clearstream | DEUTSCHE BÖRSE GROUP

Pillar III Disclosure Report of Clearstream Group 2011

Disclosures as of 31 December 2011

June 2012

Pillar III Disclosure Report of Clearstream Group 2011 - According to § 26a Banking Act (Kreditwesengesetz, KWG) in conjunction with §§ 319–334 Solvency Regulation (Solvabilitätsverordnung, SolvV)

June 2012

Document number: 6475

Clearstream Holding AG is a Deutsche Börse Group company.

Foreword

The purpose of the document is to fulfil regulatory disclosure requirements based on the "Basel II" rules, implemented in the European Union (EU) by the directives 2006/48/EC and 2006/49/EC (commonly known as "Capital Requirement Directives" or "CRD").

Clearstream Holding AG (CH) has been classified as a financial holding company as defined in the German Banking Act (Kreditwesengesetz, KWG) and, together with its other subordinated companies, notably Clearstream International S.A., Luxembourg (CI), Clearstream Banking S.A., Luxembourg (CBL) and Clearstream Banking AG, Frankfurt/ Main (CBF), forms a financial holding group under German law.

This Group (hereafter called Clearstream Group, CH-Group or Clearstream) is subject to consolidated supervision by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungs-aufsicht, BaFin).

Clearstream Holding AG is, according to German law, a superordinated company of the regulatory Clearstream Group and therefore responsible for publishing this disclosure report.

The figures for the Clearstream Holding group (CHG) follow the consolidation provisions set out in § 10a (6) KWG and the German Generally Accepted Accounting Principles (GAAP) rules 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, Frankfurt/Main (DBAG), Clearstream Holding AG is, according to § 291 of the HGB, exempted from the obligation to draw up consolidated statutory accounts.

Due to the mandatory use of different accounting standards (CBL uses International Financial Reporting Standards [IFRS]), some existing differences in the rules on presenting and using the figures in Germany and Luxembourg need to be noted. German rules, for example, do not permit the inclusion of accumulated profits brought forward in the definition of equity and - based on choices taken - the CH Group figures do not include own work capitalised. Furthermore, under IFRS, investment securities (mainly government bonds and covered bonds) are measured at fair value (category: available for sale) whereas German GAAP requires valuation at the lower of cost or market value.

Visible differences result - albeit limited in amount overall - from the use of different foreign exchange (FX) rates. In Germany, European Central Bank (ECB) reference rates are mandatory whereas, for reporting of CBL, internal rates derived from various sources have been used.

In the following, we always refer to the respective laws in place during the reporting period.

Foreword

How this document is organised

The report is presented over eight chapters, as follows:

1. Introduction;
2. Implementation of Basel II at Clearstream;
3. Risk management overview;
4. Management of operational risk;
5. Management of credit risk;
6. Management of market risk, including interest rate risk in the banking book;
7. Management of liquidity risk;
8. Capital structure and solvency ratio.

An explanatory list of the abbreviations used is provided as an appendix to this document.

Contact details

For further information or if you have specific questions regarding this report, please contact us at clearstreamholding@clearstream.com.

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1. Introduction

The information in this chapter is presented in the following sections:

1.1 Background

1.1.1 "Basel II" framework

On 4 July 2006, the Basel Committee on Banking Supervision (BCBS)[1] issued a comprehensive version of the Basel II Framework[2], including the contents of the 2005 papers regarding Trading activities, double default effects and market risks.

The requirements expressed in the Basel II framework were transposed into European legislation as the Capital Requirements Directive (CRD), comprising Directive 2006/48/EC and Directive 2006/49/EC. CRD was also transposed into German and Luxembourg Law.

In Germany, the implementation is reflected mainly in the German Banking Act, the German Solvency Regulation (Solvabilitätsverordnung, SolvV) and the regulation governing large exposures and million loans (Großkredit- und Millionenkreditverordnung, GroMiKV). In Luxembourg, the Basel II framework was incorporated into the Law of 5 April 1993 and CSSF circular 06/273.

For the Clearstream Group (see 1.3.1 Group structure on page 1-11), these national rules only are relevant in the "Basel II" context.

The Basel II framework itself does not apply to any of the Clearstream units. Nevertheless, the term "Basel II" is used throughout this document as it has become the commonly used synonym also for the national rules.

Due to ongoing permanent work to optimise banking supervision, and partly driven by the financial crisis starting in 2007, the BCBS issued, in July 2009, first major amendments to the Basel II regulation.

The July 2009 package[3], with updates in 2010 and 2011, also known as "Basel 2.5", enhanced the measurement of risks related to securitisations and the trading book. At EU level, the "Capital Requirements Directives CRD II+III"[4], containing the above-mentioned enhancements and additionally new remuneration rules, was adopted in 2010. The incorporation into German and Luxembourg law was completed in 2011. The changes are in place since 2011.

1. Current members of the BCBS are the European Central Bank and the central banks or monetary authorities of: Algeria, Argentina, Australia, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Macedonia, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Peru, the Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, the United Arab Emirates, the United Kingdom and the U.S.A. (see also http://www.bis.org/about/orggov.htm).
2. International Convergence of Capital Measurement and Capital Standards - A revised framework http://www.bis.org/publ/bcbs128.htm.
3. Enhancements to the Basel II Framework, http://www.bis.org/publ/bcbs157.htm; Revision to the Basel II Market Risk Framework, http://www.bis.org/publ/bcbs158.htm; Guidelines for computing capital for incremental risk in the trading book, http://www.bis.org/publ/bcbs159.htm.
4. "CRD II Directives 2009/111/EC (regarding banks affiliated to central institutions, certain own funds items, large exposures, supervisory arrangements and crisis management), 2009/27/EC and 2009/83/EC (regarding technical provisions concerning risk management) and CRD III Directive 2010/76/EU (regarding capital requirements for the trading book and for re-securitisations, and the supervisory review of remuneration policies.

1.1.2 Recent developments

After the first major amendment package to the Basel II regulation, the BCBS published in December 2010 the second major amendment package and a revised version in June 2011, also known as Basel III[1].

In particular, Basel III includes a revised definition of capital, additional risk buffers for expected losses, the introduction of anticyclical capital buffers, the introduction of a leverage ratio (put simply, a minimum ratio of capital to unweighted total assets plus off-balance-sheet risk positions), stricter liquidity management requirements and closer monitoring of liquidity by supervisory authorities (in particular the introduction of two quantitative minimum ratios for short-term and medium-term liquidity) and credit valuation adjustments (CVA) for Over-The-Counter (OTC) derivatives counterparties.

The Basel III package also comprises a general revision of the capitalisation requirements for exposures to central counterparties (CCPs). Since the details for this are still under discussion, no final version is available yet.

However, certain issues remain unresolved and additional fine-tuning is being discussed by the BCBS for the future.

A phased introduction of Basel III in the period period from 2013 to 2019 is planned, with certain sub-areas being reviewed and, if necessary, modified during the process of transition.

The European Commission intends to include the new Basel III regulations together with other aspects (for example, corporate governance issues and the implementation to a large extent of a single rule book) in a revised regulatory framework for institutions. To this end, the EU Directives 2006/48/EC (Banking Directive) and 2006/49/EC (Capital Adequacy Directive) are to be completely revised and restructured to produce an integrated legislative package consisting of a directive and a regulation (commonly referred to as CRD IV)[2]. It is expected that the political process for the enactment of the CRD IV package will be completed in the second half of 2012. The rules are still intended to come into effect as of 1 January 2013. In addition, the European Banking Authority (EBA) has been commissioned to define many details of the regulation within so-called Technical Standards.

Whereas the Basel III rules only apply directly to global commercial banks with an international remit, the EU rules apply to all banks that operate in the EU. CRD IV therefore partly addresses both regional- and size-related issues and provides specific or modified regulations for certain types of business.

Clearstream has monitored the entire Basel III and CRD IV process in detail. The Group participates actively in the consultations, being in constant dialogue with the political rule setters and regulators, and will continue to be actively involved in this process in the coming years, including its incorporation in national law, making sure that political decision makers are aware of potential negative consequences for the market as a whole and ensuring that its business activities are taken into account as appropriately as possible.

Given the current status of the discussions on the provisions of CRD IV, the Group does not expect any material effect on the equity base of its regulated companies. Since specific issues - including the concrete application of the rules concerning the leverage ratio and liquidity ratios - have not yet been resolved and it is also unclear how the various regulations will interact in future, the ultimate impact on its business activities cannot be assessed as yet.

1. The main documents of this package are:" Basel III: A global regulatory framework for more resilient banks and banking systems", http://www.bis.org/publ/bcbs189.htm, and "Basel III: International framework for liquidity risk measurement, standards and monitoring", http://www.bis.org/publ/bcbs188.htm.
2. CRD IV, http://ec.europa.eu/internal_market/bank/regcapital/new_proposals_en.htm.

1.2 The Basel II "Three Pillars" framework

Basel II differentiates between three so-called pillars, which complement each other. Figure 1-1 illustrates the "three pillars" model. In particular, for Pillar I, Basel II offers banks the possibility to use different risk measurement approaches, from simple (standardised) to sophisticated methods according to their business model.

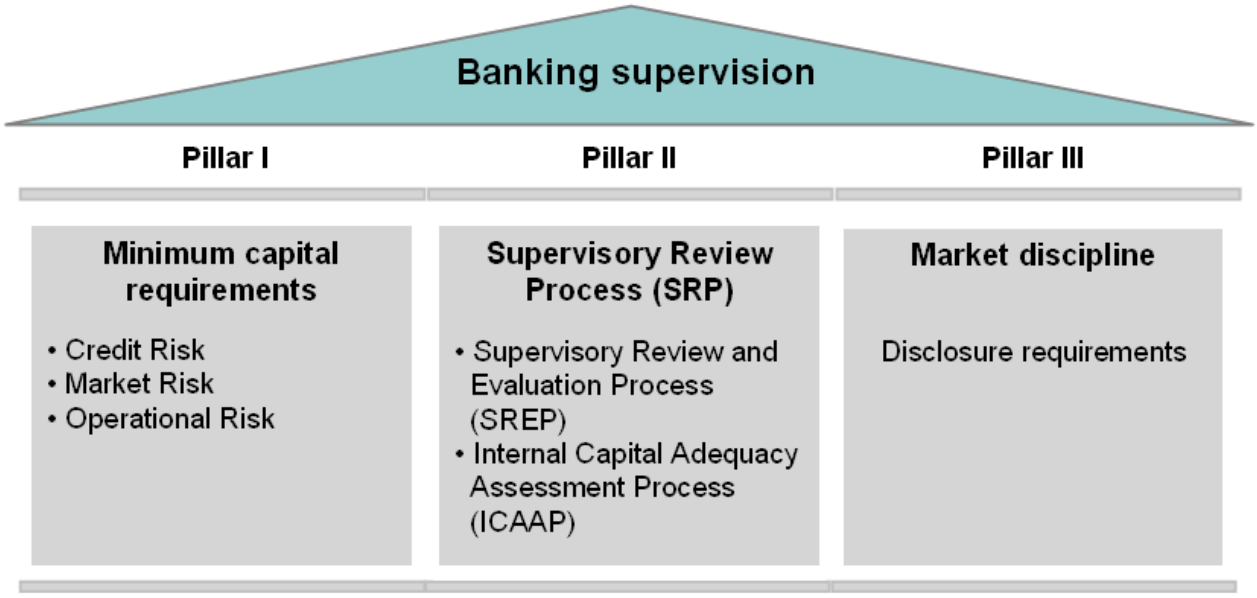


Figure 1-1. "Three pillars" model of Basel II

1.2.1 Pillar I

The first pillar deals with the minimum capital requirements. Capital requirements are to be calculated for credit risk, market risk and operational risk. The capital charge for each of the three risk categories has to be calculated using an approach that is suitable and sufficient for the individual bank. For the sake of an evolutionary approach, both simple and more refined measurement methods have been defined for each risk category.

The minimum capital requirements (capital ratio) must be at least 8%. The capital ratio is calculated by dividing the eligible regulatory capital by the capital requirements of the operational and market risks, multiplied by a specified factor (12.5) and added to the risk-weighted assets (RWA) for credit risk. The calculation of the RWA is fully described in Credit risk on page 1-4.

Figure 1-2 gives a simplified overview of the calculation of the minimum capital requirements (capital ratio).

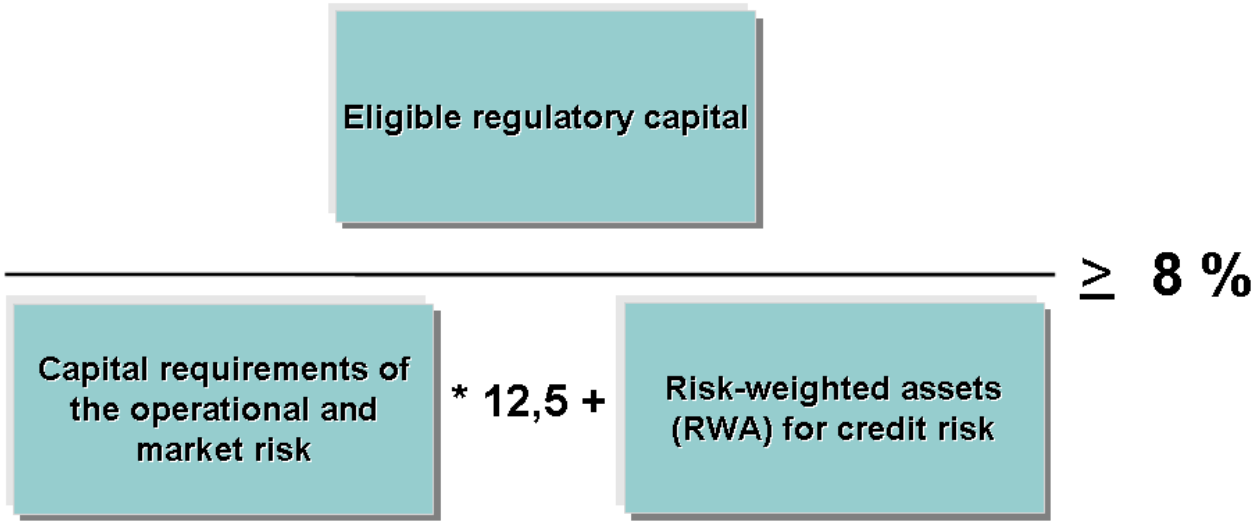


Figure 1-2. Calculation of the minimum capital requirements (capital ratio)

If the supervisory authority concludes that application of the risk measurement method is not adequate or appropriate (for example, the method is not sufficient for the particular bank or specific type of business, or the business risk is not appropriately reflected in the method), the supervisory authority may ask for additional capital requirements via Pillar II.

Credit risk

To measure the credit risk, one simple approach (Standardised Approach - StA) and two advanced approaches (Foundation Internal Rating Based Approach (FIRB) and Advanced Internal Rating Based Approach (IRBA)) are available. The Standardised Approach is based on external credit risk assessments and the two advanced approaches are based on internal ratings.

The calculation of the Risk-Weighted Assets (RWA) for credit risk is shown in Figure 1-3.

Figure 1-3. Calculation of the RWA

The basis for assessment is, in principle, the asset value taking into account the eligible credit risk mitigation techniques (see Credit Risk Mitigation (CRM) on page 1-6). The basis for assessment must be multiplied by a regulatory risk weight that depends on predefined regulatory asset classes.

Figure 1-4 illustrates the choices regarding the assessment of credit risk. In general the capital charge decreases and the risk sensitivity increases with the complexity of the approach. Furthermore, the implementation and running efforts and costs are also increasing with complexity.

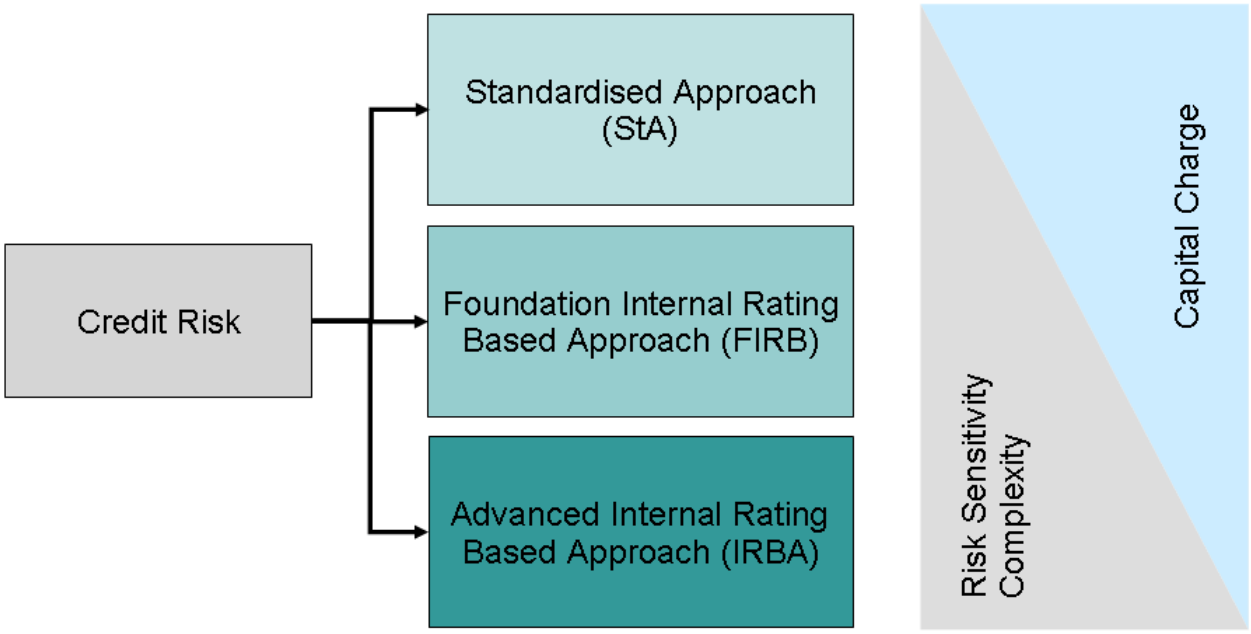


Figure 1-4. Possible calculation methods for the credit risk

The Standardised Approach defines 15 regulatory asset classes[1] that relate partially to counterparty type only and partially to a specific type of business. The risk weights of each of these classes (for example, central governments, public sector entities, corporate institutions, securitisations, covered bonds, participations etc.) are fixed (for example, 0%, 20%, 50%, 100% etc.); or depend on ratings given by an accepted external credit assessment institution (ECAI), such as Moody's, Standard & Poor's, Fitch etc.; or are based on credit assessments by Export Credit Agencies (for example, Euler Hermes Kreditversicherungs AG, the Organisation for Economic Cooperation and Development (OECD) etc.) for the purposes of exposures for central governments and central banks.

Credit institutions may use these Export Credit Agencies' credit assessments if the chosen Export Credit Agency participates in the OECD "Arrangement for Officially Supported Export Credits" or the Export Credit Agency publishes its credit assessment and subscribes to the OECD agreed methodology.

Furthermore, the credit assessment of the Export Credit Agency must be associated with one of the minimum export insurance premiums (MEIP) that the OECD establishes under this methodology. In Germany and Luxembourg, the risk weights for banks, local and regional governments and other public sector entities are in general derived from the risk weighting of the respective country of residence.

In order to use the FIRB or the IRBA, banks must fulfil a number of additional requirements. A detailed review of processes, estimates and documentation, as well as explicit permission from the respective supervisor, is necessary to be allowed to use one of the Internal Rating Based Approaches for the calculation of the risk-weighted asset amounts.

1. CRD defined 16 exposure classes and CSSF 06/273 14 classes. The different number of exposure classes leads only to a different presentation of calculation results, not to a different total.

Even further developments of the advanced risk measurement systems must be approved by the respective supervisory authority. Using these approaches, the bank does not rely on information provided by an external rating agency but carries out its own assessments, which form the basis for determining potential future losses. These calculated potential losses are in turn used as the basis for the corresponding capital requirements.

The permission of the supervisory authority may be granted:

- In general, for probability of default (PD[1]) estimates (Foundation Internal Rating Based Approach - FIRB); or
- For probability of default estimates and own estimates of loss given default (LGD[2]) and maturity adjustment for effective maturity based on PD (Advanced Internal Rating Based Approach (IRBA)).

Credit Risk Mitigation (CRM)

It is at the discretion of each institution whether to use credit risk mitigation techniques or not.

If an institution decides to use any credit risk mitigation techniques, the institution must consider various operational and procedural requirements besides quantitative requirements. The pool of possible collateral to be used is in principle enlarged in the two advanced credit risk approaches compared with the standardised credit risk approach.

Basel II defines two methods to calculate the credit risk mitigation of financial collaterals: the Simple Approach and the Comprehensive Approach. Depending on the calculation method used, only predefined financial collateral types can be considered.

The Simple Approach is a substitution approach. The risk weight that would be assigned under the provisions of the standardised credit risk approach, if the lender institution had a direct exposure to the issuer of the collateral instrument, shall be assigned to those portions of claims collateralised by the market value of generally eligible financial collateral. The remainder of the exposure shall receive the risk weight that would be assigned to an unsecured exposure to the counterparty under the provisions of the standardised credit risk approach.

In the Comprehensive Approach, institutions must calculate their adjusted exposure to a counterparty in order to take account of the effects of that collateral. Using haircuts, banks are required to adjust both the amount of the exposure to the counterparty and the value of any collateral received in support of that counterparty to take account of possible future fluctuations in the value of either, occasioned by market movements. This will produce volatility adjusted amounts for both exposure and collateral.

Additionally where the exposure and collateral are held in different currencies an additional downwards adjustment must be made to the volatility adjusted collateral amount to take account of possible future fluctuations in exchange rates. Institutions have two ways of calculating the haircuts:

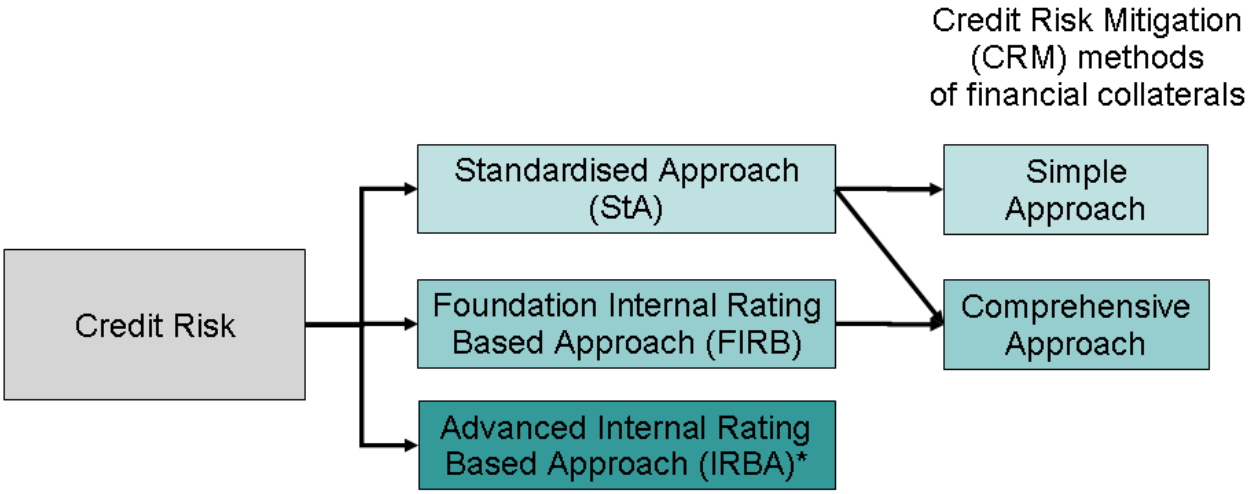
- Standard supervisory haircuts;
- Own-estimate haircuts, using own internal estimates of market price volatility.

Supervisors allow banks to use own-estimate haircuts only when they fulfil certain qualitative and quantitative criteria.

In summary, it can be noted that the comprehensive approach for credit risk mitigation allows taking into account many more financial collateral types with only a slight increase in the complexity of the calculation method.

Figure 1-5 gives a simplified overview of the calculation methods of financial collaterals under Basel II.

1. PD: the probability (as a percentage) of default by a counterparty over a one-year period.
2. LGD: the ratio (as a percentage) of the loss on an exposure due to the default of a counterparty to the amount outstanding at default.



* Credit Risk Mitigation is taken into account as part of the LGD assessment.

Figure 1-5. Overview of calculation methods of financial collaterals

Market risk

Market risk is typically defined as the uncertainty about future earnings and about the value of assets and liabilities (on or off balance sheet items) due to changes in interest rates, foreign exchange rates, security prices or commodity prices.

Basel II distinguishes between the bank's trading book (held with trading intent [short-term] and typically valued marked-to-market) and the non-trading or banking book (typically held for a longer term or to generate permanent earnings [hold or income-making intention]) and attaches different requirements accordingly.

Certain positions cannot be allocated by the nature of the position but need dedication. The institution needs to have a clear policy for allocation and must document the current allocation. If the positions finally allocated to the trading book exceed certain thresholds, capital requirement rules for the trading book apply. If the thresholds are not surpassed, those rules are not relevant. This corresponds with a classification as Non-Trading book institution according to § 2 (11) German Banking Act (Kreditwesengesetz, KWG) and under Luxembourg law with the "simplified ratio" (CSSF circular 06/273 part V, chapter 2).

Market risk under the perspective of Pillar I is defined as the risk of losses in positions (on and off balance sheet) arising from movements in market prices. The risks subject to this requirement are as follows:

- The risks pertaining to interest rate related instruments and equities in the trading book only;
- Foreign exchange risk and commodities risk independent of trading book allocation.

The interest rate risks of the banking book are taken into account under Pillar II (in the context of other or further risks).

Basel II defines two methods to calculate the capital requirements for market risk (standardised approach and internal models).

Operational risk

The main drivers of operational risk in banks are the growing dependence of banking operations on IT systems, the enlarged use of electronic banking, the progressive development of risk systems and, especially, the increasing complexity of business processes in banking.

In this context, operational risk is by nature very different from credit risk and market risk. Operational risk is far more difficult to capture because it is inherent to many activities and is still nearly inevitable. Recent events have shown that operational risk can be significant, and resulting losses can even threaten a bank's existence.

Basel II defines three methods to calculate the capital requirements for operational risk as shown in Figure 1-6.

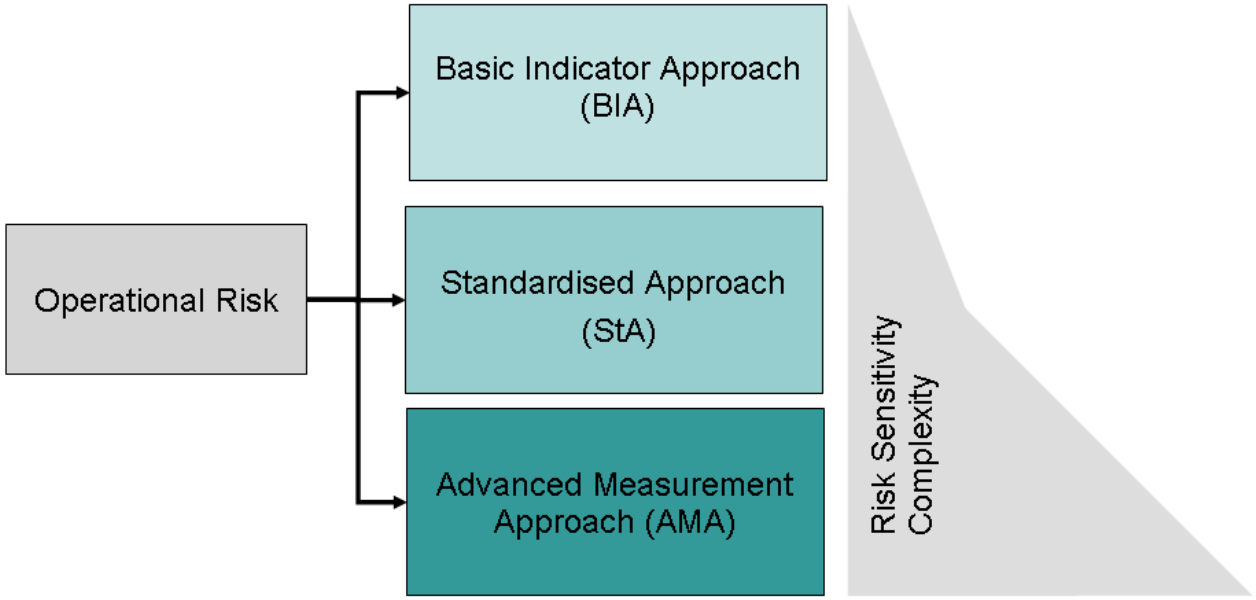


Figure 1-6. Possible calculation methods for the operational risk

Complexity and risk sensitivity in the two more simple approaches are similar, whereas it is much higher in the advanced approach.

First of all, there is the **Basic Indicator Approach (BIA)**, in which a bank's operational risk is estimated as a percentage (alpha factor 15%) of the gross income[1]. This approach involves a simple calculation but is not very risk sensitive.

Next is the **Standardised Approach (SA)**, which splits business into predefined business lines. The operational risk is estimated as a specified percentage (beta factor 12%, 15% or 18%) of "gross income" per business line. This can be seen as a basic indicator approach applied to each business line.

The **Advanced Measurement Approach (AMA)** requires internal loss data and model-based methods to calculate the regulatory capital requirements. Comparable to the Advanced Internal Rating Based approaches, explicit permission as well as a detailed review of processes, estimates and documentation by the respective supervisory authority is necessary to be allowed to use the AMA to calculate the operational risk amounts. The application of advanced measurement approaches will be subject to both qualitative and quantitative criteria, and banks will be allowed to recognise the risk mitigating impact of insurance.

1. The "gross income" is calculated as a three-year average. Details of how to calculate the "gross income" are defined in the German Solvency Regulation and CSSF circular 06/273.

1.2.2 Pillar II

The risks of Pillar I and further significant and substantial risks must be included in an integrated capital management and risk management consideration. The following figure gives a basic overview of one possible integrated risk profile.

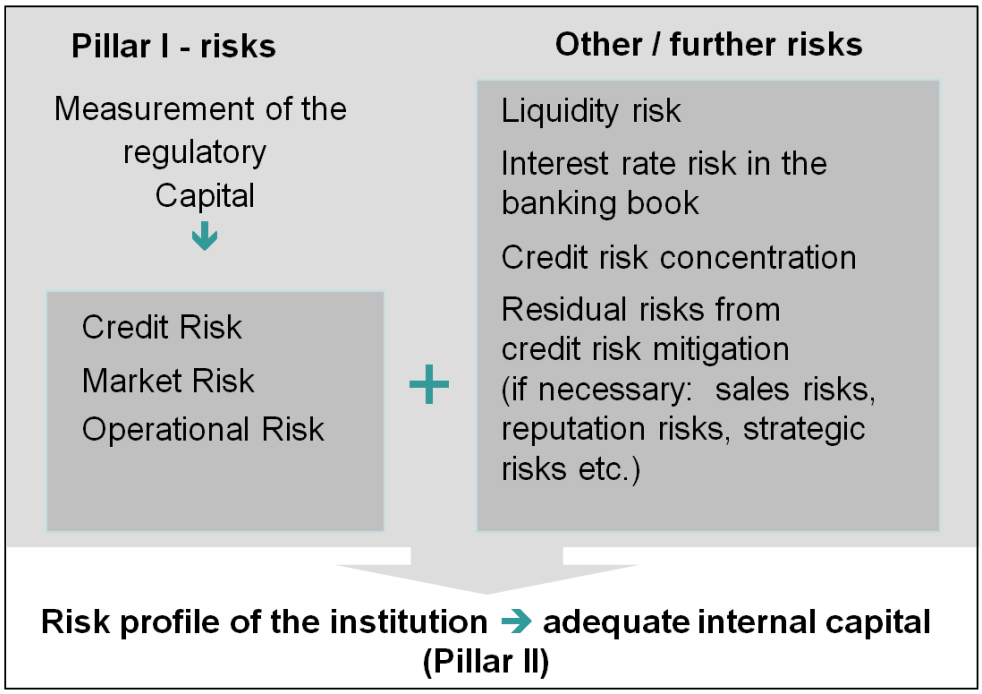


Figure 1-7. Integrated risk consideration (Pillar II)

The Basel Committee has summarised the goals of the second Pillar in four principles of prudential supervision. These four principles relate, on the one hand, to the bank's internal procedures and strategies to identify and to maintain sufficient equity (principle 1 - Internal Capital Adequacy Assessment Process [ICAAP]) and, on the other hand, to the Supervisory Review and Evaluation Process (principles 2, 3 and 4 - SREP) adapted to it. All together are called the **Supervisory Review Process (SRP)**.

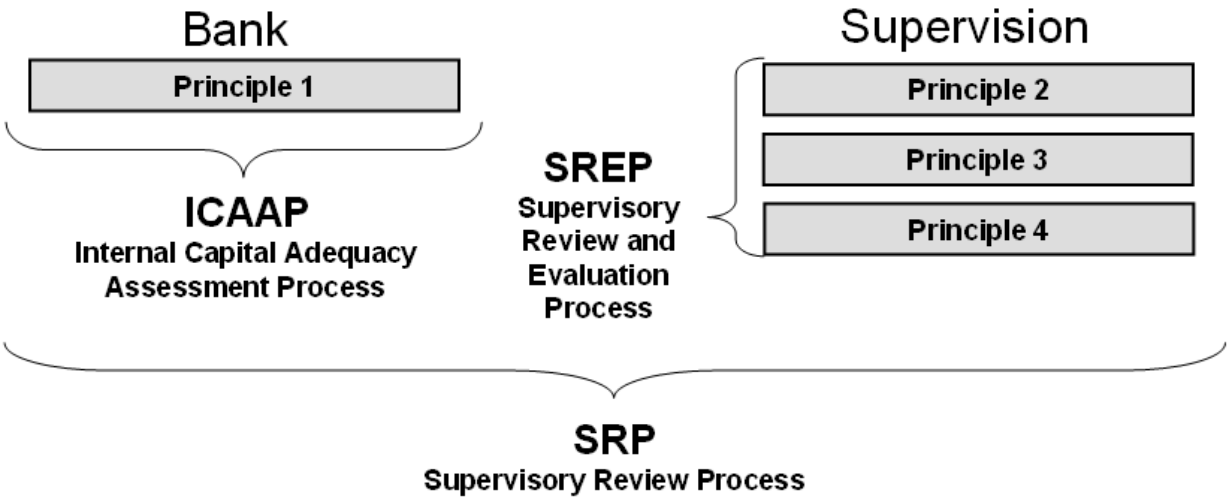


Figure 1-8. Prudential supervision principles

The four principles of prudential supervision are as follows:

Principle 1:

Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.

Principle 2:

Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process.

Principle 3:

Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum.

Principle 4:

Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored.

In summary, it can be stated that the SRP requires banking supervisory authorities to carry out qualitative reviews in order to ensure that the internal processes necessary for assessing the bank's specific risk situation and that appropriate capital resources exist, function and undergo constant improvement in each bank.

Under Pillar II, banks are obliged to have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels (ICAAP). On the other hand, Pillar II lays out the interaction between the banks' own assessments and processes as well as the response of the banking supervisors. If the capital adequacy is deemed unsatisfactory, regulators may require the bank to raise additional capital immediately or to prepare and implement a capital restoration plan.

1.2.3 Pillar III

The third pillar, named Market Discipline, is also known as "regulatory disclosure" requirements. The disclosure requirements are a basic prerequisite for sound information standards among all market participants. This in turn allows market forces to take effect without obstructions, thus indicating the prevalence of market discipline.

The accord contains disclosure requirements and recommendations for various areas of banking operations, including the methods a bank uses to estimate its risks or how the bank determines its capital adequacy (that is, the relationship between equity and overall risk). The bulk of these disclosure requirements will apply to all banks, and more detailed requirements have to be fulfilled from banks using internal methods.

The present report serves the purpose of meeting these requirements and providing interested parties with further essential information about the business and risk situation of Clearstream Group.

1.3 Information about Clearstream Group

1.3.1 Group structure

Clearstream Holding AG acts as a pure holding company for the shareholding in Clearstream International S.A. and as a financial holding company under German banking law being recognized by BaFin as the superordinated company according to § 10a (3) sentence 8 KWG.

Within the subsidiaries of Clearstream International S.A. there are companies which are not included in the regulatory consolidation.

Clearstream International S.A. and its main subsidiaries act in the securities settlement and custody area. Clearstream Banking S.A., Luxembourg (CBL), thereby acts as an International Central Securities Depository (ICSD) and Clearstream Banking AG, Frankfurt/Main (CBF), as the German Central Securities Depository (CSD).

CBL and CBF are both supported by Clearstream Services S.A., Luxembourg (CS), Clearstream Operations Prague s.r.o., Prague (COP), and Clearstream International S.A., Luxembourg (CI), which perform supporting tasks like IT, both development and operations, settlement and custody operations, central functions and other services. Clearstream Banking Japan Ltd, Tokyo (CBJ), provides customer liaison in Japan and support accessory business activities.

Clearstream International S.A., Luxembourg, and Banque centrale du Luxembourg, the Grand Duchy's central bank, jointly own LuxCSD S.A., which has been founded in order to operate a central securities depository for Luxembourg securities and to connect the Grand Duchy of Luxembourg's financial industry to the future TARGET2 securities (T2S) platform. The company acts under the regulatory status as Professional of the Financial Sector (PSF) and as SSS (Securities Settlement System) and appeared on market in October 2011.

Clearstream Banking S.A., Luxembourg, and Sociedad de Géstion de los Sistemas de Registro, Compensación y Liquidación de Valores S.A.U., Madrid, Spain (Iberclear) jointly own REGIS-TR S.A., Luxembourg. REGIS-TR is a trade repository in the sense of the forthcoming regulation on OTC derivatives, central counterparties and trade repositories proposed by the European Parliament and the Council (EMIR)[1]. The regulation was originally intended to enter into force in 2011. A draft of the regulation was presented by the European Parliament and European Council in September 2010 and is currently in the final stages of the political process, which is now likely to be concluded in the 3rd quarter of 2012.

Until 30 September 2012, the European Securities and Markets Authority (ESMA) shall draft the technical implementation provisions for EMIR. The national implementation of the regulation and coming into force is currently intended for first quarter 2013.

REGIS-TR is licensed as a PSF according to the general provisions of the Luxembourg Law of April 1993, which is the preliminary regulatory framework for its future operation. Once the new regulation is in force, REGIS-TR will apply for an EMIR licence.

Clearstream Banking AG, Frankfurt/Main, participates in the international joint venture of central securities depositories Link-Up Capital Markets S.L., Madrid, Spain (Link Up Markets). The participation share as at 31 December 2011 amounts about 23.5%.

Clearstream Holding AG and its subsidiaries are fully owned by DBAG and are highly integrated into Deutsche Börse Group. The ownership and structure of the group is shown Figure 1-9.

1. European Market Infrastructure Regulation (EMIR), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010PC0484:EN:NOT.

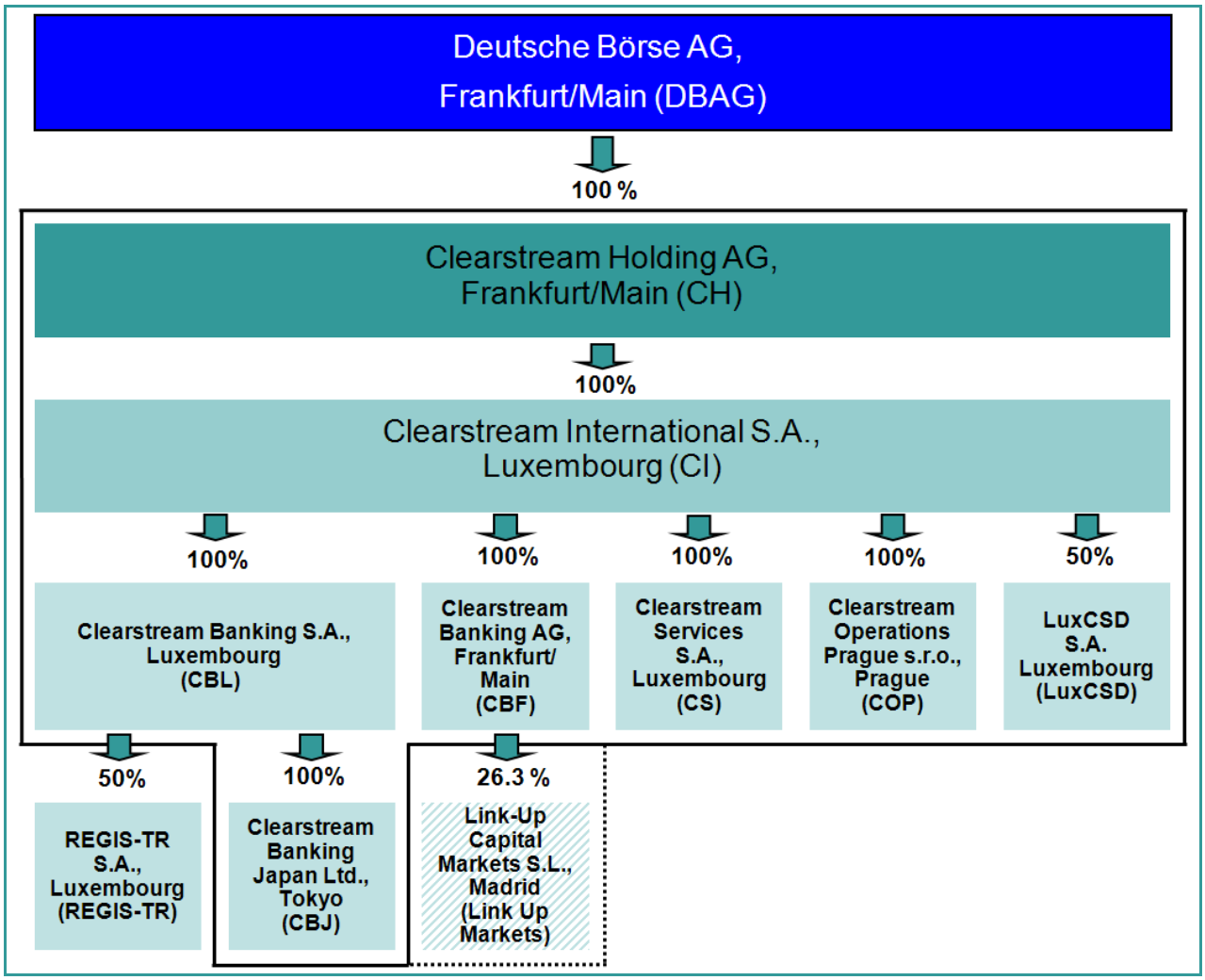


Figure 1-9. Structure and ownership of Clearstream Group

Clearstream International S.A. operates a branch in London and Clearstream Banking S.A. operates a branch in Singapore as well as a network of representative offices in New York, London, Tokyo, Hong Kong, Singapore and Dubai. In 2012, CBL plans to open a new branch in Dublin.

The composition of the regulatory Clearstream group is shown in Figure 1-9 within the black frame. REGIS-TR has been classified as an "other undertaking" by BaFin and is therefore not included in regulatory consolidation. According to § 10a (4) of the German Banking Act, in principle Link Up Markets has to be consolidated under regulatory terms. Due to the small size of operations Clearstream Holding has requested an exemption from consolidation according to § 31 (3) sentence 4 German Banking Act, which has been granted by BaFin.

1.3.2 Business operations and supervision

Clearstream Holding AG, Frankfurt/Main (CH):

CH is classified as a financial holding company according to §1 (3a) KWG.

CH acts solely as a holding company for the interest in CI and its subsidiaries and does not have material additional business activities and therefore risk positions. Moreover CH is the superordinated company of the financial holding group according to §10a (3) KWG. CH in its role as superordinated company is responsible to fulfil the regulatory obligations on a consolidated/group level towards the German supervisory authorities and the college of supervisors.

Clearstream International S.A., Luxembourg (CI):

CI is authorised in Luxembourg as an "other Professional of the Financial Sector" (specific type of PSF) according to article 26 of the Luxembourg law of 5 April 1993 on the financial sector.

Moreover, CI is defined as "financial holding company" (CI Group) in accordance with article 48 of the Luxembourg Law of 5 April 1993.

The purpose of the Company is, among other things, to undertake financial services related to the safekeeping, administration, clearing and settlement of securities, precious metals, derivatives and other financial instruments within the Grand Duchy of Luxembourg and abroad. CI acts mainly as collateral agent and guarantor for securities lending transactions.

In the context of the Clearstream Group, CI delivers support services to its subsidiaries. The main support services relate to finance, human resources, internal control, risk management etc. Internal control, risk management and strategic analysis are performed by CI.

Clearstream Banking S.A., Luxembourg (CBL):

CBL's mission is to deliver to financial institutions competitive and high-quality settlement, custody and related services across markets.

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.; and
- Transactional information distribution.

CBL currently accepts over 850,000 securities for custody and settlement, including:

- Debt instruments, such as:
  - Eurobonds (for example, straight, floating rate, convertible);
  - government bonds (Bunds);
  - corporate bonds;
  - mortgage bonds;
  - international bonds;
  - municipal bonds;
  - convertible bonds;
  - money-market instruments, including short-term and medium-term notes, commercial paper and certificates of deposit;
- Equities, such as bearer shares and registered shares, as well as depository receipts;
- Warrants and certificates;
- Investment fund units;
- Other securities, such as international securities held in collective safe custody, for example, German certificates representing international securities;
- Gold bullion (traded on the Luxembourg Stock Exchange).

Clearstream Banking S.A. is licensed as a securities settlement system (SSS) according to Title V of the Luxembourg Law of 10 November 2009 relating to payment services. The Banque centrale du Luxembourg (BCL) is responsible for the prudential supervision of SSSs (in accordance with article 110 of the law of 10 November 2009). The focus of the supervision is the operational and financial stability of each system and participants in systems as well as the stability of the financial system as a whole.

Furthermore, specific regulations for SSSs must be taken into account (for example, Circulars BCL 2001/163 and 2001/168).

The CSSF continues to be the competent authority for the supervision of CBL as credit institution according to articles 42 and 43 of the Luxembourg law of 5 April 1993 and, in addition, 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 and the Banque centrale du Luxembourg.

CBL maintains relationships with around 2,500 customers in over 110 countries. Its global network extends across 52 domestic markets.

CBL established a branch in Singapore that obtained a banking licence on 23 November 2009. The activities of the branch are supervised by the Monetary Authority of Singapore (MAS). The following CBL activities related to the Asian Pacific region are, among others, handled via Singapore: Credit, Treasury, new issues, account administration, securities settlement, certain asset services, the management of the custodian and cash correspondent bank (CCB) network.

Representative offices of CBL are subject to the limited supervision of the local regulators, according to and to the extent provided by the local legislation.

Clearstream Banking AG, Frankfurt am Main (CBF):

CBF offers settlement, custody and related services in both the Collective Safe Custody (CSC, mainly German domestic) and the Non-Collective Safe Custody (NCSC) businesses. The focus of the settlement business is thereby on the settlement of stock exchange transactions.

CBF is the only central securities depository in Germany. It operates a large vault where most of the securities issued in Germany and even securities issued elsewhere 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.; and
- Transactional information distribution.

CBF currently accepts the same securities as CBL in the NCSC business (over 850,000 securities) and more than 1 million securities in the CSC business for custody and settlement.

Related to the NCSC business, all instruments eligible in CBL (except Gold bullion) are also eligible in CBF.

Owing to the different customer base (mainly European banks at CBF; many international banks at CBL), the number of different securities held by customers in NCSC is nevertheless lower at CBF.

For the CSC business, the securities eligible include:

- Debt instruments, such as:
  - government bonds (Bunds);
  - corporate bonds;
  - mortgage bonds;
  - international bonds;
  - municipal bonds;
  - convertible bonds;
  - money-market instruments, including short-term and medium-term notes, commercial paper and certificates of deposit;
- Equities, such as bearer shares and registered shares;
- Warrants and certificates;
- Investment fund units.

Beyond that, CBF acts as 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 performs safekeeping as Central Securities Depository and, as trustee, offers an increased level of protection for investors by virtue of its significantly low-risk business and operational model. Moreover, CBF offers its customers the Global Securities Financing (GSF) service, through which market participants can lend and grant securities and cash against collateral.

CBF is subject to German supervision and is supervised as credit institution (according to § 1 (1) German Banking Act) by BaFin and the Bundesbank; as securities settlement system (SSS) (according to § 24 b German Banking Act) by the Bundesbank; and as a central securities depository (according to § 1 (3) German Securities Deposit Act) by the competent federal state authorities.

Clearstream Services S.A., Luxembourg (CS):

CS is responsible for IT development and production. It develops and maintains the hardware and software and operates the IT systems. Furthermore, CS acts as IT operator and offers third-party IT services.

CS is supervised in Luxembourg as a "PSF connexe" (specific type of PSF) according to articles 29-2 to 29-4 of the Luxembourg law of 5 April 1993.

Clearstream Operations Prague s. r. o., Prague (COP):

COP is not a regulated entity. Since COP insources services directly or indirectly from CBL, based on a memorandum of understanding between the BCL and the Czech National Bank (CNB), the Czech National Bank performs local oversight on behalf of the BCL.

COP operates services for the Clearstream Banking units. As these 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. Therefore, they are an integral part of all required supervision processes.

LuxCSD S.A., Luxembourg (LuxCSD):

Clearstream International S.A. and the Banque centrale du Luxembourg (BCL) jointly own LuxCSD S.A., a central securities depository located in Luxembourg. The market launch of LuxCSD, of which Clearstream International S.A. currently holds a 50% stake, took place in October 2011. LuxCSD has been created within the context of the future implementation of the Eurosystem's TARGET2 Securities (T2S) initiative. T2S will bring a single integrated process across Europe for DVP settlement in EUR central bank money. The development of T2S coupled with other significant market and regulatory initiatives were the key drivers for introducing central bank money settlement in Luxembourg and for preparing a national access point to T2S.

In addition, LuxCSD also provides issuing, central settlement and custody services for securities of all types, including shares in investment funds.

REGIS-TR S.A., Luxembourg (REGIS-TR):

REGIS-TR is a European central register where all contracts agreed over a wide variety of derivative financial instruments traded, OTC or on-exchange, can be recorded, giving market participants and regulators a consolidated view of positions. REGIS-TR will facilitate administrative tasks and will help to improve operational management of these transactions. The trade repository is targeted to comply with the new regulatory requirements as laid down in the proposed regulation on OTC derivatives, central counterparties and trade repositories proposed by EMIR, which aims at increasing the transparency in the OTC derivatives markets.

Since 2010, REGIS-TR is fully included in the consolidated financial statements. With regard to the consolidation provisions set out in the KWG, REGIS-TR has been classified by BaFin as an "other undertaking" and is therefore not included in regulatory consolidation (see Figure 1-9. on page 1-12).

Clearstream Banking Japan Ltd, Tokyo (CBJ):

The purpose of CBJ is to engage in marketing, information providing service 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.

Link-Up Capital Markets S.L., Madrid (Link Up Markets):

Since the launch of Link Up Markets in 2008 by seven CSDs, CBF participates in a joint venture to improve efficiency and reduce costs of post-trade processing of cross-border securities transactions.

Link Up Markets has established a common infrastructure enabling the easy implementation of links between CSD markets and introducing efficient cross-border processing capabilities. By connecting to the common infrastructure, each participating CSD has access to the services of the other participating CSD markets across all available asset classes.

Currently, ten CSDs are partners in the joint venture, based in Madrid, Spain. Each participating CSD took an equity stake.

2. Implementation of Basel II at Clearstream

The information in this chapter is presented in the following sections:

2.1 Pillar I: Minimum capital requirements

According to its business operations and the associated risks, Clearstream has selected for each risk category the most appropriate and efficient approach for measurement.

Granting loans is not Clearstream's core business. Credit risk mainly arises in the short term and with credit institutions or governmental counterparties. Therefore, Clearstream has selected the standardised approach to assess the credit risk under Pillar I.

Credit risk is derived from short-term money-market investments (without trading intent), exposures on interbank operational accounts and investments in government or other eligible securities. Treasury counterparties as well as Cash Correspondent Banks for the operational network are selected based on a high degree of creditworthiness and operational reliability. Furthermore, overdrafts to customers are given based on credit assessment and, in general, on a collateralised basis (see also 5. Management of credit risk on page 5-1).

As both investments and overdrafts to customers are collateralised to a high degree, Clearstream has selected the comprehensive approach for credit risk mitigation.

Contrary to credit risk, operational risk is much more important to Clearstream compared to conventional commercial banks.

All of Clearstream's operations rely on a complex IT system that connects a variety of financial markets, instruments and various currencies across different time zones around the world. This needs a continuous, 24 hours a day, 7 days a week operation. Furthermore, due to the huge variety of instruments and volumes of settlement transactions, reconciliation of proper master data, movements and balances is crucial to the business.

126.3 million settlement transactions were processed in the year under review. Even with a high degree of straight-through processing, manual interventions are occasionally necessary and need careful management. The potential risks of loss resulting from inadequate or failed internal processes or systems, or from human error or external events, are therefore significant. Clearstream accordingly selected the **Advanced Measurement Approach (AMA)** to assess and manage its individual scale of operational risk.

Since having received regulatory approvals as of January 2008, Clearstream Banking S.A., Clearstream Banking AG and Clearstream International S.A. apply the AMA to calculate their capital requirements for operational risk. In October 2010, Clearstream Holding AG received BaFin's approval to use the approach at group level also.

Clearstream uses the standardised approach for assessing market risk. The complete business activity belongs to the banking book. Market risk, according to the regulatory classification, is currently derived from foreign currency risks only.

The following table gives an overview of the calculation methods chosen by Clearstream:

Risk Category	Calculation Method
Credit Risk	Standardised Approach
Credit Risk Mitigation (CRM) of financial collaterals	Comprehensive Approach
Operational Risk	Advanced Measurement Approach
Market Risk	Standardised Approach

Table 2-1. Calculation methods chosen by Clearstream

2.2 Pillar II: Supervisory Review Process (SRP) and Internal Capital Adequacy Assessment Process (ICAAP)

Clearstream Group has implemented all necessary organisational and methodological requirements for the Internal Capital Adequacy Assessment Process and Supervisory Evaluation and Review Process.

The Executive Management of Clearstream Group is informed at least on a quarterly basis about all significant and substantial risks. If necessary, risks are reported ad hoc. This reporting includes also risk that is not in the scope of Pillar I and is the basis for Clearstream's internal capital planning.

As part of the Supervisory Evaluation and Review Process, the management of Clearstream Group is in a constant dialogue with all its supervisors.

2.3 Pillar III: Market discipline

Clearstream Holding AG (CH) is the superordinated company of the financial holding group according to §10a (3) KWG. CH in its role as superordinated company is responsible to fulfil the regulatory obligations on a consolidated/group level towards the German supervisory authorities and presents this report in compliance with the disclosure requirements pursuant to § 26a (4) KWG and §§ 319 et sqq. German Solvency Regulation (Solvabilitätsverordnung, SolvV).

Based on Luxembourg regulation, especially CSSF circular 06/273, part XIX, Chapter 2, CBL is not obliged to issue a stand-alone disclosure report. Similar to the Luxembourg regulation, § 319 (3) of German Solvency Regulation exempts CBF from the requirement to issue a stand-alone disclosure report, as it is included in the consolidated CH Group disclosure report. No other group entity is obliged to disclose a Pillar III-report.

All information provided in this report refers in principle to the companies included in the regulatory basis of consolidation. The regulatory consolidated group differs slightly from the consolidated group under accounting rules (see Figure 1-9 and Table 2-2).

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 DBAG, Clearstream Holding AG is, according to § 291 German Commercial Code (Handelsgesetzbuch (HGB)), exempted from the obligation to draw up consolidated statutory accounts.

The following table 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 § 10a KWG / Full Consolidation	Deduction	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	
	Clearstream International S.A., Luxembourg (CI) [1]	X		X	
Investment Firm [2]	LuxCSD S.A. Luxembourg (LuxCSD)	X		X	
Regulated Ancillary Services Undertaking	Clearstream Services S.A., Luxembourg (CS) [3]	X		X	
Ancillary Services Undertaking	Clearstream Operations Prague s.r.o., Prague (COP)	X		X	
	Clearstream Banking Japan Ltd., Tokyo (CBJ)	X		X	
	Link-Up Capital Markets S.L., Madrid (Link Up Markets)		X		X
"Other" Undertaking	REGIS-TR S.A., Luxembourg (REGIS-TR) [4]	-	-	X	

1. PSF, according to article 26 of the Luxembourg Law of 5 April 1993.
2. PSF status, according to article 26 of the Luxembourg Law of 5 April 1993, received in March 2011.
3. PSF according to Articles 29-2 to 29-4 of the Luxembourg Law of 5 April 1993.
4. PSF according to general provisions of the Luxembourg Law of April 1993.

Table 2-2. Accounting and prudential consolidation

The assignment of the companies to the types of enterprise is based on the definitions contained in § 1 KWG. Clearstream has no company that was consolidated proportionately at the reporting date.

Link Up Markets is accounted for under the equity method for statutory accounting purposes. In the year under review, CBF's participation in Link Up Markets is about 23.5% and, according to § 10a (4) KWG, that company is, in principle, subject to full regulatory consolidation. Pursuant to § 31 (3) sentence 4 KWG, BaFin has Clearstream Holding revocably exempted from consolidation duties. See also 5.7 Disclosures on equities in the banking book on page 5-14.

2.4 Regulatory environment

The Clearstream Group fulfils the "Basel II" regulatory equity requirements based on the EU directives as implemented in Germany (on a consolidated level as well as, for CBF, on a stand-alone level) and in Luxembourg (for CBL on a stand alone basis).

Currently, the regulatory environment is characterised to a great extent by the reform of the legal framework for the banking business in general and large exposure regulations, equity requirements, revised risk weights for credit and market risk, liquidity risk management and measures to create more efficient and more effective supervision in particular. This is, among other things, a consequence of the global financial market crisis but also part of a routine examination of current regulations that had been previously set in motion (see 1.1.2 Recent developments on page 1-2).

Based on CRD II, national legislations have been adjusted with effect as of end of 2010. Furthermore, some of the elements of CRD III (mainly remuneration) have been incorporated into national law already during 2010. These changes have impacted Clearstream business.

Since the beginning of 2008, the EU has been working on amendments to the CRD. An initial set of CRD amending directives (Directives 2009/111/EC, 2009/27/EC and 2009/83/EC - collectively, the "CRD II") was adopted in 2009. Subsequently, in 2010, the German Banking Act (KWG), the Solvency Regulation (SolvV) and the Large Exposures Regulation (GroMiKV) were adjusted with effect from 31 December 2010. Similarly, the CSSF circular 06/273 and the Luxembourg Law of 5 April 1993 have been adjusted.

CRD III (Directive 2010/76/EU) amending CRD with regard to the capital requirements for trading book securitisations, and the supervisory review of remuneration policy came into force on 15 December 2010. This directive has been translated into national law until the end of 2011. In Germany, the implementation of the new remuneration rules was completed in 2010 with the adoption of the Regulation Governing Remuneration at Institutions (Institutsvergütungsverordnung, InstitutsVergV). In Luxembourg, changes are incorporated with Circulars 10/496, 10/497 (issued on 22 December 2010) and Circular 11/505 (issued on 11 March 2011, which specifies proportionality rules to remuneration structures).

The amendments focus overall on aspects like the treatment of securitisation transactions, supervisory cooperation related to banks active across national borders, as well as qualitative guidelines for liquidity risk management and remuneration.

The first two aspects have no or no significant impact on the Clearstream Group.

The amendments in the liquidity management regulations are to a large extent in line with Clearstream's already existing internal procedures. Therefore, no major changes to liquidity risk management were necessary.

The requirements of the regulation governing the remuneration (InstitutsVergV, CSSF circulars 10/496, 10/497 and 11/505) have been implemented, to the extent possible, at the affected companies of Clearstream. The regulation is valid in principle for all companies of Clearstream Holding Group. As the disclosure provisions of § 7 InstitutsVergV are not addressed in the German Solvency Regulation, the disclosure requirements are not met within this Pillar III report.

The information required to be disclosed for remuneration system purposes were published on the website of the Clearstream Group[1] in the course of 2011.

This entire process of international and national adjustments to the regulatory framework is being followed closely by the Clearstream Group, which participates actively in consultations and ensures that political decision makers are aware of the potential negative consequences for the market as a whole and the affected company in particular. In this way, Clearstream counters undue ramifications for the Group or any of its subsidiaries.

1. http://www.clearstream.com/ci/dispatch/en/kir/ci_nav/about_us/041_regulatory_disclosures/050_Compensation.

3. Risk management overview

The information in this chapter is presented in the following sections:

3.1 Strategy and organisation

Risk management is a fundamental component of the management and control of Clearstream. Effective and efficient risk management is vital to protecting Clearstream's interests and it enables Clearstream to achieve its corporate goals and safeguards its continued existence. Clearstream has therefore established a group-wide risk management system comprising roles, processes and responsibilities applicable to all staff and organisational units of Clearstream. This concept is designed to ensure that emerging risks can be identified and dealt with as early as possible.

Clearstream's risk strategy is based upon the group's business strategy and regulates the extent of risk taken within the various business activities carried out by Clearstream. The group risk strategy does this by determining conditions for risk management, control and limitation. The group gives considerable attention to its risk mitigation process and ensures that appropriate measures are taken to avoid, reduce and transfer risk or intentionally accept it.

Clearstream's risk strategy ensures and enables the timely and adequate control of risks. The information required for controlling risks is assessed using structured and consistent methods and methodologies. The results are collated and incorporated into a reporting system enabling measurement and control of the risks. Risk reporting is based on reliable information and is carried out on a regular basis and ad-hoc for existing and potential risks.

All members of Executive Management of Clearstream are ultimately responsible for the risk strategy of Clearstream or of relevant legal entities. The group risk strategy reflects the risk appetite that defines the maximum loss that Executive Management is willing to assume in one year, the tolerance in light of the risk as well as the desired performance levels. It is Clearstream's intention to maintain risk at an appropriate and acceptable level (see also 3.4 Risk mitigation on page 3-9).

The members of Executive Management ensure that the group 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.

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 the employees. The appropriateness of the risk management and controlling systems is continuously checked.

Risks are openly and fully reported to the responsible level of management. The responsible management body is informed fully and in a timely manner about the unit's risk profile, relevant risk(s) as well as about relevant losses. Internal reporting and communication is amended by external reporting, that is, interim and annual reports.

Clearstream has developed its own corporate risk structure and distinguishes between operational, financial, business and project risks (see also 3.3 Risk structuring and assessment on page 3-5).

The members of Executive Management of Clearstream are responsible for the management of all risks. Clearstream's risk management organisation is decentralised. The market areas are responsible for identifying risks and for reporting them promptly to Group Risk Management, a central function unit with group-wide responsibilities.

Group Risk Management assesses all new and existing risks. It also reports on a monthly basis and, if necessary, ad-hoc to the particular Executive Management. Risk control is performed in the decentralised business areas, that is, in the areas where the risks occur.

Risk control in the Clearstream operational units is ensured by nominating "Operational Risk Representatives", who are responsible, as mentioned above, for identifying, notifying and controlling any risk in their area whereas Group Risk Management is responsible for the assessment and reporting of risks.

The risk management framework of Clearstream, as stated in the Group Risk Management Policy, aims at ensuring that all threats, causes of loss and potential disruptions are properly identified as soon as possible, centrally recorded, assessed (that is, quantified in financial terms to the largest possible extent), reported in a timely manner and consistently, together with suitable recommendations to the respective Executive Management, and controlled.

These five key processes, as well as adequate quality standards, have been established in the Group Risk Management Policy and are reviewed on an ongoing basis.

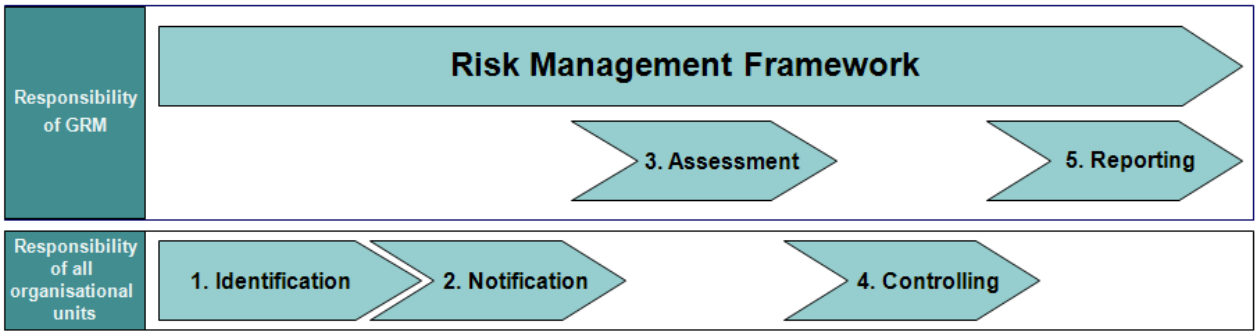


Figure 3-1. Key processes of risk management

3.1.1 Risk identification

Risk identification consists in the identification of all threats to Clearstream, as well as causes of loss and potential disruptions. Risks may arise as a result of internal activities or external factors and the risk examination must be performed with regard to existing or new processes, when concluding new business or entering new service areas.

The risk identification process is on the one hand proactive, based on regular review of processes in order to identify weak areas and points of failure (manual input required, process without double keying or four eyes controls in place, specific procedures subject to high volumes or tight deadlines etc.) or based on scenarios of disruption or failure taking into consideration all sources of issues (unavailability of systems, human error etc.). On the other hand, the risk identification process is also reactive, following an incident and, where appropriate, learning from this event.

Risk identification also involves a phase of quantification involving the definition of parameters that can be based either on statistical data, in the case of actual process monitoring, or on subjective expert appraisal when insufficient statistics are available.

All organisational units and individual employees must themselves identify and quantify potential risks in their area of responsibility.

3.1.2 Risk notification

Risk notification is the step in the risk management process that ensures that risks are centrally recorded.

All organisational units and individual employees must notify Group Risk Management, in a timely manner, of the risks that they have identified and quantified. Where a Clearstream entity, however, oversees its own risk management function, the timely notification of risks pertaining to that entity is made, in the first instance, to that dedicated risk management function, which in turn and without delay must notify Group Risk Management of matters of relevance.

3.1.3 Risk assessment

The assessment of an incident or a potential risk development aims at quantifying the risk in financial terms using the "Value at Risk" methodology and comparing the result with the available risk cover. It takes into account mitigation measures currently in place, such as business continuity measures, insurance policies etc. (see also 3.2 Risk management methodology on page 3-3 and 3.3 Risk structuring and assessment on page 3-5).

A qualitative assessment may be used whenever it adds value or is deemed more adequate.

The risk assessment phase is carried out by Group Risk Management based on data and information collected and produced either in a periodic or ad-hoc report by the relevant area or upon request of Group Risk Management.

Moreover, low frequency / high impact risks are assessed by identifying scenarios of threats to which the group is exposed. The evolution of their probability is monitored by using input from internal and external experts.

3.1.4 Risk control

Risk control involves determining and implementing the most appropriate treatment for 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 according to the established escalation process.

3.1.5 Risk reporting

The relevant boards and committees are informed consistently and in a timely manner about material risks - whether existing or potential - and about the related risk control measures in order to take appropriate action. Group Risk Management is in charge of providing this information to the relevant boards and committees (see also 3.5 Group-wide risk reporting and monitoring on page 3-9). Moreover, upon request of the relevant boards, Group Risk Management will issue reports to external parties.

3.2 Risk management methodology

Clearstream has installed a standardised approach for measuring and reporting all operational and financial business and project risk across its organisation: the concept of "Value at risk" (VaR). The purpose is to allow the overall risk appetite to be expressed in a comprehensive and easily understandable way and to facilitate the prioritisation of risk management actions.

The VaR quantifies the risks to which a company is exposed. It 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's models are based, in line with the Basel II framework, on a one-year time horizon and correlations between individual risk estimates are recognised when calculating the capital charge for operational risk.

The VaR is calculated at a confidence level of 99.0% (Management VaR), 99.9% (Regulatory VaR) as well as 99.98% (Economic Capital). Clearstream also performs VaR calculations in order to detect potential risk concentrations, as well as stress test calculations, which consider even more conservative model parameters than the regular VaR calculations.

In addition to classical stress tests, which analyse the impacts of predefined stress scenarios, Clearstream calculates so-called reverse stress tests since 2011. With the help of this instrument, stress scenarios that would exceed the risk bearing capacity are identified. The findings in the reverse stress tests can give rise to further analyses and implementations of measures to reduce risks.

In the example in the following figure, there is a 99% probability that the cumulative loss within the next year will be below EUR 2.5 million and, conversely, that there is consequently a 1% probability of a loss incurred through one or more incidents within the next year that, in total, will be equal to or greater than the VaR calculated.

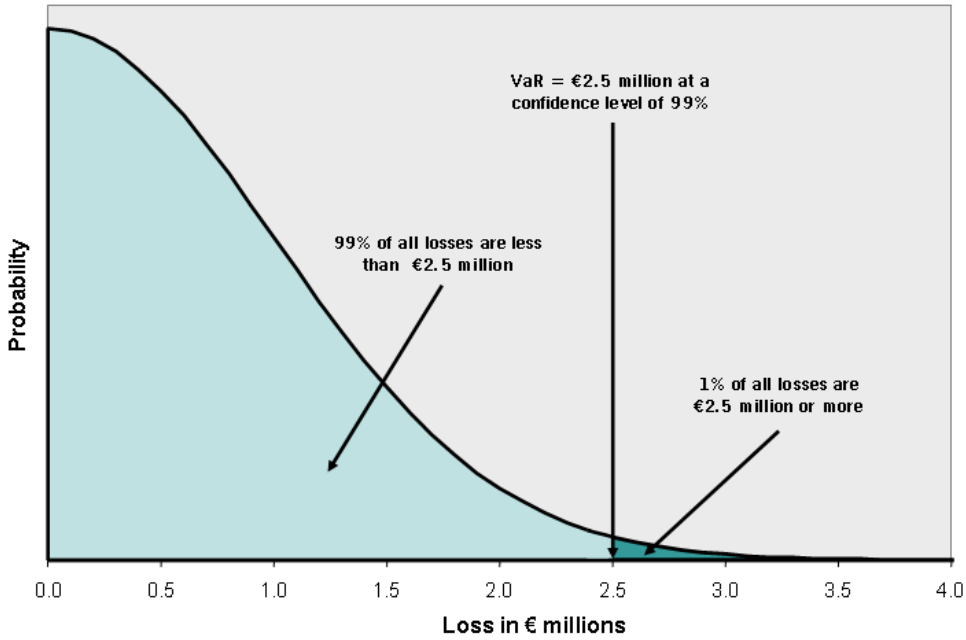


Figure 3-2. Example of VaR allocation

The calculation of the VaR is a three-step process:

1. Determination of the loss distributions for every single risk: This is performed for each risk on the basis of historical data (such as market data, default, claim or outage history) or risk scenarios. This distribution may be, for example, a Log-Normal distribution (often used for operational risk of processing errors) or a Bernoulli distribution (used, for example, for credit risk where a counterparty either defaults or fulfils).
2. Simulation of losses using the Monte Carlo method: A Monte Carlo simulation is used to run multiple trials of all random loss distributions at the same time in order to achieve a stable VaR calculation. This produces a spread of possible total losses.
3. Calculation of VaR on the basis of the Monte Carlo simulation: The losses calculated by the Monte Carlo simulation are arranged in descending order of size and the corresponding losses are determined for the specified confidence levels.

3.3 Risk structuring and assessment

The following sections describe the relevant individual risks in more detail.

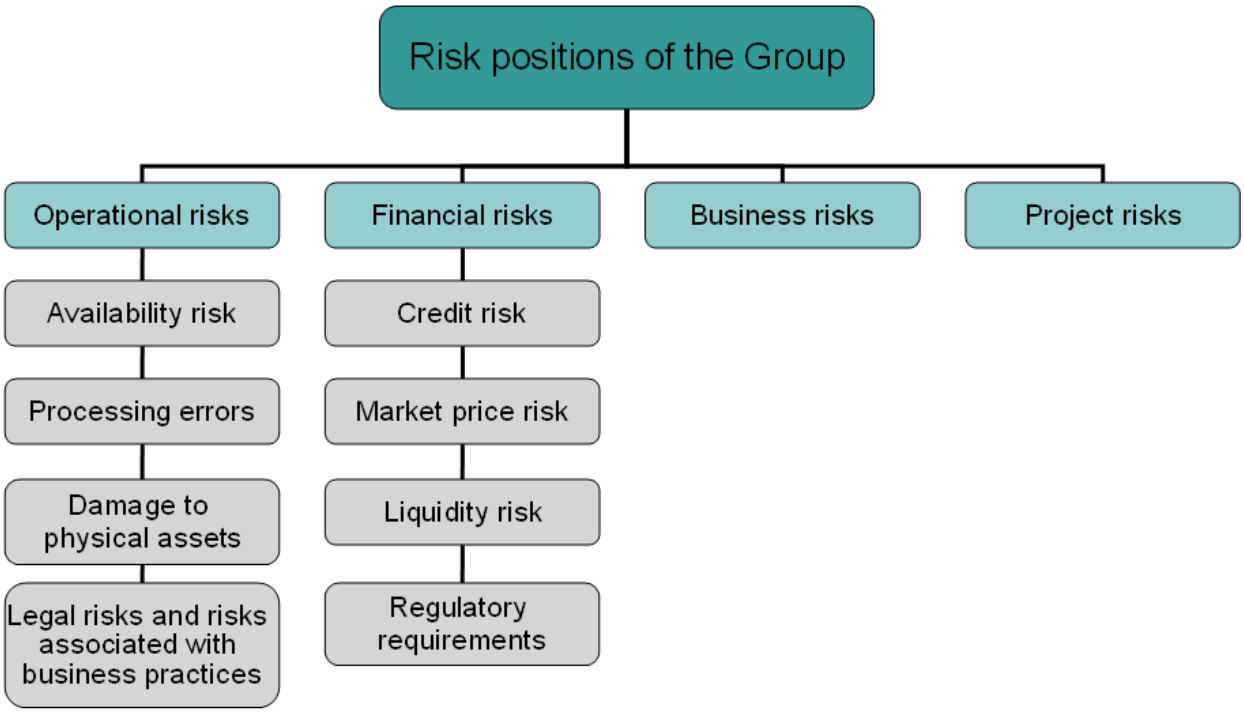


Figure 3-3. Risk structure of Clearstream

3.3.1 Operational risks

Operational risk encompasses all existing and newly arising risks in the context of the ongoing provision of services by Clearstream. In accordance with the Basel II framework[1], 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[2] and risks associated with business practices.

Operational risks that Clearstream does not want to run and that can be insured against at reasonable cost are transferred by closing insurance policies. All insurance policies are coordinated centrally for the entire Deutsche Börse Group, thereby ensuring uniform risk/cost benefit insurance cover.

Availability risk

Availability risk results from the fact that resources essential to Clearstream's service offering could fail, thereby making it impossible to deliver services in a timely manner or at all. Possible triggers include hardware and software failures, operator and security errors, physical damage to the data centres, loss of buildings and non-availability of staff.

In particular, Clearstream manages availability risk through intensive activities in the field of business continuity management (BCM). BCM encompasses all the processes that ensure that business continues as normal, even if a crisis occurs, and therefore substantially reduces availability risk. BCM relates to arrangements to ensure the availability of all key resources (systems, space, staff, suppliers/service providers), including the redundant design of all critical IT systems and technical infrastructure, as well as backup workspaces for mission-critical employee functions in each of the main operational centres (see also 4.3.2 Business Continuity Management on page 4-8).

No significant losses were incurred as a result of unavailability of resources in the year under review.

1. No. 644 "International Convergence of Capital Measurement and Capital Standards" (see http://www.bis.org/publ/bcbs128.htm).
2. Legal risk includes, but is not limited to, exposure to fines, penalties or punitive damages resulting from supervisory actions, as well as private settlements.

Processing errors

In contrast to availability risk, the occurrence of processing errors does not prevent Clearstream from providing services to its customers. However, errors or omissions may occur that relate mainly to manual input and suppliers' errors.

Despite all the automated systems and efforts aimed at delivering straight-through processing (STP), there is still a requirement for manual activity. In addition, manual intervention in market and system management is, in special cases, necessary.

In previous years, sustained improvements were made on an ongoing basis to reduce the potential risk of processing errors, either through a reduction in the amount of necessary manual intervention or through better protection.

Nevertheless, it should be noted that risk mitigation measures do not guarantee that incidents, claims and resulting loss will not occur, nor can they predict the specific occurrence of particular risk events. Despite all the risk mitigation measures deployed, Clearstream remains exposed to the risk of inadequate handling of customer instructions, which could, in extreme circumstances, result in significant losses.

No significant losses occurred as a result of service deficiency in the year under review.

Damage to physical assets

This category includes risks due to accident and natural hazard, as well as to terrorism and sabotage.

In the year under review, no significant losses occurred as a result of damage to physical assets.

Legal risks and risks associated with business practices

Risk from legal offences include losses that could arise as a result of non-compliance or inappropriate compliance with new or existing laws, losses from inadequate contract terms or from court decisions not adequately observed in customary business practice, as well as risks from fraud.

Risks associated with business practices include losses resulting from money laundering, violations of competition regulations or breaches of banking secrecy. Clearstream has established a Compliance function that seeks to protect Clearstream from any prejudice that may result from failures to comply with applicable laws, regulations and standards of good practice, with a particular focus on the following topics:

- Prevention of money laundering and terrorist financing;
- Compliance with professional and banking secrecy;
- Prevention of insider dealing;
- Prevention of market manipulation;
- Prevention of fraud;
- Prevention of conflicts of interest and corruption;
- Data protection.

Following a civil action against Iran, plaintiffs obtained a default judgment against Iran in September 2007 in the U.S. courts. In June 2008, plaintiffs commenced enforcement proceedings in the U.S. District Court for the Southern District of New York to satisfy this judgment by restraining certain client positions held in Clearstream Banking S.A.'s securities omnibus account with its U.S. depository bank, Citibank NA. The restrained positions are alleged to be beneficially owned by an Iranian government entity.

Consistent with its custodial obligations, Clearstream Banking S.A. defended against the restraints and filed a motion to vacate the restraints on various grounds. In October 2010, plaintiffs commenced a lawsuit that seeks to have the restrained positions of approximately USD 2 billion turned over to plaintiffs.

An amended complaint was received by Clearstream Banking S.A. in Luxembourg on 7 January 2011 that includes a cause of action directly against Clearstream Banking S.A. alleging USD 250 million in connection with purportedly fraudulent conveyances related to the restrained positions.

In summer 2011, Citibank NA interpleaded other potential judgment creditors of Iran into the litigation. At the direction of the court, Clearstream Banking S.A. renewed its motion to vacate the restraints. This renewed motion remains pending before the court.

On 7 December 2011, the plaintiffs filed a second amended complaint, adding claims for damages against Clearstream Banking S.A. and others of USD 2 billion, plus punitive damages to be determined at trial plus attorney's fees. Clearstream Banking S.A. considers the plaintiffs' claims against it to be legally and factually without merit, as Clearstream Banking S.A. will establish at the appropriate time in the litigation.

Should the case proceed, Clearstream Banking S.A., consistent with its custodial obligations, intends to defend itself vigorously to the fullest extent. Clearstream is cooperating with the U.S. Office of Foreign Assets Control (OFAC) as regards a current OFAC investigation under the Iranian Transactions Regulations in relation to certain asset transfers in Clearstream's settlement system.

No significant losses occurred as a result of legal risks or risks associated with business practices in the year under review.

3.3.2 Financial risks

Clearstream is exposed to financial risks mainly in the form of credit risk. On a smaller scale, there is also market price risk from cash investments and liquidity risks. The exposure to the above-mentioned risks is mitigated through the existence of effective control measures.

Credit risk

Credit risk consists in the risk that a counterparty may default and be unable to meet its liabilities against Clearstream in full or at all.

CBL and CBF within Clearstream Group grant loans to their customers in order to increase the efficiency of securities transaction settlement. However, these 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 and are largely collateralised and granted to creditworthy customers with very good credit ratings. Furthermore, credit lines granted can in general be revoked at any time. The main credit product offered is the "Technical Overdraft Facility" (TOF). A TOF is an overnight credit arrangement to facilitate the settlement of securities transactions even when cash balances in the relevant currency are, for one reason or another, (technically) unavailable at the right time.

Clearstream is also exposed to credit risk arising from its strategic securities lending activity (ASLplus - Clearstream's automated securities lending programme). Only selected banks are approved as counterparties. All lending transactions are fully collateralised. During the reporting year, only selected securities are permitted as collateral. The minimum rating permitted for selected bonds is A+. Short-term bonds without an issue rating are allowed as collateral in cases where the issuer has a short-term rating of at least A-1.

The creditworthiness of potential customers is assessed before entering into a business relationship. CBL and CBF within Clearstream Group establish customer-specific credit lines on the basis of both regular reviews of the customer's creditworthiness and ad-hoc analyses as required.

Additional credit risks are associated with cash investments and cash holdings at CCBs. Clearstream reduces this risk by spreading placements in the money market across a number of counterparties with very good credit ratings, by defining investment limits for each counterparty and by largely making short-term, collateralised placements. Clearstream establishes maximum investment limits on the basis of regular assessments of creditworthiness and ad-hoc analyses as required. The creditworthiness of Clearstream's CCBs is also assessed on a regular or, if necessary, ad-hoc basis.

Market price risk

Market risk may arise in the form of interest rate risk (as a result of fluctuations in interest rates in connection with cash investments or borrowing) or currency risk (in the operating business, when recognising net revenues denominated in foreign currencies).

Clearstream is exposed to interest rate risk in connection with cash investments. Interest rate risk is mitigated using a limit system that only permits maturity transformation to a small extent. In the year under review, currency risk was largely hedged using forward foreign exchange transactions. This entailed selling planned foreign currency positions at a price fixed in advance for delivery on the date of the expected cash inflows. Regular reviews ensure the effectiveness of these hedges.

Liquidity risk

Clearstream is exposed to liquidity risk in that it may lack sufficient liquidity to meet its daily payment obligations or incur increased refinancing costs in the event of liquidity bottlenecks. Daily and intraday liquidity is monitored closely by the Treasury and Credit sections and managed with the help of a limit system. Extensive credit lines are available to provide cover in extreme situations (see also 7. Management of liquidity risk on page 7-1).

In the year under review, Clearstream had excess liquidity at all times as a result of which no liquidity bottlenecks occurred.

Regulatory requirements

The risk of regulatory requirements is defined as risk of loss arising from the inability to meet all current regulatory financial requirements in all relevant legislations, for example, solvency and liquidity ratios.

During the year under review and in the period up to the preparation of the consolidated financial statements, the regulatory minimum requirements were, in principle, complied with at all times by CH group as well as by CBL and CBF. As a consequence of changes to the rules for large exposures as at 31 December 2010 and changed market behaviour due to exchange rate movements during the year, the large exposure limits were exceeded for a short period in the case of one customer of Clearstream Banking S.A. as a result of securities lending transactions. The company arranged for the prompt reduction of the regulatory exposure below the large exposure limits and, by revising the collateral requirements, took the measures necessary to ensure that the large exposure limits are met in future.

3.3.3 Business risks

The business risk reflects the sensitivity of Clearstream to macroeconomic developments and its vulnerability to event risks arising from other external threats. It is translated in EBIT[1] terms, reflecting both a potential revenue decrease and a potential increase of its cost base.

Clearstream's financial performance is directly or indirectly subject to the evolution of a number of macroeconomic factors and the related effects. Revenues are directly or indirectly impacted, for example, by the level of interest rates, economic growth, equity market valuations and trading volumes, the level of issuance of securities, but also investor confidence in the economic environment.

In the context of the current Eurocrisis and a related potential deterioration of the economic environment, Clearstream's profitability could be negatively impacted.

In addition, Clearstream could be affected by other external threats, like changes in the competitive or regulatory environment. Scenarios are established around the most significant risk events and quantitatively assessed. The respective departments monitor developments closely in order to take early mitigation actions if possible.

European and national regulatory evolutions and controversies are continuously monitored by Clearstream. Potential changes are analysed and appropriate measures are initiated in due time to fulfil all current and prospective regulations (see also 2.4 Regulatory environment on page 2-4).

1. EBIT: Earnings Before the deduction of Interest and Tax.

3.3.4 Project risks

Project risks can arise as a result of project implementation (launches of new products, services, processes or systems), which may have a significant impact on any of the three other risk categories (operational, financial and business).

Project risks are assessed by Group Risk Management as described in the above sections and are addressed in the early stages of major projects. Risks connected with the delivery of projects, such as budget risk, quality/scope risk and deadline risk, are monitored and reported by the units running the projects.

None of the projects planned and implemented in the year under review triggered a change in the overall risk profile of Clearstream.

3.4 Risk mitigation

It is Clearstream's intention to confine risk to an appropriate and acceptable level. Depending on the risk characteristics, there are basically four types of management strategy further elaborated at the level of the single risk type:

- Risk acceptance: a deliberate decision to take risks and monitor their development;
- Risk reduction or elimination: measures to reduce either the severity or the frequency of losses;
- Risk transfer: contracts to give risks to the market;
- Risk avoidance: changes to the businesses that anticipate and prevent built-in risks.

The latter three management strategies are risk mitigating. Within Clearstream, several mechanisms are used to reduce both the frequency and impact of incidents according to the type of risk.

3.5 Group-wide risk reporting and monitoring

Monitoring and reporting are essential parts of Clearstream's risk management, designed to give Executive Management and the Board of Directors timely, consistent and accurate information about the material risks that Clearstream Holding and its subsidiaries may encounter or have encountered.

All relevant data and information is collected, assessed and prepared by Group Risk Management, who assemble the relevant information and prepare the regular management reports according to the principles set down in this document (see also 3.1 Strategy and organisation on page 3-1).

3.5.1 Regular reports

Risk reports are issued to the relevant Executive Management of Clearstream on a regular basis. These reports provide the status of a new risk situation and/or updates on existing risk developments covering causes, potential early mitigation measures, assessment and recommendations.

3.5.2 Ad-hoc reports

Group Risk Management may issue ad-hoc reports when a new risk situation or the development of an existing risk should be reported to the relevant Executive Management of Clearstream, because of the material impact it has on the risk profile of the relevant units.

3.5.3 Monitoring

Internal auditing ensures, through independent audits, that the adequacy of the risk control and risk management functions is monitored. The results of these audits are also fed into the risk management system.

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4. Management of operational risk

The information in this chapter is presented in the following sections:

4.1 Strategy, process, structure and organisation

Operational risk represents a major risk class for Clearstream and one that 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 the regulatory capital charge 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, Clearstream Banking S.A., Clearstream Banking AG and Clearstream International S.A. apply the AMA to calculate their capital requirements for operational risk. In October 2010, Clearstream Holding AG received BaFin's approval to use the approach at group level also.

LuxCSD opened for business in October 2011 and is included in the AMA framework.

Clearstream's risk strategy, as described in 3.1 Strategy and organisation on page 3-1, also applies to the management of operational risk. In this risk strategy also, the risk capital dedicated to cover losses resulting from operational risk is defined, setting a limit for this risk type.

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 continuously analysed with regard to the expected or real effect on frequency and severity.
- For risks with 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.

The ultimate responsibility for operational risk management lies with the members of Executive Management of Clearstream, who are supported by different units and functions. Clearstream has established a segregation of duties into the predominately central operational risk management, the mostly local operational risk control and an independent review function.

The five steps of the risk management process (as described in 3.1 Strategy and organisation on page 3-1) are required to be taken into account.

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. Line management also appoints an "Operational Risk Representative" for their respective area.

The Operational Risk Representative is the key contact for both the employees in the respective organisational unit as well as for Group Risk Management. They also 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.

It is the responsibility of any single employee to support Group Risk Management, line management and the Operational Risk Representative of their organisational unit regarding any operational risk matters. Every employee is especially required to participate in the collection of operational risk event data. In addition, individual employees may be asked by line management, their Operational Risk Representative or Group Risk Management to take an active role also in the operational risk management process, for example, as experts within scenario analysis.

4.2 Measurement

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 (such as insurance) can be taken into account.

Input data for the model are internal loss data, results of a structured scenario analysis or external loss data. If loss data is sufficiently available, the application of a statistical model gives a reliable estimate of the underlying risk represented by the data. However, operational risk losses are very rare and not sufficiently available for all risk drivers. Additionally, internal loss data usually does not cover extreme events as such cases have not occurred in the bank so far.

It is assumed that banks doing similar business have also a similar risk profile. If this assumption holds, publicly available losses or losses from a banking consortium could be used to fill the gap of missing internal loss information.

However, Clearstream has a unique business model that, as of today, is not sufficiently represented in any bank consortium or public database. Therefore, Clearstream decided to use external loss data only where appropriate. Furthermore, in cases where appropriate internal or external loss data is available, Clearstream decided to apply a statistical model to scenario losses that are created in a structured process by business experts.

During this process, experts from all areas of the bank estimate the potential impact and the likelihood of a scenario loss. These losses are modelled in a similar way as the internal loss data. Where the loss data history for a particular risk class becomes sufficiently large, the basis for modelling this risk class can be switched from scenario losses to internal losses without changing the operational risk model.

The soundness and reliability of the model and its results could therefore increase as the data basis broadens over time.

4.2.1 General concept

The overall objective of the operational risk model is to simulate a loss distribution for a given time frame, which is one year for regulatory purposes (according to the regulatory requirements the so-called "holding period").

In theory, this distribution could be determined directly based on the data. For such a model, one would either need hundreds of years of loss history or scenarios that cover aggregate annual losses rather than single events. Since neither of these is available, an actuarial technique is applied that models the likelihood of the occurrence of an event (that is, the frequency) independent of its severity. Combining these two distributions by Monte Carlo simulation gives the required aggregate loss distribution.

Due to the discrete nature of the occurrence of loss events, the frequency is modelled using a discrete probability distribution. In loss distribution approach (LDA) models, typically three different distributions are taken into account to model the frequency: the Poisson distribution, the negative binomial distribution and the binomial distribution. The latter two each have two parameters that need to be determined. One major difference of the two binomial distributions from the Poisson distribution is that the variance compared to the mean is larger or smaller, respectively.

The impact of an event - that is, the accumulated loss amount - can assume any value larger than zero and hence has to be modelled with a different approach compared to the frequency. Operational risk losses are usually modelled using an asymmetric, right-skewed distribution. A characteristic of operational risk is that the capital requirements are mainly driven by individual high losses. Severity distributions describing the size of losses are an important part of the operational risk capital model.

However, modelling the severity is very cumbersome. The main reason is the lack of information about large events. Even with a long and large data history (internal or external loss data) or a sound scenario analysis process, it is always necessary to extrapolate beyond the highest relevant data point. The technique chosen by Clearstream, in line with best practice, is to fit a parametric distribution to the losses or to the scenarios, respectively, and to assume that the parameters also provide a realistic model for potential events beyond the current experience.

Typical distributions to model such a population are Log-Normal, Log-Gamma, Weibull, Gamma, Pareto and Generalised Pareto. The decision as to which distribution should be applied is based on the results of the "fitting results" and "goodness-of-fit" tests.

The overall severity distribution is determined by two types of loss: the high-frequency, low-impact (HF-LI) losses that can be represented by internal loss data; and the low-frequency, high-impact (LF-HI) losses that are very rare and hardly found in the internal loss database.

The development of each of these types of event is usually very different. HF-LI are very process dependent and occur regularly with different outcomes (that is, losses) each time. LF-HI events usually occur only once due to a severe malfunction of the control or business continuity system. It is not feasible to model both severity ranges with a single distribution. Therefore, these two types of events are modelled separately as body (HF-LI) and tail (LF-HI) of the severity distribution.

The operational risk model is applied to Clearstream Group as a whole. The aggregate loss distribution for Clearstream Group covers the operational risk of all legal entities. In the model, each risk driver is treated separately. The data is modelled in the following structure:

- Frequency distribution: Modelled for each risk driver individually. Depending on availability of internal data, the frequency can be estimated from the historic losses. Otherwise, it is based on the results of the scenario analysis.

  For a sound estimation of a Poisson frequency, a history of relevant data of at least 12 quarters is required.

- Body severity distribution: Modelled for each risk driver individually. Depending on availability of internal data, the body severity is estimated from the historic losses. Otherwise, a stochastic model is applied to the results of the scenario analysis.

  For a sound estimation of the body severity distribution, the number of relevant data points should, as a rule, exceed 100. The stability of the estimation depends significantly on the number of data points. Therefore, it needs to be decided, for each risk driver individually, whether a loss data model or a scenario model should be applied.

- Tail severity distribution: Modelled for CH Group as a whole. The tail is modelled on the extreme scenarios as a result of the structured scenario analysis.

- Catenation point x_c: The body and tail distributions are combined at a catenation point, which is determined by the body distribution for each risk driver. Therefore, each risk driver is individually modelled with a combined severity distribution.

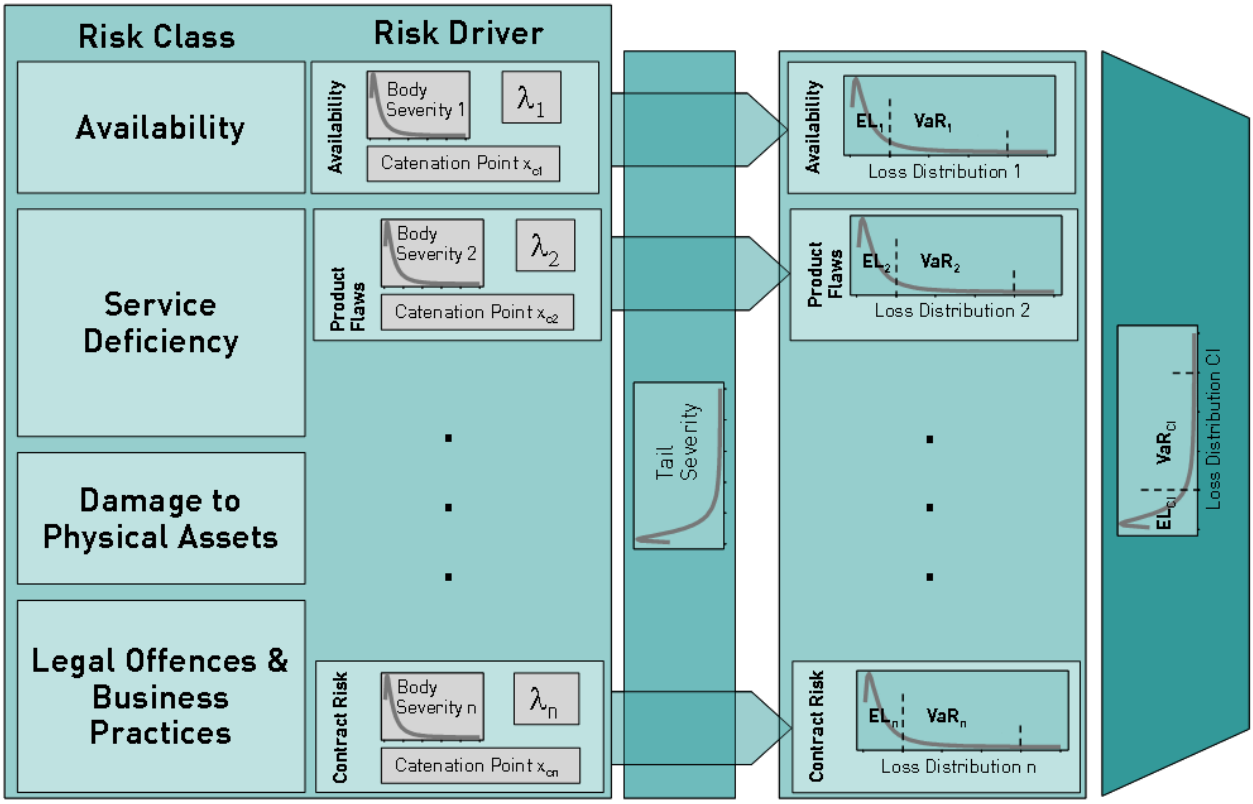

Figure 4-1. Overview of model structure

The body severity distribution, the frequency distribution and the catenation point are determined per risk class and combined with the group-wide tail severity distribution. An aggregate loss distribution is calculated for each risk driver for the group.

4.2.2 Parameter estimation

Frequency estimation is based on internal loss data (if available to a sufficient degree) or the average number of events per year is estimated as part of the scenario analysis. The frequency model covers the entire severity range and does not differentiate between the body and the tail of the severity.

The distribution of loss amounts is based on two distinct datasets: either on internal loss data or scenarios covering the high frequency body part of the distribution, or on scenarios covering very rare events. The latter distribution is modelled for the group as a whole but combined with the body severity distribution on risk driver level. This approach considers potentially severe events properly for every risk driver and enables diversification effects between different risk drivers to be taken into account.

Since internal loss data will never be sufficient to model extreme operational risk events, the tail of the severity distribution is modelled on the basis of scenario data only. For the tail, scenarios for all risk drivers with a probability of one or less in 100 years are used and combined in one dataset. The tail distribution is modelled using all relevant data.

The parameters of the fitted distribution are obtained according to the above-described fitting process for the scenarios. Since only scenarios describing very rare events are taken into account for the tail model, it is offset by the lowest bound of the scenarios: hence, the implementation of a truncation on the lower end of the distribution. The relevant appropriate distributions are heavy tailed distributions (Generalised Pareto, Log-Gamma, Weibull etc.).

The body severity and tail severity distributions are taken together to form the combined severity distribution for a risk driver. For modelling the body distribution, all scenarios or loss data are taken into account in order to use as much loss information as possible.

However, the fit is focused on the bulk part of the distribution and the part of severe losses is usually underestimated. Therefore, this part of the body distribution is not used for the capital calculation and is substituted by the tail severity distribution.

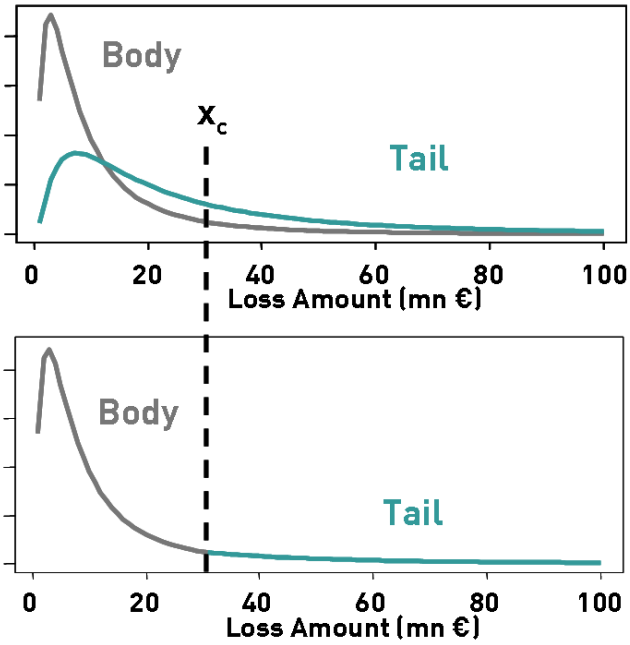

Figure 4-2. Example for substitution of the body distribution by the tail severity distribution

4.2.3 Insurance

Clearstream has insurance cover for different operational risks through multiple insurance policies and this is considered when calculating operational risk capital requirements.

The relevant insurance policies are analysed with respect to the terms and conditions, inclusions, exclusions and clauses. Following this analysis, the insurance policies are mapped to the specific risk drivers and a coverage ratio is estimated taking into consideration the possibility of uncovered losses. The objective is to evaluate the likelihood of the losses or scenarios within a risk driver being covered by the insurance policies.

In order to adequately reflect the insurance programme, with respect to limits purchased and deductibles carried as well as aggregate and stop loss conditions, Clearstream has implemented a modelling structure that enables the assessment of the likelihood of insurance payment for "each and every loss", that is, per individual simulated loss.

The insurance coverage calculation uses the obtained coverage ratios. The individual losses per risk driver generated in the Monte Carlo simulation are transferred into the insurance model and a Bernoulli trial is used to perform a random check to see whether the loss amount is covered.

4.2.4 Monte Carlo simulation

The distributions discussed so far (that is, the annual frequency and combined severity distributions) must be convoluted in order to derive the aggregate loss distribution for a risk driver and, based on that, the total loss distribution for operational risk. Clearstream implemented a Monte Carlo simulation, which enables the numerical determination of the loss distribution with high precision.

A single Monte Carlo simulation cycle is carried out in three steps:

1. Generate a random number for the number of events for the body with λ_B and the respective loss amounts from the body severity distribution that is capped at x_c.
2. Generate a random number for the number of events for the tail with λ_T and the respective loss amounts from the tail severity distribution truncated from above at x_c.
3. Sum all loss amounts in order to calculate the total loss amount of one year.

Repeating the Monte Carlo cycles many times gives a loss distribution for a risk driver with the required accuracy.

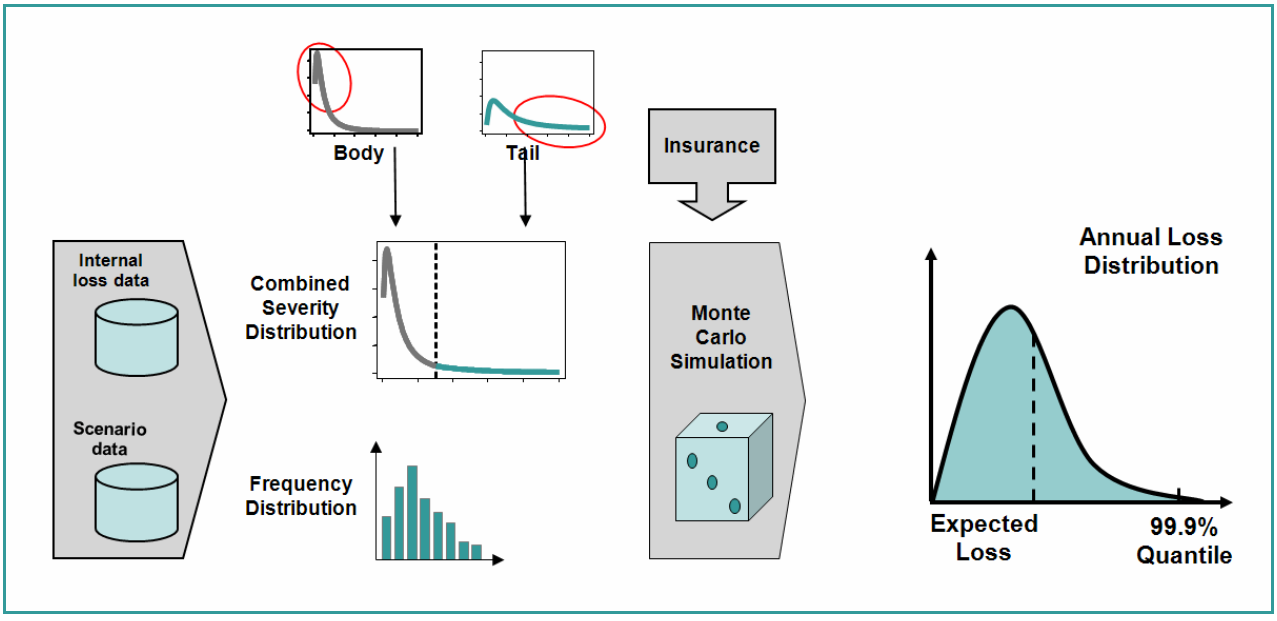

Figure 4-3. Steps of single Monte Carlo simulation

4.2.5 Stress testing of operational risks

Stress tests are performed to generate insights into the effectiveness of extreme event scenarios and to validate capital adequacy. Such stress includes the occurrence of several severe losses within one particular year. Given the fact that, in principle, any combination of existing risk scenarios is possible, the focus is on plausible stress events, considering the respective frequency of occurrence of the individual risk scenarios. Thus, for instance the combination of two extreme scenarios with a frequency of one loss in 1000 years is not considered, given the extremely limited likelihood.

Three particular stress tests are examined.

- The risk scenario with the biggest maximum loss is benchmarked with the Risk Bearing Capacity for Operational Risk.
- The combined maximum loss of the two extreme scenarios with the biggest maximum loss and a frequency not lower than one loss in 100 years is benchmarked with the Risk Bearing Capacity for Operational Risk.
- Three non-extreme risk scenarios (that are used when modeling the body distribution but are not considered when modeling the tail) with the biggest maximum loss are combined and the total loss amount is benchmarked with the Risk Bearing Capacity for Operational Risk.

In 2011, none of the stress tests exceeded the available risk bearing capacity for Regulatory operational risk (OpRisk).

In addition to the stress tests defined above, Group Risk Management performs, since 2011, a so-called reverse stress tests for operational risk, which assume that several risk scenarios materialise at once. As many operational risk scenarios are chosen as are needed so that the losses would exceed the regulatory own funds (risk bearing capacity (RBC)). For some operational risk scenarios, a recovery rate is available based on the operational business expert information provided. Scenarios that are mutually exclusive are not taken into account.

The following steps are performed to calculate the Reverse Stress Test for Operational Risk:

1. Take the operational risk scenario with the largest maximum loss.
2. If a loss would not consume the whole RBC, add the next largest operational risk scenario.
3. The Reverse Stress Test for Operational Risk is complete once the RBC is consumed completely.

4.3 Operational risk mitigation

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. The 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 in order to be in the position to define measures to reduce the probability of recurrence.

The key preventive measures of risk mitigation consist of strong internal control processes and ongoing initiatives to further reduce errors and omissions. This is supported by a number of measures that will take effect at the time or after an incident, such as business continuity management (BCM) and insurance programs

4.3.1 Internal Control System

The Executive Management of Clearstream has 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, continuously developed and adjusted to reflect changing conditions, comprises both integrated and independent control and safety measures.

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

4.3.2 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 as a whole, Clearstream has implemented a comprehensive Business Continuity Management (BCM) approach as a key mitigator of availability risk.

BCM organisation at Clearstream

The Executive Management is responsible for ensuring the continuity of business at Clearstream. This responsibility is delegated to the various organisational units, which are directly responsible for the operational resilience and disaster tolerance of the respective business areas. Reporting to Executive Management, Group Risk Management is responsible for the overall coordination and monitoring of Clearstream's preparedness to deal with incidents and crises.

The organisational roles and responsibilities, and the guiding principles to ensure operational resilience, are documented in a formal BCM policy.

BCM arrangements

The implemented BCM arrangements aim to minimise the impact of the unavailability of key resources, addressing not only 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 even in cases of catastrophe. Thereby, Clearstream is making use of its operational locations at Eschborn, London, Luxembourg, Prague and Singapore to maintain the continuity of its services.

Systems unavailability

Data centres in the main operating locations are 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 at the time of a disruption.

Workspace unavailability

Exclusively dedicated work facilities provide backup office space for mission critical staff in the event that an office location becomes unavailable. These backup facilities are fully equipped and networked 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.

Staff unavailability

Business continuity measures address the loss of significant numbers of staff, covering catastrophe 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.

Supplier unavailability

Clearstream assures itself of the continuous provision of critical supplier services by a number of means, such as regular due diligence review of suppliers' BCM arrangements, provision of services by alternative suppliers if possible and service level agreements, describing the minimum service levels expected from suppliers, and contingency procedure requirements.

Incident and crisis management process

Clearstream has implemented a group-wide incident and crisis management process that facilitates 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 the speedy return to regular business activity.

Incident Managers have been appointed in their respective business areas in case of incidents and crises. They will also ensure the appropriate escalation up to the Executive Management and notification to customers.

"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.

Three criteria are applied to validate the BCM test results:

- Functional effectiveness: validating all technical functionalities.
- Execution ability: ensuring that members of staff are familiar with and knowledgeable in the execution of BCM procedures.
- Recovery time: confirming that BCM plans can be executed within a defined recovery time objective.

Findings are reported to Executive Management. Customers are regularly invited to participate in Clearstream's BCM tests to validate their own BCM arrangements.

4.3.3 Insurance

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

The risk-reducing effect from insurance contracts is taken into account when calculating the capital requirements for operational risk according to the Advanced Measurement Approach (AMA).

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

Each major insurance cover is reviewed annually following the evolution of Clearstream's operational risk profile. This review involves all relevant parties and is coordinated by Group Risk Management.

4.4 Monitoring and reporting

The reporting approach laid out in 3.1.5 Risk reporting on page 3-3 and 3.5 Group-wide risk reporting and monitoring on page 3-9 also applies to the management of operational risk. A Supplementary Risk Report is also produced annually with the aim of providing the management body with additional background information pertaining to Clearstream's risk management.

This report includes additional summary statistics and trend analyses of operational risk events, but also a summary of major changes to the operational risk model, concept and methodology, and quality improvements in operational risk management.

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5. Management of credit risk

The information in this chapter is presented in the following sections:

5.1 Strategy, process, structure and organisation

Clearstream's general risk management structure, organisation and process, as well as the risk strategy, is specified in 3. Risk management overview on page 3-1. The present status and the business direction for credit risk are stated in a credit risk strategy. The Executive Management periodically examines and adjusts the credit risk strategy as necessary.

The credit risk strategy is set in accordance with the Risk Management Policy and is reported annually to the responsible Board of Directors. The credit risk strategy represents the framework and defines, amongst others, the principle credit risk appetite, the credit authorities, possible collaterals, the basic counterparty quality as well as the fundamental country and currency risk categories.

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

Clearstream may grant credit limits that serve to facilitate the settlement of securities transactions, support the securities financing business and limit the placement of funds with counterparties. Credit is primarily granted on a collateralised basis. Borrowers in Clearstream are central banks, banks and financial institutions. The credit processing is arranged in guidelines and work instructions.

Credit limits are set in accordance with the customer's financial standing, as indicated by factors such as the customer's credit rating and net worth, as well as having regard for the level of activity on the customer's accounts and the level of collateralisation.

The evaluation of counterparties and the credit risk classification takes place within the "credit assessment", which is performed by the Credit section. Internal ratings are systematically compared with external ratings from Moody's, Standard & Poor's and Fitch and are adjusted where applicable.

Credit lines must be collateralised to the maximum extent possible. The monitoring of recoverability of collateral is also operated by the Credit section.

The sovereign risk of each country is reviewed and allocated to one of three categories according to country risk level (high, medium, low). Credit limit concentration thresholds relating to country group, customer internal ratings and collateralisation levels are established and reported to the Executive Management on a monthly basis. Currency limits are established to cover currency exposure.

Any exception to the Credit Risk Policy must be approved by the Executive Management.

All credit risk exposures are regularly reviewed and monitored. Clearstream also conducts special reviews where information is received from external and internal sources indicating a negative change in the risk assessment of the exposure or of the collateral.

The above-mentioned exposure limits are set to ensure that Clearstream does not take too large an exposure, and therefore risk, on too few participants or counterparties. German and Luxembourg banking regulations also impose risk concentration limits that have to be respected for each applicable exposure.

Exposure after risk weighting and credit risk mitigation techniques towards an individual customer or group of connected customers above 25% of own funds is reported as a breach under the large exposures regulation[1].

Credit risk control is performed by the Credit section, an independent function reporting to Clearstream's CFO. The Credit section is responsible for issuing the monthly credit reporting to the Executive Management and to Group Risk Management, as well as for the credit exposure reporting to Group Risk Management, which forms the basis of the VaR calculations.

5.2 Credit risk exposures

5.2.1 Application of the standardised approach

Clearstream has not nominated any external credit assessment institution (ECAI) for the purposes of the standardised approach. The nomination of a rating agency and the associated application of issuer and issue credit assessment represent a possibility offered to banks. Clearstream has decided not to apply this option.

Instead, Clearstream uses the credit assessments by OECD[2] for the central governments and central banks exposure class. For the regional governments or local authorities, public sector entities and institutions (banks) exposure classes, the risk weighting is derived from that of the respective country of residence. The use of these credit assessments by OECD has been notified to the German and Luxembourg supervisors.

The exposures of Clearstream belong mainly to the exposure class of institutions with a short maturity. In most cases, exposures to institutions achieve a risk weighting according to the credit quality step to which exposures to the central government of the jurisdiction in which the institution is incorporated are assigned. In principle, this weighting is one category less favourable than that of the central government.

If the exposure of an institution has a residual maturity of not more than three months and it is incurred and refinanced in the obligor's national currency, it may be assigned the risk weight, raised by one step, applicable to the central government of the country in which the obligor is domiciled (mostly 20%). The risk weighting for multilateral development banks is in most cases 0%.

Covered bonds obtain a risk weighting on the basis of the risk weightings assigned to senior unsecured claims on the credit institution that issues them.

All other exposures in the different exposure classes mostly achieve the prescribed risk weighting of an unrated position ("unrated" implies that no credit rating by an eligible ECAI exists or that no ECAI was nominated).

Clearstream complies with the mapping established by the German Federal Ministry of Finance in the German Solvency Regulation and the CSSF in circular 06/273.

The following table shows the respective total credit risk exposure values in the standardised approach, before and after applying credit risk mitigation techniques, that have been allocated to each exposure class,

1. Revised as of 31 December 2010, the limitations and modalities to calculate large exposures are described in detail in §§ 13 and 13b German Banking Act (Kreditwesengesetz, KWG) in conjunction with the regulation governing large exposures and loans of EUR 1.5 million or more (Gross- und Millionenkreditverordnung, GroMiKV) as well as in CSSF circular 06/273.
2. http://www.oecd.org/document/49/0,2340,en_2649_34171_1901105_1_1_1_1,00.html.

as well as credit quality step prescribed in Annex 1 of the German Solvency Regulation and in Part VII of CSSF circular 06/273. On the level of CH, the participation in Link Up Markets is deducted from own funds; other than this, no other exposure values are deducted from own funds.

31 December 2011 (€' 000)		Exposure value			Exposure value after CRM			Exposure value after considering Credit Conversion Factor (CCF)		
Exposure class	Risk weigth class	CH-Group (*)	CBL(*)	CBF (*)	CH-Group (*)	CBL (*)	CBF (*)	CH-Group (*)	CBL (*)	CBF (*)
Central governments and central banks	0%	4,851,134	4,930,851	1,913	4,851,134	4,930,851	1,913	4,851,134	4,930,851	1,913
	20%	1,596	17	-	1,596	17	-	1,596	17	-
	50%	859	-	-	859	-	-	859	-	-
	100%	367	8,372	-	367	8,372	-	367	8,372	-
	150%	36	-	-	36	-	-	36	-	-
	Total	4,853,992	4,939,240	1,913	4,853,992	4,939,240	1,913	4,853,992	4,939,240	1,913
Regional governments, local authorities and other public bodies	0%	356,374	705,697	5,340	356,374	705,697	5,340	356,374	705,697	5,340
	10%	-	-	-	-	-	-	-	-	-
	20%	-	-	-	-	-	-	-	-	-
	35%	-	-	-	-	-	-	-	-	-
	50%	-	-	-	-	-	-	-	-	-
	100%	-	-		-	-		-	-	
	Total	356,374	705,697	5,340	356,374	705,697	5,340	356,374	705,697	5,340
Multilateral development banks and international Organisations	0%	520,568	496,454	-	520,568	496,454	-	520,568	496,454	-
	20%	-	-	-	-	-	-	-	-	-
	50%	-	-	-	-	-	-	-	-	-
	100%	-	-	-	-	-	-	-	-	-
	150%	-	-	-	-	-	-	-	-	-
	Total	520,568	496,454	-	520,568	496,454	-	520,568	496,454	-
Institutions (banks)	0%	627,157	275,534	-	627,157	275,534	-	627,157	275,534	-
	20%	149,689,058	142,390,579	8,932,652	105,995,090	98,171,956	9,107,652	4,031,210	4,102,046	917,725
	50%	-	-	-	-	-	-	-	-	-
	100%	-	36,318	-	-	36,318	-	-	36,318	-
	150%	-	-	-	-	-	-	-	-	-
	Total	150,316,215	142,702,432	8,932,652	106,622,247	98,483,809	9,107,652	4,658,367	4,413,898	917,725
Corporates	20%	-	687,455	-	-	8,187	-	-	8,187	-
	50%	-	1	-	-	1	-	-	1	-
	100%	773,557	22,842	1,885	64,106	22,842	1,885	64,106	22,842	1,885
	150%	258	82	-	258	82	-	258	82	-
	Total	773,815	710,379	1,885	64,364	31,112	1,885	64,364	31,112	1,885
Undertakings for collective investment (Investment shares)	100%	36,337	-	32,493	36,337	-	32,493	36,337	-	32,493
	150%	-	-	-	-	-	-	-	-	-
	Total	36,337	-	32,493	36,337	-	32,493	36,337	-	32,493
Covered bonds	10%	-	-	-	-	-	-	-	-	-
	20%	-	-	-	-	-	-	-	-	-
	50%	-	-	-	-	-	-	-	-	-
	100%	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-
Other (including equity holding)	0%	3	2	-	3	2	-	3	2	-
	20%	-	-	-	-	-	-	-	-	-
	100%	210,127	7,579	180,007	35,127	7,579	5,007	35,127	7,579	5,007
	1250%	-	-	-	-	-	-	-	-	-
	Total	210,130	7,581	180,007	35,130	7,581	5,007	35,130	7,581	5,007
Total 2011		**157,067,431**	**149,561,783**	**9,154,290**	**112,489,012**	**104,663,893**	**9,154,290**	**10,525,132**	**10,593,982**	**964,363**
Total 2010		131,372,939	123,342,731	8,944,501	106,123,413	99,901,533	8,944,501	5,296,017	6,786,862	1,093,391

Table 5-1. Total credit risk exposure values

* CRM (Credit Risk Mitigation techniques) is described in detail in 5.3 Credit risk mitigation on page 5-7.

Note: The data for CH 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).

The allocation rules for certain exposures to defined (but differing) exposure classes and the treatment for certain counterparties differ in Germany and in Luxembourg (see "Foreword" on page i).

In particular, central and regional German promotional banks (like KfW and NRW-Bank) are treated as "other public bodies" (KfW) or "banks with zero weight" in Germany but assigned in Luxembourg to the "institutions with central/regional government warranty" exposure class, with, as a consequence, big shifts recorded at the level of CBL compared to CH Group. Furthermore, investments in pension-linked fund shares and similar obligations in line with International Accounting Standards (IAS) 19/HGB § 246 (2) are netted in Luxembourg (as in the accounting standard) but shown as risk assets under German rules.

Collateral for specific securities lending products (for example, see "ASLplus" on page 5–10) are separated for a variety of single loans (collateral pool). The necessary regulatory allocation of this collateral to the loans is performed by the reporting software. The collateral effectiveness varies according to different algorithms incorporated in the tools used for Germany and Luxembourg respectively. In addition, differences occur due to usage of differing FX rates. This leads to deviations between CBL and CH Group in the figures for the "institutions" exposure class for the same loans.

In the tables that follow in this chapter, the credit exposures shown/used are always after consideration of CRM and Credit Conversion Factors (CCFs).

5.2.2 Detailed information and distribution of credit risk exposures

Past due items and default or non-performing exposures:

Pursuant to the below-stated definitions, Clearstream has had no past due item or default or non-performing exposure in its books at the reporting date so far.

Definition of past due:

An exposure is classified by German Solvency Regulation and CSSF circular 06/273 as "past due" where 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.

Definition of default or non-performing:

According to § 125 of the German Solvency Regulation and CSSF circular 06/273, Part VII, subsection 3.4.2.2., 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 Clearstream internal definition of "impairment" according to German Commercial Code (HGB) as well as International Financial Reporting Standards (IFRS) is compliant with the definition of "default" outlined in the Basel II Capital Accord.

Credit risk mainly arises in the short term and with credit institutions or governmental counterparties. Treasury counterparties as well as CCBs for the operational network are selected based on a high degree of creditworthiness and operational reliability. Due to the short-term nature of the business performed by Clearstream, strict internal guidelines and a close monitoring of business, there were no credit losses within Clearstream since 1949.

Value adjustments and provisions:

Clearstream assesses, at each balance sheet date, whether there is objective evidence that a financial asset or group of financial assets classified as held-to-maturity, available for sale or loans and receivables, are 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.

The geographical allocation of credit risk exposures is as follows:

31 December 2011 (€'000)		Geographical areas				
Exposure class	Companies	European Union	Rest of Europe	North America	Rest of World	Total
Central governments and central banks	CH-Group (*)	4,753,434	94,493	14	6,051	4,853,992
	CBL(*)	4,762,094	171,672	-	5,474	4,939,240
	CBF (*)	1,913	-	-	-	1,913
Regional governments, local authorities and other public bodies	CH-Group (*)	356,374	-	-	-	356,374
	CBL(*)	705,697	-	-	-	705,697
	CBF (*)	5,340	-	-	-	5,340
Multilateral development banks and international organisations	CH-Group (*)	-	520,308	-	260	520,568
	CBL(*)	-	496,454	-	-	496,454
	CBF (*)	-	-	-	-	0
Institutions (banks)	CH-Group (*)	3,187,708	332,235	999,965	138,459	4,658,367
	CBL(*)	2,514,414	836,549	1,004,968	57,967	4,413,898
	CBF (*)	917,652	73	-	-	917,725
Corporates	CH-Group (*)	46,994	418	799	16,153	64,364
	CBL(*)	30,169	29	637	277	31,112
	CBF (*)	1,843	37	5	-	1,885
Undertakings for collective investment (Investment shares)	CH-Group (*)	36,337	-	-	-	36,337
	CBL(*)	-	-	-	-	-
	CBF (*)	32,493	-	-	-	32,493
Covered Bonds	CH-Group (*)	-	-	-	-	-
	CBL(*)	-	-	-	-	-
	CBF (*)	-	-	-	-	-
Other (including equity holding)	CH-Group (*)	35,130	-	-	-	35,130
	CBL(*)	7,476	-	-	105	7,581
	CBF (*)	4,533	64	410	-	5,007
Total 2011	**CH-Group (*)**	**8,415,977**	**947,454**	**1,000,778**	**160,923**	**10,525,132**
	CBL(*)	**7,785,526**	**930,202**	**1,153,210**	**725,044**	**10,593,982**
	CBF (*)	**963,774**	**174**	**415**	**-**	**964,363**
Total 2010	CH-Group (*)	2,850,535	815,476	1,060,101	569,905	5,296,017
	CBL(*)	4,340,199	1,207,674	688,876	550,112	6,786,862
	CBF (*)	1,092,796	465	130	-	1,093,391

Table 5-2. Geographical allocation of credit risk exposures

Note: The data for CH 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).

Related to shifts in the exposure class allocation and different collateral valuations between CBL and CH Group, please refer to the Note under Table 5-1 on page 5–3.

Clearstream delivers settlement, custody and related services to financial markets. Clearstream does not incur exposures from its business to non-financial industrial sectors.

The following table provides information about the residual contract maturity, broken down by exposure classes. Most exposures are short-term with a significant part being intraday exposures.

31 December 2011 (€'000)		Maturity			
Exposure class	Companies	Not more than 3 months	up to one year	Over one year	Total
Central governments and central banks	CH-Group (*)	4,853,992	-	-	4,853,992
	CBL(*)	4,939,240	-	-	4,939,240
	CBF (*)	1,913	-	-	1,913
Regional governments, local authorities and other public bodies	CH-Group (*)	6,767	171,436	178,171	356,374
	CBL(*)	7,118	173,732	524,847	705,697
	CBF (*)	-	-	5,340	5,340
Multilateral development banks and international organisations	CH-Group (*)	39,411	30,563	450,594	520,568
	CBL(*)	38,744	31,406	426,304	496,454
	CBF (*)	-	-	-	-
Institutions (banks)	CH-Group (*)	4,019,696	2,398	636,273	4,658,367
	CBL(*)	4,099,696	38,668	275,534	4,413,898
	CBF (*)	917,725	-	-	917,725
Corporates	CH-Group (*)	64,364	-	-	64,364
	CBL(*)	31,112	-	-	31,112
	CBF (*)	1,885	-	-	1,885
Undertakings for collective investment (Investment shares)	CH-Group (*)	36,337	-	-	36,337
	CBL(*)	-	-	-	-
	CBF (*)	32,493	-	-	32,493
Covered Bonds	CH-Group (*)	-	-	-	-
	CBL(*)	-	-	-	-
	CBF (*)	-	-	-	-
Other (including equity holding)	CH-Group (*)	30,251	-	4,879	35,130
	CBL(*)	1,046	-	6,535	7,581
	CBF (*)	5,007	-	-	5,007
Total 2011	**CH-Group (*)**	**9,050,818**	**204,397**	**1,269,917**	**10,525,132**
	CBL(*)	**9,116,956**	**243,806**	**1,233,220**	**10,593,982**
	CBF (*)	**959,023**	-	**5,340**	**964,363**
Total 2010	CH-Group (*)	3,392,532	330,849	1,572,636	5,296,017
	CBL(*)	5,093,067	308,728	1,385,066	6,786,861
	CBF (*)	1,053,876	20,079	19,436	1,093,391

Table 5-3. Residual contract maturity

Note: The data for CH 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).

Related to shifts in the exposure class allocation and different collateral valuations between CBL and CH Group, please refer to the Note under Table 5-1 on page 5–3.

5.2.3 Stress testing of credit risk

The term "stress test" comprises the entirety of qualitative and quantitative analysis methods of rare but plausible events. Group Risk Management has developed stress tests of credit risk according to the following five steps:

1. Main model risk variables have been identified by sensitivity analyses that investigated changes in risk measures induced by isolated risk parameter changes.

   A sensitivity analysis has shown that changes of the following risk parameters induce main changes in risk measures:

   – Default rates of counterparties;
   – Counterparty and collateral ratings;
   – Recovery rates; and
   – Market volatility.

2. Rare but plausible scenarios have been defined.

   The following three scenarios are used for stress testing:

   – Mild recession, where consumption and investment go down, unemployment goes up, the profit situation is aggravated and credit defaults occur within the commercial banking sector.
   – Worldwide economic depression, which is a further escalation of mild recession scenario and where one or more major banks default.
   – Default of the counterparty with the largest unsecured credit exposure.

3. Impacts of the scenarios on the main risk parameters have been defined.

   For example, in a mild recession, a downgrade of all counterparties by one notch is assumed.

4. Stress tests are calculated as simultaneous shifts of the above-mentioned main model variables on a regular basis and the results are monitored against defined limits. Stress tests also cover the effect from an evolution of an economic variable on the value of exposures and the credit quality of the counterparty (general wrong way risk).

   The results of the stress test calculation are compared to limits derived as a fraction of the Risk-Bearing Capacity, which is the sum of equity capital and EBIT forecast.

5. Limit breaches will be reported and measures recommended.

   Limit breaches are reported to Executive Management. Depending on the risk associated to the limit breach, reporting is done monthly, yearly or ad hoc.

In addition to the stress test defined above, Group Risk Management performs, since 2011, a so-called reverse stress test for credit risk. The aim is to identify the number of counterparties that have to default to exceed the risk bearing capacity.

5.3 Credit risk mitigation

Credit risk mitigation techniques, used by Clearstream for solvency purposes, are composed of hedging and collateralisation. Furthermore, a variety of account relation is maintained on a current account basis and therefore just net positions are relevant.

The companies of Deutsche Börse Group are highly integrated and perform a variety of services for each other. As a consequence, respective fees are invoiced and, as a result, payables and receivables arise. In order to optimise cash flows and to reduce payment efforts in such cases where cash flows in both directions are material, positions are held on current accounts based on netting agreements. Debits and credits are netted immediately and net positions are settled once a month.

The accounts with customers or CCBs are, in general, maintained on a current account basis. Therefore, all movements per account and currency are immediately netted to a single account balance.

For credit purposes, except as otherwise agreed between the customer and Clearstream, all accounts of the customer with Clearstream, in whatever currency they are held, are deemed to form the elements of a single, indivisible current account and Clearstream may at any time set off, in whole or in part, credit and debit balances standing to any accounts held by the customer with Clearstream.

Despite these netting possibilities, no netting takes place. For credit purposes, cash credit positions out of these arrangements are taken as cash collateral. For solvency purposes this collateral is not taken into account (see 5.3.2 Collaterals on page 5-8).

CBL acts as principal in the securities lending business with the ASLplus Programme product, which is operated on a matched principal broking basis. Lending is performed if the ultimate lender as well as the borrower are both willing and able to close the deal and the collateral is available.

CBL acts as a central counterparty in this business according to EU directive 2006/48/EC, Annex III, Part 1, No. 2 (as confirmed by CSSF). Due to the matched principal broking basis, the business has no impact on the balance sheet. For solvency purposes, the items are nevertheless properly reflected.

5.3.1 Hedging

A profit participation right, as part of the total exposure of CBF and, consequently, also of Clearstream Holding AG consolidated, is hedged via a total return swap of a notional amount of EUR 175 million.

The gross exposure is shown as equity exposure at CBF/CH Group level. As a result of the risk mitigation effects of the total return swap, the exposure is shown after credit risk mitigation as an exposure on institutions. The total return swap is further collateralised to a large extent by high-rated government bonds. These are taken into account for large exposure purposes only and are ignored for solvency purposes.

5.3.2 Collaterals

Technical Overdraft Facilities (TOFs)

Under the contractual documentation, Clearstream has a pledge on all assets held on the customer's proprietary accounts to secure obligations towards Clearstream by the customer for the services rendered by Clearstream. This is complemented by netting provisions. Unless Clearstream is notified by the customer to the contrary, all assets held by the customer in Clearstream are pledged in favour of Clearstream to the extent of any usage of the credit facilities.

Collateral eligibility is defined and approved by the Credit section. Eligibility and haircut are dependent on the security's credit, market, liquidity and legal risks.

Securities that are eligible are subject to a margin deduction from their market value; haircuts range from 2% to 100% depending on the issue type and credit quality.

Securities issued by or correlated to the customer are not eligible as collateral.

Collateral haircuts are automatically recalculated on a daily basis; collateral policy is reviewed at least once a year.

Customers' collateral positions are evaluated daily, based on prices received from various data vendors. Any transaction on a given account that would exceed the available collateral is automatically blocked by the system.

In some instances where no collateral can be provided by the customer, Clearstream may grant an overdraft facility on the basis of third-party bank guarantees.

		31 December (€ '000)	
		2011	2010
TOF (Technical Overdraft Facilities)			
CBL		94,069,654	93,353,676
CBF		8,245,015	7,871,758
Consolidated		102,314,669	101,225,434
Utilised lines	**Unsecured**		
	CBL	31,450	152,440
	CBF	2	-
	Consolidated	31,452	152,440
	Secured		
	CBL	1,762,895	211,984
	CBF	105,259	82,422
	Consolidated	1,868,154	294,406
Collaterals (available)	**Cash**	2,070,265	158,588
	Securities	73,853,835	119,742,299
Over-collateralisation (difference between utilized lines and available collaterals)		74,055,946	119,606,481

Table 5-4. External credit lines and utilisation

Like the cash credit positions, received securities collateral and guarantees are also not taken into account for solvency purposes as the average outstanding debit amount, especially after weighting with the respective risk weighting, is, in general and on average, low and additional cost for CRM usage does not give a positive cost-to- benefit ratio.

Since mid-2011, new Technical Overdraft Facility (TOF) lines for CBL are granted on an intraday basis only. Remaining TOF lines for CBL and all TOF lines for CBF are intended to be changed to intraday basis by the end of 2012.

Collateralised placing

CBL places a part of the group's liquidity - mainly in Euro - on the basis of reverse repo agreements and similar collateralised placings with a maximum maturity of one year, but usually with maturities of three months or less. In general, repo transactions must be governed by a Global Master Repurchase Agreement (GMRA) and are only closed with banking counterparties fulfilling minimum rating criteria.

Repo transactions are, in principle, settled via Clearstream's settlement system. In some cases, the Euroclear system is also used via the "Bridge" or the domestic settlement systems of Clearstream's depositories are used. All settlement systems used are proven for that type of transaction.

Securities for placings taken as collateral have to fulfil specific requirements:

- Only the most liquid, least volatile and easily priced debt instruments with a defined credit rating (minimum long-term credit rating of Moody's [Aa3] or Standard & Poor's [AA-] or Fitch [AA-]; in the absence of a rating for the issue, the issuer rating (lowest available is relevant) are eligible as collateral for repo transactions.
- Issuers are limited to sovereigns, local governments, government agencies that are explicitly guaranteed by national governments, U.S. Government Enterprises (conventional [non-structured] instruments only), multilateral development banks and other supranational banks and banks. The rating requirements stated above vary depending on the issuer class.

- European covered bonds must be rated AA-/Aa3 or better. Not acceptable as collateral are: ABS, MBS (RMBS and CMBS) and other forms of non-standard collateral (such as CDOs, derivative bonds, credit-linked bonds, callable bonds, perpetual bonds, warrants).
- All collateral must have an active market and, in general, must be liquid.
- Subordinated securities are not eligible.
- Transactions in which the securities given as collateral are issued by or correlated to the counterparty ("own assets") are not allowed. For this reason, specific wrong way risk does not play a role in Clearstream.
- The maximum remaining life to maturity of the accepted securities is 10 years.

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, multiple fixed-income securities may be pledged as collateral. Structured transactions are not allowed.

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

For solvency purposes, according to §§ 185, 191 Solvency Regulation (SolvV) and CSSF circular 06/273, Part IX, Subparagraph 3.1.2.2.2.4, application of the zero weighting is possible in most cases. Where the issuer of the collateral does not fulfil the requirements of the regulation stated above or collateral is given in a different currency, supervisory haircuts as laid down in § 192 SolvV and CSSF circular 06/273, Part IX, Subparagraph 3.1.2.2.2.1 apply. In cases of FX mismatch, further cross-currency haircuts are to be applied.

Counterparty Institutions (banks)	31 December (€' 000) 2011		31 December (€' 000) 2010	
	CH-Group	CBL	CH-Group	CBL
Exposure - book value	5,560,856	5,567,770	4,373,311	4,494,601
Collateral - market value	5,540,226	5,586,543	4,360,664	4,480,380
RWA	4,357	74,863	6,704	99,877

Table 5-5. Placements from CBL

ASLplus

The ASLplus Programme 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 to the lenders in ASLplus and lends on securities to market participants through various counterparties.

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. Only securities rated A+ and above are eligible for collateral with haircuts ranging from 2% to 12% depending on the issuer type. Furthermore, both the exposure and the collateral are subject to daily valuation and remargining; the exposure and the collateral may be denominated in a different currency.

Mortgage-backed and other structured securities are not eligible.

In order to mitigate cross-currency risk in ASLplus, additional coverage is requested where there is a currency mismatch between a customer's loan and collateral portfolios. The add-on haircut is currently fixed at 1% (if the currency mismatch represents more than 33% of the exposure amount) and 2% (if it exceeds 66%) for one week.

The additional haircut requirement may be increased as follows if the foreign exchange mismatch amount exceeds the indicated thresholds:

- 3% for FX mismatch amount between EUR 2 billion and EUR 2.75 billion;
- 4% for FX mismatch amount between EUR 2.75 billion and EUR 3.5 billion;
- 6% for FX mismatch amount above EUR 3.5 billion.

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 §§ 185, 191 SolvV and CSSF circular 06/273, Part IX, Subparagraph 3.1.2.2.2.4 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 § 185 (3) SolvV and in CSSF circular 06/273, Part IX, Subparagraph 3.1.2.2.2.4, 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 apply.

Counterparty Institutions (banks)	31 December (€' 000) 2011		31 December (€' 000) 2010	
	CH-Group	CBL	CH-Group	CBL
Exposure - book value	38,506,373	38,496,972	20,508,376	20,510,158
Collateral - market value	39,810,366	40,228,151	21,275,095	21,279,623
RWA	70,008	76,971	48,274	317,812

Table 5-6. Exposures on the ASLplus Programme

Note: The necessary regulatory allocation of this collateral to the loans is performed by the reporting software. The collateral effectiveness varies according to different algorithms incorporated in the tools used for Germany and Luxembourg respectively. In addition, differences occur due to usage of differing FX rates. This leads to deviations between CBL and CH Group in the figures for the "institutions" exposure class for the same loans.

5.4 Guarantees of the ASL business

5.4.1 Business description

The Automated Securities Lending (ASL) Programme is a fails lending programme that is integrated into Clearstream's settlement engine and enables settlement efficiency to be maximised.

Clearstream 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 (undisclosed relationship between lender and borrower);
  - Administration of the loan.

- Collateral Agent, monitoring the quality and sufficiency of collateral with regard to:
  - 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 Clearstream;
  - Assigning loan limits to borrowers to avoid any new loan opening if the limit is reached.

5.4.2 Risk guarantee

In the ASL Programme, every loan of securities is guaranteed by CBL. The guarantee is backed by securities pledged by the borrower, as follows:

- Collateral securities are pledged by the borrower to Clearstream under a Luxembourg law pledge. Collateral quality and sufficiency are monitored by Clearstream on a daily basis.
- Second ranking pledge on collateral - in the unlikely event of a simultaneous default by Clearstream and the borrower, the right to the collateral passes to the lender.

5.4.3 Coverage value

The coverage value of the guarantee related to an ASL loan is equal to the market value of the securities plus an additional margin. Standard margins, varying from 0% to 15%, are applied depending on the securities lent.

5.4.4 Collateral eligibility

The collateral eligibility criteria of the ASL Programme are the same as those for Clearstream's settlement engine.

Collateral eligibility is defined and approved by the Credit section. 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; haircuts range from 2% to 100% depending on the issue type and credit quality.

Securities issued by or correlated to the customer are not eligible as collateral.

Collateral haircuts are automatically recalculated on a daily basis; collateral policy is reviewed at least once a year.

Customers' collateral positions are evaluated daily, based on prices received from various data vendors. Any transaction on a given account that would exceed the available collateral is automatically blocked by the system.

5.5 Monitoring and reporting

The Credit section is responsible for controlling the credit risk in Clearstream. It 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. Beside that, limit breaches - if any - are reported to the Executive Management and to Group Risk Management.

The reporting approach as described under 3.1.5 Risk reporting on page 3-3 and 3.5 Group-wide risk reporting and monitoring on page 3-9 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 Management. Besides the assessment of the VaR, Group Risk Management also measures credit risk concentration and performs stress test calculations on credit risk (see 5.2.3 Stress testing of credit risk on page 5-6).

5.6 Disclosures on derivative credit risk

Clearstream is, in general, not involved in the derivatives business. In particular, no credit derivatives are in the books of any Clearstream entity. The only exception is the total return swap covering the profit participation right in the books of CBF. (See also 5.3.1 Hedging on page 5-8.)

However, derivatives are, to a small extent, used to hedge interest rate or foreign exchange risk. Such instruments can only be used in established and regularly tested operational procedures. In compliance with IAS 39, hedging documentation must be established. The dealings with interest rate or foreign exchange risks (measurement, assignment of internal capital and limits etc.) are described in detail in 6. Management of market risk, including interest rate risk in the banking book on page 6-1.

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 EBIT of the budget year. 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.

For credit risk management purposes, foreign exchange exposures are calculated as a percentage of 20% of the purchased amount, one business day before settlement date, with 100% of the purchased amount.

Correlations of market and credit risk are taken into account within the models for calculation of the credit risk. Group Risk Management has developed specific policies and rules about how to handle these correlation risks within their uniform risk modelling landscape.

The original exposure method pursuant to Part VII, Section 4.2.1 of CSSF circular 06/273 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.

Exposure Value	Currency	31 December 2011 (mn)	31 December 2010 (mn)
Interest Rate Swaps - Fixed Rate Payer	EUR	0.4	0.6
Cross-currency swaps	EUR	53.7	54.4
Forward Foreign Exchange Contracts	EUR	0.0	0.5
Gross positive Fair Value	**Currency**	**31 December 2011 (mn)**	**31 December 2010 (mn)**
Cross-currency swaps	EUR	46.3	2.4
Notional/Trade Value	**Currency**	**31 December 2011 (mn)**	**31 December 2010 (mn)**
Interest Rate Swaps - Fixed Rate Payer	EUR	81.4	112.3
Cross-currency swaps	EUR	2,683.2	2,718.6
Forward Foreign Exchange Contracts	EUR	0.0	22.8

Table 5-7. Exposures in derivatives

5.7 Disclosures on equities in the banking book

Equities held in the banking book concern strategic participations in companies with business related to the business of Clearstream and a forced participation in the Society for Worldwide Interbank Financial Telecommunication (SWIFT), as CBL is one 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).

5.7.1 Equities in the banking book

Since the launch of Link Up Markets in 2008, CBF has participated in that joint venture of CSDs to improve efficiency and reduce costs of post-trade processing of cross-border securities transactions. Currently, 10 CSDs are partners, each participating with an equity stake in the legal entity based in Madrid.

Link Up Markets was accounted for under the equity method. In the year under review, CBF's participation in Link Up Markets is about 23.5%.

According to § 10a (4) of the German Banking Act, Link Up Markets has, in principle, to be consolidated under regulatory terms. Due to the small size of operations, CH has requested exemption from consolidation according to § 31 (3) and (4) German Banking Act, which has been granted by BaFin.

Owing to the SWIFT constitution, CBL must hold a participation in SWIFT. SWIFT is a member-owned cooperative and operates a worldwide financial messaging network that exchanges an average of over 15 million messages per day between more than 9,000 financial institutions in 209 countries.

SWIFT also markets software and services to financial institutions, much of it for use on the SWIFTNet Network, and ISO 9362 bank identification codes (BICs) are popularly known as "SWIFT codes". SWIFT transports financial messages in a highly secure way but does not hold accounts for its members and does not perform any form of clearing or settlement.

5.7.2 Valuation and accounting of equities in the banking book

The valuation and accounting specifications of the German Commercial Code (HGB) are relevant for CH Group on a consolidated level and for CBF's equities in the banking book, defined as a long-term financial asset according to HGB.

According to § 340e HGB in connection with §§ 252 and 253 HGB, such assets may not be recognised at an amount higher than their purchase price, reduced by depreciation, amortisation and write-downs in accordance with particular requirements for fixed assets. Items of fixed assets may be written down in order to carry them at the lower of cost or market value at the balance-sheet date. Impairment losses shall be recognised if impairment is expected to be permanent.

On a consolidated basis, Link Up Markets is classified as an associate and accounted for using the equity method in accordance with § 311 HGB (also in line with IAS 28). From the regulatory point of view according to § 10a (4) of the German Banking Act, Link Up Markets has, in principle, to be included in the consolidated reporting; given the small size of operations, BaFin granted the exemption from consolidation according to § 31 (3) and (4) German Banking Act (see 5.2.1 Application of the standardised approach on page 5-2).

The valuation and accounting specifications of International Financial Reporting Standards (IFRS) are relevant for CBL's participation. In accordance with IAS 39.9, the participation of CBL in SWIFT is treated as an available-for-sale financial asset.

The initial measurement is based on its fair value. For the purposes of subsequent measurement, the fair value without deduction for transaction costs that the financial asset may incur on sale or other disposal has to be taken into account. Fair value is defined as the amount for which an asset could be exchanged between knowledgeable willing parties in an arm's length transaction.

	31 December 2011 (€' 000)			31 December 2010 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Fair value of investments	7,897	6,535	1,467	7,993	6,282	1,816
Balance sheet value	7,701	4,598	3,208	7,701	4,599	3,208
Total unrealised gains (losses)	196	1,937	-1,741	292	1,683	-1,392
thereof total revaluation gains (losses)	196	1,937	-1,741	292	1,683	-1,392
Amounts included in the original or additional own funds	-	1,379	-	-	830	-

Table 5-8. Equities in the banking book

Note: The value deduction is in Clearstream's view not permanent and therefore CBF has not recognised an impairment loss in its balance sheet. The same is true for those assets on CH Group level. The data for CH 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).

None of the participations is listed on any exchange.

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6. Management of market risk, including interest rate risk in the banking book

The information in this chapter is presented in the following sections:

6.1 Strategy, process, structure and organisation

Clearstream is not involved in proprietary trading activities and does not maintain a trading book. Market risks arise, therefore, only in the area of net positions in foreign currencies. Investments in securities as part of the investment or short-term portfolio are, in principle, in bonds only and these are purchased with the "buy and hold" strategy, which leads to interest rate risk in the banking book.

Clearstream's general structure, organisation and process of risk management as well as the risk strategy is described in 3. Risk management overview on page 3-1.

Treasury Policy sets the frame for hedging future currency risk and interest income. It includes the approved hedging instruments and the delegation of power for hedging of interest income and foreign exchange risk. On a group level, the materiality for hedging currency exposure is set to a percentage of the consolidated EBIT per individual foreign currency.

With regard to market risk, the risk strategy is translated into a limit system, which is monitored on a regular basis. The Treasury Policy defines limits and responsibilities.

Market risk control is performed by the Treasury mid-office, a function independent of the Treasury section. Treasury mid-office is responsible for issuing monthly reportings to the Executive Management and to Group Risk Management. Limit excesses are monitored daily and are reported immediately to Executive Management, Group Risk Management and Treasury.

6.2 Measurement

Besides the VaR calculations (see 3.2 Risk management methodology on page 3-3), interest rate risk is calculated on all positions under Treasury management, applying a predefined parallel shift on the yield curve (see 6.6.2 Interest rate risk measurement on page 6-3). For the banking book, the risk is calculated on a daily basis for CH Group and all Clearstream legal entities with own positions, applying a 2% parallel shift to the respective yield curve and assessing the resulting effect on the net present value (NPV) of this portfolio.

For Clearstream's investment portfolio, interest rate risk is also measured with the help of a duration approach.

Foreign exchange risk is controlled using a limit system. As Clearstream has payables and receivables in foreign currencies, only the net exposure is relevant for the exposure calculation. Clearstream's income and cost are partially in foreign currencies as well. Hedging is done where the expected foreign currency net exposure out of profit and loss items exceeds 10% of the EBIT. The effectiveness of potential foreign exchange risk hedges is measured on a regular basis.

6.3 Market risk mitigation

Market price risk can arise in connection with cash investments or borrowing as a result of fluctuations in interest rates and foreign exchange rates as well as through corporate transactions. In the year under review, the foreign exchange market price risk was partly hedged through forward foreign exchange transactions, through which future foreign exchange exposures arising from cash flows in foreign currencies were hedged against adverse movements in market prices.

Testing of the effectiveness of hedging transactions is performed on a regular basis in compliance with IAS 39.

6.4 Monitoring and reporting

Treasury performance, exposure and breach of limits are controlled and reported by the Treasury mid-office. Reports are performed daily, weekly and monthly to Executive Management, Group Risk Management as well as to Treasury and Credit. Limit excesses occurring within treasury activity are reported by Treasury mid-office to Group Risk Management.

6.5 Specific disclosures for market risk

Foreign exchange risk:

CBL and CBF transact settlement and custody services business in more than 50 different currencies.

Customers maintain cash and securities accounts with CBL or CBF in those currencies in which they transact their business. Amounts in currency transmitted to CBL or CBF 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 (CBL or CBF) at its cash correspondent banks (CCBs). For most of the business, CBL is the CCB for CBF and CBF's net customer position is therefore already included in CBL's position. The information used by Treasury as a basis for placings is analysed by currency. Where there is a requirement to fund net currency credit facilities, such takings are always made in the relevant currency. Therefore, with respect to multicurrency settlement, currency risk is not borne by CBL or CBF.

A limited amount of local currency is held in each location, 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.

Customer foreign exchange orders are covered in the foreign exchange markets on a daily basis. Any residual open foreign exchange position is not considered significant and, in any case, is monitored daily by Treasury within established modest limits.

CBL has entered into forward foreign exchange transactions to partly hedge the foreign exchange risk related to 2012.

6.6 Specific disclosures on interest rate risk in the banking book

6.6.1 Interest rate risk nature

Customer liquidity of CBL and CBF is placed and refinanced primarily in short-term money markets. In addition, CBL and CBF primarily purchase highly liquid and low risk-weighted investments for Capital Adequacy Ratio purposes. The investment portfolio of CBL and CBF is aimed at providing core capital investment. Consequently, these portfolios are constructed to minimise both market and credit risk and consist mainly of zero risk-weighted debt securities.

Derivative instruments are not offered to customers or employed in day-to-day liquidity management. The use of proprietary derivative instruments is restricted to interest rate swaps and forward exchange contracts that hedge or eliminate structural foreign exchange and interest rate exposure (see also 5.3.1 Hedging on page 5-8).

Clearstream monitors currency and interest rate exposures daily by means of reporting generated by the general ledger accounting system and its customer cash ledgers or the Treasury ledger.

6.6.2 Interest rate risk measurement

Clearstream's assets and liabilities are managed to minimise interest rate risk (IRR) within the limits established by the Treasury Policy. Liabilities usually determine the structure of its assets. The close matching of investments and customer deposits ensures that Clearstream is able to control its IRR based in the context of duration and gap.

The Treasury Policy defines the maturity mismatch limits, the IRR sensitivity limits and the maximum tenor for each currency or group of currencies. Limits are based on IRR, the concept of duration and gap. Duration means the remaining maturity of every deal on the asset and liability side. Gap means the IRR on the asset side minus the IRR on the liability side. The IRR is calculated daily on the basis of the net present value (NPV) of a 1% interest rate change for the money-market book, 0.5% for the floating rate note (FRN) portfolio and 2% for the investment portfolios.

	31 December 2011 (€' 000)				31 December 2010 (€' 000)			
	Interest Rate Risk (IRR)		Mismatch / Portfolio limit		Interest Rate Risk (IRR)		Mismatch / Portfolio limit	
	Exposure	Limit	Exposure	Limit	Exposure	Limit	Exposure	Limit
CBL Short term book	5,216	8,300	4,231,626	4,400,000	5,037	8,300	4,360,377	4,400,000
CBL FRN Portfolio	28,453	34,000	1,450,699	1,500,000	27,740	34,000	1,495,629	1,500,000
CBL Investment Portfolio	-	34,000	-	400,000	8,415	34,000	222,700	400,000
CBF Investment Portfolio	488	15,000	5,000	175,000	2,173	12,500	125,962	150,000

Table 6-1. Limits for Clearstream Group according to the Treasury Policy

Based on BaFin and CSSF requirements, Clearstream calculates also the IRR of the banking book as a percentage of own funds. The IRR is measured as a 2% parallel shift of the yield curve. The banking book includes the investment portfolio and related fair value hedges, cash flow hedges and the short-term portfolio.

		31 December 2011	31 December 2010
Clearstream Banking SA Luxembourg			
Interest Rate Risk - Banking Book (IRRBB) as per circular CSSF 08/338			
Net Asset position (in EUR equivalent)	(€' 000)	4,231,042	4,532,348
IRRBB based on parallel shift of the yieldcurve of 200 bps	(€' 000)	10,438	17,850
Base Capital*	(€' 000)	521,390	525,313
IRRBB as percentage of own funds		2%	3%
Threshold for reporting to CSSF		20%	20%
Clearstream Banking AG Frankfurt			
Interest Rate Risk - Banking Book (IRRBB) as per BaFin circular 11/2011 (BA)			
Net Asset position (in EUR equivalent)	(€' 000)	179,777	281,987
IRRBB based on parallel shift of the yield curve of 200 bps**	(€' 000)	641	
Own funds***	(€' 000)	183,131	
IRRBB as percentage of own funds		0%	
Threshold for reporting to BaFin and Deutsche Bundesbank****		20%	

Table 6-2. Investment portfolio limits and interest rate risks

* The Base Capital for CBL is based on International Financial Reporting Standards (IFRS) and consists of eligible own funds plus the profit of the year minus interim dividends (not taking into account deductions).

** In 2010, the Interest Rate Risk - Banking Book (IRRBB) was based on a parallel upward shift of the yield curve of 130 bps amounting to EUR -1.435 million (1% of own funds) and a parallel downward shift of the yield curve of 190 bps amounting to EUR 2.097 million (1% of own funds).

*** The own funds for CBF are based on German Commercial Code (HGB) modified by the own funds rules for solvency purposes by the German Banking Act (KWG). In 2010, the own funds amounted to EUR 157.079 million.

**** In 2010, the threshold for reporting to BaFin and Deutsche Bundesbank was as well 20%.

The regulatory prescribed threshold has never nearly been reached within the year under review.

6.6.3 Foreign exchange risk measurement

Forward foreign exchange contracts hedging the foreign exchange risk associated with the USD-based part of the expected commission income for the year under review amounted to EUR 22,764,000. The 2011 related realised profit and loss amounted to EUR 415,348.66.

7. Management of liquidity risk

The information in this chapter is presented in the following sections:

7.1 Strategy, process, structure and organisation

Liquidity is managed on a centralised basis by CBL for all Clearstream entities. The objective of liquidity management is as follows:

- To meet all payment obligations within changing net long/short customer cash balances, intraday and overnight by currency

  Customers maintain cash balances with CBL and may draw on credit facilities as a result of their securities settlement activities. For EUR, USD and GBP, mismatch and portfolio limits are allocated to Treasury on the basis that a minimum customer cash balance and own funds are available at all times for Treasury investments with a tenor exceeding overnight. Therefore, payment requests to pay out customer long balances and payments related to trades initiated by Treasury are addressed in the described scenarios.

- To support the efficiency of customers' intraday securities settlement

  In support of its international customers, CBL needs to provide intraday liquidity to enable timely German domestic settlement against central bank money and bridge settlement. Delay in providing liquidity will result in a low settlement efficiency postponing settlement and slowing down the settlement process. Settlement liquidity is provided through collateral held at the central bank (BCL), letter of credit (L/C) related to the Bridge[1] and available cash balances held with depositories, BCL and CCBs. Through an active management of those liquidity sources CBL targets to provide such liquidity on a timely basis (mainly intraday) in order to achieve maximum settlement efficiency.

The key of the liquidity risk management of CBL is to meet all payment obligations in a timely manner and achieve high settlement efficiency.

Clearstream's general structure, organisation and process of risk management as well as the risk strategy is described in detail in 3. Risk management overview on page 3-1.

1. According to § 1 (3a) KWG. The "Bridge" is an electronic communications link that facilitates the efficient settlement of securities transactions between counterparties in Clearstream Banking S.A. and Euroclear Bank SA/NV (EB).

With regard to liquidity risk, the risk strategy is translated into a limit system, which is monitored on a regular basis. The Treasury Policy defines limits and responsibilities. As a result of customers settlement activity and related customers' cash dispositions Clearstream is generally long.

To safeguard against unforeseen cash dispositions in this regard Clearstream has a focus on liquid assets. The majority of its liabilities have an overnight maturity. Commercial papers can be issued to a maximum amount of EUR 1 billion to secure liquidity.

A profit participation right of EUR 150 million has been issued and signed by the ultimate parent Deutsche Börse AG. Beside that, no bonds or other debt securities are issued. The receivables are made up mainly by overnight amounts on customer or nostro accounts, collateralised and unsecured placements as well as highly liquid exchange traded bonds. The main position determining liquidity needs is therefore the (overnight) net customer cash balance.

Besides the regulatory requirements for CBL and CBF, Clearstream has defined more prudent internal liquidity limits on group level through a more restrictive definition of liquid assets. Liquid assets should amount to a minimum 40% of the last 30-day average net customer cash balances.

In addition, Clearstream monitors, on a monthly basis, the ratio between liquidity sources and all TOFs granted to customers in support of their settlement operations (internal liquidity ratio).

Liquidity risk is controlled by Treasury in cooperation with Credit and is closely monitored overnight and intraday. Treasury back office is responsible for issuing monthly reports to Executive Management and to Group Risk Management. Limit excesses are monitored daily by Treasury back office and are reported immediately to Executive Management and Group Risk Management as well as to Treasury and Credit.

7.2 Measurement

For CBF and CBL, regulatory ratios have been defined by national law. The definition is different in each country. Reporting duties are on a monthly basis. The target ratio for CBL is 30% and for CBF 100% (both minimum ratios). The regulatory ratios were more than met throughout the whole of the year under review.

The internal liquidity ratio (liquid assets in relation to 30-day average net customer cash balances) was: 108% as of 31 December 2011. The average internal liquidity ratio during the year under review was 107% (high 112%, low 83%) and was at all times well above the minimum limit of 40%.

The target for the internal liquidity ratio is calculated based on the most recent two years' data and considers the maximum daily drop in customer cash with a 95% confidence level; the actual figure shows that Clearstream has maintained enough cash on 31 December 2011 to repay 108% of net customer cash balances. This ratio is calculated on a daily basis and shows the evolution more than one year into the future considering maturities of assets and liabilities.

The ratio of liquidity versus TOFs extended to customers for securities settlement purposes per 31 December 2011 was at 20% (high 18%, low 14%) and is reviewed on a monthly basis against a minimum target of 10%.

7.3 Liquidity risk mitigation

Liquidity management guidelines are defined in the Treasury Policy. The objective of liquidity management is to meet all payment obligations and support settlement efficiency of its customers.

To meet its objective, CBL maintains a EUR 1 billion multicurrency euro commercial paper programme. CBL maintains a collateral portfolio with the Banque centrale du Luxembourg (BCL) that enables CBL to participate in the open market operations (tender) of the BCL and to access the marginal lending facility of the BCL up to the size of the collateral held with BCL, which was EUR 4.321 billion as of 31 December 2011. CBL maintains a network of Cash Correspondent Banks to support the funding requirements in relation to CBL's settlement operations in more than 40 currencies.

CBF maintains a cash account with CBL where it can withdraw funds same day.

7.4 Scenarios

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 amendments of 15 December 2010 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 mitigants.

7.4.1 Drivers of Overnight Liquidity

Main drivers for change in net cash position to be invested/funded by Treasury overnight are as follows:

Liquidity usage	Liquidity source
Customer debit balances	Customer credit balances
Euroclear Bank short balance	Customer takings
Treasury mismatch / securities portfolio investment	Own funds
	Euroclear Bank long balance
	BCL Credit line
	Cash correspondent bank liquidity support
	Interbank funding facilities

Table 7-1. Liquidity usage and sources

7.4.2 Scenarios for the overnight liquidity

Clearstream has defined three scenarios to stress liquidity risk:

Scenario 1 - Base Scenario

The Base scenario takes into account the average overnight cash balances by currency to be invested by Treasury. The scenario outlines the liquidity situation considering maximum expected drop from one day to the next day, noted within a most recent two-year time horizon.

Scenario 1 result:

In this scenario, based on the average net customer cash position and considering a maximum daily drop (95% confidence level) combined with a maximum utilisation of Treasury mismatch limits, Clearstream is able to cope with expected outflows in cash balances for all currencies. In Euro, the resulting short position could be funded either through the Banque centrale du Luxembourg (BCL) marginal lending (usage 70%) or through uncommitted funding lines (usage 30%) or through a combination of both facilities. For all other currencies, the scenario shows a long balance.

Scenario 2 - Market Disruption Scenario

The Market Disruption scenario addresses unfavourable changes in the macroeconomic environment with a deterioration of funding market conditions and a decline in the liquidity value of assets.

The scenario combines the highest customer credit usage with the lowest customer cash balances available, noted within a most recent two-year time horizon, and assumes a lower collateral value of own securities (short-term, Floating Rate Notes and investment portfolio) held at BCL. It also assumes a reduction of the reliability of the money market funding lines and cash correspondent bank (CCB) overdraft lines. CBL's prime focus is on this scenario due to "permanent" market turmoils since 2008.

Scenario 2 result:

This scenario is based on the lowest available customer cash and the highest customer credit usage (100% confidence level) combined with a maximum utilisation of Treasury mismatch limits. Despite the reduced availability of funding sources (50% of money-market funding lines and 80% of CCB/depository overdraft lines), Clearstream is able to fund the short positions in all currencies. Short balances can be covered through FX swaps. For the EUR currency, the short position can be funded through full utilisation of the BCL marginal lending facility combined with uncommitted funding lines (usage 5%) or completely through uncommitted funding lines (usage 66%).

Scenario 3 - Market Disruption / Idiosyncratic Scenario

The Market Disruption / Idiosyncratic scenario worsens the Market Disruption scenario by dealing with a downgrading of Clearstream. The scenario assumes a loss of all uncommitted money-market funding lines and a reduced availability (40%) of overdraft lines from CCBs and depositories.

Scenario 3 result:

This scenario is based on the lowest available customer cash and the highest customer credit usage (100% confidence level) combined with a maximum utilisation of Treasury mismatch limits.

In this scenario, Clearstream can only rely on the committed BCL credit line in Euro and to a small extent to overdraft lines available at the CCBs (40%). In Euro, full utilisation of the BCL marginal lending facility and uncommitted funding lines would lead to a long balance that could be used to reduce short balances in other currencies.

The credit facilities in Clearstream are allocated on an unconditionally revocable basis and primarily for intraday usage in support of customer settlement activities. In this stress scenario, exceptional overnight credit usage needs to be restricted to be in line with available liquidity/CCB overdraft lines.

7.4.3 Medium-term liquidity sources

Despite the very short-term nature of the Clearstream's liquidity risk as a consequence of its core settlement activities, situations might arise where funding requirements exceed the usual maximum of 48 hours.

The following instruments are available for funding:

- EUR 1 billion multicurrency Euro Commercial Programme;
- BCL tender participation in EUR and USD;
- Repurchase Agreements;
- Interbank money market;
- Foreign exchange swaps.

7.4.4 Long-term liquidity sources

- Own funds are considered as permanent available resources for Clearstream. From January 2010 to December 2011, the investable own funds amount ranged from EUR 1.290 billion to EUR 1.495 billion. At year-end, the own funds amounted to EUR 1.324 billion.
- The stable part of the net customer cash in EUR and USD currency based on historical data over the most recent two-year horizon (with a 95% confidence level) is also considered as permanent available funds and amounted to EUR equivalent 4.372 billion.
- The sum of the permanent available funds of EUR equivalent 5.696 billion sufficiently cover the size of the investment portfolios (fixed coupon and floater), which amounted to EUR 1.456 million, the other long-term strategic investments, which amounted to EUR 175 million. All these investments are ECB-eligible or collateralised with ECB-eligible securities and thus available in terms of liquidity risk management.

7.4.5 Contingency funding plan

The following facilities could be used in a contingency situation when no other liquidity source is available:

- ECB marginal lending facility;
- Sale of the proprietary securities portfolios;
- EUR 750 million revolving credit facility;
- Sale of collateral.

7.5 Governance, Approval and Validation

In accordance with the update to the "Minimum Requirements for Risk Management" (Mindestanforderungen an das Risikomanagement, MaRisk) on 15 December 2010, with BaFin circular 11/2010, and CSSF circular 09/403, Clearstream has formulated its liquidity management strategy by issuing the "Clearstream Liquidity Management" paper.

This paper contains specific requirements to implement a liquidity risk strategy that includes regular stress testing and contingency planning, governance and the definition of senior management responsibilities. Required changes are proposed to the Executive Management within the annual update of the Group Treasury Policy for approval.

Day-to-day implementation of the liquidity management strategy is under the responsibility of the Head of Clearstream Treasury.

7.6 Monitoring and reporting

Clearstream's liquidity risk exposure and breaches of limits are controlled and reported by the Treasury middle office. Reports are performed daily, weekly and monthly to Executive Management, Group Risk Management and Treasury. Limit excesses occurring within the Treasury activity are reported by Treasury middle office to Executive Management.

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8. Capital structure and solvency ratio

The information in this chapter is presented in the following sections:

8.1 Capital components

The following table summarises the total amount of Clearstream's regulatory capital. In addition, information on the regulatory capital of significant subsidiaries is disclosed, corresponding to the requirements of the German Solvency Regulation, Part V, and the CSSF circular 06/273, Part XIX, respectively.

			31 December 2011 (€' 000)			31 December 2010 (€' 000)		
			CH-Group	CBL	CBF	CH-Group	CBL	CBF
Tier 1:	Eligible Capital	Paid up capital	101,000	57,808	25,000	101,000	57,808	25,000
		Share premium	2,014,314	2,117	1,108	2,014,314	2,117	1,109
	Eligible Reserves	Reserves	-1,318,090	363,196	157,771	-1,356,649	380,404	131,509
		Interim profits	38,527	83,850	-	18,383	65,432	-
	Deductions:		-14,641	-82,397	-748	-13,026	-55,692	-539
Tier 2:	Core additional own funds	Revaluation reserves	-	1,379	-	-	830	-
		Fixed-term cumulative		-			-	-
	Deductions:		-	-	-	-	-	-
Eligible own funds:			821,110	425,953	183,131	764,022	450,899	157,079

Table 8-1. Regulatory capital components

Note: The data for CH 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).

Tier-1 capital consists mainly of subscribed capital, share premium, reserves and retained earnings.

Deductions of core capital arise from intangible assets. Different from the IFRS treatment, own work capitalised is not included at CH level as the relevant choice under German GAAP is not taken.

8.2 Internal management of capital (Risk-Bearing Capacity)

Risk-Bearing Capacity serves as a buffer to absorb potential (unexpected) losses resulting from the risks Clearstream faces in its various activities. It is the internal view on the amount of capital and, therefore, the maximum loss that the Executive Management is willing to assume in one year, the tolerance in the light of the risk as well as the desired performance levels (risk appetite is determined in the risk strategy - see also 3.1 Strategy and organisation on page 3-1).

The concept regarding Risk-Bearing Capacity is to ensure that emerging risks can be absorbed and thus to safeguard the continued existence (as going concerns) of Clearstream's affiliated companies.

The risk appetite corresponds to the amount of risk that Clearstream is prepared to run to carry out its business. The risk appetite is set by the Executive Management per risk confidence level and risk type:

- For the 99% risk confidence level, the Risk-Bearing Capacity is the planned EBIT for the current business year and is updated on a monthly basis.

  For the 99.9% and 99.98% risk confidence levels, the Risk-Bearing Capacity is defined as the regulatory own funds, which are updated annually.
- The Risk-Bearing Capacity for individual risk types (operational, financial, business) is defined as a fraction of the overall Risk-Bearing Capacity. Through this allocation, the members of the Executive Management ensure that risk is limited regarding each risk type.

The risk limits as defined above are monitored all in parallel and on a monthly basis. For CH as well as for all individual affiliated companies that must comply with the regulations regarding the adequacy of regulatory own funds, the solvency ratio is monitored in parallel.

8.3 Capital levels

8.3.1 Regulatory capital levels

Capital requirements for counterparty risk for portfolios calculated using the Credit Risk Standardized Approach (CRSA)						
	31 December 2011 (€' 000)			31 December 2010 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Central governments and central banks	94	670	-	110	114	-
Regional governments, local authorities and other public bodies	-	-	-	-	1	-
Institutions (banks)	64,499	68,539	14,684	44,390	70,569	15,111
Corporates	5,159	1,968	151	2,929	1,437	167
Undertakings for collective investment (Investment shares)	2,907	-	2,599	2,584	-	2,240
Covered bonds	-	-	-	388	323	78
Other (including equity holding)	2,810	606	401	2,742	756	518
Total	75,469	71,783	17,835	53,143	73,200	18,114

Table 8-2. Capital requirements for credit risk

Note: The data for CH 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).

Differences in the capital usage for institutions derive mainly from different allocation algorithms related to collateral, as described in the Note under Table 5-1 on page 5–3.

Capital requirements for market price risk positions

The following table shows the capital requirements for market risk exposures. Clearstream uses the standardised approach to calculate the capital requirements:

	Capital requirements for market price risk					
	31 December 2011 (€' 000)			31 December 2010 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Foreign Exchange risk (total)	3,917	693	670	1,912	1,570	584

Table 8-3. Market price risk

Note: The data for CH 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).

Capital requirements for operational risk

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

	Due to group internal allocation mechanism assigned capital requirements for operational risk					
	31 December 2011 (€' 000)			31 December 2010 (€' 000)		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Operational risk (AMA)	181,301	110,978	68,933	155,838	98,553	58,637

Table 8-4. Operational risk

* For processing reasons, the CBF report is issued prior to final December calculation and is therefore based on November figures. The final AMA amount for CBF would have been EUR 70,332,965 (2010: EUR 57,285,521).

The capital figure calculated as described above and in 4. Management of operational risk on page 4-1 applies for 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 defined as the ratio between the net operating income of the entity and the sum of the net operating income of CBF and CBL.

As described in 4.2 Measurement on page 4-2, the defined scenarios are reviewed on an ongoing basis and are, if necessary, adjusted. Also, in 2011, a review of operational risk scenarios took place taking into account actual business environment and control factors, and internal and external loss data.

8.3.2 Solvency ratio

Basis of calculation	Solvency ratio					
	31 December 2011			31 December 2010		
	CH-Group	CBL	CBF	CH-Group	CBL	CBF
Solvency regulation	25.20%	-	16.76%	28.93%	-	16.25%
CSSF circular 06/273	-	18.57%	-	-	20.81%	-

Table 8-5. Solvency ratios

Note: The data for CH 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).

Appendix A. Abbreviations used in this document

ABS	Asset Backed Securities
AMA	Advanced Measurement Approach
ASL	Automated Securities Lending Programme
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (Federal Financial Supervisory Authority)
BCBS	Basel Committee on Banking Supervision
BCL	Banque centrale de Luxembourg
BCM	Business Continuity Management
BIA	Basis Indicator Approach
CBF	Clearstream Banking AG
CBJ	Clearstream Banking Japan Ltd
CBL	Clearstream Banking S.A.
CCB	Cash Correspondent Bank
CCF	Credit Conversion Factor
CCP	Central Counterparty
CDO	Collateralised Debt Obligation
CH	Clearstream Holding AG
CHG	Clearstream Holding Group
CI	Clearstream International S.A.
CMBS	Commercial Mortgage-Backed Security
COP	Clearstream Operations Prague s.r.o.
CRD	Capital Requirements Directive
CRM	Credit Risk Mitigation
CS	Clearstream Services S.A.
CSC	Collective Safe Custody
CSD	Central Securities Depository
CSSF	Commission de Surveillance du Secteur Financier
DBAG	Deutsche Börse AG
EB	Euroclear Bank SA/NV
EBIT	Earnings Before Interest and Tax
ECAI	External Credit Assessment Institution
ECB	European Central Bank
EMIR	European Market Infrastructure Regulation
EU	European Union
FIRB	Foundation Internal Rating Based Approach
FRN	Floating Rate Note

Abbreviations

FX	Foreign Exchange
GAAP	Generally Accepted Accounting Principles
GMRA	Global Master Repurchase Agreement
GroMiKV	Groß- und Millionenkreditverordnung (Large Exposures Regulation - regulation governing large exposures and loans of EUR 1.5 million or more)
HF-LI	High-Frequency, Low-Impact
HGB	Handelsgesetzbuch (German GAAP Code)
IAS	International Accounting Standards
InstitutsVergV	Institutsvergütungsverordung (Regulation governing remuneration at institutes)
ICAAP	Internal Capital Adequacy Assessment Process
ICSD	International Central Securities Depository
IFRS	International Financial Reporting Standards
IRB	Internal Rating Based Approaches
IRBA	Advanced Internal Rating Based Approach
IRR	Interest Rate Risk
IRRBB	Interest Rate Risk - Banking Book
KWG	Gesetz über das Kreditwesen (German Banking Act)
LDA	Loss Distribution Approach Models
LF-HI	Low-Frequency, High-Impact
LGD	Loss Given Default
Link Up Markets	Link-Up Capital Markets S.L., Madrid
MaRisk	Mindestanforderungen an das Risikomanagement (Minimum Requirements for Risk Management)
MBS	Mortgage-Backed Securities
MEIP	Minimum Export Insurance Premium
NCSC	Non-Collective Safe Custody
NPV	Net Present Value
OECD	Organisation for Economic Cooperation and Development
OFAC	Office of Foreign Assets Control
OpRisk	Operational Risk
OTC	Over-The-Counter
PD	Probability of Default
PSF	Professional of the Financial Sector
RBC	Risk Bearing Capacity
RMBS	Residential Mortgage-Backed Security
RWA	Risk-weighted asset
SolvV	Solvabilitätsverordnung (German Solvency Regulation)
SREP	Supervisory Review and Evaluation Process
SRP	Supervisory Review Process
SSS	Securities Settlement System
StA	Standardised Approach (in connection with counterparty credit risk)
STP	Straight-Through Processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TOF	Technical Overdraft Facility
VaR	Value at Risk

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