk and operational risk, the market risk framework and supervisory reporting and disclosures will be part of a new legislative proposal, which the European Commission is expected to publish in 2021 and which will complete the implementation of Basel III in EU law.

Implementation has been initiated to ensure compliance with the new and amended requirements arising from CRR 2 applicable as of 28 June 2021. Additional implementing or regulatory technical standards issued by the European Banking Authority are considered where available. At present, Clearstream Holding AG does not expect any issues that could impede a timely compliance with the updated regulatory framework.

In addition to the previously mentioned regulation and directives, this report considers the following regulatory publications:

- Commission Implementing Regulation (EU) No 1423/2013 of 20 December 2013 laying down implementing technical standards with regard to disclosure of own funds requirements for institutions according to Regulation (EU) No 575/2013 of the European Parliament and Council
- Commission Implementing Regulation (EU) No 2016/200 of 15 February 2016 laying down implementing technical standards with regard to disclosure of the leverage ratio for institutions, according to Regulation (EU) No 575/2013 of the European Parliament and of the Council
- Commission Delegated Regulation (EU) No 2015/1555 of 28 May 2015 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for the disclosure of information in relation to the compliance of institutions with the requirement for a countercyclical capital buffer in accordance with Article 440
- Commission Delegated Regulation (EU) No 2017/2295 of 4 September 2017 supplementing Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to regulatory technical standards for disclosure of encumbered and unencumbered assets
- EBA/GL/2017/11: Guidelines on internal governance under Directive 2013/36/EU
- EBA/GL/2017/12: Joint ESMA and EBA Guidelines on the assessment of the suitability of members of the management body and key function holders under Directive 2013/36/EU and Directive 2014/65/EU

In the following, we refer to the respective laws in place as of 31 December 2019 if not stated otherwise.

### 1.1.1. Objective of the report (Article 431 & 432 CRR)

The objective of this Disclosure Report is to fulfil the disclosure requirements detailed in Part 8 CRR and § 26a KWG for Clearstream Holding AG ("CH"). More specifically, the report intends to provide a detailed overview on Clearstream Holding Group's ("Clearstream Group", "Clearstream", "CH-Group")

- Legal structure
- Capital structure

- Risk management framework including governance arrangements, risk management methodology and risk reporting
- Risk management in terms of identified risk types

Disclosure content can be omitted according to Article 432 CRR and relating EBA Guideline 2014/141 if the information is non-material, proprietary or confidential. To ensure adequate fulfilment of the disclosure requirements and assessing the appropriateness of the disclosed information, a Disclosure Policy has been established, which is reviewed and adapted, where necessary, on a yearly basis. The Executive Board of CH is ultimately responsible for the *Disclosure Policy* and must approve any material changes to the policy. The policy defines disclosure content, allocates responsibilities and defines disclosure processes and timelines.

In line with the *Disclosure Policy*, a dedicated process has to be followed in case Clearstream Group considers to omit certain disclosures due to these disclosures being immaterial, proprietary or confidential. Where the Group classifies information as non-material in this report, this has been stated accordingly in the related disclosures.

### 1.1.2. Scope of application (Article 436 CRR)

The figures for Clearstream Holding Group follow the consolidation provisions set out in Article 18 to 24 CRR in combination with the rules of § 10a (4) KWG and the German Generally Accepted Accounting Principles (German GAAP), based on the German Commercial Code (Handelsgesetzbuch, HGB). As all Clearstream companies - regardless of accounting and/or regulatory consolidation - are included in the consolidated annual accounts/annual report of the ultimate parent company Deutsche Börse AG ("DBAG"), CH is, according to § 291 of HGB, exempted from the obligation to draw up consolidated statutory accounts. Consolidated financial figures are therefore set up for regulatory purposes only.

All disclosed information is reported in CH's accounting and reporting currency, Euro, if not otherwise specified.

### 1.1.3. Frequency and means of Disclosure (Article 433, 434 & 450 CRR)

In accordance with Article 434 CRR, CH publishes its Disclosure Report on its website:

<https://www.clearstream.com/clearstream-en/about-clearstream/regulation-1-/pillar-iii-disclosure-report>

The report is updated once a year. In addition to the Pillar 3 report, the following documents are also made available:

- A remuneration report that fulfils the requirements according to Article 450 CRR. The report is disclosed on an annual basis on the website of Clearstream Group: [www.clearstream.com/clearstream-en/about-clearstream/regulation-1-/remuneration-information](http://www.clearstream.com/clearstream-en/about-clearstream/regulation-1-/remuneration-information)
- The Country-by-Country reporting to fulfil the requirements according to § 26a (1) sentence 2 KWG (implementation of Article 89 CRD IV into German law) is included as an annex to the financial statements of Clearstream Holding AG and that is published on the website of the German Federal Gazette ([www.bundesanzeiger.de](http://www.bundesanzeiger.de)) and that can also be found on the website of Clearstream: <https://www.clearstream.com/clearstream-en/about-clearstream/reports-and-ratings/annual-reports>
- Information about the Return on Assets ("RoA") according to § 26a (1) sentence 4 KWG (implementation of Article 90 CRD IV into German law) is disclosed in the management report of the financial statement of CBF. CBL disclosed the RoA according to Article 38-4 of the Luxembourg Banking Act under note 9.3 in the notes to its financial statements. The financial statement of CBF is published on the website of the German Federal Gazette ([www.bundesanzeiger.de](http://www.bundesanzeiger.de)). The financial statements of CBL are published the Luxembourg Trade and Companies Register (Registre de Commerce et des Sociétés). The information can also be found on the website of Clearstream: <https://www.clearstream.com/clearstream-en/about-clearstream/reports-and-ratings/annual-reports>

## 1.2. Clearstream Group (Article 436 CRR)

Clearstream Holding AG is licensed as a financial holding company as defined in Article 4 paragraph 1 No 20 CRR and, together with its subordinated companies, amongst others Clearstream Banking S.A.,

Luxembourg (“CBL”) and Clearstream Banking AG, Frankfurt/Main (“CBF”), forms a financial holding group under German law.

CH was founded under the name Deutsche Börse Verwaltungs AG on 4 June 2007 in Frankfurt/Main. On 12 May 2009 the company was officially renamed Clearstream Holding AG, Frankfurt/Main. CH is headquartered in Germany and has its registered office at Mergenthalerallee 61, 60485 Frankfurt am Main, Germany.

In the context of the corporate restructuring of Clearstream, CH acquired an additional company called Skylinehöhe 96 VV AG in December 2018. It was renamed into Clearstream Beteiligungs AG (“CBAG”) effective as of 2 January 2019. Most of Clearstream Group’s participations were transferred from Clearstream International S. A. (“CI”) to Clearstream Participations S. A. (“CP”). Effective from 1 July 2019 CP itself was merged with CBAG (the former Skylinehöhe 96 VV AG). On 12 November 2019, CH was merged into CBAG and renamed to CH.

### 1.2.1. Corporate structure

CH and its subsidiaries are mainly, directly or indirectly, fully owned by Deutsche Börse AG (“DBAG”). The ownership structure of Clearstream Group as part of DBAG is shown in Figure 2.

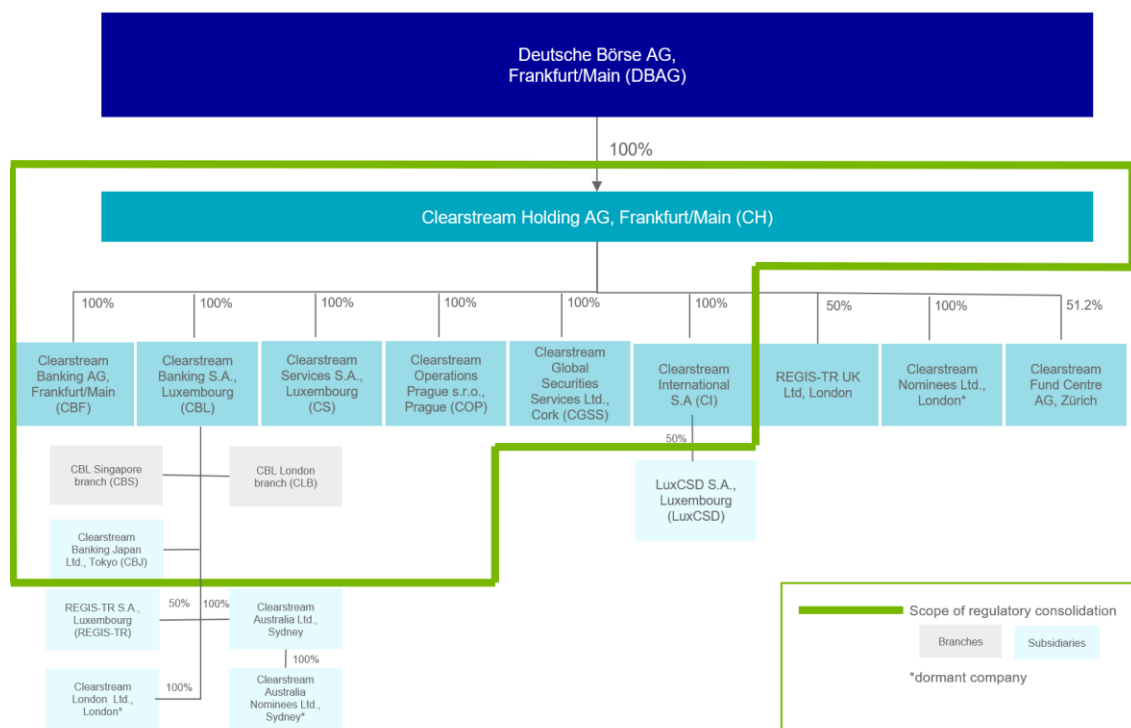


Figure 2. Overview of Corporate Structure

### 1.2.2. Business operations

Clearstream Group is a post-trade services provider and has been fully owned by DBAG since July 2002.

Clearstream Group’s main business activities are custody and settlement of securities and can be further divided into:

- Domestic central securities depository business (“CSD”) and
- International central securities depository business (“ICSD”).

In terms of the domestic business, Clearstream Banking AG (“CBF”) acts as the central securities depository for the German market according to the German Securities Deposit Act (“Depotgesetz”), while Clearstream Banking S.A. (“CBL”) is only involved marginally in domestic CSD activities for Luxembourg securities.

The ICSD business, however, is mostly performed by CBL. More specifically, the ICSD business provides different types of settlement options to facilitate the settlement of transactions in international and

domestic securities traded across borders, depending on the selected settlement location. CBF internationally only covers the services offered for Non-Collective Safe Custody business ("NCSC"), that is, book-entry credits on a fiduciary basis or trustee business.

Besides the afore-mentioned business activities, Clearstream also offers securities lending services, collateral management, banking services and Liquidity Hub Global Outsourcing (all included in the Global Securities Financing ("GSF")) as well as Investment Fund Services (including order routing) which are all linked to its main business activities custody and settlement. In addition, Clearstream offers IT outsourcing for third parties via its subsidiary Clearstream Services S.A.

Further information on the business activities per entity is provided below.

### 1.2.2.1. Clearstream Holding AG, Frankfurt / Main ("CH")

CH is classified as a financial holding company according to Article 4 paragraph 1 No 20 CRR.

CH acts solely as a holding company in the interest of its subsidiaries and does not have material additional business activities and therefore risk positions. Moreover, CH is the superordinated undertaking of the financial holding group according to § 10a (1) KWG. CH in its role is responsible to fulfil the regulatory obligations on a consolidated/group level towards the German supervisory authorities and the college of supervisors.

### 1.2.2.2. Clearstream International S.A., Luxembourg ("CI")

CI is defined as an ancillary services undertaking in accordance with Article 4 paragraph 1 point 18 CRR. Following the recent CH-Group restructuring, CI only holds one participation, i.e. 50% of the shares in LuxCSD S.A. CI's main business activities lie within its role as trustee providing operational support for ASL and ASLplus business. CI is authorized in Luxembourg as a specialized PSF (professional depository of financial instruments) according to Article 26 of the Luxembourg Law of 5 April 1993 on the financial sector, as amended.

### 1.2.2.3. Clearstream Banking S.A., Luxembourg ("CBL")

CBL is defined as a credit institution in accordance with Article 4 paragraph 1 No 1 CRR. CBL was incorporated in 1970 and is an ICSD which provides settlement and custody services for international securities.

These services include:

- Delivery versus payment and delivery free of payment settlement transactions;
- Comprehensive custody management;
- Value-added services, such as securities lending, collateral management etc.;
- Transactional information distribution.

Further services offered by CBL include the issuance of securities, Investment Funds Services ("IFS") and Global Securities Financing ("GSF"), consisting of securities lending as well as collateral management services. In addition, CBL provides operative treasury services for CBF as well as for CI and Clearstream Services S.A. ("CS").

In May 2019, CBL launched an enhanced distribution support service – called Fund Desk – for all its customers. Following the acquisition of a 51.2% stake in the UBS Fondcenter AG, Zurich, effective 1 October 2020, CBL merged its existing Clearstream Fund Desk with the new entity.

Additionally, CBL applied for an authorisation as CSD under CSDR, which covers: (i) the authorisation to provide core and non-banking type ancillary services according to Article 17; (ii) the authorisation to provide banking-type ancillary services according to Article 55; and (iii) the authorisation to operate an interoperable link with Euroclear Bank NV/SA, the Bridge, according to Article 19 CSDR. The authorisation has been provided on 12 April, 2021.

CBL holds the following branches/participations:

#### CBL Singapore branch ("CBS")

CBS is a branch of CBL and its first operational centre outside Europe. In November 2009, the Singapore branch obtained a banking license, which has been updated in October 2017. All of CBL's products and



services, including Global Securities Financing, Investment Funds Services and Issuance and Distribution are offered locally to customers in the Asia-Pacific region.

#### **CBL London branch (“CLB”)**

In January 2016, CBL transformed its representative office in London into a fully established branch, which took over the activities of the representative office.

#### **Clearstream Banking Japan Ltd, Tokyo (“CBJ”)**

In 2009, CBL established a fully owned subsidiary in Tokyo, Japan. The purpose of Clearstream Banking Japan Ltd (“CBJ”) is to engage in marketing, information provision and advertising; holding financial seminars and other education and trainings; support of existing customers of group companies and any other business activities relating to any of the preceding.

#### **Clearstream London Limited (“CLL”)**

Clearstream London Limited, a fully owned subsidiary was incorporated on 27 December 2018 and duly authorized under an Arranger Licence by the FCA on 31 January 2020, albeit with dormant permissions at the current time. A full activation is currently envisaged by Q1 2022.

#### **REGIS-TR S.A., Luxembourg (“REGIS-TR”)**

REGIS-TR S.A. is a public limited liability company (“société anonyme”) organised and existing under the laws of Luxembourg. The Company was launched on 9 December 2010 by the Spanish Central Securities Depository, Sociedad de Gestión de los Sistemas de Registro, Compensación y Liquidación de Valores, S.A. and Clearstream Banking S.A. as 50/50 joint venture, and is headquartered in the Grand Duchy of Luxembourg, with a branch in Madrid.

REGIS-TR is a European Trade Repository (TR) for reporting trades and transactions across multiple product classes and jurisdictions. The TR is open to financial and non-financial institutions, and services the major regulatory reporting obligations in Europe.

REGIS-TR collects and administers details of derivative trades and transactions reported by its customers (market participants) in order to give its customers and regulators an aggregated view of positions in compliance with the relevant regulations.

REGIS-TR has been registered by the European Markets and Securities Authority (ESMA) on 14 November 2013 in accordance with 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 (European Market Infrastructure Regulation), for the provision of reporting services commonly referred to as “EMIR”.

In addition, REGIS-TR was recognised by the Swiss Financial Market Supervisory Authority (FINMA) on 1 April 2017 as a foreign trade repository in accordance with Article 80 FMIA for the receipt of reports about derivatives transactions from persons subject to reporting requirements in accordance with Article 104 FMIA and Article 105 paragraph 2 FMIA in conjunction with Article 93 FMIO, for the provision of reporting services commonly to as “FinfraG”.

REGIS-TR has also progressed well towards its goal of becoming a one-stop-shop for regulatory reporting requirements and has been granted an extension as an EMIR Trade Repository by ESMA on 7 May 2020 to enable it to perform its Securities Financing Transaction Reporting pertaining to the Securities Finance Transaction Reporting regulation 2015/2365 of 25 November 2015 (SFTR). The service launched on 12 July 2020

Since 2010, REGIS-TR is fully consolidated in the DB Group financial statements. With regard to the consolidation provisions set out in the CRR/KWG, REGIS-TR has been classified as an “other financial undertaking” and is therefore not included in regulatory consolidation.

#### **Clearstream Australia Limited, formerly Ausmaq Limited, Sydney (“Clearstream Australia”)**

Clearstream Banking S.A. successfully completed the acquisition of Ausmaq Limited, Sydney, Australia, during the third quarter of 2019. On 1 June 2020, Ausmaq Limited changed its name to Clearstream Australia. With this acquisition, CBL is further expanding its offering in the investment funds space and has entered the Australian market. Clearstream Australia has been a wholly owned subsidiary of Clearstream Banking Luxembourg since 31 July 2019. Due to the expansion of its geographical footprint, CBL expects this transaction to deliver revenue synergies.

#### **Clearstream Australia Nominee Limited (“CAN”)**

CAN was registered in June 2020 as a Nominee company which is wholly owned by Clearstream Australia Limited. The nominee company was established to hold the assets of the company's clients. Clearstream Australia, in fulfilling its role as custodian, controls CAN and administers the assets on behalf of its clients who are the beneficial owners of the underlying managed funds.

#### 1.2.2.4. Clearstream Banking AG, Frankfurt / Main ("CBF")

CBF is defined as a credit institution in accordance with Article 4 paragraph 1 No 1 CRR. CBF is a CSD, which provides settlement and custody services in both, the Collective Safe Custody ("CSC"), which is mainly German domestic, and the Non-Collective Safe Custody businesses. The focus of the settlement business is thereby on the settlement of stock exchange transactions.

CBF is the only CSD in Germany. It operates a large vault where most of the securities issued in Germany, securities issued elsewhere, as well as physical gold are stored. Within the frame of individual or collective safe custody, the settlement and asset servicing of domestic and international securities are offered.

These services include:

- Delivery versus payment and delivery free of payment settlement transactions;
- Comprehensive custody management;
- Value-added services like securities lending, collateral management etc.;
- Transactional information distribution.

Beyond that, CBF acts as a trustee to cover specific types of asset-backed bonds. With respect to commodity-backed bonds, the commodity (Gold) is stored physically in the vaults of CBF. For bond issues covered by securities, CBF, as a Central Securities Depository, performs safekeeping's and as a trustee offers an increased level of protection for investors with significantly low-risk businesses and operational models. Moreover, CBF offers its customers the Global Securities Financing (GSF) service, through which market participants can lend and borrow securities against collateral.

Additionally, CBF applied for an authorisation as CSD according to Article 17 of Regulation (EU) No 909/2014 ("Central Securities Depositories Regulation", "CSDR"), for which authorization has been granted on 21 January 2020. Additionally, CBF applied for an authorization for providing banking-type ancillary services according to Article 54 paragraph 2 lit. a CSDR and authorization is expected in Q3 2021.

#### 1.2.2.5. Clearstream Services S.A., Luxembourg ("CS")

CS is defined as an ancillary services undertaking in accordance with Article 4 paragraph 1 No 18 CRR. CS provides information technology managed and application service provision. The company's services include hosting, network management, system management, security management, storage and data management, information technology operations, and disaster recovery planning, as well as consultancy, project management, and quality assurance services. It serves financial market customers in Luxembourg and internationally. The company was founded in 1997 and is based in Luxembourg. Main services are provided to CBL and CBF. In addition, CS provides services to external customers.

#### 1.2.2.6. Clearstream Operations Prague s. r. o., Prague ("COP")

COP is defined as an ancillary services undertaking in accordance with Article 4 paragraph 1 No 18 CRR. In 2008 CI established a subsidiary in Prague, Czech Republic. Clearstream Operations Prague s. r. o. ("COP") offers certain operational services in relation to CBL, CBF, and LuxCSD. Furthermore, COP functions as a shared services centre for certain administrative and support functions for major parts of the entire Deutsche Börse Group. After the restructuring of Clearstream Group COP operates as a direct subsidiary of CH.

As the arrangements are governed by outsourcing contracts according to Luxembourg and German regulatory standards, the services performed are fully monitored and managed by Clearstream management structures and processes.

#### 1.2.2.7. Clearstream Global Securities Services Ltd, Cork ("CGSS")

CGSS is defined as an ancillary services undertaking in accordance with Article 4 paragraph 1 No 18 CRR. CGSS is a wholly owned subsidiary of CH and is one of Clearstream's servicing centres for mutual and hedge funds, as well as core client services support. CGSS also provides corporate IT support services for DB Group entities.

### 1.2.2.8. LuxCSD S.A., Luxembourg (“LuxCSD”)

As a central securities depository, LuxCSD provides Luxembourg’s financial community with services for settlement in EUR central bank money as well as with issuing and custody services for a wide variety of domestic and international securities including investment funds. LuxCSD was incorporated in July 2010 and is jointly owned by the Banque centrale du Luxembourg (BCL) and CI (equal shares; 50%/50%).

LuxCSD applied for an authorisation as CSD according to Article 17 of Regulation (EU) No 909/2014 (“Central Securities Depositories Regulation”, “CSDR”). Authorisation has been granted on 15 April 2020.

### 1.2.2.9. REGIS-TR UK Ltd, London

In response to the United Kingdom’s decision to leave the European Union, REGIS-TR S.A. launched its sister TR, REGIS-TR UK Ltd (“REGIS-TR UK”) in order to maintain a continuous reporting service for its UK client base. REGIS-TR UK is regulated by the Financial Conduct Authority (“FCA”) and is based in the London offices of Clearstream Banking S.A. Initially, REGIS-TR UK will focus its efforts to report for UK EMIR with a view of continued expansion and market adaptation to client needs in the UK.

### 1.2.2.10. Clearstream Fund Centre AG, formerly Fondcenter AG, Zurich (“FCAG”)

Effective 1 October 2020, CH acquired a 51.2% stake in Fondcenter AG from UBS. FCAG is a B2B fund distribution support platform. UBS holds a minority stake of 48.8%, remaining a strategic partner, and has entered into long-term cooperation agreements for the provision of services by Clearstream Group including to continue using the Fund Centre platform on a long-term basis. Clearstream Holding AG combines the acquired Fondcenter business with the existing Fund Desk (previously within CBL), forming Clearstream Fund Centre AG, creating a leading provider of fund services.

### 1.2.2.11. Clearstream Nominees Ltd., London

Clearstream Nominees Limited is a dormant company registered in England and Wales which is owned by Clearstream Holding AG. The nominee concept is only used where necessary to fulfil local customer asset protection obligations.

## 1.2.3. Licensing and regulatory supervision

The “Commission de Surveillance du Secteur Financier” (“CSSF”) is the competent authority for the supervision of CBL as a credit institution according to Article 42 and 43 of the Luxembourg Banking Act. Furthermore, the “Banque Centrale du Luxembourg” (“BCL”) has a shared responsibility for liquidity supervision on the basis of Article 2 (4) of the Law of 23 December 1998 concerning the monetary status.

Moreover, CBL is subject to regulatory supervision in relation to the securities settlement system (“SSS”) according to Title V of the Luxembourg Law of 10 November 2009 relating to payment services. BCL is responsible for the oversight of SSSs, as per Art. 110 of the Law of 10 November 2009. The oversight focuses on the operational and financial stability of each system individually, the participants in such systems as well as the stability of the financial system as a whole. Furthermore, specific regulations for SSSs must be considered (e.g. circulars BCL 2001/163 and 2001/168).

As applicable competent authority, the CSSF complies with the EBA Guidelines 2014/10 on criteria to determine the conditions of application of Art. 131(3) of Directive 2013/36/EU (CRD IV) in relation to the assessment of other systemically important institutions. Clearstream Banking S.A. is classified as Other Systemically Important Institution (“O-SII”) since 1 January 2018 based on CSSF Regulation N° 17-04 of 31 October 2017. As at 31 December 2020, CBL was classified as an O-SII based on CSSF Regulation N° 19-09 of 29 October 2019. Classification as O-SII from 1 January 2021 onwards was confirmed by CSSF Regulation N°20-07 of 12 November 2020. Due to its classification as an O-SII, CBL must produce a stand-alone Pillar 3 disclosure report.

Clearstream Banking AG is a company incorporated in Germany and licensed as a credit institution under supervision of the German Financial Supervisory Authority (“Bundesanstalt für Finanzdienstleistungsaufsicht”, “BaFin”).

CBF accepts deposits and grants its clients short-term loans. It is therefore a CRR credit institution pursuant to section 1 (3d) of Kreditwesengesetz (KWG, German Banking Act).

Clearstream Holding as the superordinate company of the financial holding Group according to § 10a (1) KWG, is responsible for fulfilling the regulatory obligations on a consolidated/Group level vis-à-vis the German supervisory authorities and presents a Pillar 3 report in compliance with the disclosure requirements pursuant to Part Eight CRR and § 26a KWG.

CH is subject to consolidated supervision by the German Federal Financial Supervisory Authority.

#### 1.2.4. Scope of consolidation

All information provided in this report refers if not stated otherwise to the companies included in the regulatory scope of consolidation. The regulatory scope of consolidated differs slightly from the consolidated group under accounting rules. CH is exempted from the preparation of consolidated annual accounts according to § 291 (1) HGB. The accounting consolidation in this section refer to the consolidation method at Deutsche Börse group level.

The following Table 2 shows both the scope of regulatory and accounting consolidation including the description of the type of the enterprise.

Type of enterprise	Company	Regulatory consolidation		Accounting consolidation	
		Consolidation Art. 18 CRR Full Consolidation	Neither consolidated nor deducted	Full Consolidation	At equity
Credit Institutions	Clearstream Banking S.A., Luxembourg (CBL)	X		X	
	Clearstream Banking AG, Frankfurt am Main (CBF)	X		X	
Financial Holding Company	Clearstream Holding AG, Frankfurt am Main (CH)	X		X	
Financial Institution	Clearstream Australia Ltd <sup>1</sup>		X	X	
Ancillary Services Undertaking	Clearstream Services S.A., Luxembourg (CS) <sup>2</sup>	X		X	
	Clearstream Operations Prague s.r.o., Prague (COP)	X		X	
	Clearstream Banking Japan Ltd., Tokyo (CBJ)	X		X	
	Clearstream Global Securities Services Ltd., Cork (CGSS)	X		X	
	Clearstream International, S.A., Luxembourg (CI) <sup>3</sup>	X		X	
Other Undertaking	Clearstream Nominees Ltd., London		X		X
	LuxCSD S.A. Luxembourg (LuxCSD)		X		X
	REGIS-TR S.A., Luxembourg (REGIS-TR) <sup>4</sup>		X	X	
	REGIS-TR UK Ltd., London		X	X	
	Clearstream Fond Centre AG <sup>5</sup>		X	X	
	Clearstream London Limited (CLL)		X	X	
	Clearstream Australia Nominees <sup>6</sup>		X		

<sup>1</sup> As of 31 December 2020, the Clearstream Group did utilise the exceptional regulation of article 19 (1) CRR for the subsidiary Clearstream Australia Ltd.

<sup>2</sup> PSF according to Articles 29-2 and 29-4 of the Luxembourg Law of 5 April 1993;

<sup>3</sup> PSF according to Article 26 of the Luxembourg Law of 5 April 1993;

<sup>4</sup> REGIS-TR is classified as trade repository according to Article 2 paragraph 2 EMIR.

<sup>5</sup> Clearstream Fond Centre AG is considered as qualifying holding outside the financial sector and treated according to Art.89 (3) CRR. The amount of the participation which exceeds 15% of the eligible capital of the institution is deducted from the own funds and the residual amount is risk weighted with 100%.

<sup>6</sup> Clearstream Australia Nominees was dormant as of 31 December 2020, and was neither consolidated nor deducted.

*Table 2. Regulatory and Accounting Scope of Consolidation*

The assignment of the companies to the types of enterprise is based on the definitions contained in Art. 4 CRR. Clearstream Group has no company that was consolidated proportionately at the reporting date.

## 2. Capital structure, capital ratio and leverage ratio

In all the tables shown in this chapter, the data for CH-Group and CBF is based on the German GAAP according to the German Commercial Code (HGB). The data for CBL is based on International Financial Reporting Standards (IFRS).

### 2.1. Capital components (Article 437 (1) CRR)

The following subsections disclose the information as required by Article 437 paragraph 1 CRR and details set out in Commission Implementing Regulation (EU) No 1423/2013.

#### 2.1.1. Overview

The following Table 3 summarizes the total amount of Clearstream's regulatory own funds. "Tier 1" capital in 2020 corresponds to Core Equity Tier 1 (CET1) capital according to Article 26 CRR.

			31 December 2020 (€' 000)			31 December 2019 (€' 000)		
			CH-Group	CBL	CBF	CH-Group	CBL	CBF
<b>Tier 1:</b>	Eligible Capital	Paid up capital	50	92,000	25,000	50	92,000	25,000
		Share premium	0	229,935	1,108	0	229,935	1,108
	Eligible Reserves	Accumulated other comprehensive income (and other reserves)	1,779,466	940,360	295,892	1,616,947	-	245,892
		Retained earnings	-122,790	0	97,968	-121,912	-512	97,776
		Funds for general banking risk	169,309	0	0	169,309	0	0
Deductions		-148,376	-52,428	-78	-104,888	-109,950	-80	
<b>Tier 2:</b>	Coreadditional own funds	Revaluation reserves	-	-	-	-	-	-
		Subordinated Loan Capital	-	-	-	-	-	-
		Fixed-term cumulative	-	-	-	-	-	-
		Deductions:	-	-	-	-	-	-
<b>Eligible own funds:</b>		1,677,658	1,209,868	419,890	1,559,506	1,149,360	369,696	

Table 3. Composition of Regulatory Capital

Tier 1 capital consists of subscribed capital, reserves and funds for general banking risk. Losses reduce the retained earnings and therefore the Tier 1 capital. Main part of the deductions at CH group level as of 31 December 2020 arises from deductions of qualifying holdings outside the financial sector.

#### 2.1.1.1. Reconciliation of own funds items to audited financial statements (Article 437 (1)(a) CRR)

A full reconciliation of own funds to audited financial statements pursuant to point (a) of Article 437 paragraph 1 CRR must be applied by institutions as laid out in the Implementing Regulation (EU) No 1423/2013. As CH is exempted from the preparation of consolidated annual accounts in line with § 291 (1) HGB a reconciliation with consolidated own funds is not possible. The balance sheet reconciliation for CBL and CBF is shown in Table 4.

	31 December 2020 (€ 000)		31 December 2019 (€ 000)	
	CBL	CBF	CBL	CBF
<b>Own Funds elements in the Annual Financial Statements</b>				
Subscribed Capital	92.000	25.000	92.000	25.000
Share premium	229.935	1.108	229.935	1.108
Accumulated other comprehensive income	-2.986	0	-1.691	0
Legal Reserve	9.200	1.392	9.200	1.392
Other reserves and retained earnings	930.699	392.468	930.363	342.276
Profits for the financial year and accumulated profits	236.177	132.969	279.096	0
<b>Total Own Funds Elements in Audited Financial Statements</b>	<b>1.495.026</b>	<b>552.937</b>	<b>1.538.903</b>	<b>369.776</b>
Profits allocated to other reserves with the approval of financial statements (i.e. after reporting of Own Funds)				-141
Valuation differences		-3.447		
Profits for the financial year and accumulated profits (i.e. after reporting Own Funds)	-236.177	-132.969	-279.096	
<b>Eligible Capital (CET1) before regulatory adjustments</b>	<b>1.262.296</b>	<b>419.968</b>	<b>1.259.666</b>	<b>369.776</b>
Deduction other intangible assets	-35.919	-78	-92.247	-80
Other CET 1 capital adjustments	-16.509		-18.059	
<b>Common Equity Tier 1 Capital/Total Eligible Own Funds</b>	<b>1.209.867</b>	<b>419.890</b>	<b>1.149.360</b>	<b>369.696</b>

*Table 4. Balance Sheet Reconciliation*

The own funds of the financial statements of the Clearstream entities consider profits allocated to retained earnings with the approval of the financial statements and year-end profits which both do not qualify for the regulatory own funds as of 31 December 2020. The profits allocated to retained earnings do not count as CET1 capital if the financial statements are not approved or a prior permission by the competent authority according to Article 26 paragraph 2 CRR is granted.

## 2.1.2. Description of the main features of capital instruments (Article 437 (1)(b) CRR)

Disclosures under point (b) of Article 437 CRR are shown in the next tables for CH, CBL and CBF in line with the disclosure templates set out in the Implementing Regulation (EU) No 1423/2013.

<b>Capital Instruments' main features <sup>(1)</sup></b>	
Features	Instrument
1 <b>Issuer</b>	<b>Clearstream Holding AG</b>
2 Unique identifier (e.g. ISIN, etc.)	N/A
3 Governing law(s) of the instrument	German Stock Corporation Act (AktG)
<b>Regulatory treatment</b>	
4 Transitional CRR rules	Common Equity Tier 1
5 Post-transitional CRR rules	Common Equity Tier 1
6 Eligible at solo/ (sub-)consolidated/ solo & (sub-)consolidated	Consolidated
7 Instrument type (types to be specified by each jurisdiction)	Ordinary Shares
8 Amount recognised in regulatory capital (currency in thousands, as of most recent reporting date)	€ 50
9 Nominal amount of instrument (in thousands, in currency of issuance)	€ 50
9a Issue price (in thousands)	€ 50
9b Redemption price	N/A
10 Accounting classification	Shareholders' equity
11 Original date of issuance	N/A
12 Perpetual or dated	perpetual
13 Original maturity date	N/A
14 Issuer call subject to prior supervisory approval	No
15 Optional call date, contingent call dates and redemption amount	N/A
16 Subsequent call dates, if applicable	N/A
<b>Coupons/dividends</b>	
17 Fixed or floating dividend/coupon	Floating
18 Coupon rate and any related index	N/A
19 Existence of a dividend stopper	N/A
20a Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully discretionary
20b Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully discretionary
21 Existence of step up or other incentive to redeem	No
22 Noncumulative or cumulative	Noncumulative
23 Convertible or non-convertible	Non-convertible
24 If convertible, conversion trigger(s)	N/A
25 If convertible, fully or partial	N/A
26 If convertible, conversion rate	N/A
27 If convertible, mandatory or optional conversion	N/A
28 If convertible, specify instrument type convertible into	N/A
29 If convertible, specify issuer of instrument it converts into	N/A
30 Write-down features	No
31 If write-down, write-down trigger(s)	N/A
32 If write-down, full or partial	N/A
33 If write-down, permanent or temporary	N/A
34 If temporary write-down, description of write-up mechanism	N/A
35 Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	N/A
36 Non-compliant transitioned features	No
37 If yes, specify non-compliant features	N/A

(1) 'N/A' inserted if the question is not applicable

Table 5. Capital Instruments Main Features (CH)

**Capital Instruments' main features <sup>(1)</sup>**

Features	Instrument
1 Issuer	Clearstream Banking SA
2 Unique identifier (e.g. ISIN, etc.)	N/A
3 Governing law(s) of the instrument	Luxembourg Company Law: Law of 10th August 1915 on commercial companies
<b>Regulatory treatment</b>	
4 Transitional CRR rules	Common Equity Tier 1
5 Post-transitional CRR rules	Common Equity Tier 1
6 Eligible at solo/ (sub-)consolidated/ solo & (sub-)consolidated	Solo
7 Instrument type (types to be specified by each jurisdiction)	Ordinary Shares
8 Amount recognised in regulatory capital (currency in millions, as of most recent reporting date)	€ 229
9 Nominal amount of instrument (in millions, in currency of issuance)	€ 92
9a Issue price (in millions)	€ 229
9b Redemption price	N/A
10 Accounting classification	Shareholders' equity
11 Original date of issuance	1970
12 Perpetual or dated	perpetual
13 Original maturity date	N/A
14 Issuer call subject to prior supervisory approval	No
15 Optional call date, contingent call dates and redemption amount	N/A
16 Subsequent call dates, if applicable	N/A
<b>Coupons/dividends</b>	
17 Fixed or floating dividend/coupon	Floating
18 Coupon rate and any related index	N/A
19 Existence of a dividend stopper	No
20a Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully discretionary
20b Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully discretionary
21 Existence of step up or other incentive to redeem	No
22 Noncumulative or cumulative	Noncumulative
23 Convertible or non-convertible	Non-convertible
24 If convertible, conversion trigger(s)	N/A
25 If convertible, fully or partial	N/A
26 If convertible, conversion rate	N/A
27 If convertible, mandatory or optional conversion	N/A
28 If convertible, specify instrument type convertible into	N/A
29 If convertible, specify issuer of instrument it converts into	N/A
30 Write-down features	No
31 If write-down, write-down trigger(s)	N/A
32 If write-down, full or partial	N/A
33 If write-down, permanent or temporary	N/A
34 If temporary write-down, description of write-up mechanism	N/A
35 Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	N/A
36 Non-compliant transitioned features	No
37 If yes, specify non-compliant features	N/A

(1) 'N/A' inserted if the question is not applicable

*Table 6. Capital Instruments Main Features (CBL)*



### Capital Instruments' main features <sup>(1)</sup>

Features	Instrument
1 Issuer	Clearstream Banking Aktiengesellschaft
2 Unique identifier (e.g. ISIN, etc.)	DE0008053604
3 Governing law(s) of the instrument	German Stock Corporation Act (AktG)
<b>Regulatory treatment</b>	
4 Transitional CRR rules	Common Equity Tier 1
5 Post-transitional CRR rules	Common Equity Tier 1
6 Eligible at solo/ (sub-)consolidated/ solo & (sub-)consolidated	Solo
7 Instrument type (types to be specified by each jurisdiction)	Ordinary Shares
8 Amount recognised in regulatory capital (currency in millions, as of most recent reporting date)	€ 26
9 Nominal amount of instrument (in millions, in currency of issuance)	€ 25
9a Issue price (in millions)	€ 26
9b Redemption price	N/A
10 Accounting classification	Shareholders' equity
11 Original date of issuance	1949
12 Perpetual or dated	perpetual
13 Original maturity date	N/A
14 Issuer call subject to prior supervisory approval	No
15 Optional call date, contingent call dates and redemption amount	N/A
16 Subsequent call dates, if applicable	N/A
<b>Coupons/dividends</b>	
17 Fixed or floating dividend/coupon	Floating
18 Coupon rate and any related index	N/A
19 Existence of a dividend stopper	N/A
20a Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully discretionary
20b Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully discretionary
21 Existence of step up or other incentive to redeem	No
22 Noncumulative or cumulative	Noncumulative
23 Convertible or non-convertible	Non-convertible
24 If convertible, conversion trigger(s)	N/A
25 If convertible, fully or partial	N/A
26 If convertible, conversion rate	N/A
27 If convertible, mandatory or optional conversion	N/A
28 If convertible, specify instrument type convertible into	N/A
29 If convertible, specify issuer of instrument it converts into	N/A
30 Write-down features	No
31 If write-down, write-down trigger(s)	N/A
32 If write-down, full or partial	N/A
33 If write-down, permanent or temporary	N/A
34 If temporary write-down, description of write-up mechanism	N/A
35 Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	N/A
36 Non-compliant transitioned features	No
37 If yes, specify non-compliant features	N/A

(1) 'N/A' inserted if the question is not applicable

Table 7. Capital Instruments Main Features (CBF)

### 2.1.3. Own fund details

The following tables summarise the total amount of the regulatory capital of CH-Group, CBL and CBF.

	31 December 2020 (€ 000)	(B) REGULATION (EU) No. 575/2013 ARTICLE REFERENCE	
<b>Common Equity Tier 1 capital instruments and reserves</b>			
1	Directly issued qualifying common share (and equivalent for non-joint stock companies) capital plus related stock surplus	50	26 (1), 27, 28, 29, EBA list 26 (3)
2	Retained earnings	-122.790	26 (1) (c)
3	Accumulated other comprehensive income (and other reserves)	1.779.466	26 (1)
3a	Funds for general banking risk	169.309	26 (1)
<b>6</b>	<b>Common Equity Tier 1 capital before regulatory adjustments</b>	<b>1.826.034</b>	
<b>Common Equity Tier 1 capital: regulatory adjustments</b>			
8	Intangible assets (net of related tax liability) (negative amount)	-44.275	36 (1) (b), 37
<b>20a</b>	<b>Exposure amount of the following items which qualify for a RW of 1250%, where the institution opts for the deduction alternative</b>	<b>-104.101</b>	<b>36 (1)</b>
20b	of which: qualifying holdings outside the financial sector (negative amount)	-104.101	36 (1), 89 to 91
<b>28</b>	<b>Total regulatory adjustments to Common Equity Tier 1</b>	<b>-148.376</b>	
<b>29</b>	<b>Common Equity Tier 1 capital (CET1)</b>	<b>1.677.658</b>	
<b>44</b>	<b>Additional Tier 1 (AT 1) capital</b>	<b>0</b>	
<b>45</b>	<b>Tier 1 capital (T1 = CET1 + AT1)</b>	<b>1.677.658</b>	
<b>58</b>	<b>Tier 2 capital (T2)</b>	<b>0</b>	
<b>59</b>	<b>Total capital (TC = T1 + T2)</b>	<b>1.677.658</b>	
<b>60</b>	<b>Total risk weighted assets</b>	<b>6.700.960</b>	
<b>Capital ratios and buffers</b>			
61	Common Equity Tier 1 (as a percentage of total risk exposure amount)	25,04%	92 (2) (a)
62	Tier 1 (as a percentage of total risk exposure amount)	25,04%	92 (2) (b)
63	Total capital (as a percentage of total risk exposure amount)	25,04%	92 (2) (c)
64	Institution specific buffer requirement (CET1 requirement in accordance with article 92(1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus systemically important institution buffer expressed as a percentage of risk exposure amount)	7,09%	CRD 128, 129, 130, 131, 133
65	of which: capital conservation buffer requirement	2,50%	
66	of which: counter cyclical buffer requirement	0,09%	
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	17,04%	CRD 128
<b>Amounts below the thresholds for deduction (before risk weighting)</b>			
73	Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	33.876	36 (1) (i), 45, 48
<b>Applicable caps on the inclusion of provisions in Tier 2</b>			
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	12.983	62

Table 8. Own Funds Details (CH-Group)

	31 December 2020 (€ 000)	(B) REGULATION (EU) No. 575/2013 ARTICLE REFERENCE	
<b>Common Equity Tier 1 capital instruments and reserves</b>			
1	Capital instruments and Share premium	321.935	26 (1), 27, 28, 29, EBA list 26 (3)
	of which: Subscribed capital	92.000	EBA list 26 (3)
	of which: Share premium	229.935	EBA list 26 (3)
2	Retained Earnings	0	26 (1) (c)
3	Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	940.360	26 (1)
<b>6</b>	<b>Common Equity Tier 1 (CET1) capital before regulatory adjustments</b>	<b>1.262.296</b>	
<b>Common Equity Tier 1 (CET1) capital: regulatory adjustments</b>			
7	Additional value adjustments (negative amount)	-190	
8	Intangible assets (net of related tax liability) (negative amount)	-35.919	36 (1) (b), 37, 472 (4)
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability where the conditions in Article 38 (3) CRR are met) (negative amount)	-1.719	
27	Qualifying AT1 deductions that exceeds the AT1 capital of the institution (negative amount)	-14.600	36 (1) (j)
<b>28</b>	<b>Total regulatory adjustments to Common Equity Tier 1</b>	<b>-52.428</b>	
<b>29</b>	<b>Common Equity Tier 1 capital (CET1)</b>	<b>1.209.868</b>	
<b>44</b>	<b>Additional Tier 1 (AT 1) capital</b>	<b>0</b>	
<b>45</b>	<b>Tier 1 capital (T1 = CET1 + AT1)</b>	<b>1.209.868</b>	
<b>58</b>	<b>Tier 2 capital (T2)</b>	<b>0</b>	
<b>59</b>	<b>Total capital (TC = T1 + T2)</b>	<b>1.209.868</b>	
<b>60</b>	<b>Total risk weighted assets</b>	<b>4.548.991</b>	
<b>Capital ratios and buffers</b>			
61	Common Equity Tier 1 (as a percentage of total risk exposure amount)	26,60%	92 (2) (a)
62	Tier 1 capital ratio (as a percentage of total risk exposure amount)	26,60%	92 (2) (b)
63	Total capital ratio (as a percentage of total risk exposure amount)	26,60%	92 (2) (c)
64	Institution specific buffer requirement (CET1 requirement in accordance with article 92(1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus systemically important institution buffer expressed as a percentage of risk exposure amount)	7,54%	CRD 128, 129, 130, 131, 133
65	of which: capital conservation buffer requirement	2,50%	
66	of which: counter cyclical buffer requirement	0,04%	
67	of which: systemic risk buffer requirement	0,50%	
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	10,06%	CRD 128
<b>Amounts below the thresholds for deduction (before risk weighting)</b>			
72	Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	5.882	36 (1) (h), 46, 45 56 (c), 59 60 66 (c), 69, 70
73	Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	31.660	36 (1) (i), 45, 48

Table 9. Own Funds Details (CBL)

	31 December 2020 (€' 000)	REGULATION (EU) No. 575/2013 ARTICLE REFERENCE
<b>Common Equity Tier 1 capital instruments and reserves</b>		
1 Capital instruments and Share premium	26.108	26 (1), 27, 28, 29, EBA list 26 (3)
2 Retained Earnings	97.968	26 (1) (c)
3 Accumulated other comprehensive income (and other reserves)	295.892	26 (1)
<b>6 Common Equity Tier 1 (CET1) capital before regulatory adjustments</b>	<b>419.968</b>	
<b>Common Equity Tier 1 (CET1) capital: regulatory adjustments</b>		
8 Intangible assets (net of related tax liability) (negative amount)	-78	36 (1) (6), 37, 472 (4)
<b>28 Total regulatory adjustments to Common Equity Tier 1</b>	<b>-78</b>	
<b>29 Common Equity Tier 1 capital (CET1)</b>	<b>419.890</b>	
<b>44 Additional Tier 1 (AT 1) capital</b>	<b>0</b>	
<b>45 Tier 1 capital (T1 = CET1 + AT1)</b>	<b>419.890</b>	
<b>58 Tier 2 capital (T2)</b>	<b>0</b>	
<b>59 Total capital (TC = T1 + T2)</b>	<b>419.890</b>	
<b>60 Total risk weighted assets</b>	<b>1.878.936</b>	
<b>Capital ratios and buffers</b>		
61 Common Equity Tier 1 (as a percentage of total risk exposure amount)	22,35%	92 (2) (a)
62 Tier 1 capital ratio (as a percentage of total risk exposure amount)	22,35%	92 (2) (b)
63 Total capital ratio (as a percentage of total risk exposure amount)	22,35%	92 (2) (c)
64 Institution specific buffer requirement (CET1 requirement in accordance with article 92(1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus systemically important institution buffer expressed as a percentage of risk exposure amount)	7,45%	CRD 128, 129, 130, 131, 133
65 of which: capital conservation buffer requirement	2,50%	
66 of which: counter cyclical buffer requirement	0,45%	
67 of which: systemic risk buffer requirement	0,00%	
67a of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer	0,00%	
68 Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	14,35%	CRD 128
<b>Applicable caps on the inclusion of provisions in Tier 2</b>		
77 Cap on inclusion of credit risk adjustments in T2 under standardised approach	798	62

Table 10. Own Funds Details (CBF)

## 2.2. Capital levels

### 2.2.1. Capital requirements for credit risk positions (Article 438 (1)(c) CRR)

Clearstream uses the Standardized Approach to calculate the capital requirements for credit risk. The following table shows the risk weighted assets and the capital requirements for credit risk exposures:

Risk weighted assets	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Central governments and central banks	1,257	4,420	19	1,150	3,316	78
Regional governments, local authorities and other public bodies	14	6	0	3,397	0	0
Institutions (banks)	419,721	451,153	52,988	521,061	451,133	61,380
Corporates	189,958	119,366	5,452	107,013	75,865	7,717
Retail	10	0	4	432	0	7
Exposures in default	0	8,804	0	0	10,273	0
Other (including equity holding)	427,686	109,454	5,365	154,945	97,759	12,403
Capital requirements from contributions to the default fund of a CCP	1,103	1,103	0	0	331	0
<b>Total risk weighted assets</b>	<b>1,039,750</b>	<b>694,307</b>	<b>63,827</b>	<b>787,998</b>	<b>638,677</b>	<b>81,585</b>
<b>Capital requirements</b>						
Central governments and central banks	101	354	2	92	265	6
Regional governments, local authorities and other public bodies	1	0	0	272	0	0
Institutions (banks)	33,578	36,092	4,239	41,685	36,091	4,910
Corporates	15,197	9,549	436	8,561	6,069	617
Retail	1	0	0	35	0	1
Exposures in default	0	704	0	0	822	0
Other (including equity holding)	34,215	8,756	429	12,396	7,821	992
Capital requirements from contributions to the default fund of a CCP	88	88	0	0	27	0
<b>Total capital requirements</b>	<b>83,180</b>	<b>55,545</b>	<b>5,106</b>	<b>63,040</b>	<b>51,094</b>	<b>6,527</b>

Table 11. Capital requirements for credit risk

**Note:** Differences in the capital usage for institutions derive mainly from different allocation algorithms related to collateral.

## 2.2.2. Capital requirements for credit valuation adjustments

Clearstream uses the Standardized Method to calculate the capital requirements for CVA risk which arises from CBL transactions only. The following table shows the resulting capital requirements:

	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Capital requirements	251	306	0	143	139	0

Table 12. Credit valuation adjustment

**Note:** The data for CH-Group and CBF is based on German GAAP according to the German Commercial Code (HGB). The data for CBL is based on International Financial Reporting Standards (IFRS).

## 2.2.3. Capital requirements for market risk positions (Article 438 (1)(e) CRR)

Clearstream uses the Standardised Approach to calculate the capital requirements for market risk positions.

Foreign Exchange risk (total)	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Capital requirements		632			1,972	

Table 13. Market price risk

## 2.2.4. Capital requirements for operational risk (Article 438 (1)(f) CRR)

The capital requirements for backing operational risk according to the Advanced Measurement Approach (AMA) amounted to a capital requirement as follows:

Due to group internal allocation mechanism assigned capital requirements for operational risk

Operational risk (AMA)	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Own fund requirements	452,646	307,437	145,209	450,635	324,469	126,166

Table 14. Operational risk

The capital figure calculated as described above and in [Chapter 6](#), applies to Clearstream Group. It covers the risk of all legal entities of the Group and is allocated to CBL and CBF afterwards. The allocation key is the proportion of the aggregate total expected yearly maximum loss amount allocated to CBL and CBF based the assessed Operational Risk scenarios which are classified as tail<sup>1</sup> event scenarios.

As described in [Chapter 6.3](#), the defined Operational Risk scenarios are reviewed on a regular basis and are, if necessary, adjusted.

## 2.2.5. Total capital requirements

The following table summarizes the capital requirements of the Clearstream entities:

	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Total capital requirements	536,077	363,919	150,315	513,818	377,675	132,693
Eligible own funds	1,677,658	1,209,868	419,890	1,559,506	1,149,360	369,696
Capital ratio (%)	25.04%	26.60%	22.35%	24.28%	24.35%	22.29%

Table 15. Total capital requirements

<sup>1</sup> Maximum loss is defined as EUR 750K and the frequency is less than once in 20 years.

## 2.2.6. Capital ratio

The capital requirements of CBL decreased in the reporting period. The decrease of the capital requirements resulted from a decrease of credit risk.

The capital requirements of CBF increased in total due to the increase of capital requirements for operational risk and credit risk.

On CH-Group level the increased capital requirements were mainly driven by a increase in credit risk capital requirements whereby the capital requirements for operational risk increased.

	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Total capital requirements	536,077	363,919	150,315	513,818	377,675	132,693
Eligible own funds	1,677,658	1,209,868	419,890	1,559,506	1,149,360	369,696
Capital ratio (%)	25.04%	26.60%	22.35%	24.28%	24.35%	22.29%

Table 16. Capital ratios

**Note:** Clearstream entities do not issue T1 or T2 securities, meaning the eligible own funds consist entirely of CET1 capital. Therefore, the Capital Ratio in the table above is both the Common Equity Tier 1 ratio, the Tier 1 capital ratio, and the total capital ratio.

## 2.3. Countercyclical capital buffer (Article 440 CRR)

The countercyclical capital buffer aims to ensure that banking sector capital requirements take account of the macro-financial environment in which banks operate. According to Delegated Regulation (EU) 2015/1555 on the disclosure of information in relation to the compliance of institutions with the requirement for a countercyclical buffer, institutions need to disclose a geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer which is attached in the [Annex 2](#) of this report.

In the following tables the amounts of institution-specific countercyclical capital buffers are shown for CH-Group, CBL and CBF.

31 December 2020 (€' 000)	
010 Total risk exposure (€' 000)	6,700,960
020 Institution specific countercyclical buffer rate (%)	0.09%
030 Institution specific countercyclical buffer requirement (€' 000)	6,131

Table 17. Amount of institution-specific countercyclical capital buffer (CH-Group)

31 December 2020 (€' 000)	
010 Total risk exposure (€' 000)	4,548,991
020 Institution specific countercyclical buffer rate (%)	0.04%
030 Institution specific countercyclical buffer requirement (€' 000)	1,804

Table 18. Amount of institution-specific countercyclical capital buffer (CBL)

31 December 2020 (€' 000)	
010 Total risk exposure (€' 000)	1,878,936
020 Institution specific countercyclical buffer rate (%)	0.45%
030 Institution specific countercyclical buffer requirement (€' 000)	8,433

Table 19. Amount of institution-specific countercyclical capital buffer (CBF)

## 2.4. Leverage ratio (Article 451 CRR)

According to Article 429 (2) CRR, the leverage ratio is defined as the capital parameter of an institution divided by that institution's total exposure parameter and is expressed as a percentage. This figure is not risk-sensitive and complements the risk-based perspective of capital requirements and capital ratios.

In accordance with Article 451 CRR in conjunction with the Implementation Regulation (EU) 2016/200 regarding the disclosure of the leverage ratio, the following tables show the leverage ratio for the Clearstream entities. There has so far not been a binding maximum limit in the European Union for the leverage ratio. However, with the Amending Regulation (EU) 2019/876 (CRR II), the Article 92 (1) CRR was amended in such a way that institutions (starting 28 June 2021) must maintain a leverage ratio of at least 3 % at all times.

The delegated regulation on disclosure of the leverage ratio (EU) No 2016/200 requires disclosure of detailed information.

As CH is exempted from the preparation of consolidated annual accounts in line with § 291 (1) HGB a reconciliation with Leverage Ratio total exposure measure is not possible. Therefore, in the following table the reconciliation of the Leverage Ratio total exposure measure to the relevant information in the published financial statements as of 31 December 2020 including any adjustments made are shown for CBL and CBF:

### Summary comparison of accounting assets vs Leverage Ratio exposure measure

	CBL	CBF
Total consolidated assets as per published financial statements	14,616,583	2,614,971
Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	0	0
Adjustment for fiduciary assets recognised on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	0	0
Adjustment for derivative financial instruments	50,970	0
Adjustment for securities financing transactions (ie repos and similar secured lending)	7,610	0
Adjustment for off-balance sheet items (ie conversoin to credit equivalent amounts of off-balance sheet exposures)	435,805	0
Other adjustments	-802	7,319
<b>Leverage Ratio exposure</b>	<b>15,110,166</b>	<b>2,622,290</b>

*Table 20. Summary reconciliation of accounting assets and Leverage Ratio exposures (LRSum)*

The following table shows that the on-balance sheet exposures are the biggest part of the Leverage Ratio total exposure measure. In addition to the on-balance sheet items, off-balance sheet items and derivative as well as SFT exposures are considered to determine the Leverage Ratio exposure measure as well as the Leverage Ratio itself.

	31 December 2020 (€' 000)			31 December 2019 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
<b>On-balance sheet exposures</b>						
On-balance sheet items (excluding derivatives and SFTs, but including collateral)	11,434,906	9,134,104	1,942,630	10,039,100	8,860,574	1,290,659
(Assets, amounts deducted in determining Basel III)						
Tier 1 capital	-148,375.94	-37,828.00	-77.78	-104,888.00	-93,430.00	-80.00
<b>On-balance sheet exposures</b>	<b>11,286,530</b>	<b>9,096,276</b>	<b>1,942,552</b>	<b>9,934,212</b>	<b>8,767,144</b>	<b>1,290,579</b>
<b>Derivative exposures</b>						
Replacement cost associated with all derivatives transactions (ie net of eligible cash variation margin)	0	59,481	0	0	62,257	0
Add-on amounts for PFE associated with all derivatives transactions	0	0	0	0	0	0
Risk position according to original risk method	54,758	0	0	61,659	0	0
Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	0	0	0	0	0	0
(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	0	0	0	0	0	0
(Exempted CCP leg of client-cleared trade exposures)	0	0	0	0	0	0
Adjusted effective notional amount of written credit derivatives	0	0	0	0	0	0
(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	0	0	0	0	0	0
<b>Total derivative exposures</b>	<b>54,758</b>	<b>59,481</b>	<b>0</b>	<b>61,659</b>	<b>62,257</b>	<b>0</b>
<b>Securities financing transaction exposures</b>						
Gross SFT assets with no recognition of netting, after adjusting for sale accounting transactions	5,511,026	5,510,994	679,738	6,516,891	6,516,401	877,964
(Netted amounts of cash payables and cash receivables of gross SFT assets)		0	0	0	0	0
CCR exposure for SFT assets	20,195	7,610	0	51,491	175,861	0
Agent transaction exposures		7,745	0	0	15,841	0
<b>Total securities financing transaction exposures</b>	<b>5,531,222</b>	<b>5,526,350</b>	<b>679,738</b>	<b>6,568,382</b>	<b>6,708,103</b>	<b>877,964</b>
<b>Other off-balance sheet exposures</b>						
Off-balance sheet exposures at gross notional amount	468,165	428,059	0	337,450	288,638	0
(Adjustments for conversion to credit equivalent amounts)	-36,672	0	0	-44,063	0	0
<b>Off-balance sheet items</b>	<b>431,493</b>	<b>428,059</b>	<b>0</b>	<b>293,387</b>	<b>288,638</b>	<b>0</b>
<b>Capital and total exposures</b>						
Tier 1 capital	1,677,658	1,209,867	419,890	1,559,506	1,149,360	369,696
<b>Total exposures (sum of on-balance, derivative, SFT and off-balance exposures)</b>	<b>17,304,003</b>	<b>15,110,166</b>	<b>2,622,290</b>	<b>16,857,640</b>	<b>15,826,142</b>	<b>2,168,544</b>
<b>Leverage Ratio</b>						
<b>Basel III Leverage Ratio</b>	<b>9.70%</b>	<b>8.01%</b>	<b>16.01%</b>	<b>9.25%</b>	<b>7.26%</b>	<b>17.05%</b>
<b>Choice on transitional arrangements and amount of derecognised fiduciary items</b>						
Choice on transitional arrangements for the definition of the capital measure	-	-	-	-	-	-
Amount of derecognised fiduciary items in accordance with Article 429 (11) of Regulation (EU) No 575/2013	-	-	-	-	-	-

Table 21. Leverage Ratio common disclosure template (LRCom)

As the on-balance sheet items are the main part of the Leverage Ratio total exposure measure a sufficiently granular breakdown of the related components to identify the main composition of the leverage ratio is provided in Table 22. As Clearstream has no trading book the total on-balance sheet exposures are banking book exposures.

<b>CRR leverage ratio exposures</b>	<b>31 December 2020 (€' 000)</b>	<b>31 December 2019 (€' 000)</b>
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	11,434,906	10,039,100
Trading book exposures	0	0
Banking book exposures, of which:	11,434,906	10,039,100
Covered bonds	0	0
Exposures treated as sovereigns	9,103,594	8,450,191
Exposures to regional governments, MDB, international organisations and PSE NOT treated as sovereigns	72	16,986
Institutions	1,570,754	1,359,916
Secured by mortgages of immovable properties	0	0
Retail exposures	13	576
Corporate	189,497	107,150
Exposures in default	0	0
Other exposures (eg equity, securitisations, and other non-credit obligation assets)	570,975	104,281

Table 22. Split-up of on balance sheet exposures (excluding derivatives, SFTs and exempted exposures; LRSpl)

<b>CRR leverage ratio exposures</b>	<b>CH-Group CBL CBF</b>
Description of processes used to manage the risk of excessive leverage	Clearstream as CSD has a volatile balance sheet volume depending on customers' short-term cash deposits used to foster settlement. The balance sheet varies sharply within short timeframes and the cash received is reinvested with low credit and market risk. This position affects the Leverage Ratio exposure measure to a high degree. Thus, a direct management of leverage is only feasible to a limited extent.
Description of the factors that had an impact on the leverage ration during the period to which the disclosed leverage ratio refers	The leverage exposure, and therefore ratio, is primarily influenced by the volume of client deposits and the corresponding actions taken by Clearstream to place these funds in the market in as low risk a way as possible, through on-balance sheet placements and securities financing transactions.

Table 23. Description of qualitative items (LRQual)

## 3. Governance arrangements (Article 435 (2) CRR)

### 3.1. Clearstream Banking S.A.

#### 3.1.1. General arrangements

Clearstream Banking S.A. ("CBL") is incorporated in Luxembourg in the form of a public limited company (Société Anonyme). It is governed by its articles of association and applicable laws and regulations, such as Luxembourg company law.

CBL maintains a comprehensive *Suitability Assessment Policy*. The objective of this policy is to ensure that members of the Executive Board of CBL, members of the Supervisory Board of CBL, and key function holders ("KFH") of CBL are suitable in terms of reputation, experience, and governance criteria, as stipulated in the Luxembourg Banking Act, EBA Guidelines, CSSF circulars and CSDR.

CBL follows stringently the *Suitability Assessment Policy* for the recruitment and selection of members of the Supervisory Board and the Executive Board as well as the key function holders, as described below. Also, CBL has diversity principles and the *Gender Diversity Policy* in place, which refer to educational and professional background, gender, age, and geographical provenance, to achieve a variety of views and experiences and to facilitate independent opinions within the Supervisory and the Executive Board. To increase the number of the under-represented gender,



the Supervisory Board agreed on the proposed 20% target quota for the representation of the under-represented gender (currently female) in both the Supervisory Board and the Executive Board until 31 December 2021.

Since 2018, the rules of the limitation of mandates in accordance with Article 38-2 of the Luxembourg Banking Act must be complied with. Under this definition, and in consideration of the legal permissibility of the aggregation of mandates, on 31 December 2020 all members of the Executive Board and the Supervisory Board of CBL complied with these rules.

### 3.1.2. Executive Board

The Executive Board is responsible for managing CBL in accordance with the applicable laws, its Articles of association, and its internal rules and regulations with the objective of creating sustainable value in the interest of the company, and taking into consideration the interests of the shareholders, employees, and other stakeholders. The Executive Board is responsible for establishing a proper business organisation, encompassing appropriate and effective risk management.

According to CBL's governing documents, the Executive Board shall be composed of at least three members who are appointed by the Supervisory Board of CBL for a period of four years. The Executive Board is chaired by the CEO.

The recruitment process of members of the Executive Board starts with the Nomination Committee to prepare and the Supervisory Board to resolve on a job description and candidate profile for a specific position. Afterwards, the Nomination Committee identifies and recommends suitable members for the approval to the Supervisory Board. After the selection and nomination of a candidate, Boards & Committees Clearstream prepares a formal decision of the Supervisory Board. The appointment of new members of the Executive Board of CBL requires prior approval by the competent authority (CSSF).

The members of the Executive Board must be professionally suitable and reliable for the management of a credit institution and central securities depository, and they must be able to devote sufficient time to fulfil their tasks. Their professional competence requires sufficient theoretical and practical knowledge of the business of a credit institution and central securities depository.

The business distribution scheme regulates the allocation of tasks between the board members. Nevertheless, the Executive Board remains collectively responsible for the fulfilment of the duties as defined by law and set out in the articles of association (overall responsibility).

Meetings of the Executive Board are held monthly or more frequently if required.

As at 31 December 2020, the Executive Board of Clearstream Banking S.A. consisted of five members, namely:

<b>Name / Position</b>	<b>Number of directorships (as of 31/12/2020)</b>
Philippe Seyll – Chief Executive Officer	8 (thereof 6 within Deutsche Börse Group)
João Amaral	1 (thereof 1 within Deutsche Börse Group)
Maurice Lamy	3 (thereof 3 within Deutsche Börse Group)
Anne-Pascale Matrechauffe	3 (thereof 3 within Deutsche Börse Group)
Denis Schloremberg	2 (thereof 1 within Deutsche Börse Group)
Guido Wille	1 (thereof 1 within Deutsche Börse Group)

*Table 24. Number of directorships held per Executive Board Member (CBL)*

### 3.1.3. Supervisory Board

According to the articles of association of CBL, the Supervisory Board consists of at least three members. The members of the Supervisory Board are required to fulfil certain criteria, as laid down in the *Suitability Assessment Policy*, and to comply with regulatory requirements, as set out in the section above.

Such criteria include, but are not limited to:

- Members of the Supervisory Board should have an up-to-date understanding of the business, of the company, and its risks. The assessment of a member’s knowledge, skills and experience should consider both the theoretical experience attained through education and training, and the practical experience gained in previous occupations.
- A member of the Supervisory Board should be considered to be of good repute, honest and possess integrity, if there are no objective and demonstrable grounds to suggest otherwise and no reason to have reasonable doubt about his or her good repute, honesty and integrity.

The Nomination Committee prepares a job description and a candidate profile for a specific position, which is resolved by the Supervisory Board. Subsequently, the Nomination Committee identifies and recommends suitable candidates, who are sent for approval to the general meeting of shareholders. Following selection and nomination, Boards & Committees Clearstream prepares the formal decision of the general meeting of shareholders to appoint the candidate as new member. The appointments of members to the Supervisory Board require prior approval by the competent authority (CSSF). There were no new appointments in 2020.

As at 31 December 2020, the Supervisory Board consisted of the persons displayed in [Table 25](#), which also discloses the number of directorships held by each member, as required by Article 435 (2) of CRR.

Name / Position	Number of directorships (as of 31/12/2020)
Stephan Leithner - Chairperson	9 (thereof 7 within Deutsche Börse Group)
Gregor Pottmeyer – Vice-Chairperson	5 (thereof 5 within Deutsche Börse Group)
Oliver Engels	3 (thereof 2 within Deutsche Börse Group)
Stephanie Eckermann	3 (thereof 3 within Deutsche Börse Group)
Wolfgang Gaertner	2 (thereof 1 within Deutsche Börse Group)
Marie-Jeanne Chèvremont	6 (thereof 1 within Deutsche Börse Group)

*Table 25. Number of directorships held per Supervisory Board Member (CBL)*

The Supervisory Board typically meets four times per year, with additional meetings possible if and as required.

### 3.1.4. Committees

In 2020, the Supervisory Board was supported by four separate committees being Audit Committee, Risk Committee, Nomination Committee and Remuneration Committee. All four committees have three members each, while the Audit Committee is chaired by an independent member of the Supervisory Board.

#### Audit Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>▪ Marie-Jeanne Chevremont – Chairperson</li> <li>▪ Wolfgang Gaertner – Vice Chairperson</li> <li>▪ Stephanie Eckermann (Q3-Q4)</li> <li>▪ Samuel Riley (Q1-Q2)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitors accounting and financial reporting processes</li> <li>▪ Monitors the effectiveness of the risk management process, in particular, the Internal Control System (ICS), the risk management system and internal audit</li> <li>▪ Monitors the execution of audits, in particular, in relation to the selection and independence of the auditor and the</li> </ul>

Members	Tasks and responsibilities
	<p>services provided by the auditor (for example, scope, frequency or reports)</p> <ul style="list-style-type: none"> <li>Submits recommendations to the Supervisory Board to ensure the integrity of the reporting and accounting processes</li> </ul>

*Table 26. Overview CBL Audit Committee*

### Nomination Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>Wolfgang Gaertner – Chairperson</li> <li>Stephan Leithner</li> <li>Marie-Jeanne Chevremont</li> </ul>	<ul style="list-style-type: none"> <li>Identifies, recommends and promotes, candidates to fill vacancies in the Executive Board (EB) and Supervisory Board (SB), with the objective to reach a balance and diversity of knowledge, skills and experience, as well as gender diversity among the respective members</li> <li>Periodically assesses the general structure and performance of EB and SB and provides related recommendations to the SB for improvements</li> <li>Assesses the knowledge, skills and experience of respective boards, on an individual and collective basis</li> </ul>

*Table 27. Overview CBL Nomination Committee*

### Remuneration Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>Stephan Leithner (Chairperson)</li> <li>Gregor Pottmeyer (Vice Chairperson)</li> <li>Wolfgang Gaertner</li> </ul>	<ul style="list-style-type: none"> <li>Supervises the reasonableness of the remuneration system of executive management members. In particular, it supervises the appropriateness of the compensation of the Head of the risk function and of the compliance function as well as employees having a substantial influence on the overall risk profile of the institution. It also supports the Supervisory Board in monitoring the reasonableness of the remuneration system of employees as well as the institution. At the same time, it assesses the impacts of the remuneration system on the risk, capital and liquidity management</li> <li>Supports the Supervisory Board in overseeing the internal control system and all other relevant areas in the structuring of the remuneration system</li> </ul>

*Table 28. Overview CBL Remuneration Committee*

### Risk Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>Oliver Engels – Chairperson</li> <li>Stephan Leithner – Vice Chairperson</li> <li>Stephanie Eckermann (Q3-Q4)</li> <li>Samuel Riley (Q1-Q2)</li> </ul>	<ul style="list-style-type: none"> <li>Advises the Supervisory Board on the institution's overall current and future risk appetite, risk tolerance and risk strategy and assists the Supervisory Board in overseeing the implementation of that strategy</li> </ul>

Members	Tasks and responsibilities
	<ul style="list-style-type: none"> <li>▪ Reviews whether the conditions offered to customers take into account the institution’s business model and risk structure. If this is not the case, the Risk Committee submits proposals to the Executive Board, about how the conditions applied to customers in accordance with the business model and the risk structure could be created</li> <li>▪ Examines whether incentives provided by the remuneration system take into consideration the risk, capital and liquidity structure of the institution and the likelihood and timing of earnings</li> <li>▪ Takes advice from external experts, if necessary. It determines type, comprehensiveness, format and frequency of information to be provided by the Executive Board with regard to strategy and risk</li> </ul>

Table 29. Overview CBL Risk Committee

In 2020, the Risk Committee met 4 times (information disclosed as required by Article 435 (2) (d) CRR).

### User committee

According to CSDR, a CSD is required to establish a User Committee for each security settlement system it operates. The user committee shall consist of representatives of issuers and participants in the securities settlement systems.

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>▪ European Investment Bank</li> <li>▪ Bank of New York Mellon</li> <li>▪ Citigroup</li> <li>▪ BNP Paribas Securities Services</li> <li>▪ Union Bank of Switzerland</li> <li>▪ Barclays</li> <li>▪ Northern Trust</li> </ul>	<ul style="list-style-type: none"> <li>▪ Submits non-binding opinions to the Executive Board</li> <li>▪ Advises the Executive Board on key arrangements that may affect its members, including the criteria for accepting issuers or customers in their respective securities settlement systems and at the service level and the pricing structure</li> </ul>

Table 30. Overview CBL User Committee

## 3.2. Clearstream Banking AG

### 3.2.1. General Arrangements

Clearstream Banking AG (CBF) is a stock corporation incorporated in Germany. The German Stock Corporation Act (AktG) requires such a company to set up an Executive Board (§§ 76 et seq. AktG) and a Supervisory Board (§§ 95-116 AktG).

Clearstream Banking AG maintains a comprehensive *Suitability Assessment Policy*. The objective of this policy is to ensure that members of the Executive Board, members of the Supervisory Board and key function holders of CBF are suitable in terms of reputation, experience and governance criteria, as stipulated in the “Joint ESMA and EBA Guidelines on the assessment of the suitability of members of the management body and key function holders under Directive 2013/36/EU and Directive 2014/65/EU” (EBA/GL/2017/12/ESMA71-99-598) and BaFin guidance notes regarding the members of the Executive Board and the Supervisory Board in accordance with the German Banking Act as amended. CBF follows a stringent *Recruitment Procedure* for the selection of members of the Supervisory Board and Executive Board as described below. A suitability assessment is initiated about each appointment or election of a new

board member, the resignation of a board member causing material changes to the composition of the management body and on a regular basis, at least annually.

To benefit from a balanced gender diversity and to fulfil the requirement of Art. 27 (4) of the Regulation (EU) No 909/2014 the Supervisory Boards of Clearstream Banking AG and Clearstream Banking S.A. have approved the *Gender Diversity Policy* as published on Clearstream's website and decided on a target to increase the number of the under-represented gender in the management body.

The members of the Supervisory Board of Clearstream Banking AG agreed on a target quota amounted to 20% of the under-represented gender (currently female) in the Supervisory Board of Clearstream Banking AG and a target quota of 25% of the under-represented gender for the Executive Board of Clearstream Banking AG until 31 December 2021.

### 3.2.2. Executive Board

According to § 25a KWG and MaRisk certain functions and duties in several business areas have to be segregated up to the level of the Executive Board. In addition, all tasks have to be allocated in a clear manner to the responsible areas. Furthermore, the four-eyes principle as well as the role of a deputy should be determined. In order to fulfil the above-mentioned organisational requirements and in the light of the systemic importance of CBF, the Articles of incorporation of CBF stipulate that the Executive Board consists of at least two members. A notification is provided to the competent authorities, as well as for Key Function Holders ("KFH"), (Chief Risk Officer, Chief Compliance Officer and Head of Internal Audit according to MaRisk Article 4, and in the event of the appointment of new members of the Executive Board of CBF.

The Executive Board is inter alia responsible for the proper business organisation (in accordance with § 25c (3) number 1 in connection with § 25a of the German Banking Act). The Executive Board is also responsible for the business distribution plan which regulates the allocation of tasks between the board members in order to enable a more efficient management. Nevertheless, the Executive Board as a whole remains responsible for the fulfilment of the duties as defined by law and set out in the Articles of Incorporation (overall responsibility).

Meetings of the Executive Board shall be held regularly; further details, including but not limited to the interval between the meetings, shall be determined by the chairperson. Meetings are held as often as business requires, but at least one meeting per quarter should be scheduled each year.

The members of the Executive Board must be professionally suitable and reliable for the management of a credit institution and must be able to devote sufficient time to fulfil their tasks. Their professional competence requires sufficient theoretical and practical knowledge of the business of a credit institution.

Members of the Executive Board must have in particular:

- An understanding of financial markets, especially within the regulatory framework
- Professional experience with credit institutions
- Sufficient practical and professional experience in managerial positions

The rules of the limitation of mandates in accordance with § 25c (2) KWG must be complied with. Under this definition and in consideration of the legal permissibility of the aggregation of mandates, on 31 December 2020 all members of the Executive Board of CBF complied with these rules.

As at 31 December 2020, the Executive Board of Clearstream Banking AG. consisted of five members:

Name / Position	Number of directorships (as of 31/12/2020)
Berthold Kracke - Chief Executive Officer	5 (thereof 4 within Deutsche Börse Group)
Mathias Papenfuss	5 (thereof 4 within Deutsche Börse Group)
Tilman Fechter	2 (thereof 2 within Deutsche Börse Group)
Martina Gruber	2 (thereof 2 within Deutsche Börse Group)
Volker Riebesell	1 (thereof 1 within Deutsche Börse Group)

*Table 31. Number of directorships held per Executive Board Member (CBF)*

### 3.2.3. Supervisory Board

CBF has established a Supervisory Board to supervise the Executive Board, in accordance with the mandatory provisions of the German Stock Corporation Act (AktG) in connection with the German One Third Participation Act (“Drittelbeteiligungsgesetz”, “DrittelbG”). According to the DrittelbG, one third of the members of the Supervisory Board (two out of six) are employee representatives. The shareholders representatives of the Supervisory Board of CBF are elected by the shareholders in the annual general meeting of shareholders or, if there is the need of a replacement, in an extraordinary shareholders’ meeting. The employee representatives are elected by the employees of CBF prior to that shareholders’ meeting to elect an entirely new Supervisory Board. All members are elected for a period of five years (a term of office ending at the closing of the General Shareholders’ Meeting, which votes on the discharge of the members of the Supervisory Board for the fourth fiscal year after the commencement of the term of office, not including such fiscal year in which the term of office has commenced).

According to the Articles of Incorporation, the Supervisory Board consists of six members. The Supervisory Board in its entirety must have the necessary skills, capabilities and experience to supervise and control the Executive Board of CBF. This requires understanding of the business of a credit institution. A notification is provided to the competent authorities in the event of the appointment of new members of the Supervisory Board of CBF. There were no new appointments in 2020.

In addition, at least two members of the Supervisory Board should have sound knowledge in each of the following areas

- accounting, finance and audit
- risk management and compliance
- information technology and security
- clearing business
- regulatory requirements

The rules of the limitation of mandates in accordance with § 25d (3) KWG must be complied with. Under this definition and in consideration of the legal permissibility of the aggregation of mandates, on 31 December 2020 all members of the Supervisory Board of CBF complied with these rules.

The Supervisory Board of CBF also agreed to support and make use of the existing Female Executive Mentoring (FEM) programme which is a part of the gender diversity initiative of Deutsche Börse Group as well as the Deutsche Börse Group’s Women’s Network; both programmes promote the underrepresented gender on different levels.

As at 31 December 2020, the Supervisory Board consisted persons displayed in [Table 32](#), which also discloses the number of directorships held by each member, as required by Article 435 (2) of CRR.

Name / Position	Number of directorships (as of 31/12/2020)
Stephan Leithner - Chairperson	10 (thereof 7 within Deutsche Börse Group)
Oliver Engels - Vice-Chairperson	2 (thereof 2 within Deutsche Börse Group)
Peter Gomber	3 (thereof 1 within Deutsche Börse Group)
Christina Bannier	1 (thereof 1 within Deutsche Börse Group)
Peter Eck	1 (thereof 1 within Deutsche Börse Group)
Norfried Stumpf	1 (thereof 1 within Deutsche Börse Group)

*Table 32. Number of directorships held per Supervisory Board Member (CBF)*

The Supervisory Board meets as often as business requires, but at least two meetings per half-year are scheduled each year, which generally take place around March, May, September and December.

### 3.2.4. Committees

EU Central Securities Depositories regulation No 909/2014 (CSDR) requires each Central Securities Depository (CSD) to implement an Audit Committee, a Remuneration Committee and a Risk Committee.

Additionally, CBF follows a proactive approach towards its customers by hosting a User Committee on a quarterly basis. It is a domestic user group that meets two to four times a year. If required, a user task force is formed taking care of ad hoc topics. Membership as well as tasks and responsibilities are outlined below.

#### Audit Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>▪ Peter Gomber (Chairperson)</li> <li>▪ Oliver Engels (Vice Chairperson)</li> <li>▪ Norfried Stumpf</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitors accounting and financial reporting processes</li> <li>▪ Monitors the effectiveness of the risk management process, in particular, the internal control system (ICS), the risk management system and internal audit</li> <li>▪ Monitors the execution of audits, in particular, in relation to the selection and independence of the auditor and the services provided by the auditor (for example scope, frequency or reports)</li> <li>▪ Submits recommendations to the Supervisory Board to ensure the integrity of the reporting and accounting processes</li> </ul>

*Table 33. Overview CBF Audit Committee*

#### Remuneration Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>▪ Stephan Leithner (Chairperson)</li> <li>▪ Christiane Bannier (Vice Chairperson)</li> <li>▪ Norfried Stumpf</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supervises the reasonableness of the remuneration system of Executive Board members. In particular, it supervises the appropriateness of the compensation of the Head of the risk function and of the compliance function as well as employees having a substantial influence on the overall risk profile of the institution. It also supports the Supervisory Board in monitoring the reasonableness of the remuneration system of employees as well as the institution. At the same time, it assesses the impacts of the remuneration system on the risk, capital and liquidity management</li> <li>▪ Prepares the Supervisory Board resolutions regarding the determination of the aggregate remuneration of any member of the Executive Board, and by doing so, takes into account what effects the resolutions have on the risk and the risk management</li> </ul>

Members	Tasks and responsibilities
	<p>of the institution as well as the long-term interests of the shareholders, investors and other stakeholders</p> <ul style="list-style-type: none"> <li>▪ Designs and further develops the <i>Remuneration Policy</i> including the remuneration of the Executive Board</li> <li>▪ Supports the Supervisory Board in overseeing the internal control system and all other relevant areas in the structuring of the remuneration system</li> <li>▪ The Remuneration Committee shall cooperate with the Risk Committee. The Remuneration Committee shall use internal advice, for example from risk controlling, and external advice from individuals independent of the Executive Board. The Chair of the Remuneration Committee may obtain information from the Head of internal audit and the Head of the organisational units responsible for the development of the remuneration systems</li> <li>▪ Members of the Executive Board are not allowed to participate in meetings of the Remuneration Committee, the subject of which is their remuneration.</li> </ul>

*Table 34. Overview CBF Remuneration Committee*

### Risk Committee

Members	Tasks and responsibilities
<ul style="list-style-type: none"> <li>▪ Oliver Engels (Chairperson)</li> <li>▪ Stephan Leithner (Vice Chairperson)</li> <li>▪ Peter Eck</li> </ul>	<ul style="list-style-type: none"> <li>▪ Advises the Supervisory Board on the institution's overall current and future risk appetite, risk tolerance and risk strategy and assists the Supervisory Board in overseeing the implementation of that strategy</li> <li>▪ With the Audit Committee, submits proposals to the Executive Board about how the conditions applied to customers in accordance with the business model and the risk structure could be created; and</li> <li>▪ Examines whether incentives provided by the remuneration system take into consideration the risk, capital and liquidity structure of the institution and the likelihood and timing of earnings. The tasks of the Remuneration Committee remain unaffected</li> <li>▪ Reviews whether the conditions offered to customers take into account the institution's business model and risk structure</li> <li>▪ If this is not the case, the Risk Committee takes advice from external experts, if necessary. It determines type, comprehensiveness, format and frequency of information to be provided by the Executive Board with regard to strategy and risk.</li> </ul>

*Table 35. Overview CBF Risk Committee*

In 2020, the Risk Committee met 4 times (information disclosed as required by Article 435 (2) (d) CRR).

### User Committee

According to the CSD Regulation, a CSD is required to establish a User Committee for each security settlement system it operates.

Clearstream Banking AG (CBF) operates the securities settlement systems CASCADE and CREATION and offers services through both systems. Consequently, CBF established two user committees.

The committees consist of representatives of issuers and participants in the securities settlement systems.



Members	Tasks and responsibilities
<p><b>CASCADE</b></p> <ul style="list-style-type: none"> <li>▪ BNP Paribas</li> <li>▪ Citigroup</li> <li>▪ Commerzbank</li> <li>▪ Deutsche Bank</li> <li>▪ dwpbank</li> <li>▪ HSBC</li> </ul> <p><b>CREATION</b></p> <ul style="list-style-type: none"> <li>▪ BNP Paribas</li> <li>▪ Commerzbank</li> <li>▪ Deutsche Bank</li> <li>▪ dwpbank</li> <li>▪ HSBC</li> <li>▪ LBBW</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pursuant to Article 28 of the CSD Regulation (EU) 909/2014 (CSDR), the User Committee advises the Executive Board of the Company on the following topics: <ul style="list-style-type: none"> <li>– Committee shall advise the Executive Board on key arrangements that impact on its members, including the criteria for accepting issuers or participants in the securities settlement systems and on service level</li> <li>– Committee may submit non-binding opinions to the Executive Board, containing detailed reasons regarding the pricing structures of the securities settlement systems of the Company</li> </ul> </li> <li>▪ The advice of the Committee shall be independent from any direct influence of the Executive Board</li> <li>▪ Apart from the CSDR requirements, the Executive Board may seek advice and recommendation from the User Committees with respect to matters which are of relevance for the business of the Company and its relationship with customers, in particular: <ul style="list-style-type: none"> <li>– Business and marketing strategy</li> <li>– Development of new products</li> <li>– General market trends and requirements</li> </ul> </li> </ul>

Table 36. Overview CBF User Committee

### 3.3. Clearstream Holding AG

#### 3.3.1. General arrangements

Clearstream Holding AG is incorporated in Germany in the form of a stock corporation (Aktiengesellschaft). The German Stock Corporation Act (Aktiengesetz – “AktG”) requires such a company to set up an Executive Board (§§ 76 et seq. AktG) and a Supervisory Board (§§ 95-116 AktG).

CH maintains a comprehensive *Suitability Assessment Policy* and a corresponding side-letter defining specific job descriptions of Supervisory Board and Executive Board members. The objective of this policy is to ensure that the members of the Executive Board, the members of the Supervisory Board and key function holders of CH (as well as of the subsidiaries of CH that are to be qualified as credit institutions) are suitable in terms of reputation, experience and governance criteria, as stipulated in the “Joint ESMA and EBA Guidelines on the assessment of the suitability of members of the management body and key function holders under Directive 2013/36/EU and Directive 2014/65/EU” (EBA/GL/2017/12/ESMA71-99-598) and BaFin guidance notes regarding the members of the Executive Board and the Supervisory Board in accordance with the German Banking Act as amended.

The suitability assessment is initiated when it is intended to appoint or elect a new member of the Executive Board or the Supervisory Board, if a member resigns from the mandate causing material changes to the composition of the management body and on a regular basis, at least once a year. The rules of the limitation of mandates in accordance with § 25c (2) KWG and § 25d (3) KWG must be complied with. Under this definition, and in consideration of the legal permissibility of the aggregation of mandates, on 31 December 2020 all members of the Supervisory Board and Executive Board of CH complied with these

rules. In the following paragraphs, the composition of all boards and committees is reflected as at the end of the reporting period, being 31 December 2020.

### 3.3.2. Executive Board

According to CH's Articles of Incorporation, the Executive Board may consist of one or several members who are appointed by the Supervisory Board of CH for a period of three years. The Executive Board is chaired by the CEO. A notification is provided to the competent authorities in the event of the appointment of new members of the Executive Board of CH. Dr. Stephanie Eckermann and Dr. Daniel Besse became newly appointed members of the CH Executive Board in 2020.

The Executive Board is inter alia responsible for the proper business organisation (in accordance with § 25c (3) number 1 in connection with § 25a KWG). The Executive Board is also responsible for the adoption of the business distribution plan, which regulates the allocation of tasks between the board members in order to enable a more efficient management of the company. Nevertheless, the Executive Board, as a whole, remains responsible for the fulfilment of the duties as defined by law and set out in the Articles of Incorporation (overall responsibility).

The members of the Executive Board must be professionally suitable and reliable for the management of a Financial Holding Company and must be able to devote sufficient time to fulfil their tasks. Further, sufficient theoretical and practical knowledge of the business of a financial holding company is required from all members of the Executive Board. In addition, the members of the Executive Board must have:

- An understanding of banking and financial markets, especially within the regulatory framework
- An understanding of managing a financial holding company
- Sufficient experience in managerial positions.

Meetings of the Executive Board are held monthly; further details are determined by the chairperson. Additional meetings take place, if required for the well-being of CH.

As at 31 December 2020, the Executive Board consisted of the persons displayed in [Table 37](#), which also discloses the number of directorships held by each member, as required by Article 435 (2) of CRR.

Name / Position	Number of directorships (as of 31/12/2020)
Philip Brown – Chief Executive Officer	3 (thereof 3 within Deutsche Börse Group)
Daniel Besse	2 (thereof 2 within Deutsche Börse Group)
Stephanie Eckermann	6 (thereof 6 within Deutsche Börse Group)
Berthold Kracke	5 (thereof 4 within Deutsche Börse Group)
Samuel Riley	1 (thereof 1 within Deutsche Börse Group)
Philippe Seyll	7 (thereof 6 within Deutsche Börse Group)

*Table 37. Number of further directorships held per Executive Board Member (CH)*

### 3.3.3. Supervisory Board

CH has established a Supervisory Board to supervise the Executive Board, in accordance with the mandatory provision of the German Stock Corporation Act (§§ 95-116 AktG). The members of the Supervisory Board of CH are elected by the shareholders. This in principle takes place during the annual general meeting of shareholders. The members are elected for a period of five years (a term of office ending at the closing of the General Shareholders' Meeting, which votes on the discharge of the members of the Supervisory Board for the fourth fiscal year after the commencement of the term of office, not including such fiscal year in which the term of office has commenced). If there is the need of a replacement, this is done by an extraordinary shareholder's meeting. A notification is provided to the competent authorities in the event of the appointment of new members of the Supervisory Board of CH. There were no new appointments in 2020.

- According to the Articles of Incorporation of CH, the Supervisory Board consists of three members. The members of the Supervisory Board are required to fulfil certain criteria, as laid down in the *Suitability Assessment Policy*, and to comply with regulatory requirements, as set out in the section above. Furthermore, the Supervisory Board in its entirety must have the necessary skills, capabilities and experience to supervise and control the Executive Board of CH. This requires understanding of the business of a financial holding company. In addition, at least two members of the Supervisory Board should have a sound knowledge in each of the following areas:
  - accounting, finance and audit
  - risk management and compliance
  - information technology and security
  - clearing business
  - regulatory requirements

As at 31 December 2020, the Supervisory Board consisted of the persons displayed in [Table 38](#), which also discloses the number of directorships held by each member as required by Article 435 (2) of CRR.

Name / Position	Number of directorships (as of 31/12/2020)
Stephan Leithner	9 (thereof 6 within Deutsche Börse Group)
Gregor Pottmeyer	6 (thereof 6 within Deutsche Börse Group)
Christoph Böhm	3 (thereof 3 within Deutsche Börse Group)

*Table 38. Number of directorships held per Supervisory Board Member (CH)*

The CH Supervisory Board meets as often as business requires, but at least two meetings are scheduled each half-year. In these meetings, it is informed about normal business activities as well as all substantial business events. In case of extraordinary incidents, the CH Supervisory Board is informed immediately.

### 3.3.4. Committees

Due to the small size of the Supervisory Board (three members), it is not necessary to set up any committees. However, the Supervisory Board in its entirety takes over the responsibilities stipulated for committees in § 25d (8) - (12) KWG.

## 4. Risk management overview

### 4.1. Risk management framework

Risk management is a fundamental component of Clearstream's management and control framework. Effective and efficient risk management is vital to protect Clearstream's interests and simultaneously enables Clearstream to achieve its corporate goals. Clearstream has therefore established a group-wide risk management system comprising roles, processes and responsibilities applicable to all employees and organisational units of Clearstream. This ensures that emerging risks are identified and managed as early as possible.

#### 4.1.1. Risk strategy (Article 435 (1)(a) CRR)

Clearstream Risk Management (CRM) has developed three risk strategy statements, which are linked to Clearstream's overall business strategy, related to all entities.

Risk limitation – CRM aims to protect and ensure continuity of operations with its risk limitation in both capital and liquidity terms.

Supporting growth in the various business divisions – CRM supports the business division to expand their overall business.

Appropriate risk and return ratio – Clearstream has set itself the goal that risk and return should be in a reasonable proportion across the product and customer base. Also, the cost of liquidity must fairly reflect the benefits derived from maintaining sufficient liquidity levels.

The analysis of initiatives and project related to the business strategy is an essential part of the annual Risk Strategy review. The Clearstream Risk Strategy process follows a five-step process covering planning & review, assessment, risk bearing capacity (RBC) limit allocation, approval and implementation. The strategy process takes changing market and the regulatory environment into account as well as feedback from internal and external stakeholders. Clearstream's risk strategy is based upon its business strategy and regulates the extent of risks taken through its various business activities.

All members of the Executive Board of Clearstream are ultimately responsible for the risk strategy, which reflects Clearstream's risk appetite defining the maximum loss the Executive Board is willing to assume in one year, the risk tolerance, as well as, desired performance levels. It is Clearstream's intention to maintain risk at an appropriate and acceptable level. Moreover, the members of the Executive Board ensure that the risk strategy is integrated into all business activities and that adequate measures are in place to implement the strategies, policies and procedures.

#### 4.1.2. Risk appetite (Article 438 (1)(a) CRR)

The risk strategy includes statements concerning risk appetite and sets limits. The following two concepts are established and determine the risk appetite:

- Required Economic Capital - Economic perspective (*former Liquidation principle*): The *Required Economic Capital* is the Value at Risk (VaR) based on a 99.90 percent confidence level (as of 01.01.2021, until then 99.98%). Required Economic Capital is compared with the Available Risk-Bearing Capacity ("ARBC"), which is defined as regulatory own funds (eligible regulatory capital) minus adjustments for unrealized losses driven mainly by ongoing litigations, for non-consolidated entities as well as for potential further reasons. The Available Risk-Bearing Capacity is updated according to the respective regulatory reporting frequency.
- Earnings at Risk: *Earnings at Risk* is the VaR based on 99.0 percent confidence level. This VaR is used for information purposes only at CH-Group, CBL and CBF level. It is not expected to have impact on capital and therefore it is not used for capital management. It is compared with the budgeted EBITDA.

The RBC for individual risk types is defined as a fraction of the overall Risk-Bearing Capacity. When allocating the respective Risk-Bearing capacity to a risk type, the respective risk profile for Clearstream is taken into account.

#### 4.1.3. Risk profile

The risk profile of Clearstream differs fundamentally from those of other financial services providers. Clearstream manages and controls three aggregated risk types with distinct methods. These risk types are operational risk, financial risk and business risk. Operational risk is assessed as the major risk type within Clearstream.

Financial risks (divided into credit, market and liquidity risks), as well as operational risk are described in the further sections.

The risk strategy was approved by the Executive Board of Clearstream in May 2021.

Following the 2021 Risk Inventory review, in addition to the above; Intraday Credit Risk, Pension Risk and Winding-down & Restructuring Risk, have been included as risk types. These subsequent changes are reflected in the 2021 risk strategy.

#### 4.1.4. Risk culture

Risk awareness and a corresponding risk-conscious culture are encouraged, amongst other things, through appropriate organisational structures and responsibilities, adequate processes and the knowledge of employees. The appropriateness of the risk management and controlling systems is regularly checked.

Overall, Clearstream’s risk culture is based on the Financial Stability Board’s four indicators of a sound risk culture: tone from the top, accountability, effective communication and challenge, and incentives, thereby striving for clear risk ownership and accountability.

#### 4.1.5. Risk management process

Clearstream’s risk management process is based on the three lines of defence model, see [Figure 3](#). Furthermore, the process aims at ensuring that all threats, causes of loss and potential disruptions are:

- Properly identified as soon as possible (identification);
- Centrally recorded (notification);
- Assessed (that is, quantified in financial terms to the largest possible extent);
- Controlled (mitigation & control); and
- Reported in a timely manner and consistently, together with suitable recommendations to the Executive Board (monitoring & reporting).

These five key elements as well as adequate quality standards, are defined in the *Group Risk Management Policy* and are reviewed on an ongoing basis by an independent audit function, which ensures the suitability and effectiveness of the risk management process..

Controlling risks is performed in the decentralised business areas, that is, where the risks occur. Risk control in the Clearstream operational units is ensured by nominating “Operational Risk Representatives” who are responsible for identifying, notifying and controlling any risk in their area. Clearstream Risk Management, a central risk controlling function within Clearstream, assesses all existing and potential new risks and reports on a quarterly basis, and if necessary ad hoc, to the relevant Executive Board.

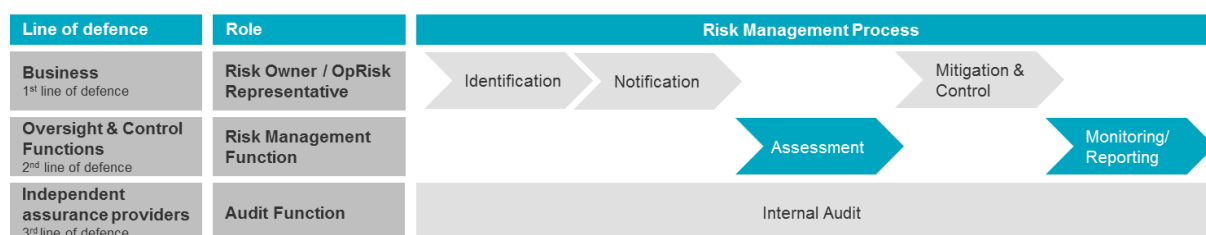


Figure 3. Five-level risk management system with central and decentralized responsibilities

##### 4.1.5.1. Risk identification

Risk identification includes the identification of all threats, causes of loss and potential disruptions with regard to existing or new processes as well as internal activities or external factors.

More specifically, the risk identification process is on the one hand proactive, based on regular reviews of processes in order to identify weak areas and points of failure (e.g. manual input required, processes without double keying or four-eyes controls in place, specific procedures subject to high volumes or tight deadlines) or based on scenarios of disruption or failure taking into consideration all sources of issues (e.g. unavailability of systems, human error). For the purpose of properly identifying potential risks for Clearstream, a risk inventory process has been established. The inventory process is carried out at least once a year by Clearstream Risk Management. On the other hand, the risk identification process is also reactive as a consequence of an incident.

The identification phase also includes the quantification of risks in the form of parameters based either on statistical data, in the case of actual process monitoring, or on subjective expert judgement when available statistics are insufficient.

All organisational units and individual employees are obliged to identify and quantify potential risks within their area of responsibility.

##### 4.1.5.2. Risk notification

The process step of risk notification ensures that risks are centrally recorded. To do so, all organisational units and individual employees must notify Clearstream Risk Management in a timely manner of the risks that they have identified.

### 4.1.5.3. Risk assessment

Clearstream assesses material risks on an ongoing basis. It applies both the economic perspective and the Earnings at Risk principle to aggregate risks at company level. The main instrument that Clearstream uses for the purpose of quantification is the Value at Risk ("VaR") concept. The VaR quantifies the risks to which a company is exposed and indicates the maximum cumulative loss that Clearstream could face if certain independent loss events materialise over a specific time horizon for a given probability.

Clearstream also considers extreme scenarios and factors these into its risk management. Such extreme scenarios include both stress tests across all risk types and stress tests for specific material risk types.

### 4.1.5.4. Risk mitigation and control

Risk mitigation and control involves the determination and implementation of the most appropriate reaction to the identified risk. It encompasses risk avoidance, risk reduction, risk transfer and intentional risk acceptance.

All organisational units and employees must perform risk control and implement mitigating actions.

### 4.1.5.5. Risk monitoring and reporting (Article 435 (1)(e))

Clearstream Risk Management is the independent control function of Clearstream, responsible for monitoring and reporting risks.

A detailed risk report is submitted to the Executive Board of Clearstream at least once a quarter.

Limit breaches are explained in detail and reported to the Executive Board before the 10<sup>th</sup> business day following the end of the respective quarter of the year or ad-hoc in case the regular monitoring process identifies a limit breach. The regular risk reports contain risk quantification results in comparison with the limits, risk related qualitative information, information about stress tests and capital adequacy information.

In addition to the above-mentioned risk monitoring and reporting functions, Internal Audit serves as the 3<sup>rd</sup> line of defence and provides further assurance of the risk management process by conducting independent audits.

In the Executive Board meeting on 25 March 2021 the Executive Board concluded that the Risk Management System for the reporting period was effective.

### 4.1.6. Concise Risk Statement (Article 435 (1)(f) CRR)

Article 435(1)(f) CRR requirements	Reference sections in CH Pillar 3 Report 2020
Risk profile	4.1.3. Risk profile
Strategy	4.1.1. Risk strategy (Article 435 (1)(a) CRR) 4.1.4. Risk culture
Management of risk	4.1. Risk management framework 4.1.5. Risk management process 4.1.5.1. Risk identification 4.1.5.2. Risk notification 4.1.5.3. Risk assessment 4.1.5.4. Risk mitigation and control 4.1.5.5. Risk monitoring and reporting 5. Management of credit risk 6. Management of operational risk 7. Management of market risk 8. Management of liquidity risk
Risk Tolerances	4.1.2. Risk appetite (Article 438 (1)(a) CRR)
Key Ratios and Figures	2.1.3. Own fund details

- 2.2. Capital levels
  - 2.2.1. Capital requirements for credit risk positions (Article 438 (1)(c) CRR)
  - 2.2.2. Capital requirements for credit valuation adjustments
  - 2.2.3. Capital requirements for market risk positions (Article 438 (1)(e) CRR)
  - 2.2.4. Capital requirements for operational risk (Article 438 (1)(f) CRR)
  - 2.2.5. Total capital requirements
- 2.3. Countercyclical capital buffer (Article 440 CRR)
- 2.4. Leverage ratio (Article 451 CRR)
- 5.9. 50 Disclosure on credit risk exposures (Article 442, 444, 453 (f) CRR)
- 5.10. Disclosure of counterparty credit risk (CCR) (Article 439 CRR)
- 5.11. Disclosure of equities not included in the trading book (Article 447 CRR)
- 5.12. Asset encumbrance (Article 443 CRR)
- 6.6. Disclosure on operational risk (Article 446 CRR)
- 7.6. Disclosure exposures for market risk
- 7.7. Disclosure exposures on interest rate risk on positions not included in the trading book (Article 448 CRR)
- 8.3.1. Key Liquidity Indicators
- 8.6. Disclosure on Liquidity Coverage Ratio (LCR)

The CH Executive Board approved the above Concise Risk Statement as required by Article 435(1)(f) CRR.

## 5. Management of credit risk

Credit risk refers to the risk that a counterparty may default and therefore be unable to partly or entirely meet its liabilities against Clearstream

### 5.1. Strategy and process (Article 435 (1)(a) CRR)

Given the unique nature of the Clearstream business, its lending operations cannot be compared with those of other credit institutions. Firstly, the loans are extended solely on an extremely short-term basis. Secondly, they are extended solely for the purposes of increasing the efficiency of securities settlement. With a few exceptions of selected central banks, these loans are fully collateralized. Moreover, loans are only granted to creditworthy customers and credit lines granted are uncommitted and can be revoked at any time.

Credit risk is classified as material risk in Clearstream's risk strategy. The risk strategy for credit risk follows the overall risk strategy laid out in [Chapter 4.1.1](#). The risk management process for credit risk follows the overall risk management process as presented in [Chapter 4.1.5](#).

## 5.2. Structure and organisation (Article 435 (1)(b) CRR)

The credit risk management function is performed by dedicated organizational units and governing bodies based on the *Credit Policy*. In particular, the following tasks are performed, and responsibilities are assigned:

- The creditworthiness of potential new counterparties and the creditworthiness of issuers of collateral accepted by Clearstream is assessed by Credit Section.
- The creditworthiness of existing counterparts is regularly reviewed and continuously monitored.
- Collateral eligibility is defined and approved by the Credit Section. The monitoring of recoverability of collateral is also operated by the Clearstream Default Management.
- Any exception to the *Credit Policy* must be approved by the respective Executive Board.

## 5.3. Assessment (Article 435 (1)(c) CRR)

In the natural course of day-to-day business transactions, Clearstream is exposed to credit risk from a multitude of sources. Credit risk is present in all of Clearstream's primary businesses – this includes custody (mainly related to asset servicing activities), settlement, securities financing, treasury operations and from settlement over the Bridge with Euroclear.

Sources of credit risk are assessed after considering all business segments, products and services. The list of sources of credit risk is updated annually. Moreover, the list of sources of credit risk is updated as per the Material Change Procedure requiring new products/services to be subjected to a Clearstream Risk Committee (CRC) decision prior to approval.

### 5.3.1. Limits

With regard to credit risk, the credit risk strategy is translated into a limit system, which is monitored on a regular basis and ad hoc.

Credit is exclusively granted on a collateralised basis, with the exception of certain unsecured settlement limits granted to sovereign and supranational institutions (as per the exemption foreseen in Art.23.2 of CSDR (EU) No 2017/390). Borrowers in Clearstream are central banks, banks and financial institutions. Furthermore, credit limits are set for the placement of funds with counterparties. The credit processing is arranged in guidelines and work instructions.

All credit risk exposures are regularly reviewed and monitored. The exposure limits (on level of each single customer, on level of each customer group and on level of each country) are set to ensure that Clearstream does not take too large an exposure, and therefore risk, on too few participants or counterparties.

### 5.3.2. Stress testing

The term "stress test" comprises the entirety of qualitative and quantitative analysis methods of rare but plausible events. There are several stress tests performed for credit risk, e.g.:

- The "Default of the Largest Counterparty Group Stress Test", where the default of the counterparty group with the largest unsecured exposure is simulated on a monthly basis, after utilisation of all respective collateral and after taking the recovery rate into account.
- The "Economic Deterioration Stress Test", where the impact of a deterioration of the economic environment on Clearstream is simulated on a monthly basis. To capture the worsening of the economy, certain credit risk model parameters are adjusted compared to the standard VaR simulation.
- The results of the "Default of the Largest Counterparty Group Stress Test", and the "Economic Deterioration Stress Test" are compared to limits, which are defined as a fraction of the available risk bearing capacity. The stress test results are reported to the Executive Boards on a quarterly basis and to the Supervisory Board on a half-yearly basis.

In addition to the stress tests defined above, a "Reverse Credit Stress Test" is yearly being performed, whose aim is to identify the number of unsecured credit lines that exceed the available risk bearing capacity.



### 5.3.3. Ad-hoc Stress Testing

- Ad-hoc stress tests may be triggered by a certain scenario proposed by the respective Executive Board or a Financial risk metric traffic light turned red. The relevant markets, countries and market rates are defined by expert judgement based on each entity's risk profile.
- The ad-hoc stress scenarios are based on the currently established methodology for stress scenarios, where the specific parameters relevant for the respective risks are additionally stressed. The stress degree is based on expert judgement.
- If the ad-hoc stress test leads to an increased result compared to the regular stress test, the ad-hoc stress test is reported. The ad-hoc stress test may also replace the regular stress test, in case it persists being relevant for longer than one quarter.

## 5.4. Mitigation and control (Article 435 (1)(d) & 453 CRR)

Credit risk mitigation techniques, used by Clearstream, are composed of hedging and collateralisation.

Collateral eligibility is recommended and reviewed on a yearly basis by the Credit Section-, and approved by the respective Executive Board. Eligibility and haircut are dependent on the credit, market, liquidity, and legal risks of the security. Securities that are eligible are subject to a margin deduction from their market value. Securities issued by or correlated to the customer are not eligible as collateral. Any transaction on a given account that would exceed the available collateral is automatically blocked by the system.

Collateralisations are also used in connection with the settlement credit limits. To facilitate the settlement of securities transactions against payment two types of credit limits are currently available:

- the Technical Overdraft Facility (TOF) and
- the Unconfirmed Funds Facility (UCF).

Under the Credit Terms and Conditions document, Clearstream has a right of pledge on all the customer's assets held on the customer's account(s) defined as pledge account(s) to secure obligations towards Clearstream by the customer for the services rendered to this customer.

## 5.5. Collateralized placing

CBL places a major part of the Group's liquidity on the basis of reverse repo agreements with a maximum maturity of one year, but usually with maturities of three months or less. Repo transactions must be governed by a Global Master Repurchase Agreement (GMRA) and are only closed with banking counterparties fulfilling minimum rating criteria. Securities eligible for these transactions must also fulfil a specific set of requirements (e.g. daily pricing, minimum rating or a maximum remaining life to maturity, etc...) specified in the Clearstream Treasury Investment Policy.

Cross-currency collateralisation is in general possible. It was not used for bilateral transactions but in the context of triparty repos. Bilateral transactions must be "plain vanilla" on a single fixed-income security. In triparty transactions (including Eurex Repo GC Pooling transactions), multiple fixed-income securities may be taken as collateral. Structured transactions are not allowed.

Haircuts on the securities are applied within triparty repo transactions. All collaterals are valued daily. To secure the cash lent through reverse repurchase agreements, CBL agrees to margin calls with the repo counterparty on a daily basis to keep cash and collateral in balance.

## 5.6. ASL

ASL (Automated Securities Lending) is a lending programme that allows customers who are short of securities due to settlement failure to borrow securities from other Clearstream customers (lenders).

CBL acts as:

- Lending agent, offering:
  - Automatic detection of loan requirements to cover a failed trade;
  - Automatic identification of loan supply from ASL lenders;

- Anonymous transfer of securities to the ASL borrower (the undisclosed relationship between lender and borrower);
- Administration of the loan.
- Collateral agent, monitoring the quality and sufficiency of collateral regarding:
  - Eligibility;
  - Collateral value;
  - Concentration limits;
  - Fluctuations in the market values of positions pledged as collateral (mark-to market of the loan and the collateral);
  - Securities prices, reviewed several times a day depending on the closing time of the market;
  - Automatic collateral substitution.
- Guarantor for the collateralised loans:
  - Underwriting the risk involved if the borrower defaults on its obligations;
  - Managing collateral securities pledged by the borrower to CBL;
  - Assigning loan limits to borrowers to avoid any new loan opening if the limit is reached.

## 5.7. ASLplus

The ASLplus Programme is a Securities Lending programme that enables customers to enhance the revenues that can be realised as a lender by offering access to the wholesale trading market. CBL acts as principal (borrower) to the lenders in ASLplus and lends on securities to market participants through various counterparties. CBL further undertakes administrative functions and provides a secure settlement environment.

The Credit Section defines collateralised securities borrowing limits for each borrower and credit limits are agreed on the basis of standard framework agreements between CBL and each borrower.

Collateral for ASLplus business is delivered in a collateral pool serving several loans. Out of the pool, collateral valued at least to the requested collateral value based on internal credit rules is blocked for the total of the associated loans. No allocation on a loan by loan basis is done for credit purposes.

As for the collateralised placing, a zero weighting by the application of Article 227 CRR is, in general, possible. As the lending business is covering a wider scope of securities that do not fulfil the criteria as laid down in Article 227 CRR, while the collateral given by the ultimate lender only partially fulfils these criteria, only a portion is zero weighted. For the remainder, the supervisory haircuts are applied. As there is a notable portion of cross-currency collateralisation additional FX haircuts are applied.

## 5.8. Monitoring and reporting

The Credit Section reports new credit lines and changes of credit lines (increases as well as reductions), changes of the internal rating for customers and credit exposures to the Group Risk Management section. Besides that, limit breaches, if any, are reported to the relevant Executive Board and to Group Risk Management.

The reporting approach as described under [Chapter 4.1.5.5](#) also applies to the management of credit risk. On this basis, Group Risk Management assesses the credit risk and reports VaR results as well as risk issues to the Executive Boards. Besides the assessment of the VaR, Group Risk Monitoring also measures credit risk concentration and performs stress test calculations on credit risk (see [Chapter 5.3.2](#)).

## 5.9. Disclosure on credit risk exposures (Article 442, 444, 453 (f) CRR)

In order to determine the own funds requirement for credit risk under Pillar 1, Clearstream uses the Standard Approach as defined in Article 111 et seq. CRR.

For the central governments and central banks' exposure class, Clearstream uses the External Credit Assessments Institution (ECAI) by Standard & Poor's, Moody's and Fitch Ratings. For regional governments or local authorities, public sector entities and institutions (credit institutions, investment firms and other dedicated financial counterparties) exposure classes, the dedicated risk weight is derived from that of the

respective country of residence. The German supervisors have been notified of the use of credit assessments by Standard & Poor's, Moody's and Fitch Ratings. The risk weights of the remaining exposure classes are mainly derived from unrated positions meaning that no ECAI has been nominated.

Clearstream complies with the risk weighting as defined in Section 2 of Chapter 2 of Part Three, Title II of the CRR.

Clearstream applies credit risk mitigation ("CRM") techniques. Clearstream uses the comprehensive method for financial collateral according to Article 223 CRR for the purposes of credit risk mitigation.

For capital requirements purposes, according to Article 227 CRR the application of zero volatility adjustments is possible. Where the conditions of the regulation stated above are not fulfilled, supervisory haircuts as laid down in Article 224 CRR apply. In cases of FX mismatch, further cross-currency haircuts are applied.

The following tables show the total credit risk exposure values per exposure class and risk weight before and after applying credit risk mitigation techniques (CRM) and credit conversion factor (CCF) at the end of the period as well as the average credit risk exposure values after applying CRM and CCF.

31 December 2020 (€' 000)			
Exposure class	Risk weight	Exposure value before CRM* and CCF**	Exposure value after CRM* and CCF**
	0%	7,954,382	7,913,635
	20%	2,674	2,674
Central governments and central banks	50%	329	329
	100%	381	381
	150%	118	118
	<b>Total</b>	<b>7,957,884</b>	<b>7,917,137</b>
	0%	607,397	607,397
Regional governments, local authorities and other public bodies	20%	72	72
	<b>Total</b>	<b>607,469</b>	<b>607,469</b>
Multilateral development banks and international Organisations	0%	579,059	579,059
	<b>Total</b>	<b>579,059</b>	<b>579,059</b>
	2%	4,832	4,832
Institutions	20%	55,336,898	2,085,634
	50%	495,415	4,995
	<b>Total</b>	<b>55,837,145</b>	<b>2,095,461</b>
	100%	189,175	189,171
Corporates	150%	525	525
	<b>Total</b>	<b>189,700</b>	<b>189,696</b>
Retail	75%	13	13
	<b>Total</b>	<b>13</b>	<b>13</b>
	0%	90,002	90,002
Other (including equity holding)	100%	342,996	342,996
	250%	33,876	33,876
	<b>Total</b>	<b>466,874</b>	<b>466,874</b>
<b>Total 2020</b>		<b>65,638,144</b>	<b>11,855,710</b>
Total 2019		74,952,445	11,271,444

\* CRM (Credit Risk Mitigation techniques)

\*\* CCF (Credit Conversion Factor)

Table 39. Total exposure by asset classes and risk weights (CH-Group)

Average exposure over the period (€' 000)	
Exposure class	Exposure value before CRM* and CCF**
Central governments and central banks	8,889,523
Regional governments and local authorities	266,183
Public sector entities	552,161
Multilateral development banks	476,040
International Organisations	112,777
Institutions	60,682,624
Corporates	245,822
Retail	183
Exposures in default	-
Equity exposures	171,325
Other	86,515
<b>Total 2020</b>	<b>71,483,154</b>
Total 2019	68,970,292

\* CRM (Credit Risk Mitigation techniques)

\*\* CCF (Credit Conversion Factor)

Table 40. Average exposure by asset classes and risk weights (CH-Group)

31 December 2020 (€' 000)			
Exposure class	Risk weight	Exposure value before CRM* and CCF**	Exposure value after CRM* and CCF**
Central governments and central banks	0%	6,370,826	6,330,080
	20%	16,687	16,687
	50%	418	418
	100%	873	873
	<b>Total</b>	<b>6,388,805</b>	<b>6,348,058</b>
Regional governments, local authorities and other public bodies	0%	547,794	547,794
	20%	2	2
	<b>Total</b>	<b>547,796</b>	<b>547,796</b>
Multilateral development banks and international Organisations	0%	542,348	542,348
	20%	30	30
	<b>Total</b>	<b>542,378</b>	<b>542,378</b>
Institutions	2%	1	1
	20%	55,358,053	2,232,526
	100%	102,977	4,648
	<b>Total</b>	<b>55,461,031</b>	<b>2,237,175</b>
Corporates	100%	118,887	118,887
	150%	320	320
	<b>Total</b>	<b>119,207</b>	<b>119,207</b>
Exposures in default	150%	5,869	5,869
	<b>Total</b>	<b>5,869</b>	<b>5,869</b>
Other (including equity holding)	0%	1	1
	100%	30,304	30,304
	250%	31,660	31,660
	<b>Total</b>	<b>61,966</b>	<b>61,966</b>
<b>Total 2020</b>		<b>63,127,052</b>	<b>9,862,450</b>
Total 2019		73,774,025	9,734,967

\* CRM (Credit Risk Mitigation techniques)

\*\* CCF (Credit Conversion Factor)

Table 41. Total exposure by asset classes and risk weights (CBL)

Average exposure over the period (€' 000)	
Exposure class	Exposure value before CRM* and CCF**
Central governments and central banks	7,390,811
Regional governments and local authorities	241,569
Public sector entities	359,617
Multilateral development banks	476,067
International Organisations	95,912
Institutions	60,426,327
Corporates	125,945
Retail	-
Exposures in default	3,126
Equity exposures	37,461
Other	23,927
<b>Total 2020</b>	<b>69,180,763</b>
Total 2019	67,455,231

\* CRM (Credit Risk Mitigation techniques)

\*\* CCF (Credit Conversion Factor)

Table 42. Average exposure by asset classes and risk weights (CBL)

31 December 2020 (€' 000)

Exposure class	Risk weight	Exposure value before CRM* and CCF**	Exposure value after CRM* and CCF**
	0%	1,581,257	1,581,257
	20%	5	5
Central governments and central banks	50%	4	4
	100%	16	16
	<b>Total</b>	<b>1,581,282</b>	<b>1,581,282</b>
Regional governments, local authorities and other public bodies	0%	59,612	59,612
	<b>Total</b>	<b>59,612</b>	<b>59,612</b>
Multilateral development banks and international Organisations	0%	36,871	36,871
	<b>Total</b>	<b>36,871</b>	<b>36,871</b>
	2%	4,056	4,055
Institutions	20%	929,722	264,535
	<b>Total</b>	<b>933,778</b>	<b>268,590</b>
Corporates	100%	5,456	5,452
	<b>Total</b>	<b>5,456</b>	<b>5,452</b>
Retail	75%	5	5
	<b>Total</b>	<b>5</b>	<b>5</b>
Other	100%	5,365	5,365
	<b>Total</b>	<b>5,365</b>	<b>5,365</b>
<b>Total 2020</b>		<b>2,622,368</b>	<b>1,957,176</b>
Total 2019		2,168,624	1,458,518

\* CRM (Credit Risk Mitigation techniques)

\*\* CCF (Credit Conversion Factor)

Table 43. Total exposure by asset classes and risk weights (CBF)

Exposure class	Average exposure over the period (€' 000)	Exposure value before CRM* and CCF**
Central governments and central banks		1,511,010
Regional governments and local authorities		24,617
Public sector entities		10,293
International Organisations		16,806
Institutions		1,064,673
Corporates		4,158
Retail		18
Equity exposures		4,000
Other		5,080
<b>Total 2020</b>		<b>2,640,655</b>
Total 2019		2,422,422

\* CRM (Credit Risk Mitigation techniques)

\*\* CCF (Credit Conversion Factor)

Table 44. Average exposure by asset classes and risk weights (CBF)

Most of Clearstream's exposures are towards central governments and central banks as well as institutions. As per year end 2020 most exposures to central governments and central banks are risk-weighted with 0%. The exposures to institutions mainly have only a short maturity of less than or equal to three months, thus, pursuant to Article 120 paragraph 2 CRR a risk weight of 20% can be applied.

### Detailed information and distribution of credit risk exposures

In the following the distribution of the credit risk exposures is broken down by exposure classes, geographical areas and residual maturity according to Article 442 CRR.

As at 31 December 2020, the geographical distribution of credit risk exposures is as shown in the below tables.

## 31 December 2020 (€'000)

Exposure class	European Union	Rest of Europe	North America	Rest of World	Total
Central governments and central banks	7,925,307	27,159	708	4,711	7,957,884
Regional governments, local authorities and other public bodies	607,467	2	0	0	607,469
Multilateral development banks and international organisations	296,974	0	125,064	157,021	579,059
Institutions	34,013,543	19,904,113	577,830	1,341,658	55,837,145
Corporates	172,601	6,618	2,313	8,168	189,700
Retail	12	0	0	1	13
Other (including equity holding)	466,874	0	0	0	466,874
<b>Total 2020</b>	<b>43,482,779</b>	<b>19,937,892</b>	<b>705,915</b>	<b>1,511,558</b>	<b>65,638,144</b>
Total 2019	46,403,488	25,709,822	899,423	1,939,713	74,952,445

Table 45. Geographical breakdown of exposures (CH-Group)

## 31 December 2020 (€'000)

Exposure class	European Union	Rest of Europe	North America	Rest of World	Total
Central governments and central banks	6,352,475	26,861	2,102	7,367	6,388,805
Regional governments, local authorities and other public bodies	547,796	0	0	0	547,796
Multilateral development banks and international organisations	260,154	244	125,071	156,909	542,378
Institutions	52,637,353	784,392	559,775	1,479,511	55,461,031
Corporates	36,231	56,328	2,437	24,210	119,207
Exposures in default	3,605	1,827	28	409	5,869
Other (including equity holding)	33,817	0	0	28,148	61,966
<b>Total 2020</b>	<b>59,871,430</b>	<b>869,653</b>	<b>689,414</b>	<b>1,696,555</b>	<b>63,127,052</b>
Total 2019	69,538,511	1,331,374	890,004	2,014,137	73,774,026

Table 46. Geographical breakdown of exposures (CBL)

## 31 December 2020 (€'000)

Exposure class	European Union	Rest of Europe	North America	Rest of World	Total
Central governments and central banks	1,581,282	0	0	0	1,581,282
Regional governments, local authorities and other public bodies	59,612	0	0	0	59,612
Multilateral development banks and international organisations	36,871	0	0	0	36,871
Institutions	931,449	2,256	72	1	933,778
Corporates	4,933	476	23	24	5,456
Retail	5	0	0	0	5
Other	4,676	0	688	0	5,365
<b>Total 2020</b>	<b>2,618,828</b>	<b>2,732</b>	<b>783</b>	<b>24</b>	<b>2,622,368</b>
Total 2019	2,165,631	2,124	848	20	2,168,624

Table 47. Geographical breakdown of exposures (CBF)

The residual contract maturity, broken down by exposure classes is shown below.

31 December 2020 (€'000)

Exposure class	No more than three months	Up to one year	Over one year	Total
Central governments and central banks	7,957,884	0	0	7,957,884
Regional governments, local authorities and other public bodies	21,116	37,926	548,428	607,469
Multilateral development banks and international organisations	39,244	105,673	434,142	579,059
Institutions	55,174,972	658,003	4,170	55,837,145
Corporates	137,499	0	52,201	189,700
Retail	13	0	0	13
Other (including equity holding)	0	0	466,874	466,874
<b>Total 2020</b>	<b>63,330,727</b>	<b>801,602</b>	<b>1,505,815</b>	<b>65,638,144</b>
Total 2019	73,611,511	560,461	780,472	74,952,445

Table 48. Maturity of exposures (CH-Group)

31 December 2020 (€'000)

Exposure class	No more than three months	Up to one year	Over one year	Total
Central governments and central banks	6,388,805	0	0	6,388,805
Regional governments, local authorities and other public bodies	20,698	24,907	502,190	547,796
Multilateral development banks and international organisations	29,270	105,673	407,434	542,378
Institutions	55,461,031	0	0	55,461,031
Corporates	66,959	0	52,247	119,207
Exposures in default	5,869	0	0	5,869
Other (including equity holding)	0	0	61,966	61,966
<b>Total 2020</b>	<b>61,972,633</b>	<b>130,581</b>	<b>1,023,838</b>	<b>63,127,052</b>
Total 2019	1,414,856	0	72,359,169	73,774,025

Table 49. Maturity of exposures (CBL)

31 December 2020 (€'000)

Exposure class	No more than three months	Up to one year	Over one year	Total
Central governments and central banks	1,581,282	0	0	1,581,282
Regional governments, local authorities and other public bodies	235	13,018	46,359	59,612
Multilateral development banks and international organisations	10,132	0	26,738	36,871
Institutions	933,778	0	0	933,778
Corporates	5,456	0	0	5,456
Retail	5	0	0	5
Other (including equity holding)	0	0	5,365	5,365
<b>Total 2020</b>	<b>2,530,888</b>	<b>13,018</b>	<b>78,462</b>	<b>2,622,368</b>
Total 2019	2,112,937	20,002	35,685	2,168,624

Table 50. Maturity of exposures (CBF)

### Value adjustments and provisions

In accordance with German GAAP, Clearstream assesses, at each balance sheet date, whether there is objective evidence that a financial asset is impaired. Only indications of impairment incurred at the balance sheet date resulting from past events and current economic conditions can be considered. Losses expected as a result of future events, no matter how likely, are not recognised. According to the policies of Clearstream and in line with sound banking practices and regulations, Clearstream makes value adjustments and provisions, when necessary and due to individual decisions.

Clearstream does not have any value adjustments and provisions for credit risk exposures at present, because it does not have any impaired assets.

### Definition of past due

An exposure is classified as "past due" in case a counterparty has failed to make a payment when contractually due, when the debtor has exceeded an external limit communicated to him as well as when

the debtor has utilised credit without prior consent. This definition is used likewise for regulatory and accounting purposes.

#### Definition of default or non-performing

According to Article 178 CRR a debtor is in default when either or both of the following conditions apply:

- The institution has material reason to consider that the obligor is unlikely to pay its (credit) obligations in full, without recourse by the institution to actions such as realising collateral (if held);
- The obligor is past due more than 90 successive calendar days on any material part of its overall credit obligation to the institution.

The definition of "impairment" used for accounting purposes is compliant with the definition of "default" outlined in Article 178 CRR.

#### Past due items and default or non-performing exposures

Pursuant to the below stated definitions, Clearstream had no past due items or defaults or non-performing exposures in its books at the reporting date or during the year under review.

## 5.10. Disclosure of counterparty credit risk (CCR) (Article 439 CRR)

Derivatives are only held at CBL to hedge against interest and foreign exchange risk. The derivative position includes forward foreign exchange contracts. As of 31 December 2020, the positions correspond to economic hedges and do not opt for IFRS9 hedge accounting for the Luxembourg entity. The dealings with interest rate or foreign exchange risks (measurement, assignment of internal capital and limits etc.) are described in detail in [Chapter 7.7.](#)

In cases where a certain level of foreign exchange exposure, and therefore risk, is exceeded, the risk of each individual currency exposure should be hedged. For Clearstream, the level of materiality is expressed as 10% of consolidated EBITDA of the budget year to be hedged for each individual currency exposure. For the protection of Clearstream's budgeted interest income, the Treasury Section may hedge the budgeted interest income for up to 50% of the customer credit balances for the upcoming budget period(s) through approved hedging instruments.

Foreign exchange outright contracts hedging the foreign exchange risk are settled via Continuous Linked Settlement (CLS)<sup>2</sup>, to minimise settlement risk, and executed with counterparties only where a Credit Support Annex (CSA) is signed to mitigate credit risk resulting from market movement.

The Mark-to-Market Method pursuant to Article 274 CRR is used by Clearstream to calculate the exposure value for OTC derivative instruments and long settlement transactions. The original exposure thus obtained is the exposure value.

FX swaps are considered as funding or an investment vehicle for currencies where no or limited deposit market exists (overnight swaps) or to convert USD liquidity (overnight and/or term FX swaps) into EUR used to purchase/repo against highly liquid paper delivered to BCL serving as liquidity buffer.

As at 31 December 2020 Clearstream did not hold any credit derivatives on its books. Hence, the report does not include a table containing information in conjunction with Art.439 (g) and (h) CRR concerning credit derivatives.

The following table discloses a comprehensive view of the methods used to calculate CCR regulatory requirements and the main parameters used within each method for CH-Group.

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<sup>2</sup> CLS (Continuous Linked Settlement): CLS is a global multi-currency settlement system that aims to eliminate foreign exchange (FX) settlement risk due to time-zone differences by settling both legs of an FX transaction simultaneously (payment vs. payment).



	31 December 2020 (€' 000)	31 December 2019 (€' 000)
	Orininal Exposure Method	Orininal Exposure Method
Notional amount	2,816,872	2,192,274
Exposure	54,758	61,659
RWA	12,103	13,050

Table 51. Analysis of CCR exposure by approach

The next table provides a summary of CH-Group's CVA regulatory calculations.

	31 December 2020 (€' 000)		31 December 2019 (€' 000)	
	Exposure value	RWA	Exposure value	RWA
Total portfolios subject to the advanced method	-	-	-	-
All portfolios subject to the standardised method	54,758	3,140	61,659	1,786
Based on the original exposure method	-	-	-	-
<b>Total subject to the CVA capital charge</b>	<b>54,758</b>	<b>3,140</b>	<b>61,659</b>	<b>1,786</b>

Table 52. CVA capital charge

The following table discloses a breakdown of CCR exposures by exposure class and by risk weight.

	31 December 2020 (€' 000)	31 December 2019 (€' 000)
<b>Exposure classes / Risk weights</b>		
<b>Corporates</b>		
100%	230	60,321
<b>Institutions</b>		
20%	54,528	60,321
50%	-	705
100%	-	634
<b>Total</b>	<b>54,758</b>	<b>61,659</b>

Table 53. Standardised approach - CCR exposures by regulatory portfolio and risk

The following table provides an overview of the impact of netting and collateral held on exposures.

	31 December 2020 (€' 000)	31 December 2019 (€' 000)
	Derivatives	Derivatives
Gross positive fair value or net carrying amount	54,758	61,659
Netting benefits	-	-
Netted current credit exposure	54,758	61,659
Collateral held	-	-
Netted credit exposure	54,758	61,659

Table 54. Impact of netting and collateral held on exposure values

## 5.11. Disclosure of equities not included in the trading book (Article 447 CRR)

Equities held in the non-trading book concern strategic participations in companies with business related to the business of Clearstream and a mandatory participation in the Society for Worldwide Interbank Financial Telecommunication (SWIFT), as CBL and CBF are some of the largest users of SWIFT. Due to the strategic alignment, no participation is held in order to make short-term profits (no trading intent).

As described in Chapter 1.2.1., Clearstream holds participations in the following entities:

- REGIS-TR S.A.,

- REGIS-TR UK Ltd.,
- Clearstream Australia Ltd.,
- LuxCSD S.A.,
- Clearstream Nominees Ltd.,
- Clearstream Fund Centre AG,
- Clearstream London Limited

Due to the conditions laid out in Art. 19 CRR, these entities are excluded from the scope of prudential consolidation of Clearstream Group. Therefore, these participations are held as equity in the non-trading book. Owing to the SWIFT constitution, CBL and CBF must hold a participation in SWIFT as well.

For valuation and accounting purposes the German GAAP according to the German Commercial Code (HGB) is relevant for CH-Group on a consolidated level and for CBF's equities in the non-trading book. According to the specifications of HGB, equities in the non-trading book are defined as long-term financial assets.

The following table considers all mentioned participations that are held as equities in the non-trading book:

	31 December 2020 (€' 000)	31 December 2019 (€' 000)
Fair value of investments	411,563	39,549
Balance sheet value	411,563	40,183
Total unrealised gains (losses)	0	-634
thereof total revaluation gains (losses)	0	-634
Amounts included in the original or additional own funds	0	0

*Table 55. Equities in the non-trading book*

**Note:** None of the participations is listed on any exchange.

## 5.12. Asset encumbrance (Article 443 CRR)

In accordance with Article 443 CRR in conjunction with the Delegated Regulation (EU) 2017/2295, the following chapter contains information concerning encumbered and unencumbered assets for the CH Group.

The disclosed figures are year-end values as of 31 December 2021. The information is disclosed at the consolidated level of CH-Group.

		31 December 2020 (€' 000)			
		Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencumbered assets	Fair value of unencumbered assets
		010	040	060	090
010	Assets of the reporting institution	2,225	0	17,008,390	0
020	Loans on demand	0	0	9,170,110	0
030	Equity instruments	0	0	0	0
040	Debt securities	0	0	1,185,295	1,190,618
050	of which: covered bonds	0	0	0	0
060	of which: asset-backed securities	0	0	0	0
070	of which: issued by general governments	0	0	723,148	726,311
080	of which: issued by financial corporations	0	0	462,148	464,307
090	of which: issued by non-financial corporations	0	0	0	0
100	Loans and advances other than loans on demand	2,225	0	5,955,391	0
110	of which: mortgage loans	0	0	0	0
120	Other assets	0	0	697,594	0

*Table 56. Encumbered and unencumbered assets*

As there were no matching liabilities to the only source of encumbrance, no sources can be shown.

As shown in the table above, the overall level of encumbrance is very low. Unencumbered assets are mainly related to the following positions:

- Loans on-demand account for around 54%, which mainly consists of customer liquidity that is placed overnight;
- Other loans and advances that are mainly made up of repurchase agreements account for 35% of unencumbered assets;
- 7% of unencumbered assets consist of debt securities, mostly high-quality liquid assets;
- The remaining minor part is mainly other receivables and intangible assets.

The fair value of the collaterals from collateralised placings is shown in the table below.

		31 December 2020 (€' 000)	
		Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
		010	040
<b>130</b>	<b>Collateral received by the reporting institution</b>	<b>293,493</b>	<b>5,308,779</b>
150	Equity instruments	-	-
160	Debt securities	293,493	5,308,779
230	Other collateral received	-	-
240	Own debt securities issued other than own covered bonds or ABSs	-	-

Table 57. Collateral received

## 6. Management of operational risk

Operational risk is defined as the risk of loss resulting from inadequate or defective systems and internal processes, from human or technical failure, from inadequate or defective external processes, from damage to physical assets as well as from legal risks that could arise from non- or inappropriate compliance with new or existing laws and regulations and all contractual commitments. Based on this definition, Clearstream distinguishes between four types of operational risk:

- Availability risk (e.g. technical infrastructure, facilities, staff);
- Service deficiencies (e.g. errors & omissions, supplier deficiencies, product flaws);
- Damage to physical assets (e.g. accidents, natural hazards, terrorism, sabotage);
- Legal offences and business practices (e.g. non-compliance with laws & regulation).

### 6.1. Strategy and process (Article 435 (1)(a) & Article 454 CRR)

The risk management process for operational risk follows the overall risk management process as presented in Chapter 4.1.5.. The described five steps of the risk management process are therefore applicable for operational risk as well. Operational risk represents a major risk class for Clearstream and is systematically managed and controlled. Clearstream decided to cover business needs and regulatory requirements through the same approach to the largest extent possible. Therefore, Clearstream follows an Advanced Measurement Approach (AMA) for calculating regulatory capital requirements for operational risk. Thus, Clearstream established a comprehensive framework and set of instruments meeting the requirements from both a regulatory and a business perspective.

Since having received regulatory approvals as of January 2008, CBL and CBF apply the AMA to calculate their capital requirements for operational risk. In October 2010, CH received BaFin's approval to use the approach at group level in the course of the introduction of the supervision on CH-Group level. CH-Group has used the Direct VaR model for AMA purposes since regulatory approval in Q1 2017.

## 6.2. Structure and organisation (Article 435 (1)(b) CRR)

The ultimate responsibility for operational risk management lies with the members of the Executive Boards of Clearstream, who are supported by different units and functions. Executive Boards appoint "Operational Risk Representatives" for their respective area with a direct reporting line to the respective member of the Executive Management.

The Operational Risk Representative is the key contact for both the employees in the respective organisational unit as well as for Clearstream Risk Management. They support their line management with all tasks regarding operational risk and are especially responsible for the collection of operational risk event data within their organisational unit. In addition to this, the Operational Risk Representatives take an active role in further developing operational risk tools and instruments. They also coordinate operational risk training for their respective organisational unit.

Furthermore, it is the responsibility of line management to control operational risk within their area on a day-to-day basis. This includes the identification of suitable measures to mitigate operational risk and to improve the effectiveness and efficiency of the operational risk management.

Operational risk management is performed by Clearstream Risk Management and governed by the *Group Risk Management Policy*. Operational risk representatives and owners play a crucial role in identifying, assessing and monitoring operational risks. Finally, it is the responsibility of any single employee to support Clearstream Risk Management, line management and the Operational Risk Representative of their organisational unit regarding any operational risk matters. Every employee is required to participate in the collection of operational risk event data. Furthermore, individual employees may be asked by line management, their operational risk representative, or Clearstream Risk Management to take an active role in the operational risk management process, for example, as experts within the scenario analysis process.

## 6.3. Assessment (Article 435 (1)(c) CRR)

Operational risks are estimated and quantified using a Value-at-Risk concept. A key component of Clearstream's operational risk assessment is its internally developed operational risk model. The operational risk model combines a frequency distribution, that models the likelihood of the occurrence of loss events, with a severity distribution, that describes the size of operational losses, yielding in a loss distribution. The loss distribution allows Clearstream to estimate potential operational risks at different confidence levels.

As Clearstream has a unique business model, it is not sufficiently represented in any bank consortium or public database. Therefore, it has been decided to use external loss data as data input only where appropriate.

Operational risk capital is intended to represent the required risk capital for unexpected operational risk losses. As part of the AMA within Clearstream, a model for calculating operational risk capital requirements has been developed, based on the individual risk profile of the bank.

In line with common practice in other risk areas, capital requirements are calculated using the Value-at-Risk (VaR) concept. Based on a statistical analysis of relevant data, a loss distribution is determined, which enables calculation of the required figures.

The model has been designed to have the following properties:

- Capital requirements reflect the risk profile of Clearstream Group and individual group entities.
- Confidence levels can be adjusted according to the risk appetite of the bank.
- Incentives for proper risk management can be included into the model.
- Major risk drivers can be identified.
- Risk mitigation effects can be taken into account.

Insurance policy is not considered as a risk mitigating affect in the Operational Risk capital model.

Operational risk can be differentiated according to the severity and frequency of losses. As operational risk management depends on the risk position of Clearstream, the general principles are as follows:

- All main risks are identified and analysed regarding the expected or real effect on frequency and severity.

- For risks with a low frequency but high severity, risk transfers are considered – for example, through insurance contracts.
- For risks with high frequency but low severity, risk reduction is considered – for example, by optimising processes.

## 6.4. Mitigation and control (Article 435 (1)(d) CRR)

As laid out in its risk strategy, Clearstream gives considerable attention to its risk mitigation process. The aim is to reduce the frequency and the severity of potential operational risk events. Clearstream’s operational risk mitigation process has three cornerstones that are described in turn in the following sections:

- Internal Control System
- Business continuity planning
- An insurance programme

The operational risk mitigation process comprises several quality and control initiatives whose objective is to ensure that Clearstream’s operations have sufficient controls to prevent any fraud or operational service deficiency. If an event of this kind occurs in Clearstream’s operations, a thorough analysis is performed to be in the position to define measures to reduce the probability of recurrence.

### 6.4.1. Internal Control System

The Executive Boards of Clearstream have implemented an internal control system, designed to ensure the effectiveness and profitability of the business operations, prevent or detect financial loss and thus protect all its business assets. Clearstream’s internal control system, an integral part of the risk management system, is continuously developed and adjusted to reflect changing conditions. It comprises both integrated and independent control and safety measures. In 2018, Clearstream established the Control Assurance & Monitoring (CAM) function to further enhance the documentation and monitoring of the internal control system.

Internal Audit carries out risk-oriented and process-independent controls to assess the effectiveness and appropriateness of the internal control system.

### 6.4.2. Business Continuity Management

Because the unavailability of core processes and resources represents a substantial risk for Clearstream, and a potential systemic risk to the markets, Clearstream has implemented a comprehensive Business Continuity Management (“BCM”) approach as a key mitigator of availability risk. Related tests are performed throughout the year. The BCM organisation and key operational risks addressed by BCM processes are described in the following paragraphs.

#### 6.4.2.1. BCM organisation at Clearstream

The business continuity function is responsible for the overall monitoring of Clearstream’s readiness to deal with incidents, emergencies and crises. Organisational roles, responsibilities and guiding principles to ensure operational resilience are all documented in a formal *Business Continuity Management Policy*. Business continuity plans are developed by the individual organisational units as each unit is responsible for its disaster tolerance and operational resilience. Reporting to executive management, the Business Continuity Management function is responsible for the overall coordination, monitoring and assessment of Clearstream’s preparedness to deal with incidents and crises.

#### 6.4.2.2. BCM arrangements

The implemented BCM arrangements aim to minimise the impact of the unavailability of key resources and address the unavailability of systems, workspace and suppliers, but also the loss of significant numbers of staff in order to ensure the continuity of the most critical operations in cases of catastrophic events. Clearstream also leverage on its operational locations in Cork, Eschborn, London, Luxembourg, Prague and Singapore to maintain the continuity of its services.

### 6.4.2.3. Systems unavailability

Data centres are geographically distributed to form active centres, acting as backups of each other. Data is mirrored in real time across the data centres. The infrastructure is designed to ensure the online availability and integrity of all transactions to limit the impact due to any disruption.

### 6.4.2.4. Workspace unavailability

Exclusively dedicated work facilities provide backup office space for mission-critical functions requiring onsite presence if an office location becomes unavailable. These backup facilities are always fully equipped and connected to the distributed data centres and are operational at all times. In addition, business transfer plans between Clearstream's different operations locations can be used to mitigate workspace unavailability.

### 6.4.2.5. Staff unavailability

Business Continuity measures address the loss of significant number of staff, covering emergency scenarios and potential pandemics. Solutions are designed to ensure that the minimum staff and skills required are available outside the impacted location. Staff dispersal and business transfer plans between Clearstream's different operations locations are employed such that, if one of these locations is impacted, mission critical activities can be continued by staff in other locations.

### 6.4.2.6. Supplier unavailability

Clearstream assures itself of the continuous provision of critical supplier services by a number of means, such as regular due diligence reviews of suppliers' BCM arrangements, provision of services by alternative suppliers if possible and service level agreements, describing minimum service levels expected from suppliers and contingency procedures requirements. Measures are defined to mitigate the availability risks during a widescale pandemic, either with a regional or cross regional impact. Focus is on ensuring the well-being of staff e.g. by rotational working or remote working, thus ensuring staff availability. Measures are adaptable to also adhere to any recommendations or directives issued by local authorities.

### 6.4.2.7. Incident and crisis management process

Clearstream has implemented a group-wide incident and crisis management process that facilitates a coordinated response and rapid reaction to an incident or crisis in a controlled and effective manner. The process aims to minimise business and market impact, as well as enable a speedy return to regular business activity.

Incident Managers have been appointed in the respective business areas as single points of contact in case of incidents, emergencies and crises to ensure the appropriate response mechanisms are in place including escalation up to the Executive Boards and notification to customers and other relevant external parties.

### 6.4.2.8. "Real-life" simulation testing

Clearstream adopts a comprehensive and ambitious business continuity testing approach that simulates scenarios as close as possible to real-life situations while reducing associated risks and avoiding customer impacts. BCM plans are tested on a regular basis, at least annually and mostly unannounced.

BCM test results are validated against the following objectives:

- Functional effectiveness: validating all technical functionalities.
- Execution ability: staff must be familiar with and knowledgeable in the execution of BCM procedures.
- Recovery time: the functions in the scope of the business continuity plans must be operational within the defined recovery time objective.

Test results are reported to the Executive Board. Customers are regularly invited to participate in Clearstream's BCM tests to provide them with the direct assurance of Clearstream's BCM preparedness.

### 6.4.3. Insurance

Insurance is an additional tool used by Clearstream to mitigate the impact of operational risk, by transferring risks above a certain threshold to third parties through a comprehensive insurance programme.

In order to achieve the optimum risk/benefit versus premium ratio, insurance policies are negotiated either through insurance brokers or directly with highly rated insurers to purchase tailor-made policies reflecting the specificities of Clearstream business.

Each major insurance cover is reviewed annually following the evolution of Clearstream's risk profile.

Although the risk mitigating effect of insurance policies is not considered in the Operational Risk capital model, the insurance program is an important measure for management purposes.

## 6.5. Monitoring and reporting

In order to monitor operational risks effectively, thresholds have been defined for key risk indicators ("KRI") and risk indicators ("RI"). If the observed value exceeds the threshold, an escalation process is initiated, i.e. an analysis/investigation is carried out by the operational risk representative or the risk owner.

Operational risk information is integrated into the regular overall risk management reporting, which is laid out in [Chapter 4.1.5.5](#).

Furthermore, the Internal Capital Adequacy Assessment of Clearstream is defined centrally and calculated on an annual basis. The executive management is ultimately responsible for the Risk Strategy of Clearstream and oversee the internal capital adequacy process. Clearstream Risk Management prepares, updates and reviews the ICAAP report, presents it to the relevant Executive Boards for approval and provides the report to the regulatory authorities. The ICAAP report is subject to a 4-eyes principle. The checks are performed using the EBA Readers Manual. The input to the report is prepared and collected by Clearstream Risk Management team members including other relevant parties. The final report is reviewed by the Chief Risk Officer of CH and the Head of Risk Management of CBL.

The process includes the first and second line of defense. The ICAAP Report is also reviewed by CBL Compliance in line with CSSF requirements. The CBL Chief Compliance Officer issues recommendations after having reviewed the report which will be discussed with CRM during a meeting and incorporated into the report. Internal Audit, as the third line of defense, reviews the ICAAP regularly.

The executive management is ultimately responsible for the ICAAP with a focus on:

- ensuring full compliance with the ICAAP objective concerning risk taking, mitigation and internal capital planning,
- assuring adequate capitalization of the company,
- ensuring effective risk management structures including risk policies and procedures to address and mitigate all risks to which Clearstream is exposed to,
- ensuring that the Risk Strategy is integrated into the business activities throughout the entire group and that adequate measures are in place to implement the strategies, policies and procedures, approving capital planning,
- overseeing the integration of internal capital adequacy statement and framework (ICAAP) into the company.

The key components of the ICAAP report are defined as follows:

- consistency between the business and risk strategies
- integration within the overall risk management and risk appetite frameworks, including early warning indicators, limit structures, and escalation procedures
- identification, measurement, assessment and aggregation of material risks
- assessment, planning and allocation of capital requirements for the normative and economic perspectives
- derivation and monitoring of the Available Risk Bearing Capacity
- stress testing and consistency with the recovery plan
- overall governance and IT support

- reporting
- Capital Adequacy Statement

The components are supported by objectives, assumptions and methodologies and are captured by clear, concise and consistent documentation approved by Executive Management.

## 6.6. Disclosure on operational risk (Article 446 CRR)

As described in [Chapter 6.1.](#), the own funds requirement for operational risk under Pillar 1 are calculated by using the Advanced Measurement Approach as defined in Art. 321 to Art. 324 CRR. Therefore, not only own funds requirements have to be reported but also losses and recoveries, as well as, details regarding large loss events.

# 7. Management of market risk including interest rate risk of exposures on positions not included in the trading book

Market risk may result from currency, equity price or interest rate fluctuations.

## 7.1. Strategy and process (Article 435 (1)(a) CRR)

The risk strategy and risk management process for market risk follows the overall risk management process as presented in [Chapter 4.1.5.](#). The described five steps of the risk management process is therefore applicable for market risk as well.

As national and international central securities depository Clearstream follows a restrictive investment policy. Clearstream is not involved in proprietary trading activities and does not maintain a trading book. Thus, Clearstream's investment activities, i.e. the placement of clearing members' cash collateral and the investment of Clearstream's own liquidity, are allocated to the non-trading book in accordance with the CRR.

As the leading principle, placements shall be collateralised to the extent possible. Direct security purchases shall be permitted if mismatch, interest rate risk and stop loss limits have been approved by the responsible Executive Board. Uninvested cash shall be deposited with central banks or be placed with several financial institutions to avoid concentration. Transactions in derivative instruments shall be allowed only for hedging purposes.

## 7.2. Structure and organization (Article 435 (1)(b) CRR)

Clearstream Treasury activities are governed by Deutsche Börse's *Group Treasury Policy* including limits and responsibilities. The processes are further detailed by Clearstream Banking's *Treasury Liquidity Management Policy* and *Treasury Investment Policy*.

The *Treasury Investment Policy* sets the frame for hedging future currency risk and net interest income. It includes the approved hedging instruments and the delegation of power for hedging.

Treasury performs daily cash and risk management within predefined limits. This includes the application of mitigating measures to reduce market risk if necessary. Treasury Middle Office monitors compliance with the limits on a daily basis.



## 7.3. Assessment (Article 435 (1)(c) CRR)

The market risks are calculated using statistical simulations under Pillar II (Monte Carlo simulation), and the calculations of Interest Rate Risk in the Banking Book (IRRBB) are measured using sensitivity analysis. Clearstream monitors currency and interest rate exposures by means of reports generated by the general ledger accounting system and its customer cash ledgers or the Treasury ledger.

### 7.3.1. Interest Rate Risk

The interest rate risk at Clearstream stems primarily from asset liabilities mismatch. The non-exhaustive list of positions under scope contain customer cash and its placement either secured (reverse repo) or unsecured (nostros or overnight placements), loros, FX swaps, FX forwards, coupons of fixed bonds, pension assets and liabilities. These positions need to be quantified and monitored.

For the protection of Clearstream's budgeted net interest income, the Treasury section may hedge the budgeted net interest income for up to 50% of the customer credit balances for the upcoming budget period(s) through approved hedging instruments.

#### 7.3.1.1. Interest Rate Risk Limits

Clearstream's assets and liabilities are managed by Treasury to contain interest rate risk (IRR) within the limits established by the *Treasury Investment Policy*. In particular, due to the short-term nature of Clearstream's liabilities its asset side is structured accordingly. The close matching of investments and customer deposits ensures that Clearstream can control its IRR.

To manage and measure the IRR positions, an IRR limit shall be maintained. The IRR limit defines the maximum acceptable loss which can be caused by an adverse shift in the yield curve. IRR shall be calculated daily on the basis of the net present value of a predefined hypothetical yield change calculated for the remaining days to maturity.

Interest rate risk is calculated by Risk Management under Pillar II and checked against the allocated risk bearing capacity. The IRR calculation takes place on a monthly basis and it is reported to Executive Board quarterly.

#### 7.3.1.2. Stop-Loss Limits

To identify unfavourable changes in market conditions Stop-Loss limits are established. The Stop-Loss limit defines the amount up to which the fair value of a portfolio can decline upon which a prompt review of the portfolio shall be conducted, and actions shall be implemented to reduce the interest rate risk sensitive position to cut further losses. The unrealized loss is calculated daily based on the yield difference between position yield and market yield over the remaining life to maturity.

### 7.3.2. Foreign exchange risk

Clearstream provides settlement and custody services in more than 40 different currencies. Amounts in currency transmitted to Clearstream by customers are registered on the respective customers' account(s) in that currency. The same is true for any withdrawal of funds by customers (for example, for settlement purposes or for custody payments).

Debits and credits of all customers in the same currency are held by the respective Clearstream legal entity at its cash correspondent banks (CCBs). Treasury analyses balances per currency as a basis for placings. Where there is a requirement to fund net currency credit facilities, such takings are always made in the relevant currency.

A limited amount of local currency is held on entity level as well as at CBL representative offices, to cover expenses. In addition, interest earned on currency placings above interest payable to customers on currency balances will cause small (generally long) currency positions. Invoices in foreign currencies will cause short currency positions. These FX positions are monitored daily and covered in the foreign exchange market to remain within the approved limits set in the Treasury Investment Policy.

Additionally, Clearstream provides foreign exchange services to its customers. Foreign exchange risk resulting from the execution of customer foreign exchange requests is covered daily in the foreign exchange market to remain within the approved limits set in the Treasury Investment Policy.

### 7.3.2.1. Foreign exchange Risk Limits

The residual foreign exchange positions are monitored against approved limits on a daily basis. Reports to the Executive Board are submitted in case of limit violations.

The *Treasury Investment Policy* defines the maximum open foreign exchange position allowed for all currencies. A report showing the foreign exchange positions in all currencies is produced daily. Treasury Middle Office unit (hierarchically independent from Treasury) controls the report and reports any overstepping against the limit to the Executive Boards.

	31 December 2020 (€ 000)				31 December 2019 (€ 000)			
	Mismatch/Portfolio		Interest Rate Risk (IRR)		Mismatch/Portfolio		Interest Rate Risk (IRR)	
	Exposure	Limit	Exposure	Limit	Exposure	Limit	Exposure	Limit
CBL Investment portfolio (Fixed and FRN)	1.139.487	2.500.000	42.117	72.000	1.228.613	2.500.000	26.977	72.000
CBF Investment portfolio (Fixed and FRN)	257.000	175.000	26.601	35.000	43.000	175.000	584	8.000
CBL MM portfolio	1.546.585	5.800.000	13.982	18.000	3.898.606	7.300.000	11.936	24.000
CBF MM portfolio	13.150	300.000	3	1.000	33.168	300.000	12	1.000

Table 58. Limits according to Treasury Policy

### 7.3.3. Equity price risk

Equity price risk could only arise in the Defined Benefit Clearstream pension fund portfolio in Luxembourg and in the Deutsche Börse Group pension plan assets (Contractual Trust Arrangement) in Germany.

The pension fund in Germany is managed by an external asset manager and the pension fund in Luxembourg is managed by selected asset managers in the Luxembourg Treasury department both with an aligned and restricted investment policy. The investments in Equity are administrated and reported by the asset managers. If the performance of the portfolio reaches an upper or lower threshold the asset managers of Luxembourg need to alert the board of directors and the asset manager of Germany needs to inform the CTA investment committee.

Equity price risk is calculated by Risk Management under Pillar II and checked against the allocated risk bearing capacity. The IRR calculation takes place monthly and it is reported to the Executive Board quarterly.

### 7.3.4. Stress testing

In order to achieve a better understanding of the largest risks, help gauge the potential vulnerability to extreme but plausible events and assess the impact on the capital, Clearstream Risk Management runs stress tests. The stress tests focus on extreme but plausible events based on historical simulations.

Additionally, in accordance with the BaFin circular 06/2019 (BA)<sup>3</sup>, Treasury computes and reports to BaFin the level of interest rate risk in its banking book (IRRBB). Further details on IRRBB are described in Chapter 7.7.

## 7.4. Mitigation and control (Article 435 (1)(d) CRR)

Compliance with IRR and Stop-Loss limits shall be checked by the Treasury Middle Office. Limit breaches, if not properly explained and sanctioned by the manager responsible for the position, shall immediately be reported to the board members responsible for Treasury and Risk. Interest sensitive and stop-loss relevant positions may be closed to mitigate increased risk.

Forward foreign exchange transactions may be undertaken in anticipation of expected future exposures in foreign currencies to hedge the expected foreign exchange exposure resulting from CBL's budgeted USD based net interest income (NII). In 2020 an amount of USD 108mn (USD 36mn reversed in July) was hedged against USD as a material part of the net interest-based USD income. If a foreign exchange hedge is undertaken, testing of the effectiveness of hedging transactions is performed on a regular basis in compliance with IFRS 9.

<sup>3</sup> BaFin Circular (BA) -Interest rate risk in the Banking book:  
[https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Rundschreiben/2019/rs\\_06-2019\\_ZAER.html](https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Rundschreiben/2019/rs_06-2019_ZAER.html)

## 7.5. Monitoring and reporting

As described in the limit sections, Treasury Middle Office, independent of the Treasury Front Office department, is responsible for monitoring compliance with limits and issues monthly reports to the Executive Board and to Group Risk Management. Limit excesses are monitored daily and are reported immediately to the Head of Treasury, to Group Risk Management, the Chief Compliance Officer of Clearstream and Clearstream's Executive Board Members.

## 7.6. Disclosure exposures for market risk (Article 445 CRR)

In order to determine the own funds requirement for market risk under Pillar 1, Clearstream uses the Standard Approach as defined in Article 325 et seq. CRR. Clearstream reports its amount of foreign-exchange risk calculated as at 31 December 2020. Clearstream is neither subject to settlement risk nor commodities risk as defined in the CRR.

## 7.7. Disclosure exposures on interest rate risk on positions not included in the trading book (Article 448 CRR)

Clearstream identifies and measures interest rate risk on a regular basis.

Quarterly, in accordance with the BaFin circular 06/2019 (BA)<sup>4</sup> starting from 2019 Q4 (after being exempted during 2019), Clearstream computes and reports to BaFin the level of interest rate risk in its banking book (IRRBB) and demonstrates that its regulatory capital is sufficient to withstand an unexpected parallel shift in the interest rate yield curve of  $\pm 200$  basis points. If this standard shock results in a potential decline of the net present value of its interest rate sensitive positions by more than 20% of the regulatory capital, the Supervisory Authority will take appropriate actions. As of 31 December 2020, Clearstream did not breach the mandated threshold.

Clearstream Holding AG, Frankfurt	31 December 2020 (€ 000)	31 December 2019 (€ 000)
<i>Interest Rate Risk - Banking Book (IRRBB) as per BaFin Rundschreiben 06/2019 (BA)</i>		
Base EVE (in EUR equivalent)	2,037,127	1,959,476
(a) Standard shock: +200bps shift up	-10,352	-10,819
(b) Standard shock: -200bps shift down	7,604	3,257
(c) Scenario 1: Parallel shift up	-10,874	-11,164
(d) Scenario 2: Parallel shift down	7,604	3,257
(e) Scenario 3: Steepened curve	11,623	11,219
(f) Scenario 4: Flattened curve	-18,070	-22,292
(g) Scenario 5: Short rate up	-26,266	-23,452
(h) Scenario 6: Short rate down	6,881	12,534
Eligible own funds	1,677,658	2,002,958
(a) IRRBB + 200bps parallel shift as percentage of own funds	-0,62%	-0,54%
(b) IRRBB - 200bps parallel shift as percentage of own funds	0,45%	0,16%

Table 59. Interest rate in the banking book (CH-Group)

<sup>4</sup> BaFin Circular (BA) -Interest rate risk in the Banking book:  
[https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Rundschreiben/2019/rs\\_06-2019\\_ZAER.html](https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Rundschreiben/2019/rs_06-2019_ZAER.html)

Clearstream Banking S.A. Luxembourg	31 December 2020 (€ 000)	31 December 2019 (€ 000)
Interest Rate Risk - Banking Book (IRRBB) as per BaFin Rundschreiben 06/2019 [BA]		
Base EVE (in EUR equivalent)	1.477.614	1.465.059
(a) Standard shock: +200bps shift up	-43.203	-18.822
(b) Standard shock: -200bps shift down	9.460	20.165
(c) Scenario 1: Parallel shift up	-43.876	-19.167
(d) Scenario 2: Parallel shift down	9.460	20.165
(e) Scenario 3: Steepened curve	5.492	13.273
(f) Scenario 4: Flattened curve	-21.241	-15.382
(g) Scenario 5: Short rate up	-36.990	-21.577
(h) Scenario 6: Short rate down	8.736	12.547
Eligible own funds	1.211.586	1.396.197
(a) IRRBB + 200bps parallel shift as percentage of own funds	-3,57%	-1,35%
(b) IRRBB - 200bps parallel shift as percentage of own funds	0,78%	1,44%

Table 60. Interest rate in the banking book (CBL)

Clearstream Banking AG, Frankfurt	31 December 2020 (€ 000)	31 December 2019 (€ 000)
Interest Rate Risk - Banking Book (IRRBB) as per BaFin Rundschreiben 06/2019 [BA]		
Base EVE (in EUR equivalent)	559.425	494.417
(a) Standard shock: +200bps shift up	23.679	9.014
(b) Standard shock: -200bps shift down	-3.557	-6.338
(c) Scenario 1: Parallel shift up	23.679	9.014
(d) Scenario 2: Parallel shift down	-3.557	-6.338
(e) Scenario 3: Steepened curve	6.208	4.583
(f) Scenario 4: Flattened curve	1.319	-6.910
(g) Scenario 5: Short rate up	5.027	-366
(h) Scenario 6: Short rate down	-3.557	-24
Eligible own funds	419.890	515.608
(a) IRRBB + 200bps parallel shift as percentage of own funds	5,64%	1,75%
(b) IRRBB - 200bps parallel shift as percentage of own funds	-0,85%	-1,23%

Table 61. Interest rate in the banking book (CBF)

## 8. Management of liquidity risk

Liquidity risk is the risk arising from the inability to meet short-term payment obligations in case of mismatches between liquidity needs and liquidity sources.

### 8.1. Strategy and processes (Article 435 (1)(a) CRR)

The aim of Clearstream's liquidity management is the ability to respond to daily, including intraday, changing customer net long/short cash balances. Customers maintain cash balances with Clearstream

and may additionally draw on credit facilities (unconfirmed funds facility (UCF) and intraday technical overdraft facilities (i-TOFs)) as a result of their securities settlement activities.

As Treasury's investment strategy is driven by the cash amounts customers leave on their settlement accounts with Clearstream, strict mismatch limits are established to limit liquidity risk that may arise from Treasury investments. Funds must be invested with the objective to have sufficient liquid resources such as highly liquid collateral or investments readily available and convertible into cash to sustain liquidity risks under a wide range of potential stress scenarios including intraday.

On an annual basis, Clearstream Risk Management reviews the liquidity risk inventory, which is a comprehensive and complete list of all the potential liquidity risk items that Clearstream may be exposed to due to its current and future business operations. This risk inventory should include all risks that Clearstream is aware of and represents a key input into the subsequent risk management processes. For the financial year 2020, the following liquidity risks were identified as relevant for Clearstream:

- **General Liquidity Risk:** Risk arising from the inability of meeting payment obligations when they come due
- **Funding/Refinancing Risk:** Risk related to the limited access to capital and financial resources to finance operation and investment activities and the related expenses from rising capital (higher level of refinancing cost), incl. capital structure risk
- **Credit Rating Risk:** Risk related to a downgrade in credit rating leading to a raise in costs of funding and other outstanding debt
- **Investors' expectations risk:** Risk arising from unmet investors' expectations leading to a raise in the costs of funding

Once identified, the liquidity risks are assessed, controlled, and monitored/reported on a regular basis. Please refer to the following paragraphs for a more detailed description of the respective processes.

## 8.2. Structure and organisation (Article 435 (1)(b) CRR)

As defined in Clearstream's *Liquidity Management Policy*, the liquidity management strategy is executed by Treasury Luxembourg/Singapore on a centralized basis combining liquidity from CBL, CBF and other Clearstream entities for which cash pooling arrangements are in place.

Within Clearstream, the liquidity management function is performed by Treasury. Treasury controls the liquid assets and has the following tasks and responsibilities:

- Ensure access to and control over Clearstream's liquid assets at all times,
- Ensure the availability and diversification of sufficient liquidity sources including committed lines
- Ensure the avoidance of an excessive currency mismatch.

Treasury is responsible for the monitoring of activities resulting from Clearstream's cash management, liquidity stress test results and liquidity indicators, and taking appropriate actions accordingly.

Clearstream Risk Management oversees the liquidity risk and supports Treasury with assessments, monitoring and reporting activities. In addition, the risk committees of Clearstream entities monitor and oversee those activities and make recommendations to the relevant Executive Boards.

## 8.3. Assessment (Article 435 (1)(c) CRR)

### 8.3.1. Key Liquidity Indicators

In line with regulatory standards, Clearstream has established a comprehensive set of liquidity indicators to detect critical developments early and initiate mitigating measures in time. In the following, the key liquidity indicators are outlined.

In order to identify potential liquidity shortfalls in advance, Clearstream implemented early warning triggers as well as recovery triggers for all Key Liquidity Indicators.

### 8.3.2. Liquidity Coverage Ratio (LCR)

The LCR ratio focusses on the resilience of the liquidity risk profile and requires Clearstream to hold an adequate stock of unencumbered high-quality liquid assets (liquidity buffer) that can be converted into cash easily and immediately in private markets to meet its liquidity needs (net liquidity outflows) within a 30 calendar day horizon. Regulation (EU) No 575/2013 (CRR) supplemented by Commission Delegated Regulation (EU) 2018/1620 with regard to liquidity coverage requirements for credit institutions set out the detailed rules for the calculation of the LCR.

In addition to the LCR, Treasury calculates and monitors additional internal liquidity ratios which ensure a more dynamic adaptation to a changing liquidity situation, and that the liquidity sources provide sufficient liquidity to cover peak customer end-of-day overdraft balances. Treasury also measures, monitors and manages liquidity including intraday per entity, per currency and per cash correspondent bank or depository acting as cash agent with the aid of an intraday liquidity management tool capable to monitor actual cash flows as reported online by its cash correspondent banks / agents as well as expected forthcoming cash flows from its customers, corporate actions or other activities such as payment flows resulting from Treasury activities. Treasury monitors intraday concentration and liquidity usage based on various on-line alerts automatically triggered both at currency and cash correspondent banks / agents levels.

### 8.3.3. Stress testing

Clearstream uses scenario analysis as part of its regular stress testing in reference to the BaFin minimum requirements for risk management as defined in the MaRisk of 27 October 2017 (BaFin Circular 09/2017) and CSSF Circular 09/403 requiring that institutions conduct liquidity stress tests that enable them to assess the potential impact of extreme but plausible stress scenarios on their liquidity positions and their current contemplated risk mitigation.

In order to analyse the liquidity risk of Clearstream and to ensure that sufficient liquid financial resources are maintained at all times, comprehensive daily and quarterly stress test calculations are carried out. Clearstream has implemented various scenarios including market disruption and idiosyncratic events.

Concretely, two daily liquidity stress tests, three quarterly classical liquidity stress tests and three quarterly reverse stress tests considering idiosyncratic, market disruption and combined scenarios are performed.

#### Scenario 1 – Base scenario

The Base scenario considers the lowest net cash balances by currency in the most recent five-year time horizon.

#### Scenario 2 – Market Disruption scenario

The market disruption scenario considers a disruption in the macro economic environment. The assumption is that customer cash balances would drop by 10% (from their lowest historical five-year level), money market funding lines would decline by 50% and overdraft lines at CCBs/Depositories by 20%.

#### Scenario 3 – Idiosyncratic scenario

The market disruption / idiosyncratic scenario considers a disruption in the macro economic environment and a downgrade of Clearstream's credit rating. The assumption is that customer cash balances would drop by 30% (from their lowest historical five-year level), money market funding lines would no longer be accessible, and overdraft lines at CCBs/Depositories would decline by 60%.

#### Scenario 4 – Cover 2

The Cover 2 scenario simulates the default of the two customers with the largest intraday liquidity exposure, including their parent enterprises and subsidiaries, as well as a market disruption and a downgrade of CBL's external credit rating.

#### Scenario 5 – Cover 1 + CSD-banking service provider

The Cover 1 + CSD-banking provider scenario simulates the default of the customer with the largest intraday liquidity exposure including its parent enterprises and subsidiaries, the default of a major service provider of Clearstream, a market disruption and a downgrade of CBL's external rating.

In all liquidity stress test scenarios above, the results show that Clearstream could generate sufficient liquidity. In most cases, Clearstream had a liquidity surplus or could generate sufficient liquidity using FX swaps.

## 8.4. Mitigation and control (Article 435 (1)(d) CRR)

§ 25a KWG in combination with Chapter BTR 3 'Liquidity Risk' of MaRisk require institutions to develop effective contingency plans considering the outcome of alternative scenarios.

Treasury is responsible for designing and monitoring a Funding Plan which includes a Contingency Funding Plan. In addition, the Recovery Plan includes such measures to strengthen the liquidity position in case of a breach of an early warning or recovery indicator.

Within those documents, a wide range of measures is outlined which may be initiated in case of a severe deterioration of its liquidity profile. Such measures include inter alia

- Intragroup funding;
- Cancellation of customer UCF/TOF lines
- Priorisation of payments
- Usage of committed facilities (FX Swap, Repo and unsecured lines)
- Liquidity generation via CCP cleared repo markets
- Liquidation of customer collateral
- Liquidation of Clearstream's securities from Treasury activities.
- Marginal lending facility

## 8.5. Monitoring and reporting

Clearstream's liquidity risk exposure and breaches of limits are monitored and reported by the Treasury Middle Office. Reports are provided daily and monthly to Executive Board, Clearstream Risk Management and Treasury. Limit breaches occurring within the Treasury activity are reported by Treasury Middle Office to Executive Board.

Liquidity stress tests are calculated and reported on a regular basis by Risk Management. In case the liquidity stress tests result in a limit breach, Clearstream Risk Management (CRM) will report without delay to the respective Risk Committee and the relevant Executive Boards of Clearstream. Treasury, Credit, Product, Risk and the responsible Risk Committee evaluate the result of the liquidity stress tests and agree on mitigating actions to follow including adjustments of the liquidity framework and updates of the contingency liquidity funding plan if needed.

The Executive Board is informed on a monthly basis about liquidity indicators, and on a quarterly basis, the Executive Board receives a comprehensive liquidity risk reporting.

## 8.6. Disclosure on Liquidity Coverage Ratio (LCR)

Institutions need to hold a liquidity buffer of high-quality liquid assets ("HQLA") to cover their net cash outflows in stressed conditions over a thirty-day period. The Liquidity Coverage Ratio is set at a minimum ratio of 100%.

31.12.2020		a	b	c	d
		Total unweighted value (average) Q4	Total unweighted value (average) Q3	Total unweighted value (average) Q2	Total unweighted value (average) Q1
<b>High quality liquid assets</b>					
1	Total HQLA	16,290,251	14,174,171	16,904,015	21,011,761
<b>Cash outflows</b>					
2	Retail deposits and deposits from small business customers, of which:	0	0	0	0
3	Stable deposits	0	0	0	0
4	Less stable deposits	0	0	0	0
5	<b>Unsecured wholesale funding, of which:</b>	<b>15,752,603</b>	<b>13,847,315</b>	<b>18,348,111</b>	<b>21,898,496</b>
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	0	0	0	0
7	Non-operational deposits (all counterparties)	15,596,609	13,811,023	18,285,921	21,826,527
8	Unsecured debt	155,994	36,292	62,190	71,968
9	<b>Secured wholesale funding</b>	<b>95,076</b>	<b>155,682</b>	<b>0</b>	<b>255,532</b>
10	<b>Additional requirements, of which:</b>	<b>2,720</b>	<b>20,076</b>	<b>7,599</b>	<b>1,280</b>
11	Outflows related to derivative exposures and other collateral requirements	2,720	20,076	7,599	1,280
12	Outflows related to loss of funding on debt products	0	0	0	0
13	Credit and liquidity facilities	0	0	0	0
14	<b>Other contractual funding obligations</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
15	<b>Other contingent funding obligations</b>	<b>716,790</b>	<b>810,906</b>	<b>770,620</b>	<b>1,300,221</b>
16	<b>TOTAL CASH OUTFLOWS</b>				
<b>Cash inflows</b>					
17	<b>Secured lending (eg reverse repos)</b>	4,904,113	4,814,848	5,733,604	7,257,623
18	<b>Inflows from fully performing exposures</b>	2,055,797	2,175,933	2,593,518	2,959,117
19	Other cash inflows	281,049	364,399	4,194	4,734
20	<b>TOTAL CASH INFLOWS</b>	<b>7,240,959</b>	<b>7,355,180</b>	<b>8,331,317</b>	<b>10,221,474</b>
21	<b>Total HQLA</b>				
22	<b>Total net cash outflows</b>				
23	<b>Liquidity Coverage Ratio (%)</b>				
31.12.2020		e	f	g	h
		Total weighted value (average)Q4	Total weighted value (average)Q3	Total weighted value (average)Q2	Total weighted value (average)Q1
<b>High quality liquid assets</b>					
1	Total HQLA	16,268,816	14,164,474	18,356,442	21,011,761
<b>Cash outflows</b>					
2	Retail deposits and deposits from small business customers, of which:	0	0	0	0
3	Stable deposits	0	0	0	0
4	Less stable deposits	0	0	0	0
5	<b>Unsecured wholesale funding, of which:</b>	<b>15,079,402</b>	<b>13,428,896</b>	<b>17,714,939</b>	<b>20,748,227</b>
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	0	0	0	0
7	Non-operational deposits (all counterparties)	14,923,408	13,392,605	17,652,749	20,676,259
8	Unsecured debt	155,994	36,292	62,190	71,968
9	<b>Secured wholesale funding</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>
10	<b>Additional requirements, of which:</b>	<b>2,720</b>	<b>20,076</b>	<b>7,599</b>	<b>1,280</b>
11	Outflows related to derivative exposures and other collateral requirements	2,720	20,076	7,599	1,280
12	Outflows related to loss of funding on debt products	0	0	0	0
13	Credit and liquidity facilities	0	0	0	0
14	<b>Other contractual funding obligations</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
15	<b>Other contingent funding obligations</b>	<b>11,178</b>	<b>12,293</b>	<b>12,178</b>	<b>9,979</b>
16	<b>TOTAL CASH OUTFLOWS</b>	<b>15,093,301</b>	<b>13,461,266</b>	<b>17,734,716</b>	<b>20,759,487</b>
<b>Cash inflows</b>					
17	<b>Secured lending (eg reverse repos)</b>	136,460	174,092	143,800	214,274
18	<b>Inflows from fully performing exposures</b>	2,030,899	2,150,568	2,567,802	2,927,907
19	Other cash inflows	58,772	73,168	4,194	4,734
20	<b>TOTAL CASH INFLOWS</b>	<b>2,226,131</b>	<b>2,397,829</b>	<b>2,715,796</b>	<b>3,146,914</b>
		<b>Total adjusted value</b>			
21	<b>Total HQLA</b>	<b>16,268,816</b>	<b>14,164,474</b>	<b>18,356,442</b>	<b>21,011,761</b>
22	<b>Total net cash outflows</b>	<b>12,867,171</b>	<b>11,063,437</b>	<b>15,018,921</b>	<b>17,612,573</b>
23	<b>Liquidity Coverage Ratio (%)</b>	126.44%	128.03%	122.22%	119.30%

Table 62. Level and components of the Liquidity Coverage Ratio (LIQ1)

Additionally, as of 31 December 2020, the LCR of CBL amounted to 125.10% (2019: 118.73%), and LCR of CBF amounted to 169.04% (2019: 141.61%).



## Annex 1. Abbreviations

Abbreviation	Definition
ABS	Asset-Backed Security
AG	Aktiengesellschaft (German: stock company)
A-IRB	Advanced Internal Rating Based Approach
AktG	Aktiengesetz
AMA	Advanced Measurement Approach
ASL	Automated Securities Lending Programme
AV	Availability
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (Federal Financial Supervisory Authority)

BCBS	Basel Committee on Banking Supervision
BCL	Banque centrale du Luxembourg
BCM	Business Continuity Management
CAM	Control Assurance & Monitoring
CBAG	Clearstream Beteiligungs AG
CBJ	Clearstream banking Japan Ltd.
CBL	Clearstream Banking S.A.
CBLRC	Clearstream Banking S.A. Remuneration Committee
CCB	Cash Correspondent Bank
CCF	Credit Conversion Factor
CCP	Central Counterparty
CCR	Counterparty Credit Risk
CDO	Collateralised Debt Obligation
CEM	Current Exposure Method
CEO	Chief Executive Officer
CET1	Common Equity Tier 1
CGSS	Clearstream Global Securities Services Ltd.
CH	Clearstream Holding AG
CI	Clearstream International S.A.
CLN	Credit-Linked Note
CLO	Credit-linked Obligation
CLS	Continuous Linked Settlement
CMBS	Commercial Mortgage-Backed Security
COP	Clearstream Operations Prague s.r.o.
CP	Clearstream Participations S.A.
CRC	Clearstream Risk Committee
CRD IV	Capital Requirements Directive IV
CRD V	Capital Requirements Directive V
CRM	Clearstream Risk Management
CRO	Chief Risk Officer
CRR	Capital Requirements Regulation
CRR II	II Capital Requirements Regulation II
CS	Clearstream Services S.A.
CSA	Credit Support Annex
CSD	Central Securities Depository
CSDR	Central Securities Depository Regulation
CSSF	Commission de Surveillance du Secteur Financier
CVA	Credit Valuation Adjustment
DBAG	Deutsche Börse AG
DrittelbG	Drittelbeteiligungsgesetz
EaR	Earnings at Risk
EBA	European Banking Authority
EBITDA	Earnings before Interest, Tax, Depreciation, and Amortization
ECAI	External Credit Assessment Institution
ECB	European Central Bank
ECL	Expected Credit Loss
ECON	European Parliament's Economic & Monetary Affairs Committee
EC	European Commission

ECP	Euro Commercial Paper
EEA	European Economic Area
EMIR	European Market Infrastructure Regulation
ESMA	European Securities and Markets Authority
EU	European Union
F-IRB	Foundation Internal Rating Based Approach
FRN	Floating Rate Note
FRTB	Fundamental Review of the Trading Book
FSB	Financial Stability Board
FX	Foreign Exchange
GMRA	Global Master Repurchase Agreement
G-SIB	Global Systemically Important Bank
G-SII	Global Systemically Important Institution
GSF	Global Securities Financing
HQLA	High Quality Liquid Assets
IAS	International Accounting Standards
ICAAP	Internal Capital Adequacy Assessment Process
ICSD	International Central Securities Depository
IFRS	International Financial Reporting Standards
ILAAP	Internal Liquidity Adequacy Assessment Process
IMM	Internal Model Method
IRR	Interest Rate Risk
IRRBB	Interest Rate Risk in the Banking Book
KFH	Key Function Holder
KRI	Key Risk Indicators
KWG	Kreditwesengesetz (German Banking Act)
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LOBP	Legal Offences and Business Practices
LSI	Less Significant Institution
Ltd.	Limited
MAS	Monetary Authority of Singapore
MBS	Mortgage-Backed Security
MEIP	Minimum Export Insurance Premiums
MREL	Minimum Requirement for own funds and Eligible Liabilities
NCSC	Non-Collective Safe Custody business
NII	Net Interest Income
NPV	Net Present Value
NSFR	Net Stable Funding Ratio
OECD	Organisation for Economic Cooperation and Development
OpRisk	Operational Risk
O-SIB	Other Systemically Important Bank
O-SII	Other Systemically Important Institution
OTC	Over-the-Counter
P2G	Pillar II Capital Guidance
PA	Damage to Physical Assets
PD	Probability of Default
PROFIL	Fédération des Professionnels du Secteur Financier

RBC	Risk-Bearing Capacity
REC	Required Economic Capital
RI	Risk Indicator
RMBS	Residential Mortgage-Backed Securities
RTS	Regulatory Technical Standards
RWA	Risk-Weighted Assets
S&P	Standard & Poor's
S.A.	Société Anonyme
SA	Standardized Approach
SD	Service Deficiency
SFT	Securities Financing Transactions
SI	Significant Institution
SREP	Supervisory Review and Evaluation Process
SRM-R	Single Resolution Mechanism-Regulation
SRP	Supervisory Review Process
SSM	Single Supervisory Mechanism
SSS	Securities Settlement System
STP	Straight-Through Processing
TLAC	Total Loss Absorbing Capacity
TOF	Technical Overdraft Facility
UCF	Unconfirmed Funds Facility
URF	Upon Receipt of Funds
VaR	Value at Risk

# Annex 2. (Article 440 CRR)

31-Dec-20	General credit		Trading book		Securitisations		Own funds requirements					Country-specific countercyclical capital buffer rate <sup>1</sup>
	Exposure value for SIA	Exposure value IBB	Sum of long and short position of trading book	Value of trading book exposure for internal	Exposure value for SIA	Exposure value for IBB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total	Own funds requirement weights	
	010	020	030	040	050	060	070	080	090	100	110	120
Breakdown by country												
Germany	490,171	0	0	0	0	0	32,013	0	0	32,013	0.648	0.00%
France	89	0	0	0	0	0	7	0	0	7	0.000	0.00%
Netherlands	768	0	0	0	0	0	61	0	0	61	0.001	0.00%
Italy	53	0	0	0	0	0	4	0	0	4	0.000	0.00%
Ireland	1,002	0	0	0	0	0	80	0	0	80	0.002	0.00%
Denmark	2	0	0	0	0	0	0	0	0	0	0.000	0.00%
Greece	6	0	0	0	0	0	0	0	0	0	0.000	0.00%
Portugal	271	0	0	0	0	0	22	0	0	22	0.000	0.00%
Spain	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
Belgium	5,847	0	0	0	0	0	468	0	0	468	0.009	0.00%
Luxembourg	138,405	0	0	0	0	0	15,138	0	0	15,138	0.306	0.25%
Norway	49	0	0	0	0	0	4	0	0	4	0.000	1.00%
Finland	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
Liechtenstein	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
Austria	24	0	0	0	0	0	2	0	0	2	0.000	0.00%
Switzerland	1,942	0	0	0	0	0	155	0	0	155	0.003	0.00%
Andorra	5	0	0	0	0	0	0	0	0	0	0.000	0.00%
Malta	31	0	0	0	0	0	2	0	0	2	0.000	0.00%
San Marino	25	0	0	0	0	0	2	0	0	2	0.000	0.00%
Turkey	40	0	0	0	0	0	3	0	0	3	0.000	0.00%
Latvia	48	0	0	0	0	0	4	0	0	4	0.000	0.00%
Poland	23	0	0	0	0	0	2	0	0	2	0.000	0.00%
Czech Republic	2,114	0	0	0	0	0	169	0	0	169	0.003	0.50%
Romania	26	0	0	0	0	0	2	0	0	2	0.000	0.00%
Bulgaria	1	0	0	0	0	0	0	0	0	0	0.000	0.50%
Ukraine	1,813	0	0	0	0	0	145	0	0	145	0.003	0.00%
Russian Federation	103	0	0	0	0	0	8	0	0	8	0.000	0.00%
Georgia	6	0	0	0	0	0	0	0	0	0	0.000	0.00%
Armenia	12	0	0	0	0	0	1	0	0	1	0.000	0.00%
Kazakhstan	61	0	0	0	0	0	5	0	0	5	0.000	0.00%
Bosnia and Herzegovina	2	0	0	0	0	0	0	0	0	0	0.000	0.00%
Macedonia, the Former	6	0	0	0	0	0	0	0	0	0	0.000	0.00%
United Kingdom	2,620	0	0	0	0	0	210	0	0	210	0.004	0.00%
Guernsey	115	0	0	0	0	0	9	0	0	9	0.000	0.00%
Jersey	32	0	0	0	0	0	3	0	0	3	0.000	0.00%
Isle of Man	37	0	0	0	0	0	3	0	0	3	0.000	0.00%
Morocco	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Libya	16	0	0	0	0	0	2	0	0	2	0.000	0.00%
Egypt	131	0	0	0	0	0	10	0	0	10	0.000	0.00%
Kenya	5	0	0	0	0	0	0	0	0	0	0.000	0.00%
Mauritius	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
United States	2,086	0	0	0	0	0	167	0	0	167	0.003	0.00%
Canada	102	0	0	0	0	0	8	0	0	8	0.000	0.00%
Mexico	11	0	0	0	0	0	1	0	0	1	0.000	0.00%
Bermuda	153	0	0	0	0	0	12	0	0	12	0.000	0.00%
Guatemala	17	0	0	0	0	0	1	0	0	1	0.000	0.00%
El Salvador	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Costa Rica	54	0	0	0	0	0	4	0	0	4	0.000	0.00%
Panama	42	0	0	0	0	0	3	0	0	3	0.000	0.00%
Bahamas	10	0	0	0	0	0	1	0	0	1	0.000	0.00%
Dominican Republic	22	0	0	0	0	0	2	0	0	2	0.000	0.00%
Cayman Islands	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Virgin Islands, British	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Trinidad and Tobago	20	0	0	0	0	0	2	0	0	2	0.000	0.00%
Aruba	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Curaçao	26	0	0	0	0	0	2	0	0	2	0.000	0.00%
Colombia	91	0	0	0	0	0	7	0	0	7	0.000	0.00%
Venezuela, Bolivarian	349	0	0	0	0	0	42	0	0	42	0.001	0.00%
Ecuador	34	0	0	0	0	0	3	0	0	3	0.000	0.00%
Peru	22	0	0	0	0	0	2	0	0	2	0.000	0.00%
Chile	89	0	0	0	0	0	7	0	0	7	0.000	0.00%
Uruguay	146	0	0	0	0	0	12	0	0	12	0.000	0.00%
Argentina	42	0	0	0	0	0	5	0	0	5	0.000	0.00%
Cyprus	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Lebanon	118	0	0	0	0	0	14	0	0	14	0.000	0.00%
Iran, Islamic Republic of	149	0	0	0	0	0	12	0	0	12	0.000	0.00%
Israel	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
Jordan	2	0	0	0	0	0	0	0	0	0	0.000	0.00%
Saudi Arabia	8	0	0	0	0	0	1	0	0	1	0.000	0.00%
Kuwait	49	0	0	0	0	0	4	0	0	4	0.000	0.00%
Bahrain	79	0	0	0	0	0	6	0	0	6	0.000	0.00%
Qatar	93	0	0	0	0	0	7	0	0	7	0.000	0.00%
United Arab Emirates	623	0	0	0	0	0	50	0	0	50	0.001	0.00%
Oman	51	0	0	0	0	0	4	0	0	4	0.000	0.00%
India	14	0	0	0	0	0	1	0	0	1	0.000	0.00%
Thailand	56	0	0	0	0	0	4	0	0	4	0.000	0.00%
Viet Nam	6	0	0	0	0	0	1	0	0	1	0.000	0.00%
Indonesia	17	0	0	0	0	0	1	0	0	1	0.000	0.00%
Malaysia	3,274	0	0	0	0	0	262	0	0	262	0.005	0.00%
Brunei Darussalam	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Singapore	253	0	0	0	0	0	20	0	0	20	0.000	0.00%
Philippines	340	0	0	0	0	0	27	0	0	27	0.001	0.00%
China	2	0	0	0	0	0	0	0	0	0	0.000	0.00%
Korea, Republic of	79	0	0	0	0	0	6	0	0	6	0.000	0.00%
Japan	121	0	0	0	0	0	10	0	0	10	0.000	0.00%
Taiwan, Province of China	1,275	0	0	0	0	0	102	0	0	102	0.002	0.00%
Hong Kong	472	0	0	0	0	0	38	0	0	38	0.001	1.00%
Macao	67	0	0	0	0	0	5	0	0	5	0.000	0.00%
Australia	120	0	0	0	0	0	10	0	0	10	0.000	0.00%
European Investment Bank (EIB)	8	0	0	0	0	0	1	0	0	1	0.000	0.00%
Europ.Ges.z.Finanz.v.rollen d.Mat.	18	0	0	0	0	0	1	0	0	1	0.000	0.00%
Asian Development Bank	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Inter-American Development Bank	17	0	0	0	0	0	1	0	0	1	0.000	0.00%
The International Bank for Economic Co-operation	8	0	0	0	0	0	1	0	0	1	0.000	0.00%
<b>Total</b>	<b>656,583</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49,412</b>	<b>0</b>	<b>0</b>	<b>49,412</b>	<b>1.000</b>	

<sup>1)</sup> CCyB rates according to European Systemic Risk Board (ESRB) or Bank for International Settlements (BIS)

Table 63. Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer (CH-Group)

31-Dec-20	General credit		Trading book		Securitisation		Own funds requirements				Own funds requirement weights	Country-specific countercyclical capital buffer rate <sup>1</sup>
	Exposure value for SA	Exposure value IFRB	Sum of long and short position of trading book	Value of trading book exposure for internal	Exposure value for SA	Exposure value for IFRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total		
	010	020	030	040	050	060	070	080	090	100	110	120
Breakdown by country												
Andorra	5	0	0	0	0	0	0	0	0	0	0.000	0.00%
Armenia	12	0	0	0	0	0	1	0	0	1	0.000	0.00%
Aruba	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Bahrain	87,92	0	0	0	0	0	7	0	0	7	0.000	0.00%
Brunei Darussalam	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Bahamas	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Canada	99	0	0	0	0	0	8	0	0	8	0.001	0.00%
Switzerland	55,909	0	0	0	0	0	4,539	0	0	4,539	0.312	0.00%
Chile	92	0	0	0	0	0	7	0	0	7	0.001	0.00%
China	0,7	0	0	0	0	0	0	0	0	0	0.000	0.00%
Colombia	91	0	0	0	0	0	7	0	0	7	0.001	0.00%
Costa Rica	54	0	0	0	0	0	4	0	0	4	0.000	0.00%
Curaçao	26	0	0	0	0	0	2	0	0	2	0.000	0.00%
Cyprus	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Czech Republic	509	0	0	0	0	0	41	0	0	41	0.003	0.50%
Germany	15,788	0	0	0	0	0	1,265	0	0	1,265	0.087	0.00%
Dominican Republic	22	0	0	0	0	0	2	0	0	2	0.000	0.00%
Ecuador	34	0	0	0	0	0	3	0	0	3	0.000	0.00%
Egypt	133	0	0	0	0	0	11	0	0	11	0.001	0.00%
Spain	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
Finland	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
France	245	0	0	0	0	0	28	0	0	28	0.002	0.00%
United Kingdom	3,237	0	0	0	0	0	279	0	0	279	0.019	0.00%
Georgia	6	0	0	0	0	0	0	0	0	0	0.000	0.00%
Guernsey	195	0	0	0	0	0	20	0	0	20	0.001	0.00%
Gibraltar	2	0	0	0	0	0	0	0	0	0	0.000	0.00%
Greece	6	0	0	0	0	0	0	0	0	0	0.000	0.00%
Guatemala	17	0	0	0	0	0	1	0	0	1	0.000	0.00%
Hong Kong	547	0	0	0	0	0	44	0	0	44	0.003	1.00%
Indonesia	17	0	0	0	0	0	2	0	0	2	0.000	0.00%
Ireland	1,490	0	0	0	0	0	124	0	0	124	0.009	0.00%
Israel	0	0	0	0	0	0	-19	0	0	-19	-0.001	0.00%
Isle of Man	37	0	0	0	0	0	3	0	0	3	0.000	0.00%
India	14	0	0	0	0	0	1	0	0	1	0.000	0.00%
Italy	33	0	0	0	0	0	3	0	0	3	0.000	0.00%
Jersey	64	0	0	0	0	0	6	0	0	6	0.000	0.00%
Japan	2,176	0	0	0	0	0	262	0	0	262	0.018	0.00%
Kenya	5	0	0	0	0	0	0	0	0	0	0.000	0.00%
Korea, Republic of	80	0	0	0	0	0	6	0	0	6	0.000	0.00%
Kuwait	48	0	0	0	0	0	4	0	0	4	0.000	0.00%
Cayman Islands	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Kazakhstan	39	0	0	0	0	0	3	0	0	3	0.000	0.00%
Lebanon	118	0	0	0	0	0	14	0	0	14	0.001	0.00%
Liechtenstein	31	0	0	0	0	0	4	0	0	4	0.000	0.00%
Luxembourg	45,466	0	0	0	0	0	4,164	0	0	4,164	0.287	0.25%
Latvia	48	0	0	0	0	0	4	0	0	4	0.000	0.00%
Libya	16	0	0	0	0	0	2	0	0	2	0.000	0.00%
Morocco	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Monaco	12	0	0	0	0	0	1	0	0	1	0.000	0.00%
Macedonia, the Former	6	0	0	0	0	0	0	0	0	0	0.000	0.00%
Macao	67	0	0	0	0	0	6	0	0	6	0.000	0.00%
Malta	25	0	0	0	0	0	2	0	0	2	0.000	0.00%
Mauritius	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
Mexico	24	0	0	0	0	0	20	0	0	20	0.001	0.00%
Malaysia	3,272	0	0	0	0	0	262	0	0	262	0.018	0.00%
Netherlands	751	0	0	0	0	0	62	0	0	62	0.004	0.00%
Norway	49	0	0	0	0	0	4	0	0	4	0.000	1.00%
Oman	51	0	0	0	0	0	4	0	0	4	0.000	0.00%
Panama	43	0	0	0	0	0	3	0	0	3	0.000	0.00%
Peru	22	0	0	0	0	0	2	0	0	2	0.000	0.00%
Philippines	343	0	0	0	0	0	27	0	0	27	0.002	0.00%
Poland	23	0	0	0	0	0	2	0	0	2	0.000	0.00%
Puerto Rico	3	0	0	0	0	0	0	0	0	0	0.000	0.00%
Qatar	93	0	0	0	0	0	7	0	0	7	0.001	0.00%
Romania	26	0	0	0	0	0	2	0	0	2	0.000	0.00%
Russian Federation	103	0	0	0	0	0	8	0	0	8	0.001	0.00%
Saudi Arabia	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
Singapore	252	0	0	0	0	0	20	0	0	20	0.001	0.00%
San Marino	25	0	0	0	0	0	2	0	0	2	0.000	0.00%
El Salvador	9	0	0	0	0	0	1	0	0	1	0.000	0.00%
Thailand	48	0	0	0	0	0	4	0	0	4	0.000	0.00%
Turkey	14,225	0	0	0	0	0	1,138	0	0	1,138	0.078	0.00%
Trinidad and Tobago	20	0	0	0	0	0	2	0	0	2	0.000	0.00%
Taiwan, Province of China	1,158	0	0	0	0	0	93	0	0	93	0.006	0.00%
Ukraine	1,812	0	0	0	0	0	145	0	0	145	0.010	0.00%
United States	2,142	0	0	0	0	0	172	0	0	172	0.012	0.00%
Uruguay	146	0	0	0	0	0	12	0	0	12	0.001	0.00%
Venezuela, Bolivarian	469	0	0	0	0	0	56	0	0	56	0.004	0.00%
Viet Nam	7	0	0	0	0	0	1	0	0	1	0.000	0.00%
Turkey	14,225	0	0	0	0	0	1,138	0	0	1,138	0.078	0.00%
Trinidad and Tobago	20	0	0	0	0	0	2	0	0	2	0.000	0.00%
Taiwan, Province of China	1,158	0	0	0	0	0	93	0	0	93	0.006	0.00%
Ukraine	1,812	0	0	0	0	0	145	0	0	145	0.010	0.00%
United States	2,142	0	0	0	0	0	172	0	0	172	0.012	0.00%
Uruguay	146	0	0	0	0	0	12	0	0	12	0.001	0.00%
Venezuela, Bolivarian	469	0	0	0	0	0	56	0	0	56	0.004	0.00%
South Africa	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
<b>Total</b>	<b>172,037</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14,535</b>	<b>0</b>	<b>0</b>	<b>14,535</b>	<b>1.000</b>	

Table 64. Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer (CBL)

31-Dec-20	General credit		Trading book		Securitisation		Own funds requirements				Own funds requirement weights	Country-specific countercyclical capital buffer rate <sup>1</sup>
	Exposure value for SA	Exposure value IFRB	Sum of long and short position of trading book	Value of trading book exposure for internal	Exposure value for SA	Exposure value for IFRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total		
	010	020	030	040	050	060	070	080	090	100	110	120
Breakdown by country												
Germany	2,547	0	0	0	0	0	204	0	0	204	0.235	0.00%
France	34	0	0	0	0	0	3	0	0	3	0.003	0.00%
Netherlands	60	0	0	0	0	0	5	0	0	5	0.006	0.00%
Italy	270	0	0	0	0	0	22	0	0	22	0.025	0.00%
Ireland	190	0	0	0	0	0	15	0	0	15	0.018	0.00%
Denmark	2	0	0	0	0	0	0	0	0	0	0.000	0.00%
Greece	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
Portugal	271	0	0	0	0	0	22	0	0	22	0.025	0.00%
Spain	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
Belgium	4,001	0	0	0	0	0	320	0	0	320	0.370	0.00%
Luxembourg	30	0	0	0	0	0	2	0	0	2	0.003	0.25%
Liechtenstein	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
Austria	9	0	0	0	0	0	1	0	0	1	0.001	0.00%
Switzerland	232	0	0	0	0	0	19	0	0	19	0.021	0.00%
Czech Republic	2,201	0	0	0	0	0	176	0	0	176	0.203	0.50%
Kazakhstan	22	0	0	0	0	0	2	0	0	2	0.002	0.00%
United Kingdom	240	0	0	0	0	0	19	0	0	19	0.022	0.00%
United States	711	0	0	0	0	0	57	0	0	57	0.066	0.00%
Cyprus	0	0	0	0	0	0	0	0	0	0	0.000	0.00%
China	1	0	0	0	0	0	0	0	0	0	0.000	0.00%
<b>Total</b>	<b>10,821</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>866</b>	<b>0</b>	<b>0</b>	<b>866</b>	<b>1.000</b>	

Table 65. Geographical distribution of credit exposures relevant for the calculation of the countercyclical capital buffer (CCBF)