

Eurex Clearing AG

Assessment of Eurex Clearing AG's compliance against the CPMI-IOSCO Principles for financial market infrastructures (PFMI) and disclosure framework associated to the PFMIs

February 16, 2021



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1 Executive Summary

In April 2012, the Committee on Payment and Settlement Systems (CPSS)¹ and the Technical Committee of the International Organization of Securities Commissions (IOSCO) published the report “Principles for financial market infrastructures” (PFMI). In December 2012, CPSS and IOSCO published a report containing the “Disclosure framework for financial market infrastructures” (disclosure framework) and the “Assessment methodology for the principles for FMIs and the responsibilities of authorities” (assessment methodology).

Eurex Clearing Aktiengesellschaft (Eurex Clearing AG, Eurex Clearing) performed an update of its 2019 assessment of its compliance with the CPMI-IOSCO PFMI in accordance with the CPMI-IOSCO assessment methodology². Based on the results of this updated assessment Eurex Clearing is of the opinion that it fully observes the CPMI-IOSCO PFMI.

Eurex Clearing is one of the leading global central counterparties (CCPs), assuring the safety and integrity of markets while providing innovation in risk management, clearing technology and client asset protection. It clears a broad scope of products — both on- and off-exchange — under a single framework in Europe and accepts a wide spectrum of eligible collateral. The offering comprises flexible trade management functions, advanced risk management services, efficient collateral and delivery management tools. Eurex Clearing delivers a comprehensive value chain of clearing services with our high-quality, cost-efficient and state-of-the-art clearing and risk management systems.

Eurex Clearing is a credit institution under the German Banking Act and fulfils the requirements under the European legislation, in particular Capital Requirements Regulation (CRR) / Capital Requirements Directive (CRD) and Banking Recovery and Resolution Directive (BRRD), and the respective German legislation including the German Recovery and Resolution Act (SAG).

On 10 April 2014, Eurex Clearing received a permission from the German Federal Financial Supervisory Authority to perform clearing services pursuant to Article 17 of Regulation (EU) 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (European Market Infrastructure Regulation, EMIR). The authorisation as EMIR-compliant CCP also determines Eurex Clearing as a qualifying CCP under CRR/CRD. On 1 February 2016, Eurex Clearing was registered with the Commodity Futures Trading Commission (CFTC) as a Derivatives Clearing Organisation (DCO) for clearing swaps for US Clearing Members and their customers in accordance with the Commodity Exchange Act. Furthermore, Eurex Clearing has been recognized as Recognised Clearing House by the Monetary Authority of Singapore (MAS) on 14 September 2018, as Foreign Central Counterparty by the Swiss Financial Market Supervisory Authority (FINMA) on 29 March 2018 and as Financial Instrument Clearing Organization by the Japanese Financial Services Agency (JFSA) on 12 March 2020. Additionally, Eurex Clearing has been exempted from the requirement to be recognized as a clearing agency in Ontario by the Ontario Securities Commission on 14 July 2017.

¹ On September 2014 the Committee on Payment and Settlement Systems (CPSS) was renamed to Committee on Payments and Market Infrastructure (CPMI).

² Eurex Clearing assessed its compliance against all PFMI except PFMI 11 and PFMI 12 which are not applicable to CCPs.

2 Summary of major changes since the last update of the disclosure

This is the updated version of Eurex Clearing's 2019 assessment against the CPMI-IOSCO PFMI. This document includes a number of editorial and linguistic adjustments to improve the readability and understandability of the disclosure document. Further information answering the PFMI have been added. Major changes since the last update to the content are highlighted below with respect to the respective Principle:

Principle 1 – Legal basis

No material changes.

Principle 2 – Governance

Changes to the assessment against Principle 2 were made to reflect the changes in the Executive Board (as of July 2020) and changes to the committees.

Principle 3 – Framework for the comprehensive management of risks

No material changes.

Principle 4 – Credit risk

No material changes.

Principle 5 – Collateral

No material changes.

Principle 6 – Margin

No material changes.

Principle 7 – Liquidity risk

No material changes.

Principle 8 – Settlement finality

No material changes.

Principle 9 – Money settlements

No material changes.

Principle 10 – Physical deliveries

No material changes.

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Principle 11 – Central securities depositories

Not applicable to Eurex Clearing, no changes.

Principle 12 – Exchange-of-value settlement systems

No material changes.

Principle 13 – Participant default rules and procedures

No material changes.

Principle 14 - Segregation and portability

No material changes.

Principle 15 – General business risk

No material changes.

Principle 16 – Custody and investment risk

No material changes.

Principle 17 – Operational risk

No material changes.

Principle 18 – Access and participation requirements

No material changes.

Principle 19 – Tiered participation arrangements

No material changes.

Principle 20 – FMI links

No material changes.

Principle 21 – Efficiency and effectiveness

No material changes.

Principle 22 – Communication procedures and standards

No material changes.

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Principle 23 – Disclosure of rules, key procedures, and market data

No material changes.

Principle 24 – Disclosure of market data by trade repositories

Not applicable to Eurex Clearing, no changes.

3 General background on Eurex Clearing

General description of the FMI and the markets it serves

Eurex Clearing's aim is to assure the safety and integrity of markets while providing innovation in risk management, clearing technology and client asset protection. Eurex Clearing provides central counterparty clearing services for the derivatives markets Eurex Exchange (listed derivatives) as well as EurexOTC Clear (over-the-counter (OTC) interest rate and FX derivatives), for the cash market Frankfurt Stock Exchange (equities, bonds, ETFs and other ETPs), for securities financing transactions conducted via the multilateral trading systems of Eurex Repo GmbH, and for securities lending transactions conducted via selected third-party flow providers. It operates in several currencies including Euro, Swiss Francs, US Dollars and Pounds Sterling.

Overview on served markets and product groups:

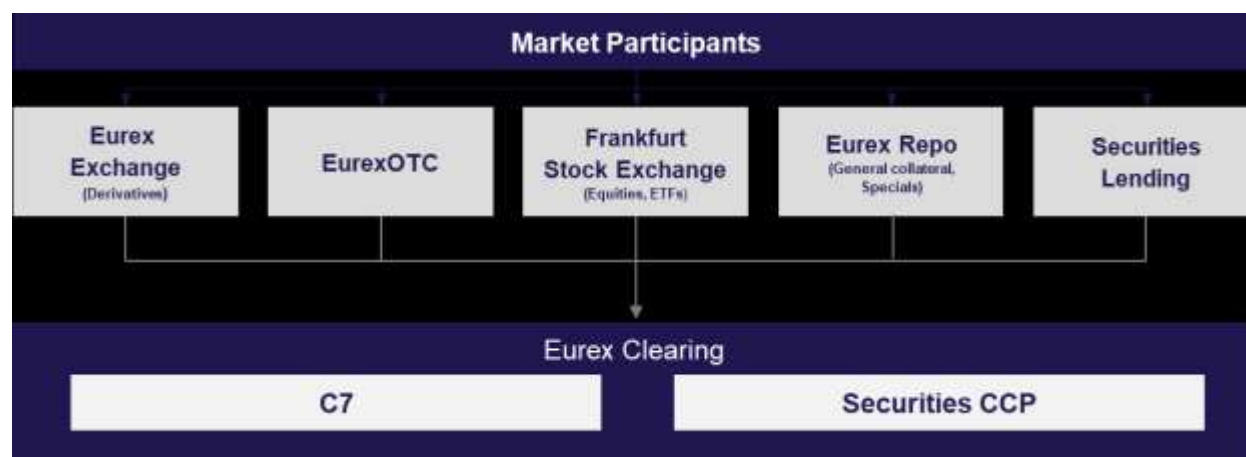


Figure 1: Eurex Clearing's served markets and product groups

- Eurex Exchange is one of the largest global derivatives exchanges with a product suite comprising the most actively traded and liquid market in EUR-denominated equity index and fixed income derivatives; as well as a broad offering in single equity products, alternative asset classes and commodities.
- With its service EurexOTC Clear for OTC interest rate, inflation and FX derivatives, Eurex Clearing has fully integrated execution with clearing and collateral management of OTC and listed derivatives in a single CCP within one single legal and operational framework. EurexOTC Clear offers clearing services for a broad range of standardised interest rate OTC derivatives in various currencies, OTC derivatives in inflation-indices, OTC FX swaps, forwards as well as cross-currency swaps for the currency pairs Euro vs. US Dollar and Pound Sterling vs. USD.

For its OTC IRD business, Eurex Clearing is furthermore connected to the following external Approved Trade Sources:

- MarkitSERV Ltd
- Bloomberg Trading Facility LTD
- Bloomberg Trading Facility BV
- Bloomberg SEF LLC
- Bloomberg Tradebook Singapore PTE LTD
- Tradeweb EU BV
- Tradeweb SEF LLC

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- Cash equity trading is undertaken via the FWB® Frankfurter Wertpapierbörse (the Frankfurt Stock Exchange) – both Xetra® and floor, cleared by Eurex Clearing as CCP and settled in Clearstream Banking Frankfurt and Clearstream Banking Luxembourg. Cash transactions are settled in Euro and Swiss Francs via Central Banks and in US Dollars and Pounds Sterling via commercial banks.
- Eurex Repo ranks among the leading electronic markets for secured funding and financing and is the marketplace for the collateralised money market in Swiss Francs and Euros as well as for the GC Pooling® offering. It also serves as a flow provider for the securities lending business. Repo trading is undertaken via Eurex Repo, cleared by Eurex Clearing as CCP and settled in Clearstream Banking Frankfurt, Clearstream Banking Luxembourg and Euroclear Bank.

For its repo business, Eurex Clearing is furthermore connected to the following external Approved Trade Sources:

- NEX BrokerTec Europe Limited
- CME Amsterdam B.V.
- The Lending CCP offers clearing services for loans in equities, ETFs and fixed income securities, initially covering European markets. For the Lending CCP service, cash collateral (EUR and USD) and non-cash collateral are eligible.

Eurex Clearing serves 215 Clearing Members located in 21 countries worldwide (as of 31 December 2020) and manages a collateral pool of approximately EUR 79.2 billion (monthly average in 2020). In 2020, Eurex Clearing processed approximately 2.0 billion transactions. Transaction volumes in the Eurex OTC Clear service show a strong increase over the last years.

In millions	2018	2019	2020
Number of transactions	2,077	2,055	2,029
Value of transactions (ETD) (EUR)	125,970,499	121,173,839	118,040,296
EurexOTC Clear - Notional Value (EUR)	7,373,964	14,032,000	17,031,000
Total Margin Collateral Value (EUR)	48,547	57,697	66,598
Default Fund (EUR)	3.245	3.829	4.736
Number of Clearing Members	198	211	215
of which: Foreign Clearing Member	138	149	152

Figure 2: Eurex Clearing volumes

More statistics on Eurex Clearing's participant base are provided in the quarterly CPMI-IOSCO public quantitative disclosure on the "AggregatedDataFile" tab, where one can find:

- Number of General Clearing Members (18_1_1_1),
- Number of Direct Clearing Members (18_1_1_2),
- Number of Basic Clearing Members (18_1_1_3),
- Number of central bank participants (18_1_2_1),
- Number of bank participants (18_1_2_3),

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- Number of other participants (18_1_2_4),
- Number of domestic participants (18_1_3_1), and
- Number of foreign participants (18_1_3_2).

The list of cleared products, descriptions of services offered, and a broad range of basic and performance statistics is constantly updated and available on the Eurex Clearing website (www.eurexclearing.com).

Eurex Clearing has documented and established governance arrangements that provide for clear responsibility and accountability for both the Eurex Clearing Executive Board and Supervisory Board. These arrangements are disclosed to relevant stakeholders at different granularity.

The composition of the Supervisory Board, its committees as well as the composition and structure of senior management, represented by the Executive Board, is published on the Eurex Clearing website in the corporate governance section. The roles and responsibilities of the board, the committees and senior management are laid down in arrangements that comply with Part 4, Section 1 and 2 of the Stock Corporation Act (Aktiengesetz, AktG).

Legal and regulatory framework

Eurex Clearing is a stock corporation (Aktiengesellschaft) formed and incorporated under the laws of Germany and founded on 9 March 1998. It is a wholly owned subsidiary of Eurex Frankfurt AG (Eurex Frankfurt), a German stock corporation which is itself wholly owned by Deutsche Börse AG, a German stock corporation listed at the Frankfurt Stock Exchange.

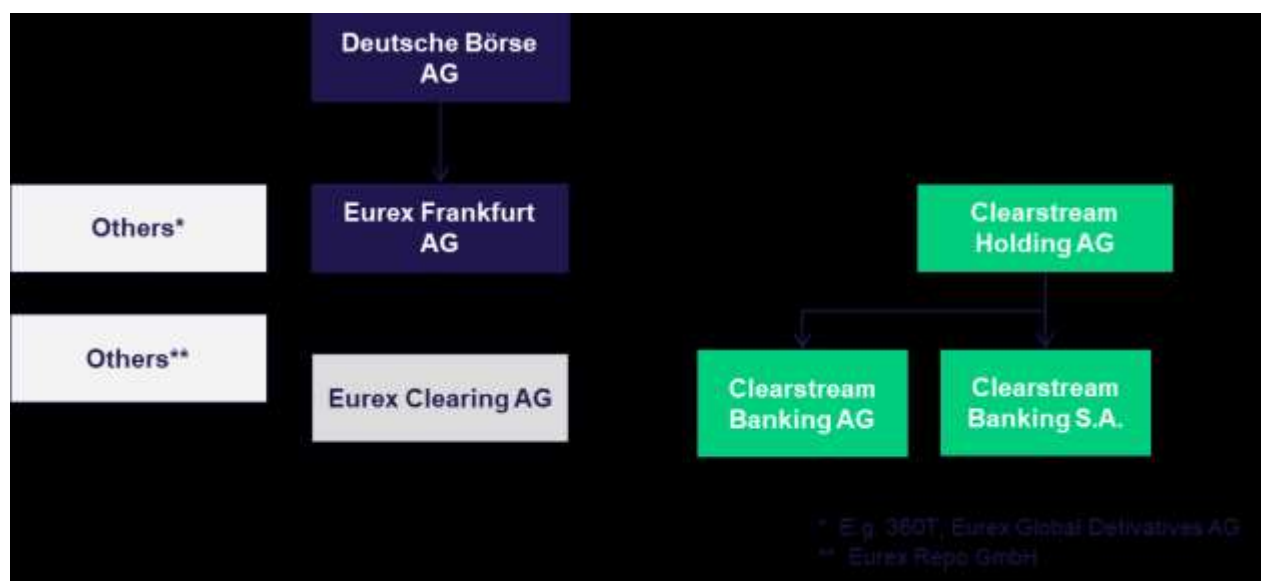


Figure 3: Shareholder structure of Eurex Clearing

Eurex Clearing's objective is to ensure full compliance with regulatory standards for CCPs. Methodologies and risk management practices are regularly reviewed.

Eurex Clearing's rules are stipulated in the Clearing Conditions which are part of the general terms and conditions. Eurex Clearing reserves the right to amend the Clearing Conditions at any time; those amendments and additions are announced via electronic circular to Clearing Members and Disclosed Direct Clients at least fifteen (15) business days prior to the effective date fixed in the relevant notice. The Clearing Conditions of Eurex Clearing are available to the public via the Eurex Clearing website (www.eurexclearing.com).

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Eurex Clearing is a CCP in accordance with EMIR as approved by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht BaFin) on 10 April 2014. Eurex Clearing is listed in the European Securities and Markets Authority's register of central counterparties authorised to offer services and activities in the European Union in accordance with EMIR (https://www.esma.europa.eu/sites/default/files/library/ccps_authorized_under_emir.pdf). On a national level, the legal framework is further based on Section 32 KWG enabling Eurex Clearing to perform its services as a CCP.

System design and operation

Eurex Clearing safeguards market integrity and also offers customers ways to streamline their business. The core functions increase overall efficiency and promote standardisation in the clearing and settlement industry. From trade capture to risk management and on to delivery management, Eurex Clearing offers the complete value chain.



Figure 4: Clearing value chain of Eurex Clearing

4 Principle-by-principle narrative disclosure

Principle 1: Legal Basis

Principle 1: Legal Basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Key Consideration 1:

The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

Eurex Clearing is a clearing house in accordance with EMIR as approved by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht - "BaFin") on the 10th of April 2014. Eurex Clearing is listed in the ESMA register of Central Counterparties authorised to offer services and activities in the Union in accordance with EMIR (https://www.esma.europa.eu/sites/default/files/library/ccps_authorized_under_emir.pdf).

Eurex Clearing is also holding a German banking licence for the provision of the services as a central counterparty (zentraler Kontrahent), deposit taking business (Einlagengeschäft), lending business (Kreditgeschäft) and own account trading not relating to a client (Eigengeschäft) pursuant to Section 1 (1) and 32 of the German Banking Act (Kreditwesengesetz – "KWG").

In the U.S., Eurex Clearing is a registered derivatives clearing organization ("DCO") with the U.S. Commodity Futures Trading Commission (the "CFTC"). Eurex Clearing is thus subject to and complies with the CFTC's DCO Core Principles. Eurex Clearing is allowed to clear proprietary interest rate swap ("IRS") transactions for U.S. Clearing Members for their own account and client accounts.

Eurex Clearing's services are regulated by the Clearing Conditions ("Clearing Conditions") or the FCM Regulations ("FCM Regulations"). The Clearing Conditions can be downloaded from Eurex Clearing's website under the following link: <https://www.eurex.com/ec-en/rules-regs/rules-and-regulations/Clearing-Conditions-53674>.

Eurex Clearing participants are required to comply with the Clearing Conditions when providing clearing business. The Clearing Conditions are governed by German civil law and are structured as general terms and conditions (Allgemeine Geschäftsbedingungen) within the meaning of Sections 305 et seqq. of the German Civil Code (Bürgerliches Gesetzbuch – "BGB"). Chapter I of the Clearing Conditions contains general provisions. Chapters II to IX contain the specific provisions, which are applicable to the relevant markets.

The FCM Regulations govern all material aspects for the Clearing of OTC Interest Rate derivative Transactions with respect to FCM Clearing Member. FCM Clearing Members are required to comply with the FCM Regulations when providing clearing business. The FCM Regulations are governed by the laws of the United States and of the State of New York.

Entering into a clearing relationship with Eurex Clearing requires the entering into a Clearing Agreement between Eurex Clearing and its Clearing Members. Operations are governed by standard Clearing Agreements which are publicly available as Appendices 1, 5, 6, 10 of the Clearing Conditions and Appendix 1 to the FCM Regulations. The Clearing Conditions and FCM Regulations form part of the relevant Clearing Agreements and regulate all significant features of Eurex Clearing's operations and are enforceable against its participants by virtue of the contractual relationship.

All Eurex Clearing' Clearing Members have to submit themselves to German law once they sign any of Eurex Clearing's Clearing Agreements (Chapter I, Part 1, Number 17.1.1 and 17.1.2). Thus, in case of any lawsuits between Eurex Clearing and its participants regarding the fulfilment, non-fulfilment, non-

performance, etc. of obligations and/or rights in the context of Eurex Clearing's clearing services or arising from any transaction cleared by Eurex Clearing, German law will primarily apply.

The German legal framework provides a robust basis for the relevant legal issues. It is in line with the European legal framework after the implementation in German law of European directives such as the Settlement Finality Directive and the Collateral Directive. In Europe, the regulatory framework concerning CCPs is mainly determined by EMIR. EMIR in connection with the ESMA's Regulatory and Implementing Technical Standards have further strengthened and harmonised the European regulatory environment of CCPs.

With respect to Clearing Members, entities domiciled in a country of the European Union, Switzerland, Singapore, and the United States of America are eligible for becoming a Clearing Member. Generally, Clearing Members need to qualify as institutions holding a licence granted by their competent national supervisory authorities. Under certain requirements, Eurex Clearing also allows non-institutions, such as insurance undertakings, reinsurance undertakings, collective investment undertakings, or institutions for occupational retirement provision to become a Clearing Member. Currently, Eurex Clearing provides clearing services to more than 500 participants (including Clearing Members and Disclosed Direct Clients) located in 37 countries (thereof 25 European countries).

There are two legal structures how cleared transactions are established between the CCP and its participants, namely open offer and novation. Open offer is foreseen by the Clearing Conditions for transactions concluded on Frankfurt Stock Exchange, Eurex Deutschland and Eurex Repo. OTC Transactions as well as securities lending transactions transmitted to Eurex Clearing for clearing will be established by novation. The novation requires fulfilment of the novation criteria set by Eurex Clearing in the Clearing Conditions.

The timing of assumption of liability as CCP

The relevant point of time for the establishment of Transactions with the CCP via open offer is the confirmation of the matching of the orders and quotes entered into the order books of the relevant trading platform. The novation will be confirmed by the CCP directly.

Netting arrangements

Netting procedures are included in the Clearing Conditions and are based on the set-off-principles under Sections 387 et seqq. BGB,. Netting procedures are also included in the FCM Regulations and are based on the set-off-principles under U.S. law.

Collateral arrangements

The Clearing Conditions provide rules for collateral arrangements. One has to differentiate between the different Clearing Models. Generally, the Clearing Member fulfils its Margin Requirement by the delivery of collateral in the form of cash and securities. Under the Elementary Clearing Model, collateral in the form of cash is granted in the form of a full title transfer, whereas collateral in the form of securities is provided by way of pledging the securities in favour of Eurex Clearing. This holds true also for FCM Clearing Members under the FCM Regulations and Basic Clearing Members under a Basic Clearing Member Provisions. Under the ISA Provisions, Margin in the form of cash is granted by way of title transfer. Whereas, Margin in the form of securities is provided either by way of pledge or by way of title transfer.

Regarding the pledge of securities and based on general legal principles (in particular the *lex rei sitae*-principle) the laws of the jurisdiction where the relevant central securities depository system (CSD) is located, in which the relevant security is deposited, will prevail. If the pledged security is maintained with Clearstream Banking AG, German law is applicable regarding pledged securities that are located in Germany as far as the right in rem is concerned. If the pledged security is maintained with Clearstream Banking S.A., Luxembourg law will govern the pledge. If the security is maintained with SIX SIS AG, the pledge will be governed by Swiss law. Legislation of the European Union (in particular Directive 98/26/EC of the European Parliament and of the Council on settlement finality in payment and securities settlement

systems (Settlement Finality Directive) and Directive 2002/47/EC of the European Parliament and of the Council on financial collateral arrangements (Collateral Directive) increases the degree of legal certainty.

Furthermore, regarding margin requirements and collateral, Eurex Clearing needs to fulfil the requirements stipulated in Article 41 and 46 EMIR in connection with the applicable provisions under Regulation (EU) 153/2013.

Default procedures

Eurex Clearing's default rules include rules for

- (i) the default of a Clearing Member and Basic Clearing Member,
- (ii) the default of a Clearing Agent under the Basic Clearing Member Provisions;
- (iii) the default of a FCM Clearing Member under the FCM Regulations, and
- (iv) Eurex Clearing's default.

Eurex Clearing's default procedures comply with requirements set out by Articles 42 (Default Fund), 45 (Default Waterfall) and 48 (Default Procedures) of EMIR and/or the requirements under U.S. law and stipulated by the CFTC-Rules.

Finality of transfers of funds and financial instruments

The finality of transfers of funds and financial instruments is ensured by the involved Central Securities Depositories (CSD) and the use of central bank monies.

Further details on the settlement finality and on cash settlements can be found in Eurex Clearing's answer to Principle 8 and 9 respectively.

Interoperability

Currently, Eurex Clearing does not engage in any interoperability arrangements. However, in case requests of other CCPs would occur, an adequate framework is in place to govern these arrangements as explained in Eurex Clearing's answer to Principle 20.

Key Consideration 2:

An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

Eurex Clearing ensures that its rules, procedures and contractual arrangements are clear, comprehensive, in writing and in compliance with EMIR, U.S. law as well as all other applicable regulatory and supervisory requirements. The Compliance Function has the responsibility to detect any risk of failure by Eurex Clearing and its employees to comply with the obligations under EMIR, including the relevant regulatory and implementing technical standards. Eurex Clearing is required to establish, implement and maintain adequate policies and procedures that are designed to detect any risk of failure by the CCP and its employees to comply with the its obligations, as well as the associated risks, and put in place adequate measures and procedures designed to minimise such risk and to enable the competent authorities to exercise their powers effectively under these regulations. A CCP must also ensure that its rules, procedures and contractual arrangements are clear and comprehensive, and they ensure compliance with the abovementioned regulations as well as all other applicable regulatory and supervisory requirements. Furthermore, Eurex Clearing identifies and analyses the soundness of the rules, procedures and contractual arrangements of Eurex Clearing on an ongoing basis.

These rules, procedures, and contractual arrangements and any accompanying material are accurate and up-to-date. The respective policies ensure that where certain expertise, necessary to fulfil the requirements, is not available internally, the compliance function may have recourse to the expertise or technical means of third parties outside the Deutsche Börse Group.

Eurex Clearing has in place adequate rules to make amendments to the Clearing Conditions and the FCM Regulations.

Eurex Clearing reserves the right to amend the Clearing Conditions at any time. Any changes and amendments shall be published (i) via electronic circular or (ii) on the Eurex Clearing website.

Before the amendments enter into force, the relevant changes are published within a specific publication period and each affected customer (including Clearing Members and Basic Clearing Members) has the right to object to the amendments. The steps to be taken after such objection depend on the individual circumstances of the case. In case of an objection, discussions will take place with the respective Clearing Member to get this issue resolved.

Under certain requirements, amendments to the Clearing Conditions are introduced to the EMIR Risk Committee. Eurex Clearing's EMIR Risk Committee advises the Supervisory Board and the Executive Board on any arrangements that may impact the risk management of Eurex Clearing, such as a significant change in its risk model, the default procedures, the criteria for accepting Clearing Members, the clearing of new classes of instruments or outsourcing. It is composed of members of the Supervisory Board of Eurex Clearing, representatives of Clearing Members and representatives of clients.

Eurex Clearing reserves the right to change or amend the FCM Regulations at any time. Any changes and amendments of these FCM Clearing Conditions shall be published (i) via electronic circular or (ii) on the Eurex Clearing website.

Key Consideration 3:

An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.

Certain documents (including the Clearing Conditions and the FCM Regulations) are publicly available via the Eurex Clearing website, others are available for involved parties and can be found in the member section on Eurex Clearing's website. The competent authority has access to all documents.

Furthermore, on its website, Eurex Clearing provides information on its regulatory framework (<https://www.eurex.com/ec-en/find/about-us/company-profile>). The FAQ on the website further provides more details on the legal status of Eurex Clearing, which licenses it holds and by which authorities it is supervised (<https://www.eurex.com/ec-en/find/faqs>).

Key Consideration 4:

An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.

Eurex Clearing has rules, procedures and contracts in place that are enforceable in all relevant jurisdictions.

The granting of a clearing license requires that Eurex Clearing has obtained all licenses and approvals that are required for the provision of clearing services towards the applicant in the relevant jurisdiction.

Before accepting a Clearing Member in a new jurisdiction, Eurex Clearing mandates a local law firm to analyse the enforceability of the main principals of the relevant clearing models offered in such jurisdiction under the relevant national law. Currently, Eurex Clearing had commissioned and reviewed such enforceability opinions for all EU Member States, Switzerland, Singapore and the United States of America.

These legal opinions are updated on a regular basis. Depending on market demands, Eurex Clearing may commission further enforceability opinions.

Only in case of a positive outcome of such legal assessment, Eurex Clearing accepts Clearing Members from the relevant jurisdictions.

Key Consideration 5

An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

I. Clearing Member Jurisdictions

Eurex Clearing is required to ensure the enforceability of the main principles of Eurex Clearing's clearing models in all jurisdictions. Eurex Clearing provides clearing services to Clearing Members, which includes the enforceability of Eurex Clearing's choice of law. Further, whenever uncertainty exists regarding Eurex Clearing's choice of law, the Chief Compliance Officer of Eurex Clearing shall obtain reasoned and independent legal opinions and analysis in order to address properly such uncertainty.

Whenever Eurex Clearing mandates a local law firm to analyse the enforceability of the main principals of the relevant clearing models offered in the relevant jurisdiction, the enforceability of Eurex Clearing's choice of law is also assessed.

Further, when potential conflicts of law issues would arise otherwise, Eurex Clearing identifies and analyses the issues. If necessary, Eurex Clearing will contact local law firms to provide legal opinions. The Chief Compliance Officer is responsible to monitor and, on a regular basis, assess the adequacy and effectiveness of the measures put in place to identify and analyse potential conflicts of law issues and the developed rules and procedures to mitigate legal risk resulting from such issues (cf. Article 5 para. 4 Regulation (EU) 153/2013).

In addition, Eurex Clearing has published legal opinions of external law firms providing statements in relation to the risk weighting of CCP-related derivative transactions pursuant to Art 303 to 306 of the Regulation (EU) 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) 648/2012 ("CRR"). Eurex Clearing provides such opinions with respect to German law, English law, and French law ("CRR Opinions"). Depending on further demands by the market, Eurex Clearing may provide additional CRR-Opinions under the laws of other jurisdictions.

Such CRR Opinions are provided for the benefit of Clearing Members and their customers to reduce their regulatory own funds requirements stipulated by the CRR. The CRR Opinions include statements regarding the validity and enforceability of certain provisions under the Clearing Conditions to the extent such provisions are relevant to Articles 295 to 298 and 303 to 306 of the CRR. In particular, Article 296 (2) (b) CRR (relating to netting arrangements) and Article 305 (2) (c) (regarding CCP-related derivative transactions) require written and reasoned legal opinions confirming the effectiveness of certain provisions in the event of legal challenge in the laws of the Clearing Members' and their clients' jurisdiction. The CRR Opinions serve both purposes.

II. Security Collateral Locations

Additionally, Eurex Clearing ensures to maintain securities collateral provided by its Clearing Members with security collateral locations, which ensure the availability of such margin assets in case of the default or insolvency of the relevant Clearing Member. Eurex Clearing requires from the security collateral location enforceable first ranking rights on the securities, as well as prompt access to this collateral under the legal concept of title transfer or pledge.

Legal certainty of these rights has to be confirmed in the form of a legal opinion from internal and/or external legal counsels – i.e. initially during the due diligence process, and over the course for the recognized collateral locations always where a significant change makes it necessary.

Assessment of principle:

Observed

Principle 2: Governance

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key Consideration 1

An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

Eurex Clearing's aim is to assure the safety and integrity of markets while providing innovation in risk management, clearing technology and client asset protection.

Eurex Clearing supports the financial stability by guaranteeing every transaction made in the markets for which it provides services. Eurex Clearing provides clearing services ('Clearing Business') for derivatives, equities, bonds, and secured funding and securities financing markets. The company aims for the continuous extension of cleared products and the respective range of products, the expansion of markets in which Eurex Clearing is acting as central counterparty and the harmonization across different product classes. Eurex Clearing assures the safety and integrity of markets while providing innovation in risk management, clearing technology and client asset protection. Various risk management services benefit both its customers and the greater marketplace by enhancing overall safety.

Eurex Clearing's strategic objectives include the effective protection of customer positions and deposited collateral through reductions in counterparty risk and offering cost-efficient risk and trade management. This is achieved via ongoing improvement of services, functionalities and the integrated, comprehensive product range for Clearing Members and their clients. To foster fair and efficient markets, Eurex Clearing's objective is to ensure full compliance with regulatory standards for central counterparties and, as far as applicable, the relevant standards for credit institutions. Furthermore, Eurex Clearing has set up projects in order to ensure compliance with existing and upcoming regulations e.g. CCP Recovery & Resolution Regulation.

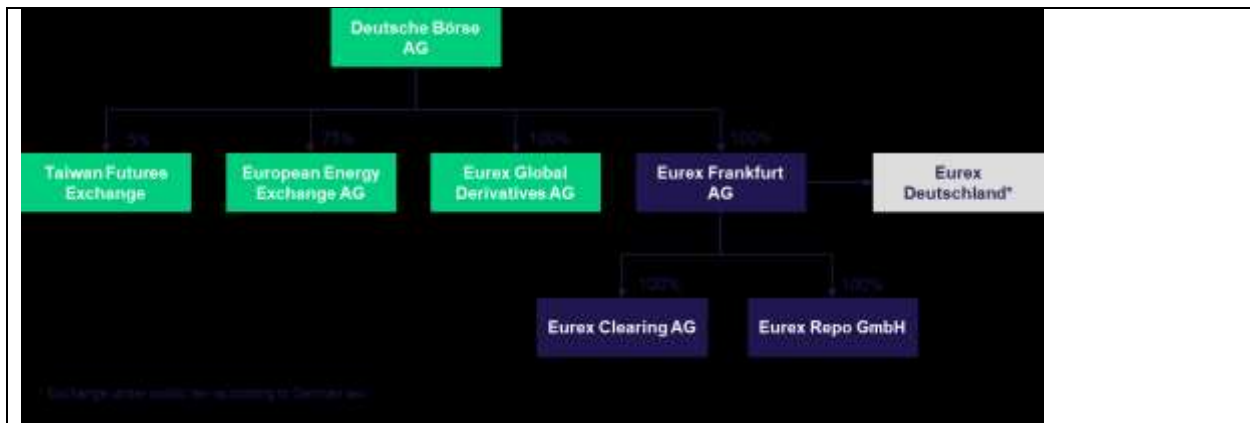
In order to ensure the safety and efficiency of its operations, Eurex Clearing offers fully automated and straight-through post trade services to the derivatives markets. Furthermore, Eurex Clearing has an adequate information technology system and ensures that the information and corresponding facilities are available when needed (availability), the information is accurate and complete when used (integrity), and the information is only accessible to the authorized entities (confidentiality).

Additionally, the Internal Control System (ICS) is a key management instrument and comprises principles, procedures and measures implemented by Deutsche Börse Group's (DBG) management. It is designed to achieve the corporate objectives, in particular ensure the effectiveness and efficiency of the operating business, the correctness and reliability of internal and external accounting and to comply with laws and other regulations that apply to the company.

Key Consideration 2

An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

Eurex Clearing has documented governance arrangements that provide for clear responsibility and accountability. These arrangements are disclosed to relevant stakeholders at different granularity. Eurex Clearing is a wholly-owned subsidiary of Eurex Frankfurt AG, which is a wholly-owned subsidiary of Deutsche Börse AG. Details of the shareholder structure can be consulted on the corporate governance section of the Eurex Clearing website.



(For more information, please visit: <https://www.eurex.com/ec-en/find/corporate-overview/corporate-structure>)

Governance arrangements that provide for clear responsibility and accountability are established for both the Eurex Clearing Executive Board and Supervisory Board. Eurex Clearing allocates the role and responsibilities to the Supervisory Board and the Executive Board as appropriate. The composition of the Supervisory Board, its committees as well as the composition and structure of the Executive Board, is published on the Eurex Clearing website in the corporate governance section. The roles and responsibilities of the boards and committees are laid down in arrangements that comply with Part 4, Section 1 and 2 of the Stock Corporation Act (Aktiengesetz, AktG), §§ 76 – 116.

Within Eurex Clearing, responsibilities of each department are clearly defined. Eurex Clearing has nominated a Chief Risk Officer, Chief Compliance Officer and Chief Technology Officer in line with EMIR.

Accountability to stakeholders is ensured by news updates on the Eurex Clearing website (Public and Member Section), complemented by reporting obligations to stakeholders. Furthermore, Eurex Clearing is in continuous dialogue with its customers. To facilitate this, Eurex Clearing hosts a number of committees to inform and integrate members from all market segments (e.g. Derivatives Clearing Committee, Securities Clearing and Settlement Committee).

Eurex Clearing has initiated the following committees to inform and integrate members from different market segments into the decision-making process for changes and new developments to the services offered by Eurex Clearing:

- Eurex Clearing has set up an EMIR Risk Committee in accordance with Article 28 EMIR. It is composed of members of the Eurex Clearing Supervisory Board, representatives of clearing members and representatives of clients. The task of the EMIR Risk Committee is to advise the Eurex Clearing Supervisory Board and the Eurex Clearing Executive Board on any arrangements that may impact the risk management of the CCP, such as a significant change in its risk model, the default procedures, the criteria for accepting clearing members, the clearing of new classes of instruments or the outsourcing of functions. The EMIR Risk Committee consists of at least 14 members. In the current composition 8 of these members are nominated by the Clearing Members, 8 by the “Clients” (Non-Clearing Members, Registered Customers and other customers) and 2 members are independent members of the Supervisory Board. This composition ensures compliance with Article 28 para. 1 EMIR, in particular with the requirement that none of the groups of representatives has a majority in the committee. Under certain conditions, employees and members of corporate bodies of Eurex Clearing or external independent experts may be invited to the meetings of the EMIR Risk Committee in a non-voting capacity. Moreover, the competent supervisory authorities are entitled to attend meetings of the EMIR Risk Committee without voting rights and to be informed about the activities and decisions of the EMIR Risk Committee. Adequate provisions are in place to ensure that the advice of the EMIR Risk Committee is independent of any direct influence by the management of Eurex Clearing (cf. Article 28 EMIR).
- Eurex Derivatives Clearing Committee - includes members holding clearing licenses for Eurex Exchanges;

- Securities Clearing and Settlement Committee - includes members holding clearing licenses for the Frankfurt Stock Exchange (FSE);
- FIC Advisory Board Committee - established to consult with and make recommendations to the management board of Eurex Clearing with respect to the Fixed Income and Currencies (FIC) matters related to the general FIC strategy as well as product and service expansions in Fixed Income and Currencies with particular focus on certain growth products. The Committee consists of up to 10 Committee Members appointed by the Eurex Clearing Executive Board, where each Committee Member represents one selected Participants Group. Members are nominated to the Committee based on their performance in the Eurex Clearing Partnership Program for a two-year term.
- Repo Board Advisory Committee - The Committee is established for the purpose of consulting with and making recommendations to the executive boards of Eurex Clearing and Eurex Repo GmbH ("Eurex Group") with respect to Special and GC Repo strategy and on important matters regarding Eurex Repo. The Committee consists of up to 10 Committee Members appointed by the Executive Board. 5 of the Committee Members each represent one Selected Participants Group. Participant Groups that belong to the 5 Participants Groups with the highest Overall Participation Ranking within the relevant Measuring Period are eligible for nomination of members. The Executive Board appoints members for a two-year-term. Further 5 Committee Members are selected by Eurex Group in its sole discretion.
- Default Management Committees (DMC) - Eurex Clearing establishes DMCs to involve its Clearing Members and to ensure the availability of the best possible knowledge and expertise in case of a default. The DMC is a panel that is continuously defined, but only temporarily convened, to assist Eurex Clearing with regards to any relevant matter of the Default Management Process (DMP) of one or more Liquidation Groups. In addition, DMCs are participating in the regular default simulations. DMC member institutions are eligible Clearing Members, actively clearing with Eurex Clearing, and each DMC member institution nominates a DMC member and a deputy. Members of the DMC will be traders who will advise on and execute the agreed upon hedging strategies as coordinated by Eurex Clearing.

Accountability to Clearing Members and customers is further ensured by the Complaints Handling Process. The Complaints Procedure Manual describes how a person who has a complaint arising in connection with the performance of, or failure to perform, any of Eurex Clearing's obligations as defined in the Clearing Conditions of Eurex Clearing and/or with the performance of, or failure to perform, any regulatory requirements that need to be fulfilled by Eurex Clearing may file the complaint, and how that complaint will be investigated and resolved. The Complaints Procedure Manual is also in line with the Deutsche Börse group-wide Policy on Complaints Management that represents a general framework for complaints management procedures in order to ensure a fair and professional treatment of customers and clients in accordance with relevant regulatory requirements.

On its website, Eurex Clearing publicly discloses its Clearing Conditions including information regarding the admission criteria for Clearing Membership under the following link: <https://www.eurex.com/ec-en/rules-regs/rules-and-regulations/Clearing-Conditions-53674>.

Furthermore, Eurex Clearing discloses to its Clearing Members and other market participants the following information, which is available in both German and English:

- a) Information regarding its governance arrangements:
 - (i) On its website, Eurex Clearing publicly discloses the information regarding the governance arrangements such as the organizational structure, and annual reports, including objectives and strategies. (For more information, please visit: <https://www.eurex.com/ec-en/find/corporate-overview>)
 - (ii) Furthermore, key elements of the remuneration policy are published in the Eurex Clearing AG Remuneration Report on the Eurex Clearing website (in accordance with § 16 InstitutsVergV) (For more information, please visit: <https://www.eurex.com/ec-en/find/about-us/remuneration>). Key elements are in particular: principles, components, total amount of

the variable remuneration, variable remuneration scheme, information on split of fixed and variable remuneration of senior risk management and risk taker.

- (iii) Eurex Clearing published its key financial information including its most recent audited financial statements. (Please visit: <https://www.eurex.com/ec-en/find/corporate-overview/annual-reports>)

b) Information regarding its rules:

- (i) On the Eurex Clearing website, information is provided on the default management procedures as well as the investment policy (For more information, please visit: <https://www.eurex.com/ec-en/services/risk-management/default-management-process> as well as <https://www.eurex.com/ec-en/services/collateral-management/cash-collateral/investment-policy>).
- (ii) The business continuity information is published on the Eurex Clearing website (For more information, please visit: <https://www.eurexclearing.com/clearing-en/find/about-us/business-continuity>).
- (iii) In addition, Eurex Clearing discloses information on the risk methodologies used, risk parameters, and other calculations (e.g., detailed risk scenario calculations). Assessment of risks and costs are publicly distributed on a periodic basis (e.g., parameters, margins, and haircuts) (For more information, please visit: <https://www.eurex.com/ec-en/services/risk-parameters>).

Material changes in its governance arrangements, objectives, strategies and key policies as well as in its applicable rules and procedures will be publicly disclosed via the website.

Key Consideration 3

The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

The roles and responsibilities of the Supervisory Board are clearly specified and documented. As outlined previously, the interaction with customers and other stakeholders is properly ensured.

The Articles of Incorporation as well as existing rules and procedures define the composition, role and responsibilities of the board and senior management and any board committees (this is in line with Article 7 (1) (EU) 153/2013).

The responsibilities of the board are allocated to the Supervisory Board and the Executive Board as appropriate in accordance with Article 3 para. 5 (EU) 153/2013.

- a) As part of conducting the business of Eurex Clearing in accordance with §76 German Stock Company Act (Aktiengesetz, AktG), the Executive Board establishes the objectives and strategies for Eurex Clearing. The Supervisory Board approves the company planning as well as important corporate decisions;
- b) Consistent with §111 AktG, the most important function of the Supervisory Board is to oversee the work of the Executive Board. Furthermore, the Supervisory Board appoints the members of the Executive Board;
- c) The Compensation Review Committee (CRC) - in compliance with CRD IV, EMIR and the Remuneration Ordinance – designs and further develops the remuneration policy with regard to the Executive Board and reviews the integrity of the process on a regular basis. Additionally, the CRC supervises the reasonableness of the remuneration system of the members of the Executive Board and of the employees, and in particular the appropriateness of the compensation of the head of the risk control function and of the compliance function as well as of such employees having a substantial influence on the overall risk profile of the enterprise. The

committee supports the Supervisory Board in monitoring the reasonableness of the remuneration system regarding the employees of the enterprise and at the same time assesses the effects of the remuneration system to the risk-, capital- and liquidity management. The Remuneration Policy is effective with the approval of the Executive Board resp. the Supervisory. Members of the Executive Board are not allowed to participate in meetings of the CRC, the subject of which is their remuneration. In this regard, the responsibilities lie with the CRC and the Supervisory Board. The Committee consists of three members who are elected by the Supervisory Board. <https://www.eurex.com/ec-en/find/corporate-overview/compensation-review-committee>

- d) The Nomination Committee (NC) - in compliance with CRD IV and EMIR - supports the Supervisory Board by the (i) identification of candidates to fill Executive Body vacancies and preparing of nominations regarding the election of members of the Supervisory Board, (ii) development of a target to promote the representation of the under-represented gender on the Supervisory Board and a strategy to achieve it, (iii) periodical, at least annual assessment of the structure, size, composition and performance of the Executive Board and the Supervisory Board and express recommendations to the Supervisory Board in this regard, (iv) periodical, at least annual assessment of the knowledge, skills and experience of the individual members of the Executive Board and of the Supervisory Board as well as of the respective board collectively, and (v) periodical review of the policy of the Executive Board for selection and appointment of senior management and recommendations of the Supervisory Board to the Executive Board. The Committee consists of three members who are elected by the Supervisory Board. <https://www.eurex.com/ec-en/find/corporate-overview/nomination-committee>
- e) As described in the Business Distribution Plan, the Executive Board establishes and oversees the Risk Management;
- f) The Audit and Risk Committee, as derived from the Supervisory Board, performs the oversight of the compliance and internal control function as well as audit related topics
- g) The Audit and Risk Committee - in compliance with CRD IV (Capital Requirements Directive) and EMIR - deals, on the one hand, with audit matters particularly related to the preparation of the annual budget, the accounting process, internal and external audits, compliance and control systems. The Committee discusses and examines the annual financial statements and the auditor's report on the annual financial statements in detail and reports the results to the Supervisory Board and recommends e.g. that the Supervisory Board approves the annual financial statements. On the other hand, the Audit and Risk Committee addresses risk matters, inter alia advises the Supervisory Board on the institution's current and future risk appetite and risk strategy and examines whether the incentives provided by the remuneration system take into account the risk, capital and liquidity structure of Eurex Clearing. The Committee consists of three members who are elected by the Supervisory Board. <https://www.eurex.com/ec-en/find/corporate-overview/audit-and-risk-committee>

The oversight of outsourcing arrangements is ensured by the Executive Board, who must approve the Outsourcing Policy. In addition, the Executive Board is responsible to approve new outsourcings as part of the outsourcing process;

- h) Consistent with the Eurex Clearing AG Compliance Policy, EMIR compliance is assessed by the Chief Compliance Officer and is reported to the Executive Board;
- i) Circulars, press releases and information on the Eurex Clearing website - and intranet for employees - provide accountability to relevant stakeholders. Accountability to Clearing Members and customers is further ensured by the complaints process as well as by numerous committees to inform and integrate members from all market segments into the consultation process.

Eurex Clearing has implemented effective arrangements for identifying and managing potential conflicts of interest between Eurex Clearing, including its managers, employees, or, any person with direct or indirect control or close links on the one hand, and its Clearing Members, and their Disclosed Direct

Clients on the other hand. As part of Deutsche Börse Group, Eurex Clearing is subject to the Deutsche Börse Policy on Conflicts of Interest. The Policy was approved by the Eurex Clearing Executive Board and applies to all employees and external service providers who work for Eurex Clearing.

Internal Audit reviews the effectiveness of measures taken in the business areas and assesses the effective operation of the Internal Control System.

Consistent with §111 AktG, the most important function of the Supervisory Board is to oversee the work of the Executive Board. Furthermore, the Supervisory Board appoints the members of the Executive Board (cf. Article 7 (2) (EU) 153/2013). The Rules of Procedure for the Executive Board define the reporting lines between the Executive Board and the Supervisory Board. §10 of the Rules of Procedure of the Executive Board of Eurex Clearing stipulates that the reporting to the Supervisory Board shall be conducted pursuant to §90 AktG. Written reports to the Supervisory Board shall be submitted to the chairperson of the Executive Board with the request for forwarding.

In accordance with §101 (1) 1 Stock Corporation Act (Aktiengesetz, AktG) the shareholders' meeting (Hauptversammlung) appoints the Supervisory Board members of Eurex Clearing. The procedure and functioning of the suitability assessment is defined by the Deutsche Börse group-wide Policy for the Assessment of the Suitability of Members of the Management Body (Supervisory Board, Executive Board, Board of Directors, Comité Exécutif, Managing Body) and Key Function Holders and further detailed in the Eurex Clearing Sideletter to the policy. The Executive Board and the Supervisory Board approved this Policy and Sideletter which reflect the requirements of the EBA Guidelines on the Assessment of the Suitability of members of the management body and key function holders on the one hand and the requirements of the Capital Requirements Directive IV on the other hand.

The Supervisory Board is responsible for ensuring that members of the management body fulfil the suitability criteria in case of a new assignment but also on an on-going basis. This means that before a member takes up his or her position in the Supervisory or Executive Board, a suitability assessment will be done (cf. Article 3 para. 1 (EU) 153/2013). If the assessment cannot be finished before the appointment for exceptional reasons, the assessment should be completed as soon as practicable, but in any event within one month. The Rules of Procedure of the Supervisory Board of Eurex Clearing reflect this adequately. The responsibilities of the Nomination Committee also include (a) periodical, at least annual assessment of the structure, size, composition and performance of the Executive Board and the Supervisory Board and express recommendations to the Supervisory Board in this regard; (b) periodical, at least annual assessment of the knowledge, skills and experience of the individual members of the Executive Board and of the Supervisory Board as well as of the respective board collectively, and (c) periodical review of the policy of the Executive Board for selection and appointment of senior management and recommendations of the Supervisory Board to the Executive Board.

Key Consideration 4

The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).

Eurex Clearing board members all have long-standing experience in the public and private sector of the financial industry and an international background. The diversity of appropriate skills is well suited to fulfil the various roles in overseeing and conducting the business of one of the largest and most diverse CCPs globally.

The Executive Board members of Eurex Clearing are appointed by the Supervisory Board as provided by §84 (1) 1 Stock Corporation Act. In the run-up to the appointment by the shareholders' meeting and the Supervisory Board, respectively, Eurex Clearing applies procedures to ensure the suitability of members of the management body (Supervisory Board and Executive Board) and other key function holders (staff members whose positions give them significant influence over the direction of Eurex Clearing, but who are not members of the Supervisory and Executive Board. Key function holders might include heads of significant business lines and other senior management).

The Supervisory Board of Eurex Clearing is generally composed out of 12 members. One third, but no less than two, of the members of the Supervisory Board shall be independent in the meaning of Art. 27 EMIR. For matters relevant to Articles 38 and 39, representatives of the clients of clearing members are invited to board meetings.

The procedures for the appointment of board members and senior management are in compliance with the German Stock Corporation Act and are conducted as follows:

In accordance with §101 (1) 1 Stock Corporation Act the shareholders' meeting (Hauptversammlung) appoints the Supervisory Board members of Eurex Clearing. Members of the Supervisory Board must be of good repute, reliable and need to prove their theoretical and practical knowledge in the respective business area to be able to evaluate, to supervise and to control the business of Eurex Clearing. All these German legal requirements can be deemed to provide a Financial Market Infrastructure (FMI) with a management with appropriate experience.

Furthermore, the Executive Board members of Eurex Clearing are appointed by the Supervisory Board as provided by §84 (1) 1 Stock Corporation Act. In the run-up to the appointment by the shareholders' meeting (only for Supervisory Board members) and the Supervisory Board, respectively, Eurex Clearing applies the following procedures to ensure the suitability of members of the management body (Supervisory Board and Executive Board) and other key function holders (staff members whose positions give them significant influence over the direction of Eurex Clearing, but who are not members of the Supervisory and Executive Board. Key function holders might include heads of significant business lines and other senior management). Members of the Executive Board need to prove a certain mix of skills such as their theoretical and practical knowledge as well as their leadership experience in the respective business areas. According to §32 KWG the CCP is obliged to provide BaFin with evidence about the professional qualification of the management board.

The national competent authority assesses and recognizes the trustworthiness ("Zuverlässigkeit") and professional qualification ("fachliche Eignung") of all members of the Executive Board in accordance with the §33 (2) German Banking Act before being appointed as member of the Executive Board or Supervisory Board.

The Supervisory Board is responsible for ensuring that members of the management body fulfil the suitability criteria in case of a new assignment but also on an on-going basis. This means that before a member takes up his or her position in the Supervisory Board or Executive Board, a suitability assessment will be done. The Chairman of the Supervisory Board will initiate this assessment with support from HR, Boards & Committees Eurex and Legal (upon request). The Supervisory Board will take the decision on the suitability upon the recommendation of the Nomination Committee. The suitability assessment of the key function holders is initiated and conducted by the Executive Board and supported by HR and Legal (upon request) and the decision is made by the Executive Board.

The suitability assessment that is conducted in compliance with the Policy for Assessment of the Suitability of Members of the Management Body and Key Function Holders. The AktG provides several rules about the duty of care and the responsibility of the members of the Management Board (§90-93 AktG). Moreover, the integrity of Eurex Clearing is ensured by "Minimum Requirements for Risk Management" rules issued by BaFin (MaRisk) and §36 KWG, defining requirements for BaFin to call for a revocation of board members. The MaRisk rules include standards with regard to all main organizational issues and business activities, which need to be complied with by the CCP.

Similar to the members of the Executive Board, members of the Supervisory Board are also recognized by the national competent authority in accordance with §36 (3) KWG ensuring their repute and expertise. Furthermore, the Supervisory Board annually assesses the suitability of the members of the Supervisory Board and its Committees according to the guidelines published by the European Banking Authority (EBA/GL/2017/12). In its latest assessment, the Supervisory Board found that all members of the Supervisory Board and its Committees were to be considered as suitable. The 2019 assessment has been completed by 12 December 2019 (decision taking). The 2020 assessment is planned to be completed by 10 December 2020 (decision taking).

Furthermore, based on Guidelines established by the European Banking Association (EBA) on the assessment of the suitability of members of the management body and key function holders on the one hand and the requirements of the CRD on the other hand, both the Executive Board and the Supervisory Board approved respective policies for the assessment of the suitability.

Key Consideration 5

The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.

As outlined in Key Consideration 4 of this Principle, Eurex Clearing operates under a two-tiered board structure comprising a Supervisory Board and an Executive Board as management body.

The Executive Board is responsible for the daily business operations and consists of five members. The Executive Board establishes the objectives and strategies for Eurex Clearing.

The Supervisory Board oversees the work of the Executive Board. Furthermore, the Supervisory Board appoints the members of the Executive Board and approves the company planning as well as important corporate decisions;

The members of the senior management are assessed based upon the Suitability Policy as described in Key Consideration 4 of this Principle. Relevant key functions in the senior management are defined including the job responsibilities and required qualifications in the Sideletter of Eurex Clearing. The job descriptions for the key function holders are reviewed and updated on a yearly basis in order to ensure the suitability of the CCP's senior management.

The senior management is responsible to execute the strategy as determined by the Executive Board of Eurex Clearing.

The Management's roles and objectives derive from important corporate decisions and company planning by the Supervisory and Executive board of Eurex Clearing. With the help of an evaluation tool, targets and goals of each senior manager are maintained and evaluated on a regular basis.

The Executive Board is responsible for ensuring that the senior management of Eurex Clearing shows the appropriate experience, mix of skills and the integrity necessary for the operating and risk management criteria in case of a new assignment but also on an on-going basis. This means that before a manager takes up his or her position, a suitability assessment will be done consisting of multiple interviews with HR and Executive Board member in which both, technical know-how and personal integrity is tested.

The senior management, together with the board, is responsible for ensuring that all risks that the clearing business poses to Eurex Clearing are monitored, managed and, as good as possible, mitigated, covering various risk types as financial risk, operational risk, legal and compliance risk etc.

Key Consideration 6

The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

Eurex Clearing has a sound framework for the comprehensive management of all material risks. In this regard Eurex Clearing has established documented policies, procedures and systems to identify, monitor and manage such risks.

The Chief Risk Officer is responsible for implementing the risk management framework including the policies and procedures established by the board and ensures that the framework is revised annually or if any material change makes it necessary.

Eurex Clearing has a clearly defined and documented Risk Strategy, which includes a risk appetite statement. The risk strategy is based upon Eurex Clearing's business strategy and defines the extent of risk taken within the various business activities carried out by Eurex Clearing. The risk strategy does this by determining conditions for risk management, control and limitation.

Eurex Clearing gives considerable attention to its risk mitigation process and ensures that appropriate measures are taken to avoid, reduce and transfer or intentionally accept risk. It is ensured that the appropriateness of the risk management and controlling systems is to be checked continuously.

Eurex Clearing has a comprehensive risk management framework composed of objectives, measures, and tools defined at the level of Eurex Clearing and that of the Deutsche Börse Group. The Risk Management Framework of Eurex Clearing provides complete, timely and consistent information about risk. The risk-related information enables the risk to be identified, notified, assessed, controlled and reported appropriately. Risks are openly and fully reported to the responsible level of management.

The Risk Strategy assigns the Executive Board of Eurex Clearing as the ultimate responsible owner for managing the risks. The Risk Strategy further reflects the risk appetite, which defines the maximum loss the Executive Board is willing to take in one year, the tolerance in the light of the risk as well as the performance levels aspired. The Executive Board ensures that the risk strategy is integrated into the business activities throughout Eurex Clearing entirely and that adequate measures are in place to implement the strategies, policies and procedures.

Risk awareness and a corresponding risk 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 to be checked continuously.

Furthermore, risks are openly and fully reported to the responsible level of management. The responsible management body is informed fully and timely about Eurex Clearing's risk profile, relevant risk(s) as well as about relevant losses. The internal reporting and communication are amended by external reporting, i.e. interim and annual reports. Risk Management is an elementary component of the management and the control of Eurex Clearing and the affiliated companies. Adequate quality standards are established and reviewed on an ongoing.

Consistent with MaRisk, Eurex Clearing makes sure that employees and their deputies have the knowledge and experience required by their duties, competencies and responsibilities. Suitable measures are taken to ensure that the employees have the appropriate qualifications (AT 7 MaRisk).

A mechanism is implemented to ensure that all necessary approval requirements are always met. On behalf of the Executive Management, the Section Policies & Procedures initiates the so-called Update Request with the responsible Line Managers of Eurex Clearing once a year.

As part of its regular audit work, Internal Audit reviews these business processes and procedures underlying the audit subjects for correctness and completeness and for the effectiveness of the Internal Control System (ICS).

The organizational structure is set up so that the segregation of duties between departments offers sufficient independence. The separation of the functions trading/front office and back office processing & control is ensured through a clear allocation of responsibilities at Executive Board level. The clear separation of responsibilities is also ensured in the event of deputisation.

Furthermore, there is a clear separation in the reporting lines between risk management and other operations of Eurex Clearing. The department is led by the Chief Risk Officer, in accordance with EMIR, who is also a member of the Eurex Clearing Executive Board, thereby ensuring the direct reporting line. The department comprises Risk Models and Analytics, Model Validation, Default Management, Risk

Exposure Management, Credit, Treasury Back Office, Financial Accounting & Controlling, Enterprise Risk Management and Business Continuity Management.

Models and Analytics comprises three units: Risk Methodology ETD, Risk Methodology OTC and Risk Analytics. Risk Methodology teams are responsible for the development and enhancement of risk methodology, risk concepts and methods for initial margin, haircuts and hedging, the development of data handling and data cleansing methods for all input data, creation of (new) pricing and valuation concepts as well as risk concepts for the introduction of new products in risk framework. Risk Analytics is responsible for the risk concepts and methodological development of stress testing, the comprehensive risk reporting including the analyses of margining and stress testing results, risk concentrations and wrong way risks, risk limits and portfolio analytics.

The Model Validation section performs risk model validation and model performance monitoring, such as back testing and sensitivity testing. Identified model risks are addressed with the model owner and regularly reported to the Executive Board of Eurex Clearing.

Default Management comprises of two units: DM Trading and DM Design. The DM Trading team is responsible for the evaluation, hedging and liquidation of exposures for the full scope of cleared products resulting from default events, executing EMIR required, supervised and observed by NCAs as well as bilaterally arranged, fire drills, staffing and chairing Default Management Committees, supporting new product and service initiatives to assure DMP readiness and validating risk factors and parameters for recommendation for SUMA charge. The DM Design team is responsible for designing and maintaining frameworks and processes for hedging, selling and auctioning positions across all classes cleared and eligible collateral as well as the lines of defense (Default Waterfall), including an incentive structure for Clearing Members' behaviour in the DMP, ensuring DMP compliance with market expectations and regulatory requirements, conceptualising the DMP related legal framework and preparing and coordinating EMIR required and bilaterally arranged fire drills, including lessons learned and change request management.

Risk Exposure Management is responsible for the monitoring of Eurex Clearing's risk situation arising from exposures out of the various markets, the management of intraday and overnight margin calls and the operation and control of risk systems. Further, the section develops and maintains operational risk procedures for new and existing clearing services.

Credit is responsible for the initial and yearly credit risk assessment of each Clearing Member and Treasury counterparty of Eurex Clearing, as well as to set Treasury counterparty limits as part of the deposit and cash management activity of Eurex Clearing. In addition, Credit is responsible for the ongoing monitoring of internal credit ratings, as well as Large Exposures monitoring linked to Treasury activities. Credit activities are outsourced by Eurex Clearing to Clearstream Services S.A. Credit performs services to all group entities where the assessment of credit risk is required.

Treasury Back Office is responsible for the settlement and control of trading activities of the Treasury area. Treasury Back Office is also responsible for the back-office activities related to credit and deposit business in the course of the Cash Pool set up with Eurex Repo GmbH. All Treasury Back Office functions are outsourced to other areas of Deutsche Börse Group.

Financial Accounting & Controlling includes billing and corporate tax matters. Financial Accounting & Controlling is outsourced to other areas of Deutsche Börse Group.

Enterprise Risk Management is responsible to ensure that the risk management processes are consistently performed in an adequate manner and that the risk measurement framework is maintained to provide relevant, useful and comprehensive output. Enterprise Risk Management further assesses, quantifies and reports on financial and operational risk.

The Business Continuity Management Officer has the responsibility to coordinate and monitor the readiness of the business continuity management of Eurex Clearing.

The internal audit function of Eurex Clearing is responsible for assessing the organization's framework of risk management, control and governance processes, and for determining whether:

- risks are adequately identified and mitigated by appropriate controls
- significant financial and operational information is accurate and reliable
- resources are used efficiently and are adequately protected
- the organization is in compliance with internal policies and procedures, as well as applicable laws and regulations.

The Internal Audit Charter in place defines the role and responsibilities of the internal audit function within Deutsche Börse Group as well as their relationship with auditees, executive managements and supervisory functions. The Charter is reviewed on a regular basis.

Internal Audit is a properly staffed independent function. The Internal Audit team remains free of influence by any element in the organisation, including matters of audit area, scope, procedure, frequency, timing or report content to permit maintenance of an independent and objective mental attitude necessary to allow internal auditors to render impartial and unbiased judgements essential to the proper conduct of audits. In order to ensure independence, where applicable, the internal audit function reports directly to the Executive Board of Eurex Clearing. As required, the Head of Internal Audit also reports to the Audit and Risk Committee of the Eurex Clearing Supervisory Board. The head of Internal Audit maintains at his or her own discretion formal lines of communication with the chairman of the respective board, the members of the Audit and Risk Committee, the external auditor as well as, where required, with the relevant regulator. Internal Audit uses a risk-based approach in defining specific areas of the organization to audit. If necessary, the executive management may request additional audits to be performed as well as ad-hoc assurance services.

Eurex Clearing regularly reviews and validates its risk models. Therefore, a model validation framework, which comprises a documentation of all testing programs, processes and report structures is in place. The processes define clearly the roles and responsibilities, metrics, thresholds and actions.

Eurex Clearing commits itself to the validation of new risk models by an independent party prior to the launch of the new model. For the on-going revision and improvement of the model, Eurex Clearing regularly seeks the advice of the EMIR Risk Committee. Any major changes and adjustments are presented to the EMIR Risk Committee and approved by the Executive Board of Eurex Clearing.

Basic assumptions as well as the model as a whole are reviewed annually. The annual revision also includes a benchmark analysis where current market standards and common practices are recognised.

All validation results and related model risk are presented to the Executive Board on a regular basis. Moreover, results will be made available for clearing members without breaching confidentiality.

Key Consideration 7

The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

Eurex Clearing continuously strives to enhance its products and services that help create safer markets for all participants. This is done jointly in continuous dialogue with its customers. To facilitate this, Eurex Clearing hosts a number of committees to inform and integrate members from all our market segments into the decision-making process for changes and new developments to the services offered by Eurex Clearing. For detailed information on the committees see Key Consideration 2 of this Principle or the Eurex Clearing website at <https://www.eurex.com/ec-en/find/corporate-overview>.

Major decisions made by the Supervisory or Executive Board are disclosed to the relevant stakeholders by publishing circulars, press releases and other information on the Eurex Clearing website - and intranet for employees. In accordance with §131 AktG, upon request, each shareholder is provided with information at the shareholders' meeting by the Executive Board regarding the company's affairs, to the

extent that such information is necessary to permit a proper evaluation of the relevant item on the agenda of the shareholders' meeting.

Stakeholders receive further important information like clearing volumes, generated profit, etc. through the Annual Report including the management report, which is available on the Eurex Clearing webpage. The Annual Report mentions in more detail the strategic objectives of Eurex Clearing and to what extent they were achieved, e.g. financial statement. Furthermore, news updates on the Eurex Clearing website (Public and Member Section for Members only) complemented by extensive reporting ensures that stakeholders are well-informed.

Eurex Clearing has implemented a Conflicts of Interest that outlines the effective arrangements of Eurex Clearing for identifying and managing potential conflicts of interest between Eurex Clearing, including its managers, employees, or any person with direct or indirect control or close links on the one hand, and its Clearing Members, and their Disclosed Direct Clients on the other hand.

In order to properly handle complaints, the Eurex Clearing Complaints Procedure Manual, describes how a person who has a complaint arising in connection with the performance of, or failure to perform any of Eurex Clearing's obligations as defined in the Clearing Conditions of Eurex Clearing AG and/or with the performance, or failure to perform, any regulatory requirements that need to be fulfilled by Eurex Clearing (Complaint) may file the Complaint, and how that Complaint will be investigated and resolved.

Assessment of principle:

Observed

Principle 3: Framework for the comprehensive management of risks

Principle 3: Framework for the comprehensive management of risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key Consideration 1

An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

Eurex Clearing applies a comprehensive and holistic risk management framework and considers the different roles a counterpart might have (e.g. Clearing Member, treasury counterpart, settlement institution etc.). The Executive Board of Eurex Clearing is responsible for the company's Risk Management Framework. Specialized departments identify risks and report them in a timely manner to the Chief Risk Officer.

Risk management policies, procedures and systems form the basis of the comprehensive risk framework. It is ensured that all risks are recorded, assessed and controlled, and that a consolidated report on these risks is submitted to the Executive Board of Eurex Clearing.

Risks are openly and fully reported to the responsible level of management. The responsible management body is informed fully and timely about Eurex Clearing's risk profile, relevant risk(s) as well as about relevant losses. The internal reporting and communication are contemplated by external reporting, i.e. interim and annual reports.

The risk management processes cover the identification, notification, assessment, control and reporting of risks.

Eurex Clearing has a clearly defined and documented Risk Strategy. The risk strategy is based upon Eurex Clearing's business strategy and governs to which extent risks can be taken within the various business activities carried out by Eurex Clearing. The risk strategy determines conditions for risk management, control and limitation. Eurex Clearing pays considerable attention to its risk mitigation process and ensures that appropriate measures are taken to avoid, reduce, transfer or intentionally accept risk.

Eurex Clearing's Risk Strategy specifies a methodological concept and a process to ensure adequacy of the available risk-bearing capacity and, thus, the limitation, reporting and monitoring of risk. Eurex Clearing sees its available risk-bearing capacity (for management purposes) from a liquidation perspective.

Using a range of tools, Eurex Clearing evaluates and monitors material risks on an ongoing basis. It applies both the liquidation principle and the going-concern principle to aggregate risks at Company level. The main instrument that it uses for the purpose of quantification is the value at risk (VaR) model.

- Liquidation principle: Eurex Clearing must not exhaust its regulatory capital in more than 0.02 per cent of all years. It calculates its required economic capital (hereinafter referred to as REC) at a confidence level of 99.98 per cent and over a time window of 12 months. The risk-bearing capacity set against the required economic capital is the regulatory capital. For the purpose of risk management, at least once a quarter Eurex Clearing calculates as a metric the REC in relation to its risk-bearing capacity.
- Going-concern principle: Eurex Clearing also employs the going-concern principle that assumes an orderly continuation of the business in the event of a crisis. The metric used is earnings at risk (EaR) at a confidence level of 99 per cent and over a time window of 12 months. Under the going-concern principle EaR is set against planned EBITDA (earnings before interest, taxes, depreciation and amortisation). Eurex Clearing defines the Value-at-Risk (VaR) as the

cumulated loss amount in a one-year time horizon that is not exceeded in q% cases of all years. Different confidence levels q could be used.

The available risk-bearing capacity concept is a central part of the management and governance framework of Eurex Clearing. The goal of the concept is to make sure that the different risks from the business are adequately covered by Eurex Clearing's equity, i.e. that capital adequacy is given.

The aim of this concept is to create a comprehensive overview of general risk tolerance and to facilitate the prioritisation of risk measures. This is used in addition to other performance indicators to determine the capital needed for business operations so that even extreme and unexpected losses can be covered.

The Risk Strategy also defines the risks Eurex Clearing is facing as part of its core business objective. "Risks" are defined as a potential negative impact on the financial, revenue and liquidity situation. The Risk Strategy differentiates between four major risk types that are managed and controlled.

These risk types are:

- financial risk,
- operational risk,
- project risk
- and business risk.

Financial risk comprises credit risk, market risk and liquidity risk. Resulting from its business model as central counterparty, Eurex Clearing is exposed to the risk that a Clearing Member cannot fulfil its contractual obligations resulting from any of its transactions until final settlement or any time thereafter (credit risk), or that Eurex Clearing is unable to meet any payment obligation or due to increased refinancing costs (liquidity risk). Eurex Clearing is furthermore exposed to interest rate, currency or other market fluctuations that affect the liabilities and potential investments in securities (market risk). However, due to its strict Treasury Policy and its limited amounts in open currency positions, market risk is seen to be immaterial.

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 and from legal risks that could arise from non- or inappropriate compliance with new or existing laws and regulations and all contractual commitments.

Project risk arises from the change of the current risk profile once a project goes live in the future. Indeed, the launch of a new product, process or system may have a significant impact on one of the above-mentioned risk categories. Therefore, project risk figures are included in operational, financial and business risks, which is why they are quantified within these risk types.

Finally, business risk reflects sensitivity to macroeconomic evolution and vulnerability to event risk arising from external threats, such as regulatory adjustments or changes in the competitive environment, or internal weaknesses.

Regular risk reports contain risk quantification results in comparison with the limits, risk related qualitative information, information about stress tests, and capital adequacy. They are sent and presented to ECAG's Executive Board, Risk Committee and Supervisory Board.

It is Eurex Clearing's intention to manage risks in an effective and efficient manner based on defined risk limits and risk statements. Risk limits intend to maintain risk at an appropriate and acceptable level. Depending on the risk characteristics there are basically four types of management strategies, which are further elaborated on the level of the single risk type:

- Risk reduction or elimination, i.e. measures to reduce either severity or frequency of losses
- Risk transfer, i.e. insurance or liability agreements in contracts with third-parties
- Risk avoidance, i.e. changes to the business which prevent risks from happening
- Risk acceptance, i.e. a deliberate decision to take risks and monitor their development

Risk Management policies, procedures and systems are developed by the Risk Management department of Eurex Clearing, reviewed by internal stakeholders, consulted with the EMIR Risk

Committee and approved by the Executive Board and, if necessary, the Supervisory Board of Eurex Clearing.

The policies and procedures are reviewed at least annually but can be ad hoc, if deemed necessary to reflect also changed environments and market practices.

They are designed to account for fluctuations in risk intensity. Eurex Clearing's risk management framework is designed to cope with various stressed market situations and is not a static framework.

Additionally, Internal Audit is responsible for assessing the organization's framework of risk management, control and governance processes, and for determining whether:

- risks are adequately identified and mitigated by appropriate controls
- significant financial and operational information is accurate and reliable
- resources are used efficiently and are adequately protected
- the organization is in compliance with internal policies and procedures, as well as applicable laws and regulations

According to Section 107 Companies Act, the supervisory board of Eurex Clearing has the obligation to assess the effectiveness of the risk management system. The supervisory board may in particular appoint an audit committee that is to monitor the financial reporting process, the effectiveness of the internal control system, the risk management system and the internal audit system. The effectiveness of the risk management system can be assessed through its functional capability and adequacy. This includes the assessment of

- Identification and management of risks
- Handling of significant risks
- Follow-up on identified weaknesses
- Good Practice Standards

Furthermore, effectiveness is tested independently by various internal control functions, internal and external auditors as well as real-live events.

Key Consideration 2

An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.

Eurex Clearing ensures that Clearing Members are able to properly manage and contain the risks they pose to the CCP. This is achieved, first, by providing Clearing Members with sufficient information regarding all relevant aspects of the CCP's risk management framework (please refer to the website: <https://www.eurex.com/ec-en/services/risk-management>), and, secondly, margin requirements help Clearing Members to properly manage and contain the risks posed to Eurex Clearing.

Margin requirements adequately protect Eurex Clearing's customers against credit risk without tying up excess capital. Margining encompasses the entire process of measuring, calculating and administering the collateral that must be put up to collateralise open positions. The provision of collateral is required to mitigate the credit risks Clearing Members pose to the clearinghouse. Eurex Clearing calculates margin requirements in real-time to ensure that it has an overview of the members' current profit and loss situations as well as an estimation of the risk exposures. Tools such as the Eurex MarginCalculator, a simulation program, are designed to help members calculate and simulate the impact of their trading behaviour and portfolio structure on their margin requirements.

Eurex Clearing further provides the following services to its Clearing Members to ensure an effective intraday control of their own and their client's trading activities:

- Real-time order and trade information (via Order and Trade Confirmation Broadcast)
- Trading Stop Button (for CMs and Disclosed Client Market Participants)
- Report information via End-of-Day and Intra-Day reports
- Position/ trade transfer between members

- Partial position transfers
- Give up/ Take up automation and Give up/ Take up monitoring
- Enhanced Risk Solution (ERS)
- Advanced Risk Protection
- Maximum TES Quantity
- Maximum Order Quantity
- Maximum Spread Quantity
- Incremental Risk Check for IRS

Eurex Clearing has established a Member Compliance Framework to assess Clearing Members' compliance with the participation requirements set out by Eurex Clearing. In addition, an important part of Eurex Clearing's risk management framework is the development and monitoring of Clearing Members' creditworthiness through an internal credit rating system that also takes into account external ratings.

Eurex Clearing also assesses the participants' operational capability. Members must provide proof of the technical and functional connection, the use of appropriate technical equipment (back-office facilities) and sufficiently qualified back office personnel.

The Clearing Conditions of Eurex Clearing set out various incentive measures to ensure that the Clearing Members monitor and manage the timely fulfilment of their obligations and thus monitoring the risk they pose towards Eurex Clearing.

Eurex Clearing has in place adequate processes for ensuring accountability to its participants and furthermore helps its Clearing Members in understanding the applicable rules and procedures. Eurex Clearing informs and involves its members in designing its policies and systems. This is achieved through participation of members and clients in the EMIR Risk Committee where all relevant changes to risk management policies and systems are presented and discussed as well as through the possibility members and clients have to consult Clearing Condition changes whenever material changes to the risk management shall be implemented.

Eurex Clearing has further published the Eurex MarginCalculator, which allows an estimation of the potential margin requirement for a portfolio and can also be accessed via the API (application programming interface). In addition, Eurex Clearing publishes model descriptions for its risk models. Both ensure that participants can determine which effect their trading behaviour can have on the associated margin requirements.

Eurex Clearing establishes DMCs to involve its Clearing Members and to ensure the availability of the best possible knowledge and expertise in case of a default. The DMC is a panel that is continuously defined, but only temporarily convened, to assist Eurex Clearing with regards to any relevant matter of the DMP of one or more Liquidation Groups. In addition, DMCs are participating in the regular default simulation exercises. DMC member institutions are eligible Clearing Members that are actively clearing with Eurex Clearing and each DMC member institution nominates a DMC member and a deputy. Members of the DMC are traders who will advise on and execute the agreed hedging strategies as coordinated by Eurex Clearing.

Key Consideration 3

An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.

Eurex Clearing is exposed to risks resulting out of its CCP activities, its treasury activities as well as to exposures arising from cash held in nostro accounts. To consider these risks on a consolidated basis, Eurex Clearing applies a comprehensive framework, which takes multiple roles a Clearing Member may have with Eurex Clearing into account. Those counterparts/roles are:

System interdependencies are considered by defining mission critical units, business functions and related systems for Eurex Clearing. Additionally, risk analyses and the Business Continuity Management

(BCM) Plans take into account external links and interdependencies within the financial infrastructure and functions or services that have been outsourced to third-party providers.

Concentration and wrong way risks are monitored and mitigated daily. Similarly, cover-2 stress tests of Eurex Clearing's liquid and total financial resources are performed on a daily basis. Tests of the business continuity plans are conducted regularly, at least annually and can be either announced or are triggered unannounced.

Key Consideration 4

An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.

Eurex Clearing is under EMIR obliged to have sufficient own funds for a winding down or the recovery of its own business (pursuant to Art. 2 (EU) 152/2013). Therefore, an appropriate time period for winding down/the recovery of its own business was estimated.

Eurex Clearing developed wind-down plan that serves the purpose to determine the procedure and time period necessary to wind down or restructure the business of Eurex Clearing and describes the underlying assumptions.

Additionally, Eurex Clearing, as a licensed credit institution, annually updates its recovery plan following the legal requirements stipulated in the German act on recovery and resolution of credit institutions SAG, transposing the Bank Recovery and Resolution Directive (BRRD) into German national law as well as the Minimum Requirements for the Design of Recovery Plans ("Mindestanforderungen an die Ausgestaltung von Sanierungsplänen"; MaSan). As of March 2020, on national level additional arrangement for CCPs regarding recovery and resolution have been introduced to the German Recovery and Resolution Act.

Currently a European Regulation for CCP Recovery and Resolution is being developed (EU CCP RR). Eurex Clearing will be subject to this upcoming regulation. The new regulation includes an exemption of the BRRD and further banking related recovery and resolution requirements for CCPs licensed as a credit institution. Forthcoming, Eurex Clearing has only to comply with the EU CCP RR once it becomes effective. The most essential part of restructuring is the application of several recovery options, since they will protect the soundness of Eurex Clearing in a stressed situation. To identify whether a recovery situation has occurred, Eurex Clearing has stipulated conservative recovery indicators along the following observation dimensions:

- Capital;
- Liquidity;
- Operational Capacity.

These observation dimensions capture the impact of financial and operational risk drivers. The recovery indicators are derived for all relevant observation dimensions. For each indicator a recovery limit is defined, indicating that a triggering event has occurred in the respective observation dimension. Additionally, early warning triggers are established and are part of the regular risk management monitoring and reporting. Concerning operational risk, Eurex Clearing's Business Continuity Management planning determines the maximum system downtime of critical functions to be limited to two hours.

Please also refer to Principle 15 for further information.

Assessment of principle:

Observed

Principle 4: Credit Risk

Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more- complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

Key Consideration 1

An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

Eurex Clearing has established a comprehensive Risk Management Framework which is described in detail in Principle 3 in order to identify, manage and control risks arising from Eurex Clearing's activities. Thereby the framework takes into account the overall risk exposures to individual counterparties from different types of relationships the counterparties may have with Eurex Clearing and consists of several policies outlining Eurex Clearing's approach to manage the risks it faces:

- Counterparty credit risk,
- Liquidity risk,
- Market risk,
- Model risk,
- Concentration risk, and
- Operational risk.

Arising credit exposures are collateralised and limits are in place to maintain the credit risk within acceptable parameters.

Consistent reporting is in place to monitor Eurex Clearing's exposures. The framework is reviewed annually to reflect changing environments and market practices. Before updates are implemented, a review and impact analysis of the required changes by all affected stakeholders is conducted to ensure an alignment with the overall risk framework of Eurex Clearing.

The framework is reviewed at least annually to reflect changing environments and market practices. For the introduction of products, a new product as well as a new risk model process is in place. When a new product is introduced, the inherent risks must be incorporated into the general risk management framework. First, it must be checked whether it is suitable for direct incorporation into existing risk models (e.g. Risk Based Margining (RBM) or Portfolio-Based Risk Management (PRISMA)). Should this not be the case, Models and Analytics section will design a new method in consultation with stakeholders, based on the specific risk profile of the product in question.

While covering adequately the risks for the CCP, the goal is to ensure a smooth and rapid launch of products, and that all the affected departments are consulted and incorporated into the development and launch process.

Key Consideration 2

An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

Eurex Clearing measures its credit exposure on a comprehensive basis taking into account multiple roles a Eurex Clearing counterpart might have. Credit exposures arising from CCP activities as well as from Treasury activities, which in general are collateralised (reverse repurchase agreements) and uncollateralised placements, derivatives for hedging purposes as well as balances left with payment banks are taken into account.

Credit exposure limits are in place to maintain the credit risk within acceptable parameters. The identification and measurement of credit exposure considers the following five dimensions:

- Types of relationships with counterparties
- Grouping of counterparties to enable e.g. single legal entity view, geographic view
- Definitions of exposures from each type of relation
- Duration of the exposure (when the exposure begins and ends)
- Level of collateralization (secured or unsecured exposure)

Credit risk is generally defined as the loss, which Eurex Clearing would suffer if a counterpart failed to meet its contractual obligations.

In the course of its business activities, Eurex Clearing is exposed to credit risk arising from a number of different sources. Consequently, a certain level of credit losses must be expected as an inherent cost of doing business. A counterpart may have different relationships with Eurex Clearing directly or with parts of Deutsche Börse. These counterparts are defined as the following:

- CCP activities: credit exposures arising from Clearing Members' portfolios
- Treasury counterpart for such activities as:
 - Unsecured Placements
 - Secured Placements (Reverse Repo)
 - Derivatives (e.g. hedging FX risks)
- Settlement Institutions:
 - Commercial banks used for CCP payment infrastructure
 - Commercial banks used for other purposes
 - Security Settlement Systems and Custodians

The notional exposure concept is applied for purposes of consolidated reporting on the Group level. Thereby, the concept on notional exposure is applied to all CCP activities, Treasury counterparts and payment infrastructures. In addition, the risk exposure is calculated for the total margin requirements from CCP activities.

For each source of credit risk, several types of exposures are defined:

- Notional Exposure (Notional Cash Exposure and Notional Derivatives Equivalent)
 - Gross Notional exposure (secured and unsecured)
 - Notional exposure considering several levels of netting
- Risk Exposure
 - Secured Exposure
 - Unsecured Exposure

To maintain the credit risk exposure within acceptable parameters, credit exposure limits are set at counterparty level. General thresholds are defined based on the rating of the counterparty. Specific threshold overrides may be applied considering further aspects such as business activities and collateral situation. Review of the credit limits is performed at least annually or on demand if necessary.

In case a counterparty breaches a granted exposure limit, the responsible Unit Risk Analytics will inform the responsible member of the Executive Board of Eurex Clearing. In addition, the Credit Committee of

Eurex Clearing assesses additional information available covering the overall situation of the counterparty taking into account for instance:

- Level of exceedance of exposure limit
- Credit quality of the Clearing Member
- Current collateral coverage and the quality of the provided collateral
- Overall concentration and wrong way risk constellation
- Degree of correlation between the creditworthiness of a member and its exposure

and prepares a proposal to the Executive Board of Eurex Clearing to decide on changes of exposure limits and/or further actions to be taken. In case the Clearing Member does not remedy the breach of the relevant credit risk limit within a reasonable period of time, Eurex Clearing is entitled to demand the provision of Supplementary Margin.

For its CCP business, Eurex Clearing measures credit exposures arising from the portfolios Eurex Clearing is facing with each Clearing Member. The core of the risk model consists out of two different risk methodologies: RBM and PRISMA, which quantifies potential losses that may occur during a default event of a Clearing Member. This risk model is complemented by stress tests. Eurex Clearing measures its exposure to its participants on a near to real-time basis as soon as updates of position or pricing data are available (“event-driven”).

Credit Risks are mitigated by:

- using preferably central bank money where possible to settle cash payments. In case where no access to central bank money is available, only counterparts with highest credit quality are acceptable. In addition, placements at these institutions are limited and concentration limits are in place.
- using Delivery versus Payment (DvP) instructions in order to settle any securities deliveries or Free of Payment (FoP) instructions for collateralization purposes. In any case, the golden rule “the CCP never delivers first” applies. In general, the CCP tries to net as many instructions as possible and only settles the net top remainder in one settlement run. For instructions entering later into the system, RTS settlement reduced the time between trade and ultimate settlement.
- limiting intraday margin credit based on the credit quality of the counterparty. In general, Eurex Clearing will call the full collateral deficit, if any intra-day collateral shortfall exceeds 10% of the total margin requirement as of the end of the last business day and is not less than EUR 10mn. However, in case of emergency, Eurex Clearing is entitled to reduce this credit line even intra-day.
- monitoring of members’ collateral pool as well as its portfolio of transactions outstanding with the CCP with regards to credit-, concentration and wrong way limits. Therefore, Eurex Clearing uses a traffic light approach in order to classify its members and their exposures, respectively. The classification is based on the credit quality of members, issuers and/or countries.
- Eurex Clearing approaches credit quality in these dimensions by classifying them into five different groups, which are rooted on the major rating codes:

Eurex Clearing determines concentration limits at the level of:

- individual issuers;
- type of issuer;
- type of asset;
- each clearing member;
- CCP (sum of all clearing members)

Concentration limits are determined in a conservative manner taking into account all relevant criteria including:

- financial instruments issued by issuers of the same sector or geographic region,
- the level of credit risk of the financial instrument or of the issuer based upon an internal assessment by the CCP.

Key Consideration 3

A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.

Not applicable.

Key Consideration 4

A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

Eurex Clearing guarantees the fulfilment of every transaction in every market for which services are provided. To ensure this commitment, a multi-level security system is set up, called “lines of defense” or default waterfall. While the mainstay of this safety system is the margin, which Clearing Members have deposited as collateral for open positions, the lines of defense consist of several additional layers of safety nets. In the event of a default, these layers are applied in the order that is outlined in the diagram below. Information on the lines of defense is also available on the webpage of Eurex Clearing (<https://www.eurex.com/ec-en/services/risk-management/default-waterfall>). The order in which the lines of defense are utilized is documented in the Clearing Conditions.

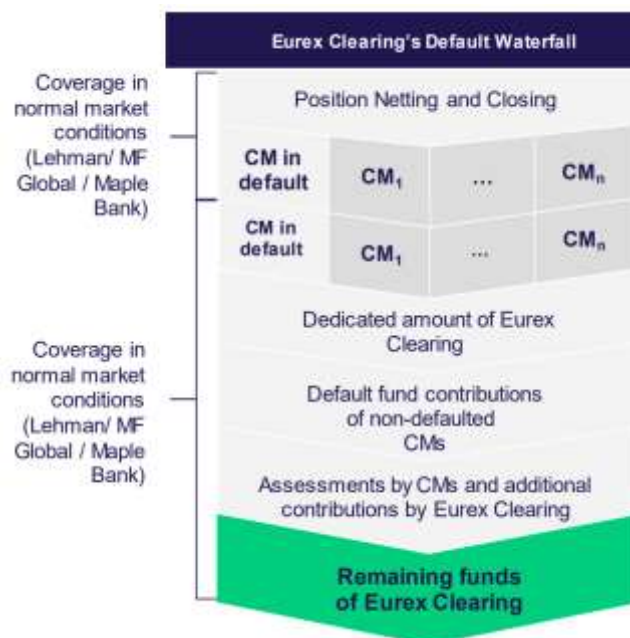
Supporting figures for Eurex Clearing’s capacity of its lines of defense are also available in the quarterly CPMI-IOSCO public quantitative disclosure in the “AggregatedDataFile” tab, where one can find:

- Eurex Clearing’s dedicated amount to the Default Fund (4_1_1),
- required aggregated prefunded participant contributions (4_1_4),
- posted aggregated prefunded participant contributions (4_1_5),
- part of Eurex Clearing’s additional contribution that is committed by its parent company to address participant defaults (4_1_7),
- aggregated participant contribution committed to replenish the Default Fund (4_1_9), and
- available other resources committed by Eurex Clearing (4_1_10).

Eurex Clearing maintains a pre-funded Default Fund that is calibrated to cover the losses resulting from the default of the two Clearing Members, and its affiliates, with the largest exposures in extreme but plausible scenarios. In addition, Eurex Clearing has access to further financial resources, namely dedicated own reserves of Eurex Clearing which are utilized after the defaulting Clearing Member’s contribution but before the mutual Default Fund, a parental guarantee and the remaining capital of Eurex Clearing.

Furthermore, Eurex Clearing has the possibility to require Clearing Members to replenish the Default Fund up to two times of their initial requirement (assessment). Simultaneously with the assessments, Eurex Clearing would provide further dedicated amount.

In addition to that, Eurex Clearing has access to further financial resources, namely a parental guarantee and the remaining capital of Eurex Clearing. Furthermore, Eurex Clearing has the possibility to require Clearing Members to replenish the Default Fund up to two times of their initial requirement (assessment) and in such a case Eurex Clearing would also provide further dedicated amount.



The Default Fund is separated into different Default Fund Segments (called DFS), whereby each Liquidation Group is assigned to one DFS. The size of each DFS depends on the exposure of the Clearing Members active in this Liquidation Group relative to the overall exposure of this member. The DFS sum up to the total Default Fund of the CCP.

In determining the adequate size of its Default Fund, Eurex Clearing conducts rigorous stress tests. Providing information on risk exposure under stressed market conditions, stress testing plays an important role in the risk management framework of Eurex Clearing.

By conducting daily stress testing, it is verified that the sum of the margins provided by the two largest members plus the Default Fund, including Eurex Clearing's dedicated own reserves, are sufficient to cover the losses resulting from the simultaneous default of the two Clearing Members with the largest exposure under extreme but plausible market conditions. In accordance with the CCP Credit Risk Management Policy, Eurex Clearing defines "extreme but plausible" scenarios as the largest risk factor movements over the stress period of risk with a confidence level of 99.9%.

Eurex Clearing is not clearing products with more-complex risk profiles. It is systemically important in more than one jurisdiction. Eurex Clearing is under supervision of BaFin in Germany and additionally has been recognized by both the Swiss National Bank and the Swiss banking Supervisory authority FINMA as being systemically important to the Swiss market. Both authorities therefore have put Eurex Clearing under their supervision.

1. The minimum amount of capital held according to Art. 16 EMIR increases
2. The resources are utilized following a Clearing Member's default.

Furthermore, margins are updated and monitored intraday whereas the Default Fund is recalibrated on a monthly basis and upon extreme market events. Stress tests are run daily and the results are presented to the Executive Board of Eurex Clearing on a monthly and to the EMIR Risk Committee on a quarterly basis.

Key Consideration 5

A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.

Stress tests apply stressed parameters, assumptions, and scenarios to the models used for the estimation of risk exposures to make sure its financial resources are sufficient to cover those exposures under extreme but plausible market conditions.

By applying a wide range of scenarios reflecting stresses across all the relevant products and risk types, stress testing aims to verify that the sum of the collateral pledged of an individual defaulting member plus Eurex Clearing dedicated own reserves as determined in accordance with the requirements set out in Article 35 (EU) 153/2013 plus the total amount of the Default Fund is sufficient to cover the potential losses of the two Clearing Members and their customers with largest exposure under extreme but plausible market conditions. The extreme but plausible conditions are defined at a confidence level of 99.9% in accordance with the CCP Credit Risk Management Policy. Worst case stress losses may not necessarily result out of the same scenario. The underlying assumption is that a default may occur not on the same day. In order to assess the impact of a Clearing Member's default on the other Clearing Members, Eurex Clearing also considers feedback effects in its stress tests.

Reverse stress testing supplements the results by determining hypothetical and extreme scenarios under which the total financial resources of Eurex Clearing are not sufficient anymore, leading to a default of the CCP. The resulting scenarios reveal to the management information about the vulnerability of the CCP.

While the actual Default Fund size is calibrated on a monthly basis, the coverage of the Default Fund is validated on a daily basis. This is done by comparing the actual "cover-2" requirement against the calibrated Default Fund size.

Additional information regarding Eurex Clearing's credit stress testing programme can be obtained from its quarterly CPMI-IOSCO public quantitative disclosure. Among others, the following relevant information on different tabs ("AggregatedDataFile", "CCP_DataFile_4_4a") is provided:

- required coverage for Eurex Clearing's stress test of its total pre-funded default resources (4_4_1 on "AggregatedDataFile"),
- per clearing service, the assumed number of business days required to close out a default when calculating credit exposures that must potentially be covered by the Default Fund (4_4_2 on "AggregatedDataFile"),
- aggregated largest estimated stress loss in excess of Initial Margin of any two Clearing Members including affiliates and transactions cleared for indirect clients on one day over the past 12 months under extreme but plausible market conditions (4_4_7 on "CCP_DataFile_4_4a"),
- aggregated largest observed stress loss in excess of Initial Margin of any two Clearing Members including affiliates and transactions cleared for indirect clients on one day over the past 12 months (4_4_10 on "CCP_DataFile_4_4a").

In addition to stress tests, Eurex Clearing performs fire drills on a regular basis.

Stress test results are incorporated in the reporting to senior management to make sure that the outcomes are considered in the overall risk management and that senior management's attention is focused on the sources of potential stresses in the decision-making process:

- Daily stress test report to the Chief Risk Officer
- Monthly stress test report to the Executive Board
- Quarterly Risk Report to the Executive Board, Supervisory Board, Audit and Risk Committee, and EMIR Risk Committee

Additional event-driven analysis are performed and reported depending on the market situation.

A sound and independent model validation is essential for running reliable and robust risk management systems and methodologies. A comprehensive Model Validation Framework with strong governance ensures effective identification of potential model risks related to models used at Eurex Clearing.

Eurex Clearing commits itself to a regular and thorough validation of all risk models along the model landscape.

Throughout the year, the independent model validation uses a number of validation instruments to regularly validate the conceptual soundness of the frameworks and adequacy of the risk models. At the end of the year an annual comprehensive validation is performed along the model landscape. In the annual validation report, all validation results obtained throughout the year are summarized and combined with a fundamental review of the methodology and the model parametrization. This yields an overall review of model performance and appropriateness.

The adequacy of the initial margin is primarily validated by portfolio backtesting, which compares the initial margin with the realized profits and losses. The results are assessed using statistical tests. Validation at parameter level is performed by means of a parameter sensitivity analysis, which is conducted to determine the margin model's response to changes in model parameters. Results from backtesting and parameter sensitivity analysis are regularly reported to the Risk Committee in a form that does not breach confidentiality.

A model assumption materiality analysis reveals the materiality of assumptions made in margining models and is used as a tool to identify potential focus areas for further model improvement. The stressed period validation is used to analyse if the applied stressed periods within the Stress VaR component of Initial Margin are reasonable. While portfolio backtesting is performed daily, the intervals for the validation of the other margining components differ between weekly, monthly and quarterly. The validation schedule allows for timely action in case the analysis results suggest that the model does not perform as expected.

Key Consideration 6

In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

Eurex Clearing identifies, measures and considers relevant risk factors specific to the contracts it clears. A detailed overview about the risks Eurex Clearing faces, how these risks can be measured, which risk factors are considered for each type of risk and how these risk factors are taken into account in the stress test scenarios can be found in the stress testing framework and underlying stress testing concept documents.

A full review of the stress testing framework is done at least annually, especially with respect to its appropriateness for the Default Fund sizing, and presented to the Executive Board, Supervisory Board

and EMIR Risk Committee. In addition, the stress testing model is validated on an annual basis by the Model Validation team.

Eurex Clearing reports a summary of stress test results to the Executive Board on a monthly basis. At the start of each month (together with the monthly reporting to the Executive Board) or if market conditions or other circumstances require this, Eurex Clearing verifies whether any scenarios, assumption or parameters need to be amended.

Historical or hypothetical scenarios are in place to reveal the risk exposures under stressed market conditions of all Clearing Members.

Historical scenarios are regularly reviewed using quantitative and qualitative analyses, taking the materiality of the cleared products into account. The shifts used for these scenarios are the worst relative returns that occurred around a respective historic date over the stress period of risk.

Hypothetical scenarios are designed to account for the largest risk factor movements over the stress period of risk with a confidence level of 99.9%. These forward-looking scenarios simulate extreme risk factor movements for all cleared asset classes and products simultaneously by combining selected constellations of up and down moves across asset classes. However, the scenarios are kept plausible by adhering to consistent risk factor movements and pricing principles within each asset class. For example, simulating a downturn of all single stocks and a simultaneous upturn of equity indices would not be considered as a plausible event.

There exist two different types of hypothetical scenarios, which can be distinguished by the type of shift:

- Relative shifts move the corresponding risk factor by a defined relative value, e.g. 15%. This is analogous to the preceding description of the historical scenarios and is independent of the current market situation.
- σ -multiplier shifts move the corresponding risk factor by a relative value that depends on the current volatility level of the risk factor. This approach accounts for the current market situation such that shifts increase if current volatility increases.

In addition, absolute shifts are used for interest rate products to adequately cover low interest rate environments.

Correlation stress scenarios are special hypothetical scenarios that additionally stress the correlations between single risk factors. Stress scenarios that are designed on asset class level imply high correlations between risk factors when shifting them in the same direction and with the same magnitude. By relaxing the assumption of parallel shifts – direction and/or magnitude – additional hypothetical scenarios that stress the correlation are introduced.

Market liquidity stress simulates low market liquidity under extreme market conditions and estimates potential additional losses during liquidation. In particular, the initial margin components that account for market liquidity risks are stressed by assuming stronger adverse price moves than considered within margining. The stressed margin component is counted as additional stress loss on top of all historical and hypothetical scenarios.

Key Consideration 7

An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.

Eurex Clearing guarantees the fulfilment of every transaction in every market for which services are provided. To ensure this commitment, a multi-level security system is set up, called "lines of defense" or

default waterfall. While the mainstay of this safety system is the margin, which Clearing Members have deposited as collateral for open positions, the lines of defense

consist of several additional layers of safety nets. In the event of a default, these layers are applied in the order that is outlined in the diagram below.

If the total Default Fund is realized as a result of a Clearing Member default, the non-affected Clearing Members are obliged to replenish the relevant Default Fund(s) up to the relevant contribution requirement applicable to it. To ensure limited exposures of Clearing Members to Eurex Clearing, further contributions of non-affected Clearing Members are subject to a liability cap. The liability cap for each non-affected Clearing Member shall, with respect to each Default Fund, be two times the originally applicable contribution requirement to the relevant Default Fund for such non-affected Clearing Member within 20 rolling business days, i.e. the overall liability of the Clearing Member is limited to three times its pre-funded Default Fund contribution. The required pre-funded Default Fund contribution for each member is determined on a monthly basis.

The capped period is rolling, that means that if within the capped period another default occurs then the period is restarted to last another 20 day. However, when the capped period is rolled the number of assessments does not restart counting. Therefore, within the rolling capped period each member is obliged to provide assessments up to two times the original amount of its Default Fund contribution at the start of the capped period. Capped periods will end after 3 months, regardless of further defaults.

Eurex Clearing will reinstate its dedicated own resources within one month after it has fallen under the minimum requirement stipulated in Art. 35 (EU) 153/2013. Where a subsequent default of one or more Clearing Members occurs before Eurex Clearing has reinstated the dedicated own resources, only the residual amount of the allocated dedicated own resources will be used in order to comply with the requirements stipulated in Art. 45 EMIR.

Letter of Comfort is a one-off amount provided by Deutsche Börse. According to the Letter of Comfort, Deutsche Börse commits to provide required funding within 3 business days.

In its recovery plan, Eurex Clearing has thoroughly outlined the recovery measures that strengthen the capital basis and the liquidity position of the clearing house in potential stress situations. An impact analysis has been performed and the process for implementing the options identified are laid out in detail.

Assessment of principle:

Observed

Principle 5: Collateral

Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Key Consideration 1

An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

In order to accept certain financial instruments as eligible margin collateral at Eurex Clearing, they must satisfy a number of collateral acceptance criteria: high credit quality, low market risk, high liquidity, immediate [unverzüglich] accessibility, and valuation (CCP Credit Risk Management Policy). Eurex Clearing accepts securities (bonds, equities and selected Exchange Traded Funds (ETFs)) and cash (in several currencies), and does not accept commercial bank guarantees or central bank guarantees. Thereby the acceptance of the financial instruments is compliant with the provisions of (EU) 153/2013 Annex I and Annex II.

From a liquidity and credit risk perspective cash is the most preferred collateral type. Cash is preferably accepted from access to central bank liquidity for reasons of counterparty credit risk and due to the finality of bookings within a protected payment system. Commercial bank money is accepted at a payment bank, if it fulfils regularly assessed creditworthiness and reliability criteria.

Eurex Clearing only accepts security collateral that can be liquidated within a short period of time, in order to keep the collateral pool value stable. The selection of eligible securities is mainly based on the central banks' (ECB, SNB) admissible securities lists. For some G20 countries, Eurex Clearing accepts additionally government bonds that will be accepted by the respective central bank. Eurex Clearing defines bond assets that are eligible for central bank repos as liquid, as they can easily be converted into cash. Eurex Clearing performs credit risk assessments of the instrument's issuer based on external and internal rating information. Only if the composite credit quality considerations result in "Investment Grade", the instrument is acceptable as collateral. For bank bonds the composite rating must be equal to or better than "A-".

In addition, all financial instruments that are Own Issues (i.e. issues by the same legal entity of the collateral provider) or Close Links (i.e. issues by the collateral provider's highly interlinked cooperation) are not eligible, unless they are guaranteed by public issuers with highest credit quality or covered with sufficiently segregated assets (issued compliant with prudent covered bond laws). Only in cases where the instrument is itself secured with high quality assets and in case the issuer of such instrument has sufficient credit quality, an exception from this rule can be granted.³ This exclusion of Own Issues and Close Links as admissible securities also applies to all issues of the Deutsche Börse Group in order to eliminate any potential wrong way risks. Furthermore, financial instruments of issuers whose business involves providing services critical to the functioning of the CCP are ineligible. Eurex Clearing defines Close Links as a direct or indirect ownership or control via voting rights between a parent undertaking and a subsidiary, in which an ownership of 50% or more of the voting rights or capital of an undertaking or a control agreement exists.

Wrong way risk is addressed by the exclusion or the restricted usage of certain issues for a specific participant to use as collateral. In order to limit the exposure of a participant "cross"-conditional on its own credit quality and the credit quality of its pledged collateral, a threshold scheme is set up. This assessment takes place consecutively and independently with respect to the affiliation of a participant to a country on one hand and a sector on the other hand. There are three exemptions where the Own

³ The general restriction is not applicable, i.e. a financial instrument is though eligible, if it belongs to one of the following three groups: emission of a Public Issuer, as defined in the Clearing Conditions of Eurex Clearing AG, Chapter I, Part 1, Number 2.1.3 (1), securities guaranteed by selected Public Issuers or central governments, covered bonds of issuers with a defined sufficient rating that are backed by segregated assets within a robust legal framework.

Issues / Close Link restriction is not applicable, and the respective financial instruments are eligible according to Eurex Clearing's further criteria:

- Securities emitted by Public Issuers as reflected in the Clearing Conditions based on the European Central Bank's definition
- Securities guaranteed by a selected set of Public Issuers and central governments with highest credit quality recognized as guarantors due to case-by-case Eurex Clearing Board decision
- Covered bonds issued by entities with an internal rating of at least "C" or an equivalent external rating that are backed by appropriately segregated assets within a robust legal framework, according to EMIR/ESMA.

Additional concentration and wrong way risk limits shall apply in order to ensure sufficiently diversified collateral pools which can be liquidated without significant market impact in case of a liquidation.

Eurex Clearing publishes a list with the admissible collateral securities on its website. Eurex Clearing regularly monitors the collateral deposits related to eligibility. If collateral has been delivered that is set to ineligible, the participant is required to substitute the collateral value by another security, or alternatively by cash, within a time specified by Eurex Clearing. After the due date the ineligible security will be valued with zero, and an amount up to the margin requirement will be debited. Hence, Eurex Clearing disregards the securities that have been excluded from the list of eligible margin assets when assessing whether the margin requirement of a participant is met.

Key Consideration 2

An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

Eurex Clearing has defined prudent and adequate criteria to identify whether an asset can be accepted as collateral or not (the collateral acceptance criteria, as well as adequate measures being described). Most importantly, credit quality, market liquidity and collateral valuation are addressed by collateral issuer assessments, adequate liquidation procedures as well as the application of prudent haircuts. The credit quality of collateral issuers is monitored closely. In case the quality deteriorates, the respective issuer might be placed on "watch-list" to monitor it even closer. Ultimately, the eligibility of instruments issued by such issuer can be revoked, in case the issuer cannot be considered to have high credit quality anymore.

Eurex Clearing values its collateral at least on a daily basis. The valuation is based on current market prices or, if not available for bond assets, on mark-to-model prices to obtain appropriate collateral values. Theoretical prices are always calculated for each eligible bond asset, which allows for a constant benchmarking of the model against observed market prices. Confidence factors are applied to any model price to mitigate risk arising from approximation errors. In order to account for any further decline in collateral value, Eurex Clearing applies prudent and not pro-cyclical haircuts to the collateral received.

Eurex Clearing applies a haircut methodology distinguishing the collateral type of the deposited collateral (bond, equity, ETFs, cash currency). In addition, collateral specific valuation factors and yield shift factors are considered to express the actual price movements in the markets and to cover for a potential decline in the value of the assets. Haircuts reflect the potential for the market value to decline over the interval between the last revaluation and the time by which they can reasonably be assumed to be liquidated. In addition, Eurex Clearing maintains currency haircuts for foreign currency (FX) collateral (securities and cash). The Haircut Framework explains in detail how the haircuts are applied for bonds, equities, ETFs and cash collateral.

Eurex Clearing is valuing the collateral at least on a daily basis and manages the risks with regard to the valuation of collateral on an adequate basis by additionally marking-to-model when marking-to-market is not possible due to a lack of market prices. Eurex Clearing regularly calculates theoretical prices for all bonds. Valuation is based on financial valuation models, which determine the present value of all expected future cash flows of the security. The present values of cash flows are obtained by applying a

bond specific discount curve. The model to derive the bond specific discount curves consists of three major components:

- Risk free interest rate curves are obtained from government or swap curves.
- Credit spread curves (sector curves) are bootstrapped from bonds belonging to the same peer group.
- An individual spread basis of a given bond is used for a further adjustment.

Haircut backtesting on single ISIN level is in place to validate the adequacy of haircuts on cash and non-cash collateral on a monthly basis. For the purpose of single parameter backtesting, the haircuts are compared to the market returns of the time horizon that they aim to cover. All realized returns exceeding the model parameter are counted as outliers. Backtesting uses statistical tests to assess the frequency of outliers, i.e. it uses statistical inference techniques. The classification of the assessment results can be derived from the probabilities of type I errors (i.e. the probability of rejecting a correct model based on the observed test statistic). The maximal number of exceptions then enters a predefined test statistic (e.g. a binomial statistics). To assess severity of potential exceptions a traffic light approach is applied. Thereby the maximal number of outliers enters the test statistics and determines the threshold for the traffic lights. The outlier classification used to assign traffic lights to securities is available for securities that had been issued more than 30 days before the report date.

Results on the haircut tests performed by Eurex Clearing can be found in the quarterly CPMI-IOSCO public quantitative disclosure on the "AggregatedDataFile" tab:

- Target confidence level when calculating the haircut (5_3_1),
- Assumed holding/liquidation period per accepted asset (5_3_2),
- Applied look-back period for the haircut backtest (5_3_3), and
Number of days during the look-back period on which the decrease in value during the assumed holding/liquidation period exceeded the haircut on an asset (5_3_4)

Key Consideration 3

In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.

Haircuts applied by Eurex Clearing recognize the fact that collateral may need to be liquidated in stressed market conditions. Therefore, market risk, credit risk and liquidity risk are important components while determining the appropriate haircuts. In addition, the haircuts are calibrated on a very high and therefore conservative confidence level (99.9%) to cover extreme market conditions, i.e. 99.9% of respective historic price changes are below the applied haircut.

Furthermore, securities' haircuts are calibrated to ensure sufficient coverage over a five-day liquidation period even in stressed market conditions. The dynamic haircut methodology reflects the individual risk and the inherent risk profiles of different collateral assets and takes into account the actual volatility of the respective instrument. The model parameters of the collateral haircut determination are validated regularly and adjusted, if necessary. Prudent minimum haircuts are an appropriate measure to prevent and control pro-cyclical effects of haircuts to the extent that Eurex Clearing's soundness and financial security is not negatively affected.

Key Consideration 4

An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

To safeguard the overall integrity of the CCP and to protect the mutualizing Default Fund, Eurex Clearing conducts an internal credit assessment of all counterparties and performs continuous monitoring of credit, concentration and wrong way risks. This enables Eurex Clearing to guarantee fulfilment of all obligations towards counterparties even under extreme market conditions. Therefore, it is essential for Eurex Clearing to monitor all risks arising from the trading portfolios of counterparties on the one hand and from the collateral deposited to secure such portfolios on the other hand.

Within the context of concentration risk, two essential aspects are addressed by Eurex Clearing's Risk Management Framework: The clustering of risk exposures and the overall portfolio diversification of risk exposures. In order to evaluate these risks in a comprehensive manner, rules are applied on Clearing Member and CCP level to ensure a firm view on both levels. The clustering of risk exposures is assessed via thresholds to the overall exposure with respect to issues, issuers, sovereigns, supranational organizations and sectors in an absolute manner. Portfolio diversification of risk exposures is assessed via relative thresholds with respect to the overall portfolio composition and its proportional exposure to sovereigns, supranational organizations and sectors.

Eurex Clearing assumes a portfolio or collateral pool to be concentrated if the exposure of a particular position exceeds the aggregated market demand during the anticipated liquidation period. Hereby, market demand depends on market capacity and on the credit quality of the particular security or instrument.

If a counterparty has defaulted, Eurex Clearing guarantees a safe and smooth winddown of such counterparty's portfolio – with the lowest possible market impact.

If, as a consequence of a counterparty's default, Eurex Clearing has to liquidate large positions of collateral, such liquidation may cause losses due to a lack in liquidity. Similar losses can arise if the portfolio of the defaulted counterparty is concentrated in certain instruments, and Eurex Clearing is confronted with a lack in liquidity when winding down the respective portfolio. To avoid such losses, Eurex Clearing defined dedicated concentration risk thresholds which are applicable to all counterparties. The concentration risk thresholds are available at Eurex Clearing's website: <http://www.eurexclearing.com/clearing-en/risk-management/credit-concentrationwrong-way-risk>.

Wrong way risks are addressed by the exclusion or the restricted usage of certain issues for a specific member to post as collateral. Monitoring or even preventing wrong way risk constellations in a Clearing Member's collateral pool is of great importance since the value of the collateral is negatively impaired in case the respective Clearing Member is in default. While determining risk adequate haircuts, it is assumed that the recovery rate of collateral is not related to the credit quality of the Clearing Member itself. Therefore, the usage of such collateral has to be restricted in case there is such a linkage.

Whenever it is possible to prevent certain wrong way risk constellations, such as the collateralization with own issues and close links, it is prohibited. In all other cases, dedicated wrong way risk thresholds are defined, enabling Eurex Clearing to take additional steps to minimize such risk. These thresholds are applicable to a counterparty's collateral pool and the counterparty's notional exposure.

In this context, Eurex Clearing sets thresholds that consider the home country of the counterparty and the home country of the issuers within the counterparty's collateral pool and portfolio. In addition, Eurex Clearing has introduced an automatic ex-post check to identify close link securities in order to exclude these collaterals from being provided as margin, Default Fund contributions and substitutes for company equity capital collateral. As outlined above, Eurex Clearing defines a close link as a direct relationship between members (Clearing Members, Disclosed Direct Clients) and issuers of a security. A member is directly linked with an issuer by participation, i.e. by ownership, directly or by way of control, of 50 % or more of the voting rights or capital of a company or by control, i.e. by the relationship between a parent company and a subsidiary, or a similar relationship between the member and a company.

1. To keep the collateral pool value stable also in extreme market conditions, a selection of high quality collateral with low credit and market risk, high liquidity and accessibility and the appliance of appropriate valuation methods including "haircuts" are combined.

Accepted collateral can be classified in two types:

- Cash
- Securities

Concentration limits and Wrong Way Risk thresholds are established by the rules laid out in the CCP Credit Risk Management Policy.

The Additionally Monitored Risks Framework describes Eurex Clearing's approach towards concentration risk in a more comprehensive way. It outlines the approaches to identify, monitor, mitigate and report concentration & wrong way risks that may arise out of the clearing business of Eurex Clearing. The CCP Credit Risk Management Policy and the Additionally Monitored Risks Framework ensure that the provided collateral remains sufficiently diversified to allow its liquidation within a defined holding period without a significant market impact. The Additionally Monitored Risks Framework further describes what mitigation measures are to be applied when the concentration limits are exceeded.

2. Once a Clearing Member breaches a risk limit or threshold, Eurex Clearing informs the responsible member of the Eurex Clearing Executive Board and the Risk Controlling Committee (and the competent authority, if required).
3. Eurex Clearing rectifies the breach as soon as possible by notifying the affected Clearing Member and requests the reduction of the relevant exposure within a reasonable period of time and in the amount, which is necessary to remedy the relevant breach.

If the member does not comply with the limits after the reasonable period of time, it may be granted an additional short "grace period", taking into account for instance:

- Credit Quality of the Clearing Member, Instrument or Issuer
- utilization of the overall Clearing House Concentration Limits
- the overall Wrong Way Risk constellation
- the degree of correlation between the member and its exposure

If a member does not comply within the given "grace period", Eurex Clearing may decide to restrict the member from clearing and reserves the right to:

- charge supplementary margins
- lower intra-day margin call limits
- value questionable collateral with zero

The latter measure may lead to an under-collateralization, which ultimately may lead to the termination of the Clearing Member, if sufficient other collateral is not posted.

4. As the Additionally Monitored Risks Framework describes, Eurex Clearing determines concentration limits at the level of:
 - individual issuers;
 - type of issuer;
 - type of asset;
 - each Clearing Member;
 - each Collateral Pool owner;
 - Clearing House (sum of all Clearing Members).

It further specifies that, within the framework of concentration risk, two essential aspects are addressed: the clustering of risk exposures on the one hand and the overall portfolio diversification of risk exposures on the other hand. In order to evaluate these risks in a comprehensive manner, rules are applied on Clearing Member and Clearing House level, to ensure a firm view on both levels. While the clustering of risk exposures is assessed via limits to the overall exposure with respect to issues, issuers, sovereigns, supra nationals and sectors in an absolute manner, portfolio diversification of risk exposures is assessed via relative limits with

respect to the overall portfolio composition and its proportional exposure to sovereigns, supra nationals and sectors.

5. Concentration limits are determined in a conservative manner. The Additionally Monitored Risks Framework describes the relevant criteria that are taken into account, including:
 - financial instruments issued by issuers of the same sector or geographic region,
 - the level of credit risk of the financial instrument or of the issuer based upon an internal assessment by the CCP.

In order to ensure efficient monitoring of credit-, concentration and wrong way risks, entities are classified based on a comprehensive risk classification approach, which corresponds to the current market standards and is in line with a qualitative credit risk assessment. The definition of the risk classification is based on internal assessments, the major credit rating codes and might be enhanced with additional market data, such as CDS spread considerations and stock price observations.

To further take into consideration the credit risk of financial instruments accepted as collateral, Eurex Clearing performs an additional assessment based on the credit quality of the country in which the financial instruments are issued. For example, in case Eurex Clearing downgrades a certain issuer to the orange or red category, it will exclude their issues from the eligible collateral database.

Liquidity is addressed in the CCP Credit Risk Management Policy. Only those instruments that may easily be transformed into cash in cases of stress are eligible. The volatility of an instrument itself is covered by haircuts which must reflect the potential for the market value to decline over the interval between the last revaluation and the time by which they can reasonably be assumed to be liquidated (Haircut Framework).

6. In the Additionally Monitored Risks Framework, Eurex Clearing determines concentration limits and thresholds on Clearing House level. When setting the threshold per issuer on collateral level, Eurex Clearing ensures that no more than 10% of the collateral is guaranteed by a single credit institution, or equivalent third country financial institution, or by an entity that is part of the same group as the credit institution or third country financial institution.
7. Sources of exposures for Eurex Clearing are determined in the Additionally Monitored Risks Framework.

In the course of its business activities, Eurex Clearing is exposed to risks arising from a number of different sources. Consequently, a certain level of losses must be expected as an inherent cost of doing business. A counterpart may have different relationships with Eurex Clearing directly or with parts of Deutsche Börse AG:

- CCP activities
 - As part of a payment infrastructure
 - As treasury counterpart from such activities as Investments, Repo, Derivatives (e.g. hedging FX risks) or Nostro accounts
 - As part of the settlement infrastructure
8. Within the Additionally Monitored Risks Framework, two essential aspects are addressed, the clustering of risk exposures on the one hand and the overall portfolio diversification of risk exposures on the other hand. In order to evaluate these risks in a comprehensive manner, rules are applied on Clearing Member and Clearing House level, to ensure a firm view on both levels. While the clustering of risk exposures is assessed via limits to the overall exposure with respect to issues, issuers, sovereigns, supra nationals and sectors in an absolute manner, portfolio diversification of risk exposures is assessed via relative limits with respect to the overall portfolio composition and its proportional exposure to sovereigns, supra nationals and sectors.

Limits and thresholds per Member

The sum of all Notional Exposures of one Clearing Member held in its portfolio or used as collateral must not exceed a limit of:

		Notional Exposure (Collateral pool and trading portfolio)
1	Issue	A limit of 25% of the issued capital per Issue (for bonds) or 1% of free float (for equities)
2	Issuer	Limits are set on the level of Exposure per Issuer. <ul style="list-style-type: none"> • 10% of total issued capital per Country/Sovereign issuer. • 5% of total issued capital per Supra Nationals issuer. • 2bn EUR or 5% of total issued capital per Sector issuer. <p>The total issued capital per issuer is restricted to what is known to the CCP.</p> <p>The current set of limits can be found on Eurex Clearing's website: https://www.eurex.com/ec-en/services/risk-management/credit-concentration-wrong-way-risk</p>
3	Aggregated Issuers	Absolute and relative thresholds are set on aggregated exposures to all issuers belonging to the same group.
4	Diversification	Stock ratio in the collateral pool must not exceed a ratio of more than 30% as a limit.

For listed fixed income derivatives, the notional concentration limits are not applicable, i.e. the exposures of these instruments are not taken into consideration while assessing the general concentration limits as outlined in the table above.

While relative limits and thresholds ensure the diversification of a Clearing Member's collateral pool or trading portfolio respectively, limits and thresholds set on the issued capital per issuer prevent that one member accumulates a notional exposure in one single name that exceeds a given level of confidence.

Limits and Thresholds on Clearing House Level

Moreover, some limits and thresholds are applied on Clearing House level.

Products in Clearing Member's Trading Portfolios:

- For listed fixed income derivatives, a daily concentration monitoring and early warning system is in place. Clearing Members are proactively contacted in case the share of open interest for an individual instrument exceeds 30%.

Products in Clearing Members' Collateral Pools:

- The aggregated collateral value pledged in the collateral pools of all Clearing Members must not exceed a limit of 10% relative to the collateral value of the entire collateral.

All limits are monitored, and mitigating actions are performed once a limit or threshold is breached (Additionally Monitored Risks Framework).

9. Eurex Clearing nets risk exposure on different levels: starting with gross terms followed by netting allowed on different aggregation levels.

Netting levels:

- a) Gross exposure, does generally not allow netting other than aggregating equal instruments.
- b) Economic Issuer netting allows netting across all products along equal economic issuers, i.e. all derivatives and cash products across asset classes issued by the same issuer are netted.
- c) Entity netting allows netting across all equal economic entities that allow to properly reflecting also close link relationships.

With net notional exposures resulting from applying the above netting conventions, aggregated bucket exposures are defined by means of aggregation metrics. For concentration risk, an “Absolute Notional Exposure” is defined.

Total exposures are defined as the sum of their respective bucket exposures, ensuring consistent definition and treatment of relative limits, which are defined on exposures that have been calculated by application of the “entity netting” scheme.

The CCP Credit Risk Management Policy requires that reviews of the framework take place on an annual basis, and whenever a material change occurs that would make a review necessary.

10. Eurex Clearing will inform its competent authority and its Clearing Members of the applicable concentration limits and of any amendment of the limits (Additionally Monitored Risks Framework).
11. Once a concentration threshold has been breached on Clearing Member level, the affected member will be contacted and requested to reduce the respective notional exposure within a reasonable timeframe. If the member does not comply with the limits after the given timeline, an additional short “grace period” may be granted - taking into account for instance the credit quality of the Clearing Member, the instrument or the issuer, and the utilization of the overall Clearing House concentration limits. If a member does not comply within the given “grace period”, Eurex Clearing reserves the right to charge supplementary margins and to reject questionable collateral. The latter measure may lead to an under-collateralization, which in turn may result in the termination of the Clearing Member, if sufficient other collateral is not posted (Additionally Monitored Risks Framework).

Once a concentration threshold has been breached on Clearing House level however, Eurex Clearing will report the breach to the Executive Committee of Eurex Clearing. Additionally, Eurex Clearing will rectify the breach as soon as possible by notifying the affected members to substitute their exposures in line with the limits. Eurex Clearing will immediately inform the competent authority, if the breach is material. It will additionally outline in its report what the reason (portfolio level or collateral level) for the limit breach was (Additionally Monitored Risks Framework).

Key Consideration 5

An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

Eurex Clearing offers direct provisioning of security collateral at designated operators of a Securities Settlement Systems (SSS), ideally with access to the European System of Central Bank (ESCB) facilities for reasons of process stability, providing the necessary collateral management and custody services for Eurex Clearing and its participants. Security collateral is provided through the security collateral locations ((I) CSDs) Clearstream Banking AG (CBF), Clearstream Banking S.A. (CBL), and SIX SIS Ltd.

Cash collateral is provided through Eurex Clearing’s payment banks, i.e. the amount is deposited at the respective cash collateral location as announced by Eurex Clearing to the participant (see <https://www.eurex.com/ec-en/services/collateral-management/cash-collateral>). Commercial bank money is only accepted according to the payment finality rules in the General Provisions of the ECAG Clearing Conditions.

Collateral processing takes place in a straightforward manner via standardized interfaces, which mitigates operational and market risks. Eurex Clearing’s risk and collateral management procedures ensure that the accepted collateral types can be covered with limited involvement of operational supervising and risk controlling units.

Moreover, Eurex Clearing’s risk management requirements towards the respective collateral locations / systems ensure that the allocation of securities is in line with eligibility criteria of collateral, with the valuation parameters, concentration limits and under wrong way risk considerations.

Any collateral location has to ensure legal certainty based on dedicated regulations (e.g. Financial Collateral Directive) regarding the first ranking of legal rights of Eurex Clearing to access the collateral in a timely manner. Eurex Clearing has prompt access to the financial instruments when required, i.e. first ranking in terms of legal rights and immediate access to the posted collateral of any type at any time. This applies also in the event of a participant's default, irrespective of the legal concept, i.e. pledge / title transfer (see Security Collateral Location Framework. Legal certainty is given for any of these aspects under the German Insolvency Code (InsO) and is required for foreign insolvency laws, in each case to be confirmed by legal counsels, coordinated by the Deutsche Börse Group Legal Department.

The legal certainty and operational set-up of any collateral location needs to provide the possibility for Eurex Clearing to "freeze" all allocated collateral in a dedicated account at any time, in particular in the event of a participant defaulting or deeming insolvent. This secure mechanism for the benefit of the CCP ensures that collateral cannot be moved by the participant and can only be used by Eurex Clearing starting at the decision point in time until Eurex Clearing releases the collateral for the collateral provider or third parties.

Key Consideration 6

An FMI should use a collateral management system that is well-designed and operationally flexible.

The scope of Eurex Clearing's collateral management service comprises the connection of designated collateral locations, the acceptance of a broad range of eligible collateral, collateral valuation and composition for the Eurex Standard Collateral Pools (i.e. Margin, Default Fund, Company Capital) across all relevant systems, transparency through intraday reports and monitoring functionalities, as well as highest protection through asset segregation and portability in line with regulatory requirements. These services are provided by the dedicated collateral management system infrastructure of Eurex Clearing and by the respective collateral locations' applications.

Participants can choose to open securities accounts either at CBF, CBL or at SIX SIS. The securities accounts in the settlement systems of CBF (CASCADE), CBL (Creation) and SIX SIS are maintained on a participant's behalf with the securities pledged or transferred by title to Eurex Clearing.

The collateral to cover the requirements of Eurex Clearing can be managed in Triparty collateral management systems, i.e. in CBF's collateral management system Xemac® or in CBL's collateral management system CmaX®. Automated facilities of Xemac® allow for optimal use of collateral, which is offering clients more efficient, real-time asset management. Collateral can also be managed in connection with the money market operations of the Deutsche Bundesbank, GC Pooling® of Eurex Repo, and bilateral transactions among Xemac® customers. Further details on Xemac® can be found on the website of Clearstream <https://www.clearstream.com/clearstream-en/products-and-services/global-securities-financing/global-liquidity-hub-csd-services/triparty-collateral-services-xemac-/xemac-product-description-1312532>.

Eurex Clearing aims to provide best in class, diversified collateral management services that create maximum value for its customers and simultaneously ensure the integrity of the CCP. For that matter, Eurex Clearing regularly adjusts its collateral management practices and procedures including the services developed by and requested from the CMS service providers.

The collateral management function is sufficiently staffed to ensure smooth operations even during times of market stress.

Assessment of principle:

Observed

Principle 6: Margin

Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Key Consideration 1

A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.

Eurex Clearing imposes, calls and collects margins to limit its credit exposure from its Clearing Members. Currently Eurex Clearing does not maintain links to other CCPs.

In general, margining encompasses the entire process of measuring and calculating a Clearing Member's risk exposure. The provision of collateral is intended to ensure that all financial commitments related to the open positions of a Clearing Member can be offset within a very short period of time. Margining generally comprises a backward looking as well as a forward-looking component.

Eurex Clearing currently operates two different margin methodologies - PRISMA which is used for margining of its derivatives positions and RBM used for margining of cash markets and securities financing transactions. A member's total margin requirement, whether parts of it have been calculated with RBM or PRISMA, is the amount that is equivalent to such member's risk exposure and provides a transparent view of the Exposure at Default (EaD) with a high level of confidence and represents the anticipated liquidation costs. Overstating the margin requirement would unnecessarily tie up the liquidity of the Clearing Member, while an understated position represents a potential threat to the guarantee of contract fulfillment and the integrity of the Clearing House and the Clearing Member community.

Forward-looking component

The forward-looking component, called initial margin, collateralizes potential future exposure making use of the default management's assumptions regarding the holding period. Eurex Clearing applies liquidation periods of 2 days in RBM and between 2 and 5 days in PRISMA. More specifically 2-3 days are applied to listed products, 5 days for OTC derivatives depending on the liquidation group and corresponding default management assumptions, internal expertise, and fire drill experience.

Eurex Clearing aims to have sufficient margin collateral to cover a member's default loss in "all but extreme market circumstances" (tail events). Eurex Clearing defines "all but extreme market circumstances" such that in 99 out of 100 cases (99% confidence level) the potential loss in case a member defaults will not exceed margin requirements. In case of OTC derivatives Eurex Clearing requires a confidence level of 99.5%. The potential loss will be covered by collateral provided for margin requirements from the defaulting Clearing Member. Losses beyond the margin requirement will be absorbed by the other lines of defense, such as the Clearing Member's Default Fund contributions.

The margin requirements of each Clearing Member are calculated intraday on a near to real-time basis. If the potential future price risk of a Clearing Member increases above the amount of collateral that is provided, then Eurex Clearing issues an intraday margin call towards that Clearing Member that has to be covered within one hour. The calculation of the future risk exposure assumes worst-case price changes within the assumed liquidation period on a given confidence level.

Eurex Clearing breaks down the forward-looking component into two main sub-components in order to ensure that margins are accurate, stable and robust: a market risk component as well as a liquidity risk component. Model components, assumptions, and outcomes are regularly tested and validated through a dedicated validation function.

The market risk component is designed to hold on a confidence level of 99% for listed and 99.5% for OTC products. In PRISMA a Value-at-risk measure is calculated based on 75% of filtered historical scenarios and 25% of stress period scenarios, where the latter are included to ensure stability and limit

procyclicality. In addition, model adjustments are in place as a supplement to the VaR measure. They account for correlation breaks, expiry risk, compression in modelling risk factors and long option credits.

A liquidity risk component is in place to capture the potential additional costs when liquidating portfolios. The component is based on the relative size of positions as compared to the available market capacity and depends on the market risk of the respective products.

Risk Based Margining is a systematic risk-oriented model to estimate future losses. While the methodology may vary between products, applied methods will satisfy a number of criteria to ensure objectives of security and efficiency as well as consistency across products. The coverage of market price risk is ensured via those parts of the margin parameter that are calibrated to historical observations (volatilities). Long-term historical characteristics are used as a floor via a minimum parameter. Short-term dynamics influence the margin parameter via current market volatilities. Overall, tail properties attached to the required confidence level are expressed in the risk factor, which is calibrated to empirical data.

The margin parameter in RBM accounts for market and credit risk via a decomposition into a market risk and a credit risk factor. Liquidity risk is considered by a liquidity factor.

Backward looking component

In addition to the forward-looking component, intraday margin calls include the backward looking component of the margin requirement. This includes Variation Margin, Premium Margins and Current Liquidating Margin. Variation Margin applies to future styled derivatives and Interest Rate Swaps and can be covered by eligible collateral intraday and is settled in cash in the product currency end of day. Premium Margin and Current Liquidating Margin reflect the value of traditional options and spot market products as well as repos, respectively. Premium Margin and Current Liquidating Margin can be covered by any eligible margin collateral. If a Clearing Member holds a position that results in a Premium Margin or Current Liquidating Margin Credit (e.g. long option positions) then this credit can be used to offset margin requirements of other positions but is not paid out.

Eurex Clearing ensures that Clearing Members are able to properly manage and contain the risks associated with their cleared business: first of all, by providing Clearing Members with sufficient information regarding the CCP's risk management (Please refer to the website: <https://www.eurex.com/ec-en/services/risk-management>).

Secondly, the margin requirements help Clearing Members to properly understand and manage the risks associated with their cleared business. Eurex Clearing calculates and distributes margin requirements in real-time to ensure a continuous measurement of members current positions and potential future exposures.

Thirdly, tools such as the Cloud Portfolio Margin Estimator (CPME), a computer-based simulation program, are publicly available and designed to help members to calculate and simulate their Eurex Clearing margin requirements. Enabling members to simulate the impact of different portfolios, portfolio structures and trading behaviour on the margin requirement, allows for full transparency and predictability of the margin model and thereby further supports members' individual risk management.

As outlined above, Eurex Clearing currently applies two margin methodologies, Risk Based Margining and Portfolio Risk Management.

PRISMA

Eurex Clearing PRISMA calculates combined risks covering all derivatives markets cleared by Eurex Clearing. Cleared products that share similar risk characteristics are assigned to so-called Liquidation Groups, allowing for a more comprehensive and consistent coverage and thereby offsetting of risk factors.

The concept of Liquidation Groups mitigates the fact that the overall portfolio of a Clearing Member typically features heterogeneous structures, sizes and/or complexities. Acknowledging this and due to the general handling principles laid out in the Default Management Process, it is assumed to be

impossible to liquidate an entire portfolio in one single transaction. Therefore, Liquidation Groups allow for a reasonable partitioning of Clearing Member portfolios into groups that can be dealt with efficiently and quickly in a situation of a member default. The constituents of a Liquidation Group can be hedged by Eurex Clearing, priced by Clearing Members and also auctioned within a reasonable period of time. The composition of Liquidation Groups is reviewed on a regular basis and adjusted if deemed necessary.

General principles for Liquidation Groups are:

- Liquidation Groups are pre-defined (they exist irrespective of a Clearing Member's default).
- Portfolio margin offsets are only granted within these pre-defined Liquidation Groups.

In addition, Liquidation Groups can be further divided into Liquidation Group Splits:

- A Liquidation Group Split has a dedicated margin period of risk.
- A Liquidation Group Split has a dedicated confidence level.

Initial margin as the forward-looking margin component, estimates the future potential losses over the margin period of risk independently for all Liquidation Group Splits of a Clearing Member. It takes into account potential correlation and netting effects for positions within a given split. The initial margin figure of a Clearing Member is afterwards aggregated across different Liquidation Group Splits and position risk accounts. It consists of two main subcomponents:

- The market risk component, based on a risk factor full revaluation approach, covers potential losses from market movements during the margin period of risk.
- The liquidity risk adjustment covers potential losses from realizing bid-ask spreads and adverse price movements expected when having to liquidate a portfolio in a Clearing Member default case.

Both components are calculated using profit and loss distributions for the Liquidation Groups respective Splits based on a set of different scenario prices for the underlying instruments.

The market risk component further includes a correlation break adjustment to account for variations in correlations, a compression model adjustment to account for pricing uncertainties as well as a countercyclical component to prevent large margin calls in stressed periods.

RBM

When determining the RBM margin requirement, the exposure is estimated by margin parameters that measure price fluctuations over time. Price fluctuations are measured by the volatility of the underlying closing prices for equity or equity-like products and by changes in yields for fixed income instruments.

Furthermore, in order to maintain margins at appropriate levels at any time except for the most extreme events, Eurex Clearing aims to consider different levels of product liquidity. The risk resulting from low or illiquid products is considered by the application of a liquidity factor. This liquidity factor will be set equal to one for all liquid products. All exchange-traded products where prices can be sourced reliably are considered being liquid. Low or not very liquid products will have a liquidity factor higher than one.

Eurex Clearing reviews the liquidity of products on a regular basis.

Additionally, Eurex Clearing considers risk reducing effects by its concept of Margin Classes and Margin Groups. For products within the same Margin Group, the margin is calculated as the larger of margin for long and margin for short positions. Implicit margin offset granted is thus capped at 50%.

Margin requirements together with Eurex Clearing's Default Fund are designed to ensure a confidence level of 99.9 %.

Key Consideration 2

A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.

In general, the preferred source of price data for the margin model is market prices. Dependent on the product, the prices are provided by the Eurex Exchanges and the Wertpapier Service System (WSS). In addition, third party providers such as Bloomberg, Reuters and Clarus FT and Tradition are used as necessary.

Prices received via the exchange system represent current market prices established via the order book. Before those prices are submitted to Eurex Clearing, they are subject to various validation steps conducted by market supervision and further monitored by trading surveillance. Afterwards, a final sanity check is conducted by Eurex Clearing before the data are used in the clearing risk management process

Theoretical prices and models to derive prices are more relevant for cleared OTC products. For Eurex Clearing, relevant products are OTC Interest Rate Swaps (IRS) as well as repurchase agreements and securities lending transactions.

For the latter, theoretical bond prices are used. For bonds, Eurex Clearing generally refers to prices provided by an internal data source or from third party market sources, e.g. Bloomberg, Reuters. Eurex Clearing calculates theoretical prices for all bonds. These prices are used for valuation if no current market prices are available. However, market prices are preferred. If a theoretical price is chosen, a higher haircut is applied in order to account for any inaccuracy that is embedded in the calculation methodology.

For OTC derivative contracts, a market standard model is in place to determine theoretical prices based on discounting and forward curves which are calibrated to quoted par-swap rates (for more information please see Annex OTC IRS Risk Methodology Description). The quoted par-swap rates received from Inter-Dealer Brokers are subject to a cleansing procedure (both automated and manual) to monitor and mitigate unavailability or unreliability of prices.

To price options, Black 76, Black/Scholes and Cox/Ross/Rubinstein models are used, which is common market practice.

Models and the Risk Management Framework of Eurex Clearing are subject to yearly independent validations.

Key Consideration 3

A CCP should adopt Initial Margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial Margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.

Eurex Clearing's margining process is a multifaceted and time-critical process that takes into account a variety of factors in order to calculate margins that adequately protect Clearing Members, their customers, the CCP and therefore the marketplace as a whole. Simultaneously, Eurex Clearing sets appropriate levels that do not tie up excess capital.

The amount of collateral, which must be deposited, is calculated on the basis of the total risk exposure of all accounts the Clearing Member is responsible for. The total risk exposure is determined from the price risk of the derivative, repo, securities lending and cash positions held in the accounts. The risk reducing effect of combinations of positions is taken into consideration in this calculation, in which equal but opposite risks within each account are offset against each other.

Eurex Clearing aims to have sufficient margin collateral to cover a member's default loss in all but the most extreme market circumstances.

Eurex Clearing defines "all but extreme market circumstances" such that the potential loss in case of a Clearing Member default does not exceed the margin requirement in 99 out of 100 cases (99 % confidence level), except for OTC derivatives for which a confidence level of 99.5 % is applied. The potential loss will be covered by collateral provided for margin requirements from the defaulting Clearing Member. Losses beyond the margin requirement will be absorbed by the other lines of defense, such as Clearing Members' Default Fund contributions.

A risk model cannot focus on margining alone but also needs to consider the impact of the additional protective mechanisms like admission criteria, intra-day margining, model validation, stress testing, clearing and default management. Additionally, risk must be measurable and chargeable within appropriate timeframes to prevent losses accumulating.

The following points summarize the guidelines for Eurex Clearing's margining methodology:

- The risk model must be in line with the CCP Credit Risk Management Policy, including appropriate inclusion into the lines of defense.
- The first priority in a risk model is the financial integrity and security of the CCP, granting offsets or adherences to market practice are important, but secondary considerations.
- The model must be transparent, communicable and replicable given the respective input parameters.
- The methodology must be technically and operationally feasible.
- The calculated results need to be considerably stable in order to avoid potential procyclical effects.

Risk Based Margining is a systematic risk-oriented model to estimate future losses. While the methodology may vary between products, applied methods will satisfy a number of criteria to ensure objectives of security and efficiency as well as consistency across products. The following assumptions apply for RBM:

- No explicit distributional assumption about risk factor returns is made.
- It is assumed that the risk factor returns applicable to the liquidation horizon are purely dominated by their volatility and Annex no measurable drift.
- By up-scaling the volatility estimate with a suitable risk factor, a two-sided range of future risk factor levels can be estimated to achieve a desired level of confidence. The resulting risk factors Annex fat tails.
- Using varying time frames when estimating risk factor volatility allows to further protect against more general changes in market regimes at a desired level of confidence.
- Built-in model memory, based on look-back periods of preset length, can suitably be mitigated via long-term based minimum margin parameters.
- A statistical confidence level of 99% is assumed for all products margined with RBM.
- The standard time to liquidate a portfolio is assumed to be 2 days.
- Eurex Clearing applies a product-specific liquidity factor.

- Position changes and volatility of prices are monitored near-to-real time.

Eurex Clearing PRISMA's margin methodology is based on a complete view of each Clearing Member's portfolio and takes advantage of cross-correlation effects. It determines the initial margin requirement on a portfolio level as opposed to a product-by-product view.

The methodology is designed for the adequate and stable computation of Initial Margin figures, thus creating a forward-looking risk model that is able to cope with a high degree of uncertainty in the financial markets and yet at the same time is sufficiently flexible to be able to adapt to changes in the risk environment.

The model calculates combined risks covering all markets cleared by Eurex Clearing. Cleared products sharing similar risk characteristics are assigned to so-called Liquidation Groups, allowing for a more comprehensive and consistent coverage and thereby offsetting of risk factors.

In summary, the following assumptions apply for PRISMA:

- The market risk component and the liquidity risk component are calculated using profit and loss distributions for the Liquidation Group Splits based on a set of different scenario prices for the underlying instruments
- The CCP standard time to liquidate the portfolio is assumed to be between 2 and 5 days
- Liquidation Group Splits contain products sharing the similar risk characteristics which can thus be liquidated together
- Portfolio margining is possible within Liquidation Groups; margin offsets across Liquidation Groups are not possible
- Eurex Clearing applies a portfolio specific Liquidity Risk Adjustment
- Position and price changes are monitored near-to-real time

Time horizons for the liquidation period

Margin requirements for OTC Derivatives offered by Eurex Clearing are determined by using PRISMA and consider a liquidation period of 5 days. For listed Equity (Index) Derivatives, Commodity Index Derivatives, Precious Metal Derivatives and Property Futures PRISMA is used considering a liquidation period of 3 days. All other liquidation groups use 2 day liquidation period. For products other than derivatives, RBM is used with a liquidation period of 2 days.

The Liquidation Horizons are the assumed maximum period that is needed for the execution of the default management process. The assumption is product-dependent and must be covered by the margin requirement calculated. Only if a product with a shorter liquidation period is cross-margined with a product with a longer liquidation period, the longer liquidation period of the two products is assumed for both.

Therefore, as outlined before, Eurex Clearing applies a liquidation period of at least 5 days for its active OTC clearing services. For all other products cleared by Eurex Clearing a liquidation period of at least 2 days is applied.

Determination of the adequate liquidation period

For both margin methodologies the liquidation period is determined following the below described steps.

The holding period is the number of days Eurex Clearing assumes to be needed for liquidating a liquidation group. In general, the holding period for the liquidation group splits is set between 2 and 5 days. The number of days has been established by the guidance of three sources.

- The first one is an internal estimation of CCP Risk Management. Every single step of the Default Management Process has been analyzed with respect to how time consuming it is. After a default is legally confirmed (end of grace period / automatic trigger), the positions are transferred to a technical Clearing Member ECAXX, representing Eurex Clearing itself.

- Furthermore, preliminary measures are applied by CCP Risk Management (e.g. sensitivity calculations or identifying portfolio concentrations). It may be necessary to convene a Default Management Committee for assisting Eurex Clearing in developing a hedging strategy.
- In any case (with or without advice of the DMC), Eurex Clearing might execute hedge trades. It is possible that hedges are adjusted later on in order to adapt to changing market conditions.
- Independent sale can be started after hedging.
- The auction starts after hedging and should be finished within one day (Equity liquidation group) respectively two days (OTC IRS/Fixed Income liquidation group). The auction can be repeated and at least one “last look” is offered to the auction participants. The asset class resolution is triggered if the auction fails.

All the described process steps lead to the before mentioned liquidation periods per liquidation group.

Second, the liquidation period schedule has been discussed with EMIR Risk Committee, which provided valuable market insights and recommended for the Board to approve the proposed liquidation periods.

Third, Eurex Clearing conducted several default simulations in which the timeframe for the Default Management process was challenged and has proven to be sufficient.

In addition, the historic Clearing Member defaults that have been managed by Eurex Clearing showed that the liquidation period assumed is realistic.

RBM

The margin requirement is determined through a margin parameter. Historically observed volatility is used to estimate future volatility. The look back period defines the number of observations that are taken into account for this estimate.

The margin parameter for equities and funds is set equal to the maximum value resulting from the exponentially weighted moving average (EWMA) volatilities and the un-weighted volatilities based on the below reference periods:

- 30 days
- 250 days
- full observation period since inception of the product (equally weighted).

The margin parameter for bonds is set based on a yield shift calibrated as the maximum value resulting from the filtered historical simulation with a 3-year lookback and a long-term Value-at-Risk with a 10-year lookback window.

As mentioned in paragraph 1, the margin parameter is determined by the maximum value resulting from the exponentially weighted moving average (EWMA) volatilities based on the above reference periods and the equally weighted long-term volatility. These periods also take into account the full observation period since inception of the product. This ensures that a full range of market conditions, including periods of stress are captured.

As mentioned in paragraph 1, three time horizons are analyzed when determining historical volatility. The maximum value (exponentially weighted moving average (EWMA) volatilities or the un-weighted volatilities for cash equities) resulting out of these periods is then chosen to determine the margin parameter. As the full observation period since inception of the product is also considered in the analysis, the time horizon used for the calculation of historical volatility results in margin requirements which are at least as high as those obtained with the time period defined in paragraph 1.

For RBM, an appropriate counter cyclical buffer is ensured through setting a minimum margin parameter. The minimum margin parameter is calibrated based on the estimated volatility over a 10 year historical lookback period and ensures that the margin requirement will not fall below the floor established by the minimum parameter. The Minimum Margin Parameters are reviewed on a yearly basis. The Minimum Margin Parameters are set conservatively high in order to cover the price movements in periods of low

volatility. This involves a qualitative judgment that ensures that the minimum margin parameters support a countercyclical behavior of the margin requirement, which may be induced by solely relying on the quantitative analysis of historical data.

PRISMA

The PRISMA methodology uses a risk-factor-based simulation approach to calculate the value at risk for the market risk component. For this approach, instrument price scenarios are attained by simulating risk factor scenarios that are subsequently used for theoretical pricing.

Two sets of risk factor scenarios are simulated:

- Filtered historical scenarios are simulated based on historically observed risk factor returns that are normalized and subsequently adapted to the most recent volatility regime.
- Stress period scenarios are simulated by taking historical returns from periods of significant financial distress

Eurex Clearing reviews the liquidity of products on a regular basis.

In PRISMA a liquidity risk adjustment is applied. The liquidity risk adjustment is designed to account for the widening of bid-ask spreads and adverse price movements that might occur as part of the liquidation of potentially very large positions resulting from a Clearing Member default.

The liquidity risk of a single position depends on a calibrated liquidity factor corresponding to the position size relative to the market capacity and on the bid-ask spread. The liquidity factor is multiplied by the position's market risk (obtained from the VaR measure) and, hence, the liquidity risk adjustment will scale with the volatility of the instrument.

Historical values stemming from the last three years (if available) will be used in filtered historical simulation component.

Stressed period scenarios are selected from a long-term lookback horizon of at least 10 years. The component as part of margining acts as a floor to initial margins and limits procyclicality by maintaining a through-the-cycle level of risk.

Model components, assumptions, and outcomes are regularly tested and validated through a dedicated validation function.

The PRISMA methodology effectively captures substantial history of risk factor moves through the economic cycle. Volatility floors are used to ensure a minimum level of volatility in the volatility-filtered scenarios. Additionally, a stress period value at risk, covering substantial periods of stress through the economic cycle, acts as a floor for the initial margin. The stressed period value at risk (SVaR) is introduced as a countercyclical component, which ensures the adequacy of the market risk component in calmer market regimes and enhances margin stability.

As stated in paragraph 1, when estimating respective volatility using PRISMA, historical values stemming from the last three years (if available) are used. The effective lookback is further extended to a much longer period through the use of Stress Period VaR reaching at least 10 years back.

Currently Eurex Clearing does not clear financial instruments without a historical observation period. When new products are introduced, Eurex Clearing takes special care to generate meaningful historical data capturing core correlations. Once the product is launched, daily settlement prices are used to extend the historical data from thereon. Therefore, the calculation promptly adapts to the price history of the product.

In general, Eurex Clearing's margin calculations are designed to be stable in order to avoid potential procyclical effects. In case Eurex Clearing will revise the parameters of its margin model, it will take into account any potential pro-cyclical effects of such revision.

Eurex Clearing's margin methodology effectively captures substantial history of risk factor moves through the economic cycle. Volatility floors are used in volatility-filtered scenarios, which are calibrated to reflect long term volatilities including periods of stress. Additionally, a weighted stress period value at risk, covering substantial periods of stress through the economic cycle, floors the initial margin.

The stressed period value at risk (SP VaR) is introduced as a countercyclical component, which ensures the adequacy of the market risk component in calmer market regimes and enhances margin stability. It will be calculated from scenario prices each stemming from a period of significant financial distress. The number of stress period scenarios used is at least 25% of the total sample used to calculate the market risk component. The scenario prices used for the stress period VaR are calculated based on n-day returns without the application of the volatility filtering technique. The magnitude of stress period VaR is then calibrated in a way to set a floor, which corresponds to margin requirement that would be more conservative than using an un-weighted VaR method used over the last 10 years.

The quarterly CPMI-IOSCO public quantitative disclosure provides detailed information on Eurex Clearing's Initial Margin models. As an example, a non-exhaustive overview of provided data given in the "AggregatedDataFile" tab are:

- Total Initial Margin required per clearing service (6_1_1),
- name of margin methodology used per clearing service (6_4_3),
- one-tailed target confidence level per clearing service (6_4_5),
- look-back period used per clearing service (6_4_7), and
- adjustments considered per clearing service (6_4_9).

Wrong way risks may arise if there is an unfavorable interrelatedness between Clearing Member's credit risk (CM as issuer), its portfolio value and/or the value of its collateral pool.

Wrong way risks will be addressed by the exclusion or the restricted usage of certain issues for a specific member to post as margin collateral or to use it to securitize security financing transactions (SFTs). Monitoring or even preventing wrong way risk constellations in a Clearing Member's portfolio and especially in its collateral pool is very important since Eurex Clearing does not consider such interdependencies in its Margin Methodology Framework. It is assumed that the recovery rate of collateral is not related to the credit quality of the Clearing Member itself.

Key Consideration 4

A CCP should mark participant positions to market and collect Variation Margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.

Margin as well as to conduct intraday margin calls. First, it is important to distinguish between the purpose of Variation Margin payments and margin calls. Using Variation Margin, profits and losses that arise due to the price fluctuations of open positions are offset daily. When option positions are mark-to-market, calculation of the appropriate credits and debits depends on how the value of a call or put position changed during the trading day. The mark-to-market procedure ensures that each position is re-valued at the daily settlement price. The difference between today's and the previous day's settlement price is offset by daily compensating payments. Therefore, the essential effect of marking positions to market is the "extraction" of potential liquidation profits or losses, such that on the last trading day only the difference between the daily settlement price of the previous day and the final settlement price of all open positions has to be calculated. In the case of options on futures, the final valuation is made at the final settlement price of either the expiration date of the option or the day on which it was exercised.

Variation Margin

The backward-looking component of the margin requirement includes Variation Margin, Premium Margins and Current Liquidating Margin. Variation Margin applies to future styled derivatives and Interest Rate Swaps and can be covered by eligible collateral intraday and is settled in cash in the product currency end of day. Premium Margin and Current Liquidating Margin reflect the value of traditional

options and spot market products as well as repos, respectively. Premium Margin and Current Liquidating Margin can be covered by any eligible margin collateral. If a Clearing Member holds a position that results in a Premium Margin or Current Liquidating Margin Credit (e.g. long option positions) then this credit can be used to offset margin requirements of other positions but is not paid out.

Using Variation Margin, profits and losses that arise due to the price fluctuations of open positions are offset daily. When option positions are mark-to-market, calculation of the appropriate credits and debits depends on how the value of a call or put position changed during the trading day. The mark-to-market procedure ensures that each position is re-valued at the daily settlement price. The difference between today's and the previous day's settlement price is offset by daily compensating payments. Therefore, the essential effect of marking positions to market is the "extraction" of potential liquidation profits or losses, such that on the last trading day only the difference between the daily settlement price of the previous day and the final settlement price of all open positions has to be calculated. In the case of options on futures, the final valuation is made at the final settlement price of either the expiration date of the option or the day on which it was exercised.

Margin Calls

Margin calls are issued when during the continuous intraday monitoring of positions an under-collateralization is discovered. Eurex Clearing monitors margin requirements near to real-time. Risk exposure is calculated event driven whenever there are updates on

- Prices
- Volatilities
- Interest rates
- Derivative positions (listed as well as OTC)
- Settlements in cash products and repos

Eurex Clearing will call the full collateral deficit, if any intra-day collateral shortfall:

- exceeds 10% of the margin requirement as of the end of the last business day, or
- exceeds an absolute number that is subject to the current size of the Default Fund, or
- is not less than EUR 10 million.

The Executive Board may set lower or higher thresholds for a specific Clearing Member.

Eurex Clearing issues an intra-day margin call payment request provided that the risk position is not reduced within 30 minutes.

Eurex Clearing requests the Clearing Member to cover the intraday margin call payment within additional 30 minutes by placing collateral to one or more of the dedicated securities accounts in one of the accepted collateral locations or by placing cash in eligible currencies on its cash account (German Bundesbank, SNB, Bank of England or a payment bank for USD) or alternatively by transferring cash in eligible currencies to Eurex Clearing.

Key Consideration 5

In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.

Portfolio margining is possible under RBM as well as under PRISMA.

RBM

Investors can reduce their exposure to individual asset risk by holding a diversified portfolio of assets. Diversification may allow for portfolios with equal return but reduced risk.

Price inter-relationships between assets, which were observed

- to have an economic rationale,
- to be statistically stable

are used to offset margin requirements.

Eurex Clearing considers risk-reducing effects by its concept of margin classes and margin groups.

Two or more margin classes whose underlying instruments are correlated with respect to their risk structure are combined in a "margin group". Within a given margin group, cross margining is again possible, i.e. the offsetting of comparable risks. Portfolio Margining offsets between different financial instruments (as defined in ESMA Opinion to Art.27 Portfolio Margining (EU) 153/2013) is capped at 50% in RBM.

PRISMA

With Eurex Clearing PRISMA, Eurex Clearing only grants margin offsets within predefined groups of products. This is firstly to avoid any risk of margin shortfalls during the liquidation procedure due to previously granted offsets on portfolio level and secondly to ensure capital efficient margining. With the introduction of Eurex Clearing PRISMA, the default management process is on (sub-) portfolio level rather than on position level.

These sub-portfolios are called "liquidation group splits" and comprise positions that are anticipated to be auctioned together in case of a Clearing Member default. Portfolio margining is only possible for products, which are assigned to the same liquidation group and positions in the same liquidation group split. However, assignment of certain products to the same liquidation group alone does not suffice to grant offsets between these products.

Only restricted offsets are granted within one liquidation group split, where Eurex Clearing limits portfolio diversification at 80% by means of supplementary margin in compliance with EMIR Art. 27. Furthermore, Eurex Clearing includes a dedicated correlation break adjustment in its margining approach in order to mitigate the risk of sudden changes in correlation in a stressed market environment. Through this procedure PRISMA ensures that Eurex Clearing is not exposed to any potential risk from the margin reduction by incorporating into the margining only the offsets which are consistent with the Default Management Process.

The set of liquidation groups is equally defined for all members on CCP level and is therefore unrelated to the size, the trading strategy or the positions of a particular Clearing Member to be liquidated. Liquidation groups are fixed over time unless the composition is adjusted in the framework of regular reviews. The definition of liquidation groups is based on the following considerations:

- Standard liquidation process: Products that follow the standard liquidation process with an auction as central element can be assigned to the same liquidation group. Products that utilize a different liquidation process cannot be assigned to one liquidation group.
- Proximity of products: Products within one liquidation group allow for objective proximity. Proximate products own a set of common risk factors. This criterion represents market standard and business understanding including the consideration of required clearing licenses and settlement infrastructures. Common risk factors also include correlation between products of one liquidation group.
- Hedge-ability: Dependency to other products in the liquidation group can be quantifiably proven and is sustainable stable. The Hedge-ability is based on quantitative metrics. Products are assigned to the same liquidation group only if they can be hedged together.
- Price-ability: The liquidation group can be priced by Clearing Members in a limited period of time. The price-ability is verified during the regular default simulations. Furthermore, it is subject to the auction format.

The liquidation group composition will be reviewed internally and in default simulations on a regular basis. However, to ensure the integrity of the Clearing House the final decision regarding the

definition of liquidation groups remains with Eurex Clearing as the responsible CCP in case of a Clearing Member default.

The definition of liquidation group criteria is within the responsibility of CCP Risk Management. The Eurex Clearing Executive Board decides on the assignment of new products to already existent or recent liquidation groups.

In addition, Eurex Clearing monitors the cases where portfolio margin requirements result in an offset of 80 % or more compared to the gross margin requirement on product level. Whenever an offset exceeds 80 % of the gross margin requirement, supplementary margin is charged to limit offsets to 80 % of the gross margin requirement.

The margin procedure is subject to a sound stress test program. Also back tests are conducted continuously to ensure that the margin requirement meets the applicable confidence level (99 % for listed and 99.5 % for OTC products).

Key Consideration 6

A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily back testing – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.

The adequacy of the market risk initial margin is primarily validated by daily portfolio backtesting, which compares the market risk initial margin with the observed profits and losses for each productive portfolio. Model add-ons for liquidity risk are excluded from backtesting. The term portfolio refers to the group of positions, which is subject to portfolio margining. This means that there is no netting of positions in backtesting, which are not subject to portfolio netting in the first place.

Backtesting uses statistical tests to assess a) the frequency and b) the severity of outliers, i.e. it uses statistical inference techniques. The classification of the assessment results can be derived from the probabilities of type I errors (i.e. the probability of rejecting a correct model based on the observed test statistic).

The test results are classified according to a Eurex Clearing defined traffic light system and, if necessary, actions are commenced according to the following scheme:

- Green Light: The results of the analysis/report lie within the normal specifications. No significant model inaccuracies were identified and no further actions are necessary.
- Yellow Light: The results of the analysis/report are outside the expected range. A thorough analysis of the results and their implication towards the adequacy of the model / parameterization is necessary. No severe damages are expected in the short-term.
- Red Light: The results of the analysis/report show material deficiencies and the validity of the model has to be questioned. An immediate action is necessary to avoid potential severe damages.

The Eurex Clearing margining models contain several model parameters. The parameters are periodically determined by calibration to observed market risk factors, by fundamental analysis, or by expert judgment.

Model parameter sensitivities are used to investigate the response of the margin model to deviations of the model parameters. The deviations are determined either by normal market scenarios as well as stressed historical and hypothetical market scenarios. Furthermore, the stressed market scenarios cover the most volatile periods observed by Eurex Clearing. The parameter sensitivities are calculated regularly for all member portfolios, i.e. all participant positions are considered. Note that the analysis can

be performed more frequently or ad-hoc, if required. Sensitivity analysis is also used for the impact analysis of a parameter re-calibration.

For most of the parameters, scenarios corresponding to up- and down shifts are defined. Only if a shift in one direction would not correspond to a challenge of the model or would violate a regulatory threshold it is not considered for sensitivity testing.

Sensitivities are measured in terms of their relative impact on margins and always compared to historical values. This helps to assess the plausibility of the sensitivity profile of the model given the current market situation.

Regular meetings of the CCP Risk Management facilitate the discussions on validation outcomes and potential problems at an early stage, so that any required enhancements or fixes can be implemented in good time. If validation suggests that the model does not perform appropriately, an internal finding is issued which triggers the Findings Tracking Process.

Furthermore, for the on-going revision and improvement of the model, Eurex Clearing regularly seeks the advice of the EMIR Risk Committee. Any major changes and adjustments will be presented to the EMIR Risk Committee and approved by the Executive Board of Eurex Clearing.

If validation suggests that the model does not perform appropriately, an internal finding is issued which triggers the Findings Tracking Process.

Model Validation may trigger a significant model change. The implementation of a significant model change needs to be in accordance with the Model Change Policy and to be approved by the relevant external authorities (i.e. EMIR Risk Committee, the Competent National Authority / Federal Financial Supervisory Authority (BaFin) as well as ESMA / College if necessary) beforehand. In the meantime, supplementary margin can be charged as outlined in the Clearing Conditions. The amount of supplementary margin charged is approved by the CRO of Eurex Clearing. Minor changes such as parameter updates do only need to be approved by the CRO unless the impact is judged as being economically significant.

In case only a minor change or parameter update is required, approval by the CRO or the respective Head of Section is sufficient.

Key Consideration 7

A CCP should regularly review and validate its margin system.

Eurex Clearing commits itself to a regular and thorough validation of all risk models. Throughout the year, the independent model validation uses a number of validation instruments to regularly validate the conceptual soundness of the frameworks and adequacy of the risk models. In the annual validation report for each model, all validation results obtained throughout the year are summarized and combined with a fundamental review of the methodology and the model parametrization. This yields an overall review of model performance and appropriateness, taking into account both the theoretical and empirical perspective.

The adequacy of the initial margin is primarily validated by portfolio backtesting, which compares the initial margin with the actually realized profits and losses. The results are assessed using statistical tests. Validation at parameter level is performed by means of a parameter sensitivity analysis, which is conducted to determine the margin model's response to changes in model parameters. Results from backtesting and parameter sensitivity analysis are regularly reported to the EMIR Risk Committee in a form that does not breach confidentiality.

Offset monitoring ensures that portfolio diversification benefits granted by the portfolio margining approach stay within regulatory required limits and that Eurex Clearing is not exposed to further potential risks by the margin reduction. A model assumption materiality analysis reveals the materiality of

assumptions made in margining models and is used as a tool to identify potential focus areas for further model improvement. The stressed period validation is used to analyze if the applied stressed periods within the Stress VaR component of Initial Margin are reasonable.

While portfolio backtesting is performed daily, the intervals for the validation of the other margining components differ between weekly, monthly and quarterly. The validation schedule allows for timely action in case the analysis results suggest that the model does not perform as expected.

Material revisions and adjustments of the margin methodology follow the process defined by the Model Change Framework. Depending on whether the change is significant or not, a number of internal and potentially external approvals is required.

ECAG reports aggregated backtesting and sensitivity analysis results, i.e. in a form that does not breach confidentiality, to the EMIR Risk Committee on a quarterly basis.

Details on Eurex Clearing's Initial Margin backtesting results are provided in the CPMI-IOSCO public quantitative disclosure on the "AggregatedDataFile" tab under:

- Number of times over the past twelve months that margin coverage held against any account fell below the actual exposure of a member account (6_5_1_1),
- Number of observations (6_5_2),
- Achieved coverage level (6_5_3),
- Peak size of uncovered exposure over last 12 months (6_5_4), and
- Average size of uncovered exposure over last 12 months (6_5_5).

Clearing Members can request test results for their own and their client's portfolio.

Assessment of principle:

Observed

Principle 7: Liquidity risk

Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key Consideration 1

An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

Eurex Clearing measures, monitors, and manages its liquidity risk according to its Liquidity Risk Management Framework which is documented in ECAG's Liquidity Risk Management Policy. The Framework has been set up in accordance and compliance with Articles 43 (other financial resources) and 44 (Liquidity risk controls) EMIR and Articles 32 – 34 of Chapter VIII (Liquidity risk controls) (EU) 153/2013 and is updated on a regular basis with consultation of the EMIR Risk Committee and the Eurex Clearing Executive Board.

The Liquidity Risk Management Framework is designed to ensure that Eurex Clearing is able to effect payment and settlement obligations in all relevant currencies as they fall due. It addresses:

- Liquidity risk management and methodology,
- Liquidity risk in the daily business,
- Liquidity risk concentration,
- Liquidity stress testing,
- Monitoring,
- Contingency Funding Plan, and
- Reporting.

Maintaining sufficient liquid financial resources is inherent to Eurex Clearing's ability to perform its services and activities, even under extreme market conditions. In assessing the adequacy of its liquid resources, Eurex Clearing considers the size of liquidity risks and the nature of its obligations and takes appropriate measures to anticipate (e.g.: stress tests) and avoid liquidity shortfalls (mitigating measures).

For Eurex Clearing, liquidity risks mainly stem from its function as a CCP and related pre-financing activities conducted to ensure settlement efficiency.

As required by EMIR, Eurex Clearing monitors the coverage of a potential simultaneous default of the two Clearing Members to which it has the largest exposures. This scenario constitutes the largest liquidity need for Eurex Clearing. Moreover, a range of market scenarios, which combine all potential risk factors, is monitored. Eurex Clearing aims to maintain sufficient liquid financial resources to cover the liquidity needs in all of its scenarios.

Eurex Clearing's liquidity management aims to ensure sufficient liquidity sources to cover all described liquidity stress scenarios. For this purpose, the above-mentioned liquidity stress testing is performed on a daily basis. Liquidity exposures towards the following counterparties are considered in liquidity stress testing:

- a) Clearing members;
- b) Settlement institutions;
- c) Nostro Agents (payment banks);
- d) Treasury unsecured placement counterparties;
- e) Correspondent banks;
- f) Liquidity providers.

A monthly liquidity stress test report is provided to the Executive Board, showing, among others, the provision of cash margins and credit facilities by individual Clearing Members as well as liquidity needs in a “cover-2” scenario.

Key Consideration 2

An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Eurex Clearing identifies, measures and monitors settlement and funding flows on a continuous basis. Throughout the day, payment and settlement systems are used to monitor intraday liquidity and to identify intraday liquidity risk as well as excess cash to be invested and liquidity gaps to be funded.

Within the Liquidity Risk Management Framework, settlement and funding flows are identified, measured and monitored in all relevant currencies on an ongoing and timely basis. Throughout the day, payment and settlement systems are used to monitor intraday liquidity and to identify intraday liquidity risk as well as excess cash to be invested and liquidity gaps to be funded.

For that purpose, Eurex Clearing operates an Intraday Liquidity Management Tool that automatically updates information on account balances on a counterparty and currency basis. The tool enables Eurex Clearing to

- a) proactively monitor liquidity in real time,
- b) reduce intraday funding costs through enhanced forecasting, monitoring and steering of outgoing and incoming cash flows, and
- c) meet increasing demands for regulatory reporting requirements.

Liquidity needs are monitored, on a daily basis, across stress scenarios that include a simultaneous default of the two Clearing Members to which Eurex Clearing has the largest exposure. Additionally, key liquidity indicators, considering pre-financing activities and cover-2 requirements, are monitored on a daily basis.

Eurex Clearing performs both daily and quarterly reporting on its liquidity needs and available liquid financial resources as governed by the Liquidity Risk Management Framework, which includes the required level of granularity.

Key Consideration 3

A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

Not applicable.

Key Consideration 4

A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required Variation Margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates

that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.

Eurex Clearing has established liquidity indicators in order to maintain sufficient liquid resources to meet payment obligations on time, with a high degree of confidence and under extreme but plausible market conditions. The key liquidity indicator is set to cover the liquidity risk generated by the default of the two Clearing Members including all affiliates to which Eurex Clearing has the largest exposures in order to ensure sufficient financial resources at all times.

In addition to the regulatory 'Cover-2' stress test and in line with industry standards, Eurex Clearing applies a range of further liquidity stress scenarios:

- Late funding scenario
- Idiosyncratic scenario
- Market disruption scenario
- Market disruption / idiosyncratic scenario

"Cover-2"

- In line with the so-called "Cover-2" requirement in EMIR, Eurex Clearing maintains sufficient financial resources to cover the liquidity risk generated by the default of the two Clearing Members to which it has the largest exposures. Additionally, Eurex Clearing monitors the "Cover-2" requirement from the default of entities in the same corporate group as well as settlement institutions.

Late funding

- A member may face difficulties to provide funding to Eurex Clearing due to technical errors. In such a case, Eurex Clearing guarantees to fulfil the respective payment obligations to ensure smooth settlement processing. The scenario assumes a member not functional for a limited period of time. The resulting short-term liquidity requirement of the largest Clearing Member, corporate group as well as settlement institution is monitored.

Idiosyncratic scenario

- In this scenario, it is assumed that the stress event is company-specific. This could lead to a downgrade of Deutsche Börse AG and, thus, to increased financing costs. It is assumed that the downgrade amounts to more than two notches in severity, leading to margin cash deposit repayments and delay in cash inflows.

Market disruption scenario

- The scenario focuses on turmoil on the markets, resulting in a member default. Additionally, it is assumed that marketable securities cannot be sold on time and only at lower prices than the fair value due to high volatility or fire sales of securities.

Market disruption / idiosyncratic scenario

- In order to detect potential liquidity shortfalls in an early state, Eurex Clearing combines the scenarios by simultaneously taking all aspects of liquidity risk into account. The combined scenarios are more conservative and lead to higher liquidity requirements.

The liquidity stress testing framework include the complete range of potential liquidity risk identified in Eurex Clearing's business procedures. Liquidity exposures resulting from the default of a Clearing Member consider all potential cash flows between the date of the default until the end of the respective liquidation period of each product. Furthermore, the stress scenarios consider liquidity risk generated by long-term investments, member cash deposit repayments, settlement pre-financing activities of Eurex Clearing as well as liquidity exposure generated by late funding.

Liquidity stress scenarios include all sources of potential liquidity risk identified in Eurex Clearing's business procedures, including its investment activities. In its liquidity risk management framework, Eurex Clearing takes into account interdependencies and multiple relationships an entity, e.g. Clearing Member or credit institution providing lines of credit, may have with the CCP. In general, Eurex Clearing may have a liquidity exposure towards an entity that also acts as, e.g. a settlement bank, nostro agent or credit line

provider at the same time. In general, credit institutions providing Eurex Clearing with lines of credit are also admitted as Clearing Members. Hence, when determining available liquidity, Eurex Clearing does not consider the credit lines provided by this credit institution if it is also one of the two Clearing Members Eurex Clearing has the largest exposure to. In addition, a high concentration of credit lines with an individual credit institution may cause liquidity issues in case this institution withdraws the credit line or is not able to perform its services as agreed. Thus, if a Clearing Member, parent undertaking or subsidiary of that Clearing Member provides more than 25% of the required credit lines, its credit line is only considered up to a maximum of 25% of total credit lines available.

Eurex Clearing uses TARGET2, the real-time gross settlement (RTGS) system for the Eurozone, Swiss Interbank Clearing (SIC) and EuroSIC, the CHF and EUR payment systems operated on behalf of the Swiss National Bank. The payment systems have contingency measures in place, which ensure their availability. Additionally, these systemically important payment systems have effective business continuity management programmes in place. As to be read in the programmes, the business continuity procedures, contingency procedures and crisis management arrangements are all tested on a regular basis. Liquidity risk for these payment systems is therefore not considered. Likewise, Eurex Clearing uses Cascade and Creation (both operated by Clearstream), Euroclear, and SIX SegalInterSettle, which, as market infrastructures, have prudential requirements to ensure availability of their systems. Liquidity risk for these securities settlement systems is therefore not considered. Besides the securities settlement systems mentioned, Eurex Clearing uses triparty agents for its USD triparty repo business. Eurex Clearing does not hold cash accounts with these custodians and therefore considers no liquidity risk. Eurex Clearing generally considers no liquidity risk for custodian banks as security settlements are allowed to be executed only in the form of “delivery vs. payment” instructions. As market infrastructure providers, they are subject to prudential requirements to ensure availability of their systems.

In order to identify strong linkages, liquidity exposures are determined per corporate group including all affiliated entities. The “Cover-2” stress scenario which is reported to the regulator on a daily basis calculates the liquidity exposure of the two corporate groups and all their affiliates to which Eurex Clearing has the largest exposure.

The Liquidity Risk Management Framework of Eurex Clearing covers all currencies in which Eurex Clearing is active in, indicating however, that for Eurex Clearing the Euro is the most important one. Liquidity exposures resulting from the default of a Clearing Member are determined for all relevant currencies, thus all currencies in which payment and settlement obligations may occur. Other sources of liquidity risk resulting e.g. from Eurex Clearing’s investment policy may only occur in clearing currencies since collateral is invested in the currency in which collateral was posted by the Clearing Members. Liquidity stress scenarios which go beyond the “Cover-2” requirement are therefore calculated in all clearing currencies.

Key Consideration 5

For the purpose of meeting its minimum liquid resource requirement, an FMI’s qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.

Eurex Clearing’s liquid financial resources either stem from its own funds or from Clearing Members’ cash collateral. Whereas its own funds are mainly denominated in EUR, Eurex Clearing accepts four currencies, namely EUR, CHF, GBP and USD, as cash collateral (AUD is accepted for late intraday delivery). Moreover, Eurex Clearing maintains balances in further currencies, where product-related payments, such as variation margin, premiums etc., need to be settled in the underlying product currency.

As a principle, Eurex Clearing's liquid financial resources are commensurate to its liquidity requirements. The CCP maintains its liquid financial resources in the currency initially provided by its Clearing Members (EUR, CHF, GBP and USD). For currencies, where Eurex Clearing has no access to a central bank account, Eurex Clearing also has in place ISDA Master Agreements or German Master Agreements for Financial Derivatives Transactions ("DRV") with a set of multiple highly reliable authorised credit institutions and may enter into FX swap contracts - if needed - accordingly. In addition, the Clearing Conditions entitle Eurex Clearing to settle payment obligations in Euro as an alternative currency in case of a disruption in the FX market. In accordance with Article 44 EMIR and Article 32 (EU) 153/2013, Eurex Clearing has several qualifying liquid resources available such as cash at central banks and creditworthy commercial banks, committed lines of credit and highly liquid financial instruments to cover existing and potential liquidity needs.

Central Banks

Eurex Clearing safely places Euro, CHF and GBP with the relevant central bank money accounts. The funds on the cash accounts can generally be accessed with immediate effect during the payment systems' operating hours. Additionally, Eurex Clearing has access to the monetary operations of the Eurosystem via its account with Deutsche Bundesbank, allowing the CCP to promptly convert ECB eligible collateral into cash. As Eurex Clearing accepts highly liquid and central bank eligible collateral only, the CCP considers these securities to be marketable even under severe stress.

Commercial Banks

Eurex Clearing carefully chooses its payment banks. Potential and existing banks are assessed internally based on quantitative and qualitative criteria that, among others, take into account factors like creditworthiness, technical infrastructure, operational effectiveness and operational reliability.

Supplemental liquid resources are uncommitted credit lines with commercial banks. Access to these resources is tested on a regular basis. The size of supplemental liquid resources is provided in the CPMI-IOSCO public quantitative disclosure (number 7_3).

Highly marketable collateral

Eurex Clearing, although carefully assessing commercial banks, intends to reduce any unsecured overnight balances with commercial banks to a minimum. Cash shall generally be deposited on a secured basis, i.e. via central bank deposit or via collateralized placements with creditworthy commercial banks. In the latter, Eurex Clearing accepts only highly liquid financial instruments with minimal credit and market risk.

Eurex Clearing maintains prearranged and highly reliable funding arrangements with a wide range of highly rated financial institutions to mobilize the securities if needed. Alternatively, the securities can also be pledged with the central bank to obtain intraday and overnight credit. For both, the mobilization process allows Eurex Clearing to generate liquidity on an intraday basis. The repo counterparties are internally assessed based on quantitative and qualitative criteria. Eurex Clearing tests the reliability of the counterparties in its capacity to perform repo and reverse repo transactions periodically, at least quarterly.

Key Consideration 6

An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.

In general, Eurex Clearing has a wide range of qualifying liquid resources at its disposal, which sufficiently cover the respective liquidity needs. The size of qualifying liquid resources as well as liquidity needs is publicly disclosed in the quarterly CPMI-IOSCO public quantitative disclosure (available at the website <http://www.eurexclearing.com/clearing-en/about-us/regulatory-standards>) especially under tabs 'CCP_DataFile_7_1' and 'CCP_DataFile_7_3'.

Supplemental liquid resources are uncommitted credit lines with commercial banks. Eurex Clearing's Liquidity Risk Management Framework requires collateral to be central bank eligible. Thus, supplemental assets would always qualify as being central bank eligible.

Supplemental liquid resources in the form of uncommitted credit lines are used in the course of the day-to-day business. Access to these resources is tested on a regular basis. In times of stress, Eurex Clearing would mobilize any available supplemental liquid resources to cover unforeseen liquidity needs.

Key Consideration 7

An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.

As indicated by the public quantitative disclosure, Eurex Clearing usually does not need to use liquidity providers to meet its minimum required qualifying resources. However, Eurex Clearing maintains committed lines of credit with liquidity providers to diversify its sources of funding and to cover its liquidity needs in case not all of its financial resources are immediately available.

Eurex Clearing performs rigorous due diligence that its liquidity providers have enough capacity to perform according to the liquidity arrangements. The assessment is made annually and/or event-driven. In general, committed lines of credit are maintained only with commercial banks whose core competencies is to provide such facilities. Eurex Clearing periodically, tests to access its lines of credit to check reliability of procedures and the speed of access. Furthermore, liquidity has to be readily available on an intraday basis.

A supporting indicator for this is the Liquidity Coverage Ratio (LCR), which requires Eurex Clearing's liquidity providers to maintain sufficient high quality liquid assets to cover their net outflows over a 30-day period of stress. Eurex Clearing's liquidity providers maintain a LCR well above the final minimum requirement of 100%.

Eurex Clearing periodically, i.e. at least quarterly, tests to access its lines of credit to check reliability of procedures and the speed of access. Besides, prearranged and highly reliable funding arrangements in the form of repo framework agreements are tested regularly. As only financial institutions are providing Eurex Clearing's credit facilities, central bank access by those liquidity providers can be assumed.

Key Consideration 8

An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.

Eurex Clearing maintains central bank accounts with Deutsche Bundesbank, Swiss National Bank and Bank of England.

Cash payments in Euro are settled via TARGET2, which is the real-time gross settlement system operated by the Eurosystem. For CHF, Eurex Clearing maintains a settlement account with SIX Interbank Clearing, who operates the payment system SIC on behalf of the Swiss National Bank. Additionally, as Eurex

Clearing is subject to the minimum reserve, it may participate in the Eurosystem's monetary instruments. This allows the CCP to access the standing facilities as well as the open market operations.

Cash accounts directly held with the Bank of England are not being offered to facilitate clearing related British Pound payments. However, Eurex Clearing has the option that funds provided through commercial banks in British Pound are transferred to the central bank account with Bank of England.

Payments and settlements in any other currency are conducted using commercial bank infrastructure as central bank access is difficult to establish.

In general, Eurex Clearing intends to use central bank's payments and settlement services to the extent possible to avoid any unsecured settlement and liquidity exposures. Furthermore, Eurex Clearing intends to place financial instruments that are not placed with an operator of a securities settlement system, with a central bank that ensures the full protection of its assets and that enables Eurex Clearing to promptly access its assets when needed.

Key Consideration 9

An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

Eurex Clearing's liquid financial resources are tested over the range of liquidity-specific stress scenarios. The core element is the "Cover-2" liquidity exposure, which is monitored on a daily basis as required by EMIR. Eurex Clearing aims to ensure sufficient liquid financial resources to cover the liquidity requirement generated by the default of the two clearing members to which it has the largest exposures.

Liquidity stress test results are incorporated in the reporting to senior management to make sure that the outcomes are considered in the overall risk management and that senior management's attention is focused on the sources of potential stresses in the decision-making process:

- Daily stress test report to various recipients within the Treasury and Risk Department as well as the national regulator
- Monthly Stress test report to the Executive Board
- Quarterly Risk Report to the Executive Board, Supervisory Board, Audit and Risk Committee, and EMIR Risk Committee

Additional event-driven analysis are performed and reported depending on the market situation.

The daily stress testing report is the basis for monitoring compliance with the "Cover-2" requirement and initiating mitigating actions if early warning or recovery triggers are breached. The ECAG Liquidity Risk Management Policy together with the Recovery Plan of Eurex Clearing AG define mitigating actions to strengthen the liquidity position and reporting lines once a trigger has been reached.

Throughout the year, the independent model validation uses a number of validation instruments to regularly validate the conceptual soundness of the frameworks and adequacy of the risk models. At the end of the year an annual comprehensive validation is performed along the model landscape. In the annual validation report, all validation results obtained throughout the year are summarized and combined with a

fundamental review of the methodology and the model parametrization. This yields an overall review of model performance and appropriateness.

Eurex Clearing documents its supporting rationale for, and its governance arrangements relating to the amount and form of its total liquid resources in the Liquidity Risk Management Policy.

Key Consideration 10

An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

Eurex Clearing's procedures for using its liquid financial resources to fulfil its payment obligations during a liquidity shortfall are outlined in the Liquidity Risk Management Policy. The main events, which could cause a potential liquidity shortfall for Eurex Clearing, are defaults of Clearing Members. In case of a Clearing Member default, Eurex Clearing ensures the fulfilment of all payment obligations to all non-defaulted Clearing Members. If Eurex Clearing purchases securities on behalf of the defaulted Clearing Member, they may be pledged to Deutsche Bundesbank or used for repo transactions with credit institutions to generate liquidity. Repo framework agreements are in place with a broad range of international credit institutions.

Following EMIR, Eurex Clearing is obliged to hold at any time sufficient liquidity to cover a simultaneous default of the two Clearing Members to which it has the largest exposures. A management information system has been established to monitor the liquidity requirement on a daily basis, applying regular as well as stressed market conditions. The liquidity requirement is compared to available liquidity. As part of the contingency funding plan, an early warning as well as recovery limit trigger is set and monitored on a daily basis (trigger foresee a mark-up on cover 2 liquidity requirement). Therefore, prior to reaching a contingency situation, options to strengthen the liquidity position have been identified to replenish financial resources.

Positions will be closed out within their margin period of risk (MPOR). The MPOR needs to be reflected in the calibration of the margin parameters. Eurex Clearing's procedures for using its liquid financial resources to fulfil its payment obligations during a liquidity shortfall are outlined in Eurex Clearing's Liquidity Risk Management Framework. Eurex Clearing's Treasury has short-term measures in place to support the liquidity position in a stress situation. As an example, credit lines could be drawn upfront to ensure their availability or pre-financing of settlement activities may be managed in order to reduce liquidity requirements to a minimum. If cash resources have been invested through reverse repo deals, the securities received as repo collateral will be mobilized through the pledge facility of Deutsche Bundesbank.

In case a Clearing Member defaults, Eurex Clearing will purchase securities to fulfil the defaulted Clearing Member's settlement obligation. Prior to liquidation of these securities, they can be pledged to Deutsche Bundesbank or sold in a repurchase agreement to commercial banks to generate liquidity. In case of a "failure to pay" event, Eurex Clearing will also purchase securities to fulfil the respective Clearing Members' settlement obligation. However, Eurex Clearing can only use the purchased security after closing of settlement or after a confirmation of the Clearing Member that it is unable to fulfil settlement.

Eurex Clearing may use purchased securities to enter into a SFT (GC Pooling) trade with non-failed Clearing Members. As an additional measure, central bank eligible securities purchased by Eurex Clearing may be pledged to Deutsche Bundesbank in order to obtain credit intraday and/ or overnight. Other securities (e.g. equities) may be transferred to commercial banks in repo transactions to generate liquidity.

In principle, during the Default Management Process, liquidity sources are automatically replenished with the liquidation of the portfolio and the defaulted Clearing Member's collateral by the Default Management

EUREX

Team. Besides this, Eurex Clearing has defined a diverse set of replenishment measures to strengthen the liquidity position also in stress situations as described above.

Assessment of principle:

Observed

Principle 8: Settlement finality

Principle 8: Settlement finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

Key Consideration 1

An FMI's rules and procedures should clearly define the point at which settlement is final.

For the purpose of settlement Eurex Clearing is forwarding transfer instructions (settlement instructions) to CSDs, also for its Clearing Members. The settlement of transactions is further treated by the settlement systems, which have contractual business relationships with Eurex Clearing (for linked CSDs see below). In the moment the CSD settled the transaction, Eurex Clearing will receive the respective information. Once the CSD reports back settlement, Eurex Clearing considers the instruction as settled / final. Thereafter, Eurex Clearing sends a report / confirmation (SWIFT message) to its Clearing Members that the settlement is final and the transaction cannot be revoked. In case the instructions could not be settled by the CSD, Eurex Clearing cancels the instruction. In that case, finality is not reached and Eurex Clearing considers those transactions as still pending. Pending transactions will be forwarded for settlement on the next business day.

From a legal point of view, the settlement of delivery obligations takes place when the counterparties to a securities transaction have performed their entire obligations (such as the transfer of rights to a security or effecting a cash payment) so that all reciprocal claims arising from the transaction have been satisfied in full and are consequently extinguished.

The European Directive 98/26/EC on Settlement Finality stipulates that finality as the legal enforceability and irrevocability of instructions occurs when transfer orders are entered into a system. The provisions of the directive are transposed into the BGB and InsO which are primarily applicable pursuant to the Clearing Conditions

As regards the irrevocability of instructions: Under German law the irrevocability of instructions is clearly defined based on general rules (see Section 130 German Civil Code (BGB)). Based on these rules Clearing Members and/or Non-Clearing Members/ Registered Customers are not entitled to revoke instructions unilaterally ones entered into the clearing system. The CCP itself enters the settlement instructions in the system of a CSD. The definition of "entering into the system" depends on the individual CSDs. Detailed information on settlement finality as well as irrevocable instruction orders are laid down in the terms & conditions or equivalent documents of each CSD. In that respect Eurex Clearing relies on CSD's and their settlement system with regard to the settlement finality. Hence, settlement finality can only be reached on the level of the CSD. Once transactions have been instructed by the CCP to the CSD and settled on the level of the CSD it is not possible for the CCP to revoke them.

Nevertheless, Eurex Clearing has at all times detailed information on the settlement of open payments, transfer instructions or other obligations. The processing of settlements is performed with SWIFT-formatted messages that contain clear references to the beneficiary. This way the key steps are documented using a system that sets the internationally recognized industry standards for settlement.

The central source for information to the exchange participants, clearing members and software vendors on the settlement of transactions is the Common Report Engine, which is Eurex Group's central solution for trading and clearing report retrieval. In particular, the needs of today on trading level have resulted in the development of a high-tech tool that has also improved Eurex Clearing's capabilities to meet the customers' increasing demand for the latest risk information on clearing level and settlement level.

Throughout each business day, Eurex Clearing provides reports (via the Common Report Engine) on daily settlements for Clearing Members and fully segregated customers to inform them on the final settlement of instructions.

Detailed information regarding the settlement of transactions can be found in the Clearing Conditions. The Clearing Conditions as well as other more general information on the settlement processes can be found on the website of Eurex Clearing.

Eurex Exchange	Eurex Repo	Frankfurt Stock Exchange	Securities Lending
CBF, CBFi / CBL and SIX SIS EUI for deliveries in GB and IE options	CBF, CBFi / CBL, EB	CBF, CBFi / CBL	CBF, ESES, SIX SIS; EUI For fixed income securities: CBFi / CBL, EB

CBF: Clearstream Banking AG, Frankfurt
 CBFi / CBL: Clearstream Banking Frankfurt International / Clearstream Banking SA, Luxembourg
 EUI: Euronext UK & Ireland
 EB: European Bank SA
 ESES: European Chamber of Eurozone-wide Securities (ESES) markets: European France, Belgium, Netherlands
 SIX SIS AG: Swiss Central Securities Depository

Eurex Clearing submits settlement instructions to the settlement locations. The actions required by the member to ensure settlement in the settlement location shall be as according to the rules of such settlement location. The members are responsible, for example, for having sufficient cash, credit and securities and for performing any releasing of transactions as may be required by the settlement location. Settlement takes place at the usual times and according to the standard process of the settlement location. Details on the settlement can be found in the rules and procedures for these settlement locations.

Eurex Clearing verifies the enforceability of each of its clearing models for each jurisdiction from which Clearing Members are admitted on the basis of comprehensive legal opinions from leading well reputed law firms in the relevant jurisdictions.

As part of the legal opinion the binding nature and enforceability of Eurex Clearing's provisions related to aspects like set-off, close-out netting, collateral provisioning is analysed per jurisdiction.

Based on the lex rei sitae rule German law is the applicable law as regards transfers of title in rem via Clearstream Banking AG. Therefore, German finality rules apply (see above).

In addition, Eurex Clearing operates a system within the meaning of Sections 1 paragraph 16 and 24b German Banking Act as well as Article 2 letter a of the Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on the settlement finality in payment and securities settlement systems (Settlement Finality Directive). The system has been reported to the European Securities and Markets Authority by the German Bundesbank in accordance with § 1 paragraph 16 sentence 1 German Banking Act.

As Eurex Clearing does not have contractual relationships with other CCPs in place the following remarks assume that the term "cash products" is referring to any CCP using cash settlement.

- a) For an SSS, how is consistency of finality achieved between the SSS and, if relevant, the LVPS where the cash leg is settled?

Cash market transactions that are recorded in the systems of the CCP are referred to as pending trades. Pending trades that are to be settled on a T+3 or shorter settlement cycle are held in the CCP system until the settlement process on the intended settlement date. At that time, settlement instructions are generated and submitted to the relevant settlement locations. Pending trades that are to be settled and have a longer settlement cycle, are held in the CCP system until the CCP batch run on that date, which is the difference between the settlement date and the standard settlement period. Settlement instructions for these trades are created and submitted to the settlement locations at that time. Once the settlement instructions are transmitted to the settlement locations, Clearing Members are able to see the pending settlement instructions via the standard information channels provided for their accounts by the settlement location.

The CCP maintains settlement accounts at multiple settlement locations. It settles transactions at the location chosen by the respective member in the trading location giving rise to the trades. As an example, a member could specify one settlement location for German government bonds and another for Swiss government bonds. The member communicates this choice to the trading location, and the trading location then informs the CCP of the location for settlement. The CCP settles transactions, except for cross border

settlement procedures described below, on an internal settlement basis, via its securities clearance account at the settlement location chosen by the member. Settlement is performed on a DvP basis according to the usual settlement mechanisms applicable at the settlement location in question. However, on the level of the CSD there is no differentiation between the settlement of securities and the related cash amounts - the finality is consistent between securities (SSS) and cash (LVPS). In order to ensure that the CCP is not short securities at one settlement location and long securities at other settlement locations, the CCP eliminates such imbalances by creating cross border settlement instructions for some pending trades. The cross-border settlement instructions are always cross border deliveries from a Clearing Member preferred settlement account to the CCP account at another settlement location. They are assigned to Clearing Members according to an algorithm that should, over time, impose cross border settlements on all members to the same extent. In all cases, the CCP submits settlement instructions to the settlement locations for itself and on behalf of the member. The actions required by the member to ensure settlement in the settlement location shall be as according to the rules of such settlement location. The members are responsible, for example, for having sufficient cash, credit and securities and for performing any releasing of transactions as may be required by the settlement location. Settlement takes place at the usual times and according to the standard process of the settlement location.

Settlement information for regular delivery instructions is processed by the CCP. Every settled delivery instruction leads to an update of the settlement status at the level CCP – CM.

- b) For a CCP for cash products, what is the relation between the finality of obligations in the CCP and the finality of the settlement of the CCP claims and obligations in other systems, depending on the rules of the relevant CSD/SSS and payment system?

Eurex Clearing is linked with the Securities Settlement Systems Cascade and Creation which are both operated by Clearstream and has further links with Euroclear Bank, Euroclear UK & Ireland, ESES and SIX SegalInterSettle (as can be seen in the picture below). Their respective rules and regulations apply.

Key Consideration 2

An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

Eurex Clearing ensures settlement finality on the value date as it creates instructions technically to observe the Intended Settlement Day (ISD). Settlement Finality is reported with report CE270 Settled Delivery. This report contains all partially or fully settled deliveries that are settled during Night Time Processing (NTP) and during the daytime processing (DTP).

The delivery obligation in the case of novation or open offer where the participant A sells to or buys from the Central Counterparty is to be fulfilled on the value date, regardless of whether the CCP is being delivered by or delivering to participant B.

Clearing Members shall fulfil their delivery and payment obligations resulting from Transactions in accordance with the instructions of Eurex Clearing. This also means that each Clearing Member and Eurex Clearing shall ensure, through appropriate instruction of the respective Settlement Location, that Transactions can be processed at the time specified in the relevant Special Clearing Provisions, on the delivery days agreed, respectively.

The Clearing Members shall authorize Eurex Clearing, by providing the appropriate power of attorney vis-à-vis the respective Settlement Location, to give, release and transmit all delivery instructions and to supplement, change or cancel the delivery instructions as required for the timely and correct fulfilment of its delivery and payment obligations against Eurex Clearing arising from Transactions in the name of and binding for and against such Clearing Member. The same applies with regard to the corresponding payment instructions.

In the event of a failure by a Clearing Member to deliver securities to Eurex Clearing on the applicable delivery date, Eurex Clearing is entitled at the cost of the defaulting Clearing Member to enter into a replacement purchase by way of a transaction with a third party or by way of a buy-in auction (Clearing

Conditions Chapter 1, Part 1, Number 1.4.4). Depending on the cleared market and the asset class, a different fail process applies. Generally, daily fines for late deliveries will be charged for shares that fall under the EU Short Selling Regulation (EU) 236/2012. Next to the fines under the EU Short Selling Regulation, also other types of fines exist; e.g. Fines over Dividend, Fines for Late bond deliveries from BUND BOBL SCHATZ notifications.

Furthermore, the CCP functionality Gross Delivery Management generally gives the CMs the possibility to make sure fails are avoided, e.g. by using block/release functionality. Due to German depository law each transaction must be handled separately in terms of disposition to prevent that stocks from e.g. client A are used to fulfil the obligation from client B. Empirically the settlement rate on average is well above 98%.

The Central Securities Depositories Regulation (CSDR) creates a common regulatory framework for securities settlement across the European Union (EU). The CSDR mandates the introduction of a shorter, harmonized, T+2 settlement cycle. The settlement discipline regime introduces – among other features - penalty fees for failing transactions and forced mandatory buy-ins within a certain time period after the intended settlement date. Trading parties will be responsible for triggering a buy-in for non-CCP-cleared transactions (with the CCP responsible for this for CCP-cleared transactions). Eurex Clearing closely follows up the news bulletins, circulars and other information received from CSDs regarding these upcoming changes. With Clearstream Banking Frankfurt, Eurex Clearing exchanges information on a regular, robust and reliable way. Next to the information from the CSDs, Eurex Clearing is also consulted regularly by the European Association of Clearing Houses (EACH).

Eurex Clearing has never experienced deferral of final settlement to the next business day that was not contemplated by its rules, procedures or contracts, as adequate safeguards are foreseen. Next to the penalty regime in case of failure to deliver as mentioned above, Eurex Clearing disposes of a well-defined default management process. When a Clearing Member goes into default, one of Eurex Clearing's principle objectives is to protect customers and minimize harm to clients and their positions.

Eurex Clearing submits settlement instructions to the settlement locations. The actions required by the member to ensure settlement in the settlement location shall be as according to the rules of such settlement location. The members are responsible, for example, for having sufficient cash, credit and securities and for performing any releasing of transactions as may be required by the settlement location. Settlement takes place at the usual times and according to the standard process of the settlement location. Details on the settlement can be found in the rules and procedures for these settlement locations.

If a participant does not have enough funds, securities at the relevant settlement time the status of the transaction will be "Pending Delivery" and potential "failure" penalties will apply (for further details on penalties see answers above). The sanctions for Non-Delivery are supposed to be an incentive for CMs to avoid fails. Report CE260 contains all trades that are partially or fully pending at this point of time. These trades are pending on the level CCP - CM or on the level CM – Customer. Pending transactions will be entered in the next value date and settled in the forthcoming batch.

Key Consideration 3

An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

The Clearing Conditions do not stipulate a certain point in time at which payments and instructions or other obligations cannot be revoked by any participant. Under German law, an express determination of such point in time is not needed. Rather, the irrevocability of declarations of intent is regulated by general principles under German civil law. Pursuant to Section 130 BGB, a declaration of intent becomes effective at the point in time when this declaration is received by the counterparty. However, it does not become effective if a revocation of the declaration of intent is received by the counterparty previously or at the same time (Section 130 para. 1 sentence 2 of the German Civil Code).

Based on these principles, CMs/NCMs/RCs are generally not entitled to revoke instructions unilaterally (notwithstanding system functionalities) once entered into the clearing system.

The aforementioned principles are supported by the restrictions enlisted under the Clearing Conditions.

Eurex Clearing AG's rights of revocation/cancellation in relation to Central Securities Depositories are defined in the rules applicable to the CSD's. A given option to revoke or cancel instructions in relation to a CSD would only be used by Eurex Clearing AG to correct errors or mistakes when instructing the CSD.

A Clearing Member is not able to force Eurex Clearing to revoke or cancel instructions in relation to a CSD. Once an instruction is entered into the system, the relevant instruction cannot be revoked.

Only in the following cases either Eurex Clearing or the relevant CM/NCM/RC could be entitled to revoke an instruction if:

- any statutory rights of rescission or termination applies due to a breach of duty (Pflichtverletzung) by Eurex Clearing; or
- an instruction is based on a wilful deceit (arglistige Täuschung) or an unlawful threat (widerrechtliche Drohung).

Eurex Clearing does not allow exceptions or extensions to the revocation deadline.

Assessment of principle:

Observed

Principle 9: Money settlement

Principle 9: Money settlement

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risks arising from the use of commercial bank money.

Key Consideration 1

An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

Eurex Clearing offers its Clearing Members an attractive payment infrastructure and provides access to a broad range of currencies for the fulfilment of payment obligations that arise from the clearing process (e.g. variation margin, premiums, fees). For this purpose, Eurex Clearing is connected to a number of central and commercial banks. Central bank connectivity is preferred since payment transactions are settled on a continuous basis, in central bank money and with immediate finality. All settlement and funding flows are monitored on an ongoing and timely basis.

Eurex Clearing predominantly settles cash flows in central bank money, i.e. for EUR via TARGET2 and for CHF via Swiss National Bank (SNB). Settlement only takes place in commercial bank money in case Eurex Clearing or the Clearing Member does not participate in the central bank's payment infrastructure.

Eurex Clearing defines the admissible central and commercial banks and publishes them on its webpage. For an overview on how money settlement is performed in each currency, please see the following figure.



¹ Eurex Clearing generally requires the usage of central bank money for clearing related cash payments in the clearing currencies EUR and CHF (TARGET2 for EUR, Swiss National Bank for CHF). If evidenced that this is not possible, neither directly nor indirectly, access to a Settlement Bank may be granted and the Settlement Bank Fee shall be charged.

Admitted central and commercial banks of Eurex Clearing.

Furthermore, for multicurrency cash settlement physical delivery Eurex Clearing is linked with CLS Bank International (CLS). CLS stands for Continuous Linked Settlement and is the largest multicurrency cash settlement system. The CLS settlement is ensured via Standard Chartered Bank in its role as CLS third-

party service provider. It mitigates settlement risk in FX transactions of its participants. Settlement of FX transactions requires the exchange of principal in two currencies based on linked obligations. Settlement risk is the risk that one party pays the currency it sold but does not receive the currency it bought, resulting in a loss of principal. CLS mitigates settlement risk through the provision of its unique Payment vs. Payment (PvP) settlement service, which has direct links to the Real Time Gross Settlement (RTGS) systems of the currencies. As funds in both PvP currencies are available, the instructions settle. The settlement is final and irrevocable.

Key Consideration 2

If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

Eurex Clearing ensures that funds provided through commercial banks are safely placed with the relevant central bank money account of Eurex Clearing (where available) or are invested on a secured basis to the extent possible. Eurex Clearing limits any remaining credit and liquidity risks with commercial banks by performing an internal assessment of the bank's creditworthiness as well as of its operational reliability (see also Key Consideration 3 of this Principle below), by applying a strict limit framework and by monitoring the cash accounts throughout the day.

The selection of commercial banks for cash settlement is based on a strict process checking credit quality and operational robustness and must be approved by the Executive Board of Eurex Clearing.

When using commercial banks, Eurex Clearing monitors the credit rating of the entity. A sudden change in a bank's credit quality may trigger a re-assessment of the relationship and/or reduction or cancellation of its limit. In addition, since 2011, Eurex Clearing is following the criteria defined below in identifying and assessing the commercial banks for additional currencies that Eurex Clearing is supporting.

As outlined in Key Consideration 1 of this Principle, Eurex Clearing, as part of the clearing process, needs to pay and receive payments to and from the Clearing Members. Other than payments in EUR and CHF, Eurex Clearing uses a network of payment and correspondent banks (together called "Banks") to assist with the process. Given Eurex Clearing's reliance on these Banks for the efficient working of the clearing processes, Eurex Clearing has developed criteria for the assessment of these Banks.

These criteria will be used to evaluate the Banks before going live and then on a regular basis to ensure compliance of these criteria at all times. This process is also required to fulfil the requirement to strictly limit cash settlement risks' as stipulated in Article 50 EMIR.

Eurex Clearing, in principle, receives clearing related payments in the same currency that it is obliged to pay out (pass-through payments). Thus, no liquidity pressure arises in the normal course of business. As an additional measure to reduce cash settlement risk, all transactions are subject to margin until they have been settled. Also, high settlement efficiency rates are achieved through settlement netting.

Eurex Clearing identifies the Banks for new currencies based on the following ten criteria:

1. Creditworthiness
2. Technical infrastructure
3. Operational effectiveness
4. Operational reliability
5. Credit facilities
6. Bank Status Requirements
7. Client Assets Sourcebook (CASS) rules
8. Currency scope
9. Information security risk management
10. Anti-Money Laundering (AML)

Key Consideration 3

If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

As an authorized CCP under EMIR, Eurex Clearing is required to have adequate procedures and mechanisms in place to deal with the default of a Clearing Member, i.e. to maintain a Default Fund to cover potential losses not being covered by margin requirements. The regulation requires a CCP to measure daily the liquidity risk generated by the default of at least the two Clearing Members to which it has the largest exposure. Eurex Clearing monitors this requirement through a Management Information System (MIS).

Initially, the Banks are assessed based on the criteria as described above. The FACT methodology, used in the credit assessment, is made up of 40% qualitative factors and 60% quantitative factors. Qualitative factors include Operating environment, Market position, Business model and Transparency. Quantitative factors include Liquidity, Capitalization, Asset Quality and Profitability.

In addition, Eurex Clearing applies a Monitoring Concept based on the defined criteria to regularly ensure compliance of those criteria by the connected Banks. Furthermore, for each Bank a Relationship Manager is assigned. Results of the monitoring are reported to the Executive Management of Eurex Clearing beyond other relevant stakeholders. In case of non-performance immediate actions are undertaken and monitored for remediation.

Eurex Clearing's Risk Management Framework ensures adequate controls over credit risk arising from Eurex Clearing activities. Eurex Clearing takes into account its overall credit risk exposures to individual counterparties from different types of relationships the counterparties may have with Eurex Clearing to monitor the exposures as well as provide necessary inputs for the consolidated DBAG group-wide credit view.

To maintain the credit risk exposure within acceptable parameters, credit exposure limits can be set at the counterparty level. Exposures to connected counterparties are treated in a consolidated way. General thresholds are defined based on the rating of the counterparty. Specific threshold overrides may be applied considering further aspects such as business activities and collateral situation. Review of the credit limits is undertaken at least yearly or on demand.

As a result of its clearing business, Eurex Clearing's liquidity risk management is based on an analysis of the settlement and funding flows of the clearing process.

For the clearing currencies central bank access has been granted. For currencies without access to central bank money, Eurex Clearing permits settlement in commercial bank money.

Settlement bank accounts per currency are monitored throughout the day. Cash inflows to the account are intended to be placed on a secured basis via reverse repo transactions backed with high quality collateral. As a result, this concept does not foresee significant unsecured overnight exposures. In order to avoid undue risk concentration in a currency, Eurex Clearing regularly monitors settlement volumes in each currency. If settlement volumes in a specific currency are deemed significant, Eurex Clearing adds a further payment bank.

Furthermore, the Liquidity Risk Management Framework foresees coverage of multiple relationships that an entity may have with Eurex Clearing. Relevant relationships that shall be addressed are, among other: Clearing Member, settlement bank, group of companies belonging to the same legal entity.

In order to avoid risk concentration in a currency and at commercial bank level, cash balances (Treasury) and settlement volumes (Clearing Operations) in the respective currency need to be monitored. In currencies for which Eurex Clearing does not have access to a central bank account, at least one payment

bank shall be set up by the unit "Settlement Service". In Euro and currencies for which large settlement volumes are observed, accounts with at least two payment banks shall be established.

For each bank, nostro limits shall be established. These limits apply to the amount which remains on the payment bank account overnight and are monitored by Credit.

If the private settlement bank model is used, concentration risk for currencies with significant exposure should be mitigated by introducing more than one settlement agent. To avoid concentration risk in significant currencies without central bank access, Eurex Clearing at least has two settlement agents in place.

Eurex Clearing has an Additionally Monitored Risks Framework that describes that one of the activities that might expose Eurex Clearing to credit risk on counterparts arises from the nostro accounts (Cash Balances):

- Commercial banks and Securities Settlement Systems used for CCP payment infrastructure
- Commercial banks used for other purposes

Exposures to payment banks are covered under nostro accounts because margin call payments using commercial bank money result in additional cash balances on nostro accounts and are therefore already covered.

The Liquidity Management Information System includes all exposures towards a defaulting Clearing Member in all relevant relationships with Eurex Clearing, i.e. as clearing member, settlement bank or nostro agent.

A settlement bank is a bank that a clearing member uses to perform securities settlement. The liquidity risk is calculated by adding all liquidity risks of the Clearing Members using that particular settlement bank in the respective market, applying netting between the Clearing Members using that settlement bank.

A nostro agent is a bank that Eurex Clearing holds a cash account with to perform CCP settlement. The associated liquidity risk is the positive end-of-day account balance held at the nostro agent.

Key Consideration 4

If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

Eurex Clearing does not conduct any money settlement on its own books.

Key Consideration 5

An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

Legal agreements with settlement banks are in place and the laws of the relevant jurisdictions support the provisions of transfers and finality (Settlement Finality Directive, German Insolvency Law (InsO, Section 116)).

Eurex Clearing has various contracts with payment banks in place to ensure the cash settlement.

Moreover, the college of regulators (pursuant to Art. 18 EMIR) approved in the EMIR re-authorization process that Eurex Clearing strictly limits cash settlement risks (Art. 50 EMIR: "... steps shall be taken to strictly limit cash settlement risks").

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Funds received are available to Eurex Clearing without any restrictions. The cash is generally transferred to Eurex Clearing free and clear from any rights and claims of the transferring party and of any third party. As such the cash is transferable immediately, i.e. intraday, when received.

Assessment of principle:

Observed

Principle 10: Physical deliveries

Principle 10: Physical deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Key Consideration 1

An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

Key Consideration 2

An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

Physical Delivery as mentioned in Principle 10 concerns the delivery of an asset, such as an instrument or a commodity, in physical form. For example, the settlement of futures contracts cleared by a central counterparty may allow or require the physical delivery of an underlying financial instrument or commodity.

“Examples of physical instruments that may be covered under this principle [10] include securities, commercial paper, and other debt instruments that are issued in paper form.” (p. 70, 2012 CPMI IOSCO PFMI)

In its Clearing Conditions, Eurex Clearing also mentions physical deliveries. Eurex Clearing's assumption is that deliveries of “physical” instruments in this context are to be understood as deliveries of securities held in book-entry form (immobilized or dematerialized) and delivery obligations are fulfilled via book transfer. One example can be found in Chapter II, Part 2, Number 2.7.1 of the Clearing Conditions:

“(2) In case of Single Stock Futures Contracts to be fulfilled by physical delivery (Number 1.6.2 Paragraph 2 of the Contract Specifications for Futures Contracts and Options Contracts at Eurex Deutschland), physical deliveries and payments are made directly between the Clearing Members and Eurex Clearing AG on the second Business Day after the last trading day (Number 1.6.2 Paragraph 1 of the Contract Specifications for Futures Contracts and Options Contracts at Eurex Deutschland).

The physical deliveries are made via a Settlement Location and the payment is made via the account defined by the respective Settlement Location.

All Clearing Members shall ensure their ability to deliver and pay by having adequate positions in the deposit of the respective Settlement Location and credit on the according cash accounts.”

The CPMI IOSCO PFMI however explicitly exclude these deliveries as being physical in the sense of Principle 10: “Immobilized and dematerialized securities, which represent the normal market practice, are covered in Principle 11 on CSDs.”

Even in the case of the “Xetra Gold Exchange Traded Commodity (ETC)”, where the physical delivery of gold is a possibility, Eurex Clearing does not itself ensure the physical delivery. It is Clearstream Banking Frankfurt, a Deutsche Börse subsidiary, that stores the gold in its vault with highest security standards and oversees that each unit of Xetra Gold is at any time covered by one gram of gold. This saves investors the costs of transporting and physically storing the gold. Nonetheless, private investors can obtain the underlying gold in physical form from their bank if desired.

This means, that physical deliveries as mentioned by Principle 10 are not performed by Eurex Clearing. Therefore, Eurex Clearing deems Principle 10 as not applicable.

Assessment of principle:

Not applicable

Principle 11: Central securities depositories

Principle 11: Central securities depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Key Consideration 1

A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

Key Consideration 2

A CSD should prohibit overdrafts and debit balances in securities accounts.

Key Consideration 3

A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

Key Consideration 4

A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

Key Consideration 5

A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.

Key Consideration 6

A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

As outlined in Key Consideration 1 of Principle 1, Eurex Clearing is an authorized CCP under EMIR and is not a Central Securities Depository. Therefore, Eurex Clearing deems Principle 11 as not applicable.

Assessment of principle:

Not applicable

Principle 12: Exchange-of-value settlement systems

Principle 12: Exchange-of-value settlement systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Key Consideration 1

An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

Eurex Clearing itself is not an exchange of value system. Eurex Clearing enters into the trade and becomes the buyer for the seller and the seller to the buyer. The seller needs to deliver the securities to the CCP and the CCP delivers the securities to the buyer. The process is supported by a Delivery vs. Payment/Receipt vs. Payment (DvP/RvP) settlement. The booking is performed in the chosen Central Securities Depository. The use of these mechanisms ensures that principal risk is eliminated. These settlement mechanisms are based on standard (SWIFT-format) message types, which ensure the timely and appropriate documentation for the availability of both securities and cash at the same time.

The final settlement of corresponding transactions based on linked obligations is ensured because Eurex Clearing issues delivery instructions in the DvP mode or processes according to the logic that both sides need to be fulfilled before the transaction is confirmed to the customer (Lending CCP service). In order to get accepted, any settlement institution has to meet Eurex Clearing's prerequisites. Selected settlement institutions are equipped with the technical capabilities to fully and timely receive Eurex Clearing's instructions and to accordingly perform the necessary deliveries. At all times, Eurex Clearing requires that all settlement institutions must have such an essential mechanism installed.

All CSDs to which Eurex Clearing instructs a Delivery vs. Payment mode have been verified to be able to process DvP instructions. The Clearing Conditions provide an adequate legal framework in Chapter I, Part 1, Number 1.4.2 (Settlement of Transactions in Securities). The Clearing Members or Basic Clearing Members (or the Clearing Agents acting on behalf of their Basic Clearing Members) provide the appropriate power of attorney (or, as applicable, sub-power of attorney) for use vis-à-vis the respective Settlement Location, to give, release and transmit all delivery instructions and to supplement, change or cancel the delivery instructions as required for the timely and correct fulfilment of its delivery and payment obligations against Eurex Clearing. The same applies with regard to the corresponding payment instructions.

The contractual framework as described in the Chapter 1, Part 1, Number 1.4.2 Clearing Conditions explains the authorization given by the Clearing Member to give delivery instructions in order to facilitate the settlement of the obligations.

Owing to the fact that Eurex Clearing must continue operating and fulfilling its contractual obligations to non-defaulting participants on schedule all financial transactions are subject to margin (for further details on the margining please see the assessment report 'Risk Management – Margin') until their settlement has been achieved.

Eurex Clearing closely monitors the market and credit risk arising due to the physical settlement via the third-party service provider, Standard Chartered Bank. Standard Chartered Bank contractually agreed with Eurex Clearing to prefund any gaps with CLS in order to ensure final settlement and eliminate principal risk. This contractual agreement is in line with expected settlement amounts and assessed on a regular basis with regards to the development of settlement volumes.

Eurex Clearing's macro view on transactions (gross delivery management) complies with German depository law and creates netted instructions to Central Securities Depositories, thereby reducing the number of delivery instructions dramatically and improving cost efficiencies.

Eurex Clearing offers both gross and net settlement options to its members. Members can mark transactions either for gross or for net processing. This functionality is available for both sell and buy transactions. Transactions can be marked by a gross flag for gross processing either by default or on a single transaction basis, providing the members with further flexibility. Transactions marked for gross processing are therefore not considered in the settlement netting process. For these transactions, the delivery process is performed on a gross process. At Eurex Clearing, more than 99% of all transactions are netted. For more information on limitations of netting due to the segregation of client assets, please see additionally Principle 14.

The independent settlement of both obligations is processed according to the participants' individual settlement settings at the CCP, i.e. either gross or net. A participant has to deliberately mark transactions for gross processing. As a result, these transactions will not be included in the overall settlement instruction entailing all transactions subject to settlement netting. Therefore, two separate delivery instructions will be sent to the (I)CSD. Furthermore, they will be also considered separate in risk management under Risk Based Margining for spot market trades.

Within Gross Delivery Management, transactions can either be manually or automatically linked. This facility is available for transactions that are subject to settlement netting. Linked transactions are automatically sorted into the offsetting block, are guaranteed to be final on the settlement day and cannot be blocked. Information on the Gross Delivery Management can also be found on Eurex Clearing's website.

The CLS settlement is taking place via Standard Chartered Bank as third-party service provider on a gross basis (trade by trade) per Clearing Member and per currency.

The booking is not always simultaneous, but rather is conducted based on a Delivery vs. Payment mechanism by the CCP. It is performed independently of the chosen Central Securities Depository. The Clearing Conditions provide an adequate legal framework in Chapter I, Part 1, Number 1.4.2 (Settlement of Transactions in Securities (as cited above)).

The settlement of the two legs of a transaction, e.g. securities from A to the CCP against cash from the CCP to A, should be operated as DvP/RvP settlement mechanism based on standard (S.W.I.F.T.) message types, which itself ensures the availability of both securities and cash; otherwise the delivery obligation runs late by the end of the value day. In case of late delivery of a Clearing Member, Eurex Clearing may designate a reasonable grace period.

In order to help reduce the incidence of 'fails', Eurex Clearing facilitates blocking and releasing of sell transactions that have not yet been settled. The Settlement Institution or Clearing Member is able to block (to exclude the transaction from settlement) or release either the whole transaction quantity or only part of it. It is possible to partially release sell transactions in order to settle the released quantity in the upcoming settlement run. Due to German depository law, each transaction must be handled separately in terms of disposition to prevent that securities from e.g. client A are used to fulfil the obligation from client B.

As described for Key Consideration 2 of Principle 8, in the event of a failure by a Clearing Member to deliver securities to Eurex Clearing on the applicable delivery date, Eurex Clearing is entitled at the cost of the defaulting Clearing Member to enter into a replacement purchase by way of a transaction with a third party or by way of a buy-in auction.

Eurex Clearing enters into the trade and becomes the buyer for the seller and the seller to the buyer. The seller needs to deliver the securities to the CCP and the CCP delivers the securities to the buyer. Therefore, there is no 1-to-1 relationship between sellers' transactions to buyers' transaction, in this way the CCP as central counterparty is the party to be contacted for further procedures. Hence, by means of our Clearing Conditions, blocked trades are protected by claims from a third party.

Further, Eurex Clearing is linked with the Securities Settlement Systems Cascade and Creation, which are both operated by Clearstream and has further links with Euroclear Bank, Euroclear UK & Ireland, ESES and SIX SegalIntersettle.

The settlement is processed entirely by the CSDs/SSSs linked with Eurex Clearing. Eurex Clearing as account owner at these CSDs/SSSs has the adequate contractual arrangements with these CSDs/SSSs. Moreover, Eurex Clearing is informed of any modification of the services provided by CSDs. The section

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Clearing Design acts as the direct contact for the accounts set up at any CSD and Key Accountants are following all relevant updates on the service, e.g. by receiving circulars. If a major modification is planned, the Key Accountants are informed beforehand and necessary adjustments are jointly planned and implemented

In terms of settlement of FX transactions, Eurex Clearing is linked with Standard Chartered Bank in its role as CLS third-party service provider. Eurex Clearing has established a contract with Standard Chartered Bank to ensure that final settlement of one obligation occurs only when the final settlement of any linked obligation occurs. As described above, the CLS settlement via Standard Chartered Bank mitigates settlement risk through the provision of Payment vs. Payment (PvP) settlement. Only once funds in both PvP currencies are available, the instructions settle. Additionally, linkages with other FMIs are also clearly indicated in the choice that Eurex Clearing gives its customers when setting up their account infrastructures.

Relevant information on the settlements effected using a certain mechanism is provided in the quarterly CPMI-IOSCO public quantitative disclosure on the "AggregatedDataFile" tab:

- Percentage of settlements by value effected using a DvP settlement mechanism (12_1_1),
- Percentage of settlements by value effected using a PvP settlement mechanism (12_1_3),
- Percentage of settlements by volume effected using a DvP settlement mechanism (12_2_1), and
- Percentage of settlements by volume effected using a PvP settlement mechanism (12_2_3).

Assessment of principle:

Observed

Principle 13: Participant-default rules and procedures

Principle 13: Participant-default rules and procedures

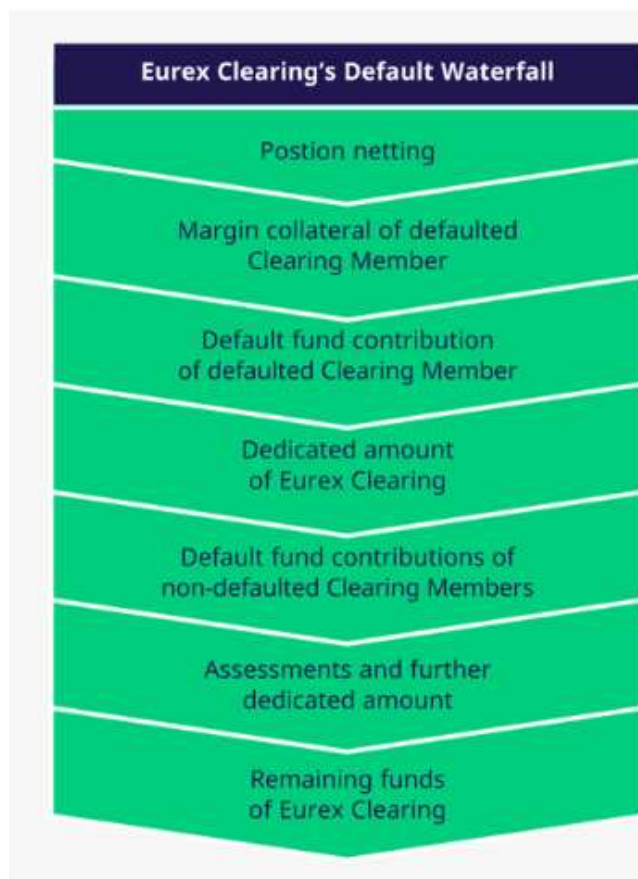
An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Key Consideration 1

An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

1. Declaration of Default:

Eurex Clearing maintains a multi-layered security system to absorb the financial consequences of a Clearing Member's default, called "lines of defense" or the default waterfall. While the mainstay of this safety system is the margin, which Clearing Members have deposited as collateral to cover exposure for open positions, the lines of defense consist of several additional layers of safety nets. In the event of a default, these layers are applied in the order that is outlined in the diagram below.



According to Eurex Clearing's Clearing Conditions, Chapter I, Part 1, Number 7, Eurex Clearing is empowered at any time to draw any financial resources (i.e. margin collateral and Default Fund contributions) of the defaulting member to cover default related losses. Once the defaulter's collateral is utilized in full, Eurex Clearing provides its own contribution, the dedicated amount of EUR 200 million, to cover the outstanding losses. Only if these funds were insufficient, Eurex Clearing will utilize the Default Fund contributions of the non-defaulted members. Only if non-defaulted Clearing Members' Default Fund contributions are insufficient to cover all losses, Clearing Members are required to provide up to two times their Default Fund Contribution requirement determined at the time when the default is declared (so-called

assessments) and Eurex Clearing provides a further dedicated amount. The obligation to provide so-called assessments is limited within a capped period of 20 business days, which starts with the declaration of default of a Clearing Member and ends with the finalization of the DMP. The capped period can be rolled, that means that if within the capped period another default occurs, another 20 days are triggered. However, when the capped period is rolled each member is still only obliged to provide assessments up to two times the original amount of the Default Fund contribution provided at the start of the capped period. The capped period ends after 3 months, regardless of further defaults.

Simultaneously with the assessments, Eurex Clearing will provide a further dedicated amount which is capped at EUR 300 million and is backed by the letter of comfort issued by Deutsche Börse AG. At the end of the default waterfall, the remaining resources from the letter of comfort and Eurex Clearing's equity capital can be used to cover remaining losses.

Detailed information on the lines of defense is also available on the webpage of Eurex Clearing (<https://www.eurex.com/ec-en/services/risk-management/default-waterfall>). The order in which the Lines of Defense are utilized is documented in the Clearing Conditions Chapter I, Part 1, Number 6.2.

Within the rulebook of Eurex Clearing (Clearing Conditions), the default of a Clearing Member is called a Termination Event. A Clearing Member termination leaves the CCP unbalanced and initiates the DMP. Eurex Clearing distinguishes between automatic and non-automatic termination events which may lead to a termination of the clearing membership.

Key objectives of default management procedures include minimizing further losses for the defaulting participant, winding down its positions in an orderly manner, enabling the CCP to continue performing its obligations and preserving other participants' and users' ability to manage their portfolios.

Nonetheless, a generic structure is required and desired to organize the complexity of defaults, which is defined by the following components:

- **Predefined Liquidation Groups:** Products and instruments are arranged into one Liquidation Group if their overall liquidation process is similar and offsets may exist between them. As such, the DMP can be seen as running in parallel for each Liquidation Group, with the specific actions and outcomes of each case following their own path. Given that the DMP is structured along Liquidation Group lines, the specificities of this process must be reflected in the margins applied to them. This will take into account possible shared risk factors and differing liquidity of the constituents of the Liquidation Group.
- **Default Management Committees (DMCs):** DMCs assist the CCP with regards to any relevant matter of the DMP. The DMC consists of representatives from Clearing Members with sufficient risk and trading expertise for a specific Liquidation Group. The DMC will be convened in case of a Clearing Member default situation or for regular default simulations or any reason as defined in the Clearing Conditions.
- **Preliminary Measures:** These enable Eurex Clearing to be in the best possible starting position to manage a default quickly and efficiently. Preliminary measures are not actions that rebalance the CCP, but technical preparations and setup, governance, operational setup and other preparations to ensure that Eurex Clearing has up-to-date information, fast and efficient decision making process, and general readiness to act.
- **Hedging:** Hedging is the reduction of risk posed by the open positions of the CCP. Hedging is an optional stage, with great flexibility to enable a commensurate response depending on the nature of the portfolio. Generally, each Liquidation Group will be hedged with liquid products, permitting a rapid reduction of exposure to risk factors. This not only minimizes the uncertainty in the losses that the CCP's open positions would lead to, but also stabilizes the portfolio for auctions.
- **Auction & Independent Sale:** While hedging has the effect of matching the economics of the open positions to mitigate risk to the CCP and its lines of defense, independent sales and auctions will be the primary tool for fully recreating a matched book. Member participation in independent sales is voluntary, whereas auctions are mandatory for members. Auctioning off previously hedged portfolios to the non-defaulting participants is expected to be the primary method to rebalance the CCP for large portfolios.

- **Cash Settlement of Liquidation Group Transactions:** If the CCP is unable to rebalance itself during the DMP and all default waterfall resources assigned to the affected Liquidation Group are utilized, recovery and resolution procedures are applied to the affected Liquidation Group to ensure that healthy asset classes can continue to be cleared. All open positions in products assigned to the Liquidation Group are cash settled and the clearing services for such products is discontinued.

The Figure below provides an overview of the components mentioned above.



Key Consideration 2

An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

The purpose of default procedures is to protect the continuing functioning of Eurex Clearing by limiting the potential for the effects of a default to spread beyond the defaulting participant. Key objectives of default procedures include minimizing further losses at the defaulting participant, winding down its positions in an orderly manner, enabling the CCP to continue performing its obligations and preserving other participants' and users' ability to manage their portfolios.

The event of a Clearing Member's default is assumed to be highly correlated to market stress and may be subject to further endogenous disruptions of the market. Given the impossibility of predicting the nature of future crises and potential defaults, the DMP is designed to be sufficiently flexible to take different default scenarios into account.

Eurex Clearing conducts regular default simulations to ensure the best level of preparation for any default situation among its Clearing Members. Clearing Members are obliged to support Eurex Clearing when any such simulation takes place. Upon request of Eurex Clearing, each Clearing Member active in the respective Liquidation Group needs to be able to act as a potential counterparty for hedging positions and shall support testing of the auction process. Hence, Eurex Clearing ensures that members have the necessary procedures and infrastructure in place to provide prices during a real default.

The default procedures are tested in realistic default simulations, which take place at least once (EMIR requirement, participation is mandatory for Clearing Members) and at maximum three times per year. In a default simulation, the procedures and infrastructure of Eurex Clearing and the Clearing Members' readiness to participate in a real DMP are tested. Pre-assigned Clearing Members are required to second

representatives to the DMC that will assist Eurex Clearing in handling the default. Representatives of the DMC are required to take part in default simulation at Eurex Clearing's premises or remotely, in case of extraordinary situations and if decided by Eurex Clearing. Furthermore, members are required to provide prices on a hypothetical portfolio during a default simulation. Thus, Eurex Clearing ensures that members have the necessary procedures and infrastructure in place to participate in the auction during a real default. If during a default simulation Eurex Clearing detects that the default procedures are not feasible anymore, Eurex Clearing can take immediate action to remedy the shortcomings. The results of the annual simulation are provided to the national competent authority, discussed with the participants during bilateral debriefing sessions and are presented to the Executive Board of Eurex Clearing as well as to the EMIR Risk Committee. In addition, Eurex Clearing regularly conducts bilateral simulations with selected Clearing Members.

The Default Management Section (DMP Team) is the primary line organization within Eurex Clearing responsible for Default Management. The DMP Team is responsible for both developing and executing the re-balancing of the CCP in the event of a member's default.

In addition, Eurex Clearing has dedicated Porting and Communication Streams in place which are responsible for the client porting procedure and internal and external communication.

The Eurex Clearing's Executive Board is the ultimate decision-making body and responsible for the DMP.

The implemented default procedures allow Eurex Clearing to control, manage or close the positions of the defaulting member – whatever is more appropriate – to ensure market integrity and CCP security. In a default case, this also includes a transfer of customer positions of the defaulting Clearing Member to a new (non-defaulting) Clearing Member. The waterfall model of Eurex Clearing's lines of defense foresees, in the case of a Clearing Member default, that first all assets and collaterals of the defaulting Clearing Member are used before other resources of Eurex Clearing or the remaining clearing community are utilized. The funds available under the lines of defense can be used without delay.

In line with Art. 48 (3) EMIR requirement, Eurex Clearing informs its competent authority if it considers that the Clearing Member will not be able to meet its future obligations. To ensure timely information sharing with the competent authority, a dedicated communication process is set up between the DMP Team and the Chief Compliance Officer of Eurex Clearing who is in charge of providing such information to the competent authority. The decision whether a Clearing Member is considered not to be able to meet its future obligations is made by at least two members of the Executive Board of Eurex Clearing.

In case the Executive Board decides on a Termination, Eurex Clearing publishes a circular with a porting notice in order to trigger the process and communicates the decision to all relevant stakeholders. Furthermore, Eurex Clearing may decide to inform the wider market via news board messages published on the website of Eurex Clearing. In case of a default, Eurex Clearing activates the Communication Stream to ensure proper distribution of relevant information.

Any amendments to the DMP have to be approved by the Eurex Clearing Executive Board, are discussed with the EMIR Risk Committee and undergo a market consultation.

All procedures executed by the DMP Section are captured in process documents, which are reviewed and audited annually.

Key Consideration 3

An FMI should publicly disclose key aspects of its default rules and procedures.

Eurex Clearing publishes information on its default management procedures including the definition of the default event as well as the actions which will be taken after a default has occurred and by whom these actions are taken. The publicly available procedures also outline the scope of the actions which may be taken, including the treatment of both proprietary and client positions, funds and assets, the mechanisms to address a CCP's obligations to non-defaulting Clearing Members as well as the mechanisms to help

addressing the defaulting Clearing Member's obligations towards its clients, which are disclosed to Eurex Clearing.

The full set of rules with regards to the DMP is outlined in the publicly available Clearing Conditions, DMC Rules and DM Auction Rules. Furthermore, a detailed functional description of Eurex Clearing's DMP is given in the Default Management framework and process documents (Default Management Framework, Default Management Governance, Default Management Hedging, Default Management Auctions, Default Management Independent Sale, Default Management Post Liquidation) which are available on Eurex Clearing's member section. Any amendments to the DMP are discussed with the EMIR Risk Committee and undergo a market consultation.

Key Consideration 4

An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

The default procedures are reviewed at least once a year as a part of the annual fire drill exercises. In addition, Eurex Clearing performs multiple bilateral member drills throughout the year. This review includes the verification of the concept, the hedging strategies, auction formats and the availability of the connected infrastructure. If necessary, the DMP is updated. Following any material change, the DMP is also tested. During annual fire drills Eurex Clearing simulates a default of one of the largest Clearing Members active in various Liquidation Groups and convenes the DMC for the respective groups.

Clearing Members are required to second representatives to the DMC that will assist Eurex Clearing in handling the default. Representatives of the DMC are required to take part in default simulation at Eurex Clearing's premises or remotely under extraordinary circumstances and if decided by Eurex Clearing. Furthermore, members are required to participate in a simulated hedging process, provide prices for a hypothetical portfolio during the auction/independent sale and collateral liquidation process. Thus, Eurex Clearing tests every step of the process and ensures that members have the necessary procedures and infrastructure in place to handle a real default.

Resolution of Clearing Members is indirectly in scope of the annual simulation as it is assumed that the largest Clearing Members are all subject to resolution regimes and are therefore unlikely to simply default. The tests scenario typically covers a resolution situation in which the responsible resolution authority has decided not to grant specific treatment to market infrastructures and the respective Clearing Member defaults on its obligation with the CCP.

Generally, in case relevant resolution authorities declare a Clearing Member of Eurex Clearing being in resolution, Eurex Clearing does not terminate the clearing relationship with the member as, according to the Clearing Conditions of Eurex Clearing, resolution itself is not a termination trigger. A resolution situation triggers a close monitoring of the Clearing Member by Eurex Clearing.

In case the Clearing Member in the meantime does not fulfil its obligations or a Termination Event according to Chapter 1, Part 1, Number 7.2.1 or 7.2.2 of the Clearing Conditions of Eurex Clearing occurs, Eurex Clearing would have the right to terminate the clearing relationship and trigger the DMP according to Chapter 1, Part 1, Number 7.5 of the Clearing Conditions of Eurex Clearing.

If during a default simulation Eurex Clearing detects that the default procedures are not feasible anymore, Eurex Clearing takes immediate action to remedy the shortcomings. Lessons learned and feedback collected from the Clearing Members are used for continuous improvement of the DMP.

The results of annual simulations are reported to the Executive Board of Eurex Clearing, EMIR Risk Committee and the regulators.

Assessment of principle:

Observed

Principle 14: Segregation and portability

Principle 14: Segregation and portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

Key Consideration 1

A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.

Thus, Eurex Clearing established a comprehensive legal framework to set market standards enabling segregation and portability of positions and collaterals of clients of a Clearing Member as well as to comply with European, U.S. and national regulatory prerequisites for the protection of these client assets.

Client Asset Protection ensures the highest protection by providing segregation and timely portability. Clients will have the option as to how their positions and margin collateral is held and posted by their Clearing Member at Eurex Clearing, depending on each individual client's needs.

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Eurex Clearing's segregation offering in accordance with EMIR

An overview of Eurex Clearing's segregation options for direct clients of a Clearing Member and key features can be found below:

	NOSA	GOSA	ISA
Client Considerations	Net Omnibus Segregated Account	Gross Omnibus Segregated Account	Individual Segregated Account
Fellow customer risk	Yes	Limited	No
Trades held in position account	With other clients	Individual a/c	Individual a/c
Margin efficiency	Net	Gross	Gross
Collateral pool	Omnibus	Omnibus	Individual
Securities collateral provided via	Pledge	Pledge	Pledge or title transfer
Cash collateral provided via	Title transfer	Title transfer	Title transfer

Collateral allocation	By value	By value	By asset
Porting	Available with fellow customers	Available as individual	Available as individual
Collateral return if porting fails	Via insolvency administrator	Direct from CCP	Direct from CCP
Direct collateral transfer	-	-	for title transferred security collateral
Direct reporting	-	Available	Available
CASS protection	Available	Available	Available under pledge for security collateral
Clearing model under Clearing Conditions	Elementary Clearing Model		Individual Segregated Account

Elementary Clearing Model

Under the Elementary Clearing Model Eurex Clearing offers its Clearing Members the following omnibus client segregation:

(a) **“net omnibus client segregation”** (NOSA) where positions of multiple Undisclosed Direct Clients are held in one position account and margin is posted by the Clearing Member to Eurex Clearing on a net basis across Transactions relating to all such Undisclosed Direct Clients. Porting is available with fellow customers.

(b) **“gross omnibus client segregation”** (GOSA) where a position account of a Direct Disclosed Client is held separately from other clients and margin is posted by the Clearing Member to Eurex Clearing on a gross basis across Transactions relating to a particular Direct Client. Porting is available for individual clients.

For further reference, please also refer to the Clearing Conditions, Chapter 1, Part 2 Subpart C.

Furthermore, Eurex Clearing supports Clearing Members domiciled in the UK to clear certain Eurex Transactions or OTC Interest Rate Derivative Transactions in accordance with the rules of the Client Asset Sourcebook (CASS) of the United Kingdom Financial Conduct Authority (“CASS Rules”) for the benefit of their clients. Positions and assets forming part of a CASS Client Account are legally segregated from any non-CASS Transactions and assets. It’s the responsibility of the Clearing Member to comply with the CASS Rules.

For further reference, please also refer to the Clearing Conditions Chapter 1 Part 2 Subpart D.

Individual Segregated Account (ISA)

Maximum protection is achieved for Direct Clients which opt for individual segregation. Positions and margin collateral of an individually segregated client are held in dedicated, individual accounts at CCP level, and hence are completely ring-fenced from the Clearing Member’s or other client’s positions and margin collateral. Portability of client positions and margin collateral is available for each client.

Under the ISA model, Eurex Clearing facilitates indirect clearing services by providing, upon request of the Clearing Member, separate Transaction Accounts for ISA Transactions relating to Indirect Clients of the relevant Disclosed Direct Client.

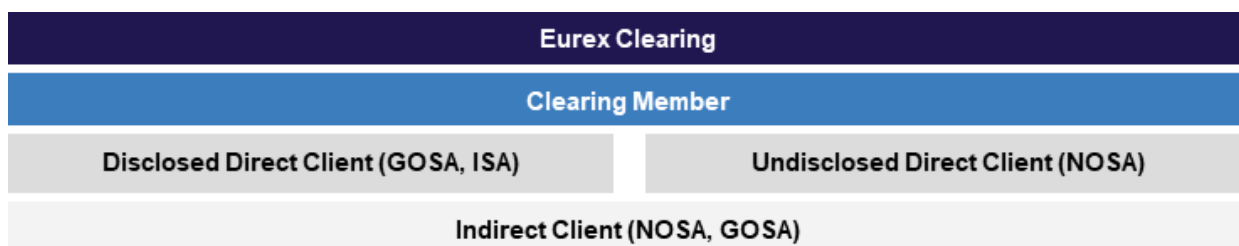
For further reference, please also refer to the Eurex Clearing Conditions, Chapter I Part 4.

Furthermore, Eurex Clearing supports Clearing Members domiciled in the UK to clear ISA Transactions in accordance with the CASS Rules for the benefit of their clients. Prerequisite for the clearing under the CASS Rules is that the securities collateral is provided under a pledge arrangement to Eurex Clearing. It's the responsibility of the Clearing Member to comply with the CASS Rules.

For further reference, please also refer to the Clearing Conditions, Chapter 1, Part 4 Number 14.

Indirect Clearing

Indirect clearing arrangements under EMIR and MiFIR provide an additional layer of protection to indirect clients.



Clearing Members, offering clearing services to indirect clients (clients of a direct client) are required to open and maintain the following accounts, on the level of CCP, in accordance with the request of the client:

- (a) an omnibus account with the assets and positions held by that client for the account of its indirect clients (NOSA);
- (b) an omnibus account with the assets and positions held by that client for the account of its indirect clients, in which the clearing member shall ensure that the positions of an indirect client do not offset the positions of another indirect client and that the assets of an indirect client cannot be used to cover the positions of another indirect client (GOSA).

Eurex Clearing opens on request of the Clearing Member the respective accounts.

Omnibus Clearing Model and Individual Segregated Account for Clearing Members domiciled inside the European Union ("EU")

An illustration of the different combinations of Eurex Clearing's customer relationships with the Clearing Members and their clients is provided on Eurex Clearing's website in the area "Client Asset Protection". For example, a Clearing Member domiciled in the EU may offer the Omnibus Clearing Model or Individual Segregated Account Model to a Disclosed Direct Client that is also registered in the EU without any constraints. Hence, the assets of the Disclosed Direct Client are protected and can be ported in the event of a default of a Clearing Member.

Omnibus Clearing Model and Individual Segregated Account for Clearing Members domiciled outside the European Union

Eurex Clearing's omnibus (ECM) and individual segregation (ISA) models under EMIR were adapted to offer them to Clearing Members and customers located outside the EU as well. The strict requirements under EMIR (please also refer to answer under Key Consideration 14.2 explained below) for omnibus or individual segregation of clients' positions and assets is obligatory for central counterparties and Clearing Members located within the EU. However, these EMIR requirements and the related legal framework that ensures the validity of the segregation arrangements may not be mirrored in all non-EU jurisdictions.

Therefore, Eurex Clearing offers a modified form of its omnibus and individual segregation models to non-EU Clearing Members in jurisdictions where local law might interfere with its standard clearing models in accordance with the EMIR regulations.

Eurex Clearing's segregation offering (LSOC) in accordance with the DCO Status

The LSOC-Models (Legally Segregated Operationally Commingled) are only offered to clearing members which are registered as Future Commission Merchants (FCM) with the U.S. Commodity Futures Trading Commission (CFTC) and members of the National Futures Association (NFA) (FCM Clearing Member).

LSOC clients of the FCM Clearing Member can be either U.S. persons or clients of the FCM located in other jurisdictions. Further details with regards to applicable jurisdictions can be found on Eurex Clearing's website <https://www.eurex.com/ec-en/join/lsoc/admission-criteria-and-scope>.

The FCM Clearing Member has the choice to provide clearing services to FCM Clients under the LSOC Without Excess Model and the LSOC With Excess Model:

- The LSOC Without Excess Model is the basic LSOC-Model, under which the portion of the FCM Client Margin Account reserved for a particular client (legally segregated value - LSV) is equal to the FCM Client Margin Requirement and the legally segregated value cannot exceed the FCM Client Margin Requirement on a day-to-day basis.
- The LSOC With Excess Model provides the FCM Clearing Member the option to assign specific portions of the FCM Client Margin Account to specific FCM Clients including excess margin. This requires the FCM Clearing Member to deliver a collateral value report ("CVR") to Eurex Clearing in which the LSVs for all FCM Clients are determined.

The choice under which LSOC-Model the FCM Clearing Member wants to clear FCM Client Transactions needs to be performed in the systems of Eurex Clearing when setting up the FCM Client Margin Account.

LSOC differs from the omnibus models under EMIR because the value of collateral associated with every individual swap clearing FCM Client is legally segregated and protected, but collateral related to all swap clearing FCM Clients is operationally commingled in one account. The value of assets assigned to one FCM Client can never be utilized to meet the obligations of another FCM Client.

For further reference please also see the FCM Regulations Chapter I Numbers 6.3 - 6.5

Constant Client Asset Protection

Eurex Clearing rules are stipulated in Eurex Clearing's Clearing Conditions and FCM Regulations. Eurex Clearing reserves the right to amend the Clearing Conditions and FCM Regulations at any time; those amendments and additions shall be announced via electronic circular to the affected Customers at least fifteen (15) business days (Regular Notification Period) prior their effective date fixed in the relevant notice.

For essential modifications of the Client Asset Protection models, Eurex Clearing will, in addition, consult the Eurex Clearing EMIR Risk Committee, or, where required, seek advice from other sources.

Portability arrangements in accordance with EMIR

Eurex Clearing has implemented detailed default management measures in accordance with EMIR to ensure a smooth porting of client positions and assets. In case of the occurrence of a termination with respect to a Clearing Member, Eurex Clearing informs all market participants about the Porting Period during which certain requirements must be fulfilled to enable porting.

Upon the publication of the Porting Notice, all Direct Disclosed Clients may use the Election Notice to provide their choice to Eurex Clearing: Clients may choose between the transfer of its positions and assets to a Replacement Clearing Member or the close-out (termination). The Porting Period starts with the occurrence of the Insolvency Termination Event of the Clearing Member or, in case Eurex Clearing exercised its termination right, with the publication of the Porting Notice and expires the next business day following the default at 13:00 CET. If the relevant segregated transactions and allocated collateral shall be ported to a new Clearing Member, the applicable prerequisites ("Porting Requirements") have to be fulfilled by 13:00 CET on the business day following the default. Under certain circumstances, Eurex Clearing may extend the Porting Period at its own discretion.

Detailed information can be found on Eurex Clearing's website <https://www.eurex.com/ec-en/services/risk-management/default-management-process/default-of-a-cm-agent/porting-under-emir>.

Portability arrangements in accordance with the DCO Status

Eurex Clearing has further implemented detailed default management measures in accordance with the DCO Status.

Before the termination of FCM Client Transactions, Eurex Clearing will use reasonable efforts to transfer FCM Client Transactions (including Eligible Margin Assets) to one or more Replacement FCM Clearing Members. The porting process is initiated by Eurex Clearing by giving notice to all other FCM Clearing Members, all FCM Clients of the defaulted FCM Clearing Member, and to all Non-FCM Clearing Members of the occurrence of the Termination Event with respect to the FCM Clearing Member and that Eurex Clearing is initiating the porting process with respect to the FCM Client Transactions (the "Replacement Notice"). If all FCM Clearing Member Replacement Requirements in respect of the relevant FCM Client Transactions are fulfilled by the end of the Replacement Cut-Off Time, the FCM Client Transactions, and all rights and obligations of the Affected FCM Clearing Member arising from such FCM Client Transactions, will be transferred to the new FCM Clearing Member.

In case of the occurrence of an Insolvency Termination Event, ECAG may deviate from the provisions and processes described above, if so required by the CFTC and the bankruptcy trustee (or a comparable person responsible for administering the proceeding).

Detailed information can be found on Eurex Clearing's website <https://www.eurex.com/ec-en/services/risk-management/default-management-process/default-of-a-cm-agent/porting-under-Isoc>

Client Asset Protection in relation to cash market services

Eurex Clearing does offer several segregation and portability solutions for cash markets; hence alternative solutions for customer asset protection are not applicable.

Protection against the concurrent default of a Clearing Member and a fellow customer

(i) Eurex Clearing offers protection to customers to protect their positions and collateral against the concurrent default of the Clearing Member and a fellow customer by offering the Individual Segregation Account (ISA).

The ISA is an individual client segregation model within the meaning of article 39(3) EMIR. It provides for the segregation of client-related positions of the Clearing Member with respect to a specific ISA Client. ISA (Direct Disclosed) Clients neither bear the risk of losses relating to proprietary transactions of their Clearing Member nor the risk of losses relating to other client-related transactions of the Clearing Member.

The contractual rights and obligations of a Clearing Member towards Eurex Clearing with respect to a certain ISA Client are legally segregated from all other rights and obligations between such Clearing Member and Eurex Clearing. This is ensured by an allocation of the respective positions to a separate standard agreement per ISA Client, the ISA Standard Agreement. Accordingly, a separate ISA Standard Agreement is established between the Clearing Member and Eurex Clearing for each ISA Client.

The occurrence of a Termination Date with respect to a Clearing Member will, at the election of the ISA Client, initiate a porting process by which all rights and obligations under the ISA Standard Agreement will be transferred and all Redelivery Claims for Margin and Variation Margin relating thereto will be assigned to a Replacement Clearing Member. If the ISA Client chooses not to port or if the Porting Requirements are not met within the applicable cut-off times, a close-out netting will take place.

If close-out netting occurs, all payment and delivery obligations under the relevant ISA Standard Agreement between Eurex Clearing and the Clearing Member expire and will be combined into a separate Difference Claim. Eurex Clearing will return any balance owed by it in respect of such ISA Standard Agreement following the completion of the default management process with respect to the Clearing Member.

(ii) Under the Elementary Clearing Model (ECM), Clients do not bear the risk of losses arising from proprietary transactions of their Clearing Member or from client-related transactions cleared under another

clearing model, but do bear the risk of losses arising from other client-related transactions of the Clearing Member under the Elementary Clearing Model.

For GOSA segregated Clients, fellow customer risk is limited to collateral shortfalls. A Disclosed Direct Client may port individually to a new Clearing Member and in the absence of porting, any remaining balance that is allocable to the GOSA Client will be directly returned to the relevant client.

(iii) In addition to the EMIR Models the primary objective of the LSOC Models is to minimize the “fellow customer risk” for FCM Clients in case of the default or insolvency of the FCM Clearing Member.

Such rules require that a DCO is restricted from utilizing the value of margin assets allocated to one FCM Client to meet the obligations arising from Own Transactions of the FCM Clearing Member and from FCM Client Transactions of another FCM Client. The LSOC Models provide for the segregation of transactions and margin assets of an FCM Clearing Member from the positions and assets of its FCM Clients and it also provides segregation of transactions and margin assets on a value basis from the positions and margin assets of any other FCM Client of such FCM Clearing Member.

The margin assets of all FCM Clients are commingled in the same FCM Client Margin Account, however, the portion of value of the FCM Client Margin Account which is reserved for the relevant FCM Client (LSV) is segregated from the LSV of each other FCM Client. FCM Clients do not bear the risk of losses arising from the Own Transactions of their FCM Clearing Member or from FCM Client Transactions of other FCM Clients of such FCM Clearing Member. LSOC Without Excess offers the full protection of an LSOC model, but does not allow - in contrast to LSOC With Excess - for customer's excess collateral to be segregated at Eurex Clearing.

If a Termination Date occurs with respect to an FCM Clearing Member, Eurex Clearing is entitled to exercise the following rights separately for each FCM Client Netting Set:

(i) its right to transfer all FCM Client Transactions under the relevant FCM Client Netting Set (including the relevant Eligible Margin Assets) to one or more other FCM Clearing Members (each a “Replacement FCM Clearing Member”), or

(i) its right to treat FCM Client Transactions under the relevant Netting Set as if they are terminated by issuing an FCM Client Declaration of Termination and calculating the Difference Claim with respect to such Netting Set. The final amount of the Difference Claim will, if it is a positive figure, be owed by Eurex Clearing to the FCM Clearing Member on behalf of the relevant FCM Client.

In case of the occurrence of an Insolvency Termination Event, the FCM Clearing Member would be subject to an insolvency proceeding pursuant to the applicable U.S. laws. As a consequence, Eurex Clearing will seek to coordinate with the CFTC and the bankruptcy trustee (or a comparable person responsible for administering the proceeding) with respect to the transfer of FCM Client Transactions and Eligible Margin Assets allocated to the relevant FCM Client.

Evidence that the legal basis will support the CCP's arrangements to protect and transfer the positions and collateral of the clients

The legal segregation of the contractual rights and obligations arising from Own Transactions and client transactions and the segregation of the contractual rights and obligations arising from such transactions is achieved via the legal combination of certain transactions into separate netting sets. Please see also information provided in “Segregation of Participants` Positions”.

The availability of all model-specific features depends on their compliance with the individual rules set out by the respective local jurisdiction of the Clearing Member. Porting of clients' transactions and collateral is intended and possible in all countries within the EU in which Eurex Clearing provides its services. For other jurisdictions Eurex Clearing determines whether restrictions within the default management process apply (including the porting mechanism) based on the legal circumstances in the jurisdiction where the Clearing Member is domiciled.

Eurex Clearing verifies the enforceability of each of its clearing models, including the arrangements to protect and transfer the positions and collateral related to customers of a Clearing Member, for each

jurisdiction from which Clearing Members are admitted on the basis of comprehensive legal opinions from leading well reputed law firms in the relevant jurisdictions.

Key Consideration 2

A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.

Proprietary Accounts of the Clearing Member and the FCM Clearing Member

Any own transaction of the Clearing Member/ FCM Clearing Member is to be entered as a proprietary transaction of the Clearing Member/ FCM Clearing Member (an "Own Transaction") under the Elementary Clearing Model between Eurex Clearing and the Clearing Member/ FCM Clearing Member under the Clearing Conditions and the FCM Regulation of Eurex Clearing AG. In this context Eurex Clearing maintains with respect to each Clearing Member "Clearing Member Own Account(s)" (Chapter I Part 1 Number 3 of the Clearing Conditions of Eurex Clearing AG) and FCM Clearing Member Own Transaction Account (Chapter 1 Number 4.2.1).

Thus, the assets and positions of one CM will not be recorded in a CM account dedicated to another CM. Eurex Clearing's own assets will not be recorded in CM accounts.

The netting of positions related to different CMs and therefore recorded in different CM accounts is legally not possible under German law as the debtor and the creditor in such scenario would not be identical (see Section 387 German Civil Code).

The assets covering the positions recorded in one CM account are not exposed to losses connected to positions recorded in another CM account. Legally this is ensured through respective provisions regarding the security purpose of the provided margin (e.g. in Chapter I Chapter I Part 2 Subpart A Number 4.3.3 Clearing Conditions and Chapter 1 Number 3.3 FCM Regulation).

Customer Accounts of the Clearing Member in accordance with EMIR

Eurex Clearing currently offers the following client clearing models under the Clearing Conditions to provide flexibility in terms of available position and collateral account setups in order to meet customer specific needs: the Elementary Clearing Model ("ECM") (Chapter I Part 2 of the Clearing Conditions of Eurex Clearing AG) and the Individual Segregated Account ("ISA") (Chapter I Part 4 of the Clearing Conditions of Eurex Clearing AG)

Omnibus Accounts

Under the Elementary Clearing Model Eurex Clearing offers its Clearing Members the following omnibus client segregation:

(a) "net omnibus client segregation" where margin is posted by the Clearing Member to Eurex Clearing on a net basis across Transactions relating to multiple Undisclosed Direct Clients (UDC), and

(b) "gross omnibus client segregation" where margin is posted by the Clearing Member to Eurex Clearing on a gross basis across Transactions relating to a particular Direct Client (DC).

In addition, Eurex Clearing offers net omnibus segregated accounts and gross omnibus segregated accounts for indirect client clearing in relation to omnibus accounts.

Furthermore, Eurex Clearing supports Clearing Members domiciled in the UK that wish to clear certain Omnibus Transactions in accordance with CASS Rules for the benefit of their clients. Positions and assets forming part of a CASS Client Account are legally segregated from any non-CASS Transactions and assets.

For further reference, please also refer to the Clearing Conditions Chapter 1 Part 2 Subpart D.

Any Omnibus Transaction between Eurex Clearing and a Clearing Member to be cleared under the Elementary Clearing Model (ECM Transaction) is entered into as a Client-Related Transaction (an "Omnibus Transaction", which may be a UDC-Related Transaction or a DC-Related Transaction (in each case including own transactions of the relevant Direct Client and transactions of such Direct Client that relate to its Indirect Clients).

For the purpose of omnibus client segregation, Eurex Clearing maintains with respect to each Clearing Member the following types of Transaction Accounts in which the omnibus transactions of the Clearing Member have to be booked:

- a) "NOSA UDC Account(s)" with respect to UDC-Related Transactions of the Clearing Member relating to transactions of multiple Undisclosed Direct Clients;
- b) "DC Own Account(s)" with respect to own transactions of each Disclosed Direct Client of the Clearing Member;
- c) "NOSA Indirect Client Account(s)" for the clearing of Client-Related Transactions relating to multiple Indirect Clients of a Direct Client of the Clearing Member;
- d) "GOSA Indirect Client Account(s)" for the clearing of Eurex Transactions and OTC Interest Rate Derivative Transactions relating to one particular Indirect Client of a Direct Client of the Clearing Member.

Transaction Accounts are combined in one or more Transaction Accounts Groups. The Transactions booked to the Transaction Accounts forming part of the same Transaction Accounts Group and the Eligible Margin Assets allocated to the Transaction Accounts of such Transaction Accounts Group constitute a separate ECM Standard Agreement.

Individual Segregated Account (ISA)

The ISA is an individual client segregation model within the meaning of Article 39 (3) EMIR. It provides for the segregation of DC-Related Transactions of the Clearing Member with respect to each Disclosed Direct Client. Individually segregated DCs bear neither the risk of losses relating to proprietary transactions of their Clearing Member nor the risk of losses relating to other Client-Related Transactions of their Clearing Member. Additionally, all Eligible Margin Assets provided as Margin to Eurex Clearing with respect to a specific Disclosed Direct Client are segregated from the Eligible Margin Assets of all other clients of the Clearing Member.

In addition, Eurex Clearing offers net omnibus segregated accounts and gross omnibus segregated accounts for indirect client clearing in relation to ISA accounts.

Furthermore, Eurex Clearing supports Clearing Members domiciled in the UK that wish to clear ISA Transactions in accordance with CASS Rules for the benefit of their clients. For further reference please also see the Clearing Conditions of Eurex Clearing AG, Chapter 1, Part 4 Number 14.

For the purpose of individual account segregation Eurex Clearing maintains with respect to each Disclosed Direct Client of the Clearing Member the following types of Transaction Accounts in which the ISA Transactions of the Clearing Member have to be booked:

- a) one or more DC Own Accounts;
- b) one or more NOSA Indirect Client Accounts;
- c) one or more GOSA Indirect Client Accounts

(each such account an "ISA Transaction Account").

All ISA Transaction Accounts of a Clearing Member relating to a particular Disclosed Direct Client form a separate group of Transaction Accounts (each such group an "ISA Transaction Accounts Group"). Each Transaction Accounts Group constitutes a separate ISA Standard Agreement.

Customer Accounts in accordance with the DCO Status

Eurex Clearing maintains with respect to FCM Client Transactions, a separate account for each FCM Client (each, an "FCM Client Transaction Account"). All FCM Client Transactions of each FCM Client booked into the relevant FCM Client Transaction Account of such FCM Client form a separate Netting Set (each a "FCM Client Netting Set"). Further Eurex Clearing maintains one or more internal margin accounts

for FCM Client Transactions (each an "FCM Client Margin Account") to which the collateral value with respect to the relevant FCM Client Transactions are booked.

Within each FCM Client Margin Account, Eurex Clearing establishes the following separate sub-accounts:

- i. separate margin sub-account linked to each FCM Client Transaction Account (each an "FCM Client Margin Sub-Account");
- ii. one sub-account linked to the FCM Buffer (the "FCM Client Buffer Sub-Account"); and
- iii. one sub-account linked to the Unallocated Excess (the "FCM Client Unallocated Excess Sub-Account")

Collateral coverage of customer positions

A Clearing Member is required to provide Elementary Omnibus Margin, Omnibus CASS Margin, ISA Margin or ISA CASS Margin as applicable.

In addition, an FCM Clearing Member is required to deliver separate cover with respect to each FCM Client Margin requirement. The applicable margin requirement consists of the sum of all relevant Margin Requirements separately calculated by Eurex Clearing in accordance with the relevant applicable Margin Methodology subject to and in accordance with the relevant Segregation Model. The provision of collateral is intended to ensure that all financial commitments related to the open positions of a Clearing Member can be offset within a very short period of time.

The different types of Margin Requirements are defined in Chapter I of the Clearing Conditions of Eurex Clearing AG: Current Liquidation Margin, Premium Margin, Additional Margin, Initial Margin

And respectively also in the Chapter I of the FCM Regulation: Initial Margin and Supplementary Margin.

Omnibus Accounts

Under the ECM Model, the Clearing Member is required to provide Margin for each Omnibus Standard Agreement.

Margin in the form of cash is granted by way of transfer of title. Margin in the form of securities is provided by way of pledge.

A Clearing Member may request the setup of multiple Internal Margin Accounts and thus establish multiple omnibus collateral pools.

In each case, all Eligible Margin Assets so booked to an Internal Omnibus Margin Account will be further allocated by means of an allocation algorithm to each Client Transaction Account linked to such Internal Omnibus Margin Account. With the allocation algorithm applied by Eurex Clearing to assign each Client Transaction Accounts Group with margin collateral out of a common Internal Omnibus Margin Account, clients will receive a portion of the available margin collateral based on their margin requirement.

The Clearing Member is required to separately demand margin from its clients with respect to the transactions between them that correspond to the Omnibus Transactions.

The same mechanisms apply as well to Transactions of UK Clearing Members designated as Omnibus CASS Eligible Transactions.

Individual Segregated Accounts

Under the ISA Model, the Clearing Member is required to provide Margin for each ISA Standard Agreement

Margin in the form of cash is granted by way of title transfer. Margin in the form of securities is provided either by way of pledge or by way of title transfer. The Clearing Member is required to separately demand margin from its ISA Client in an amount which shall at least be equal to the sum of the Margin Requirement applicable to each ISA Transaction Account.

The same mechanisms apply as well to Transactions of UK Clearing Members designated as ISA CASS Eligible Transactions.

LSOC Accounts

Under the LSOC Model, the FCM Clearing Member is required to provide Margin for each FCM Client.

FCM Client Margin can be provided in the form of cash or in the form of securities. Eligible Margin Assets in the form of cash are transferred to Eurex Clearing via full title transfer. Margin in the form of securities is provided by way of pledge.

Eurex Clearing operates and maintains Cash Trust Accounts at commercial bank(s) or central bank(s) as an open trust account (offenes Treuhandkonto) solely for purposes of holding Initial Margin or Supplementary Margin for FCM Client Transactions or for investment purposes for margin asset in cash delivered by all FCM Clearing Members of Eurex Clearing in respect of any FCM Client Margin Account(s). This ensures insolvency protection in relation to Eligible Margin Assets in the form of cash delivered to Eurex Clearing by the FCM Clearing Member in respect of the FCM Client Margin Account in case of Eurex Clearing's insolvency. Further information can be found in Chapter 1 Number 3.2.2 of the FCM Regulation and in Annex 1 to the FCM Regulation ("FCM Clearing Agreement").

Under the LSOC Without Excess Model, it is not permitted that the LSV for an FCM Client exceeds the FCM Client Margin Requirement on a day-to-day basis, but an LSV may exceed the FCM Client Margin Requirement on an intraday basis (excess margin). If any excess margin is attributable to an FCM Client following a close of the end-of-day clearing cycle, Eurex Clearing transfers any excess margin to the FCM Client Unallocated Excess Sub-Account of the FCM Client Margin Account, whereupon such excess margin becomes FCM Client Unallocated Excess.

If the Margin Requirement with respect to an FCM Client exceeds the LSV intraday, Eurex Clearing is permitted to apply any portion of the FCM Client Buffer booked in the FCM Client Buffer Sub-Account to satisfy the margin shortfall for such FCM Client (the "Encumbered FCM Client Buffer"). Eurex Clearing will issue a Margin Call with respect to an FCM Client only if the FCM Client Margin Requirement exceeds the sum of the LSV and any Encumbered FCM Client Buffer.

In the end-of day settlement cycle, Eurex Clearing will calculate the Margin Requirement for each FCM Client without regarding any (Encumbered) FCM Client Buffer. However, the FCM Clearing Member may elect to use the Encumbered FCM Client Buffer to meet the Margin Call. In such case, the Encumbered FCM Client Buffer becomes part of the LSV and no longer constitutes Encumbered FCM Client Buffer.

The Clearing Member is required to separately demand margin from its FCM Client in an amount which shall at least be equal to the sum of the Margin Requirement applicable to each FCM Transaction Account. For further details please see Chapter 1 Number 6.2.6 FCM Regulations.

"Fellow Customer Risk"

With regards to the question to what extent a customer's collateral is exposed to "fellow customer risk" please see the section "Protection against the concurrent default of a Clearing Member and a fellow customer".

Information on client positions held in different accounts is provided in the quarterly CPMI-IOSCO public quantitative disclosure on the "AggregatedDataFile" tab:

- Total Client Positions held in individually segregated accounts (14_1_1),
- Total Client Positions held in omnibus client-only accounts, other than legally segregated but operationally comingled (LSOC) accounts (14_1_2),
- Total Client Positions held in LSOC accounts (14_1_3),
- Total Client Positions held in comingled house and client accounts (14_1_4).

Key Consideration 3

A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.

If a Termination Date occurs with respect to a Clearing Member, Eurex Clearing will initiate a standardized porting process separately with respect to each Omnibus and ISA Standard Agreement, which is similar

for all segregation models. The porting of transactions and collateral to a Replacement Clearing Member is operationally close to the process of a regular Clearer Change.

Eurex Clearing will use reasonable efforts to port each Disclosed Direct Client individually to a non-defaulting Clearing Member ("Replacement Clearing Member"). If the Porting Requirements are fulfilled within the Porting Period, all rights and obligations of the defaulted Clearing Member under the relevant Standard Agreement, including with respect to corresponding margin, will be transferred to the Replacement Clearing Member. The instructions of the direct client will also apply to the respective indirect clients.

Under certain circumstances, Eurex Clearing may extend the Porting Period at its own discretion.

To facilitate the porting process, a back-up Clearing Member can be designated for clients prior to any termination. The designation as a back-up Clearing Member does not impose any obligations to become the new Clearing Member in case of the termination with respect to the current Clearing Member. The qualification as a back-up Clearing Member does not require a 'hot stand by', i.e. a second participant who has contractually entered into client agreements and who would accept immediately the transfer of positions and collateral to it in the event of that client's main Clearing Member's default.

A comparable porting process is initiated if a Termination Date occurs with respect to an FCM Clearing Member. Eurex Clearing will use reasonable efforts to port each FCM Client individually to a separate Replacement FCM Clearing Member. If all FCM Clearing Member Replacement Requirements in respect of the relevant FCM Client Transactions are fulfilled by the end of the Replacement Cut-Off Time, the FCM Client Transactions, and all rights and obligations of the Affected FCM Clearing Member arising from such FCM Client Transactions including a portion of the value of Eligible Margin Assets booked on the FCM Client Margin Account equal to the LSV of the relevant FCM Client, will be transferred to the new FCM Clearing Member. Eurex Clearing may extend the Replacement Cut-off Time at its own discretion.

The Clearing Conditions and the FCM Regulations provide for the rules under which positions and collateral are ported. By signing the "Clearing Agreement" or the "FCM Clearing Agreement" (as prerequisite of a Clearing Member/ FCM Clearing Member license), a Clearing Member or FCM Clearing Member gives his consent to the porting rules because these agreements incorporate by reference the Clearing Conditions or FCM Regulations.

Key Consideration 4

A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.

Eurex Clearing provides summary descriptions of its clearing models on its website, namely

- i. the "Disclosure pursuant to Article 39 (7) EMIR with respect to the Clearing Conditions of Eurex Clearing AG" and
- ii. the "Disclosure pursuant to Article 39 (7) EMIR with respect to the FCM Clearing Conditions of Eurex Clearing AG"

The published documents describe the levels of protection of the available clearing models, including the main legal implications related to these clearing models and the applicable insolvency laws.

In addition, the recent versions of the Clearing Conditions and FCM Regulations are available for download on Eurex Clearing's website.

Detailed descriptions of the respective porting procedures are also published on Eurex Clearing's website as well as jurisdiction related information.

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The abovementioned documents as well as the website further specify that Eurex Clearing does not charge costs that specifically relate to the use of a certain clearing model. Instead, the price list of Eurex Clearing applies. This price list is also publicly available on Eurex Clearing's website.

Assessment of principle:

Observed

Principle 15: General business risk

Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key Consideration 1

An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

Eurex Clearing has a sound framework for the comprehensive management of all material risks. In that regard Eurex Clearing has established documented policies, procedures and systems to identify, monitor and manage such risks. This is already described in greater detail in Key Consideration 1 of Principle 3.

Eurex Clearing established a Risk Strategy, which is based upon Eurex Clearing's business strategy and regulates the extent of risk taken within the various business activities carried out by Eurex Clearing. The Risk Strategy determines conditions for risk management, control and limitation. Eurex Clearing pays considerable attention to its risk mitigation process and ensures that appropriate measures are taken to avoid, reduce and transfer or intentionally accept risk. It is defined that the appropriateness of the risk management and controlling systems is to be validated continuously.

The Risk Strategy differentiates between three major risk types that are managed and controlled with distinct methods. These risk types are:

- financial risk,
- operational risk, and
- business risk

Eurex Clearing is not directly exposed to business risk. This is due to the following two aspects:

- (i) Eurex Clearing is operating under the business ownership of its parent companies. All income is collected in the name of the operating (parent) companies. Eurex Clearing is getting reimbursed its total expenditures plus a defined margin by the operating companies (Betriebsführungskonstrukt).
- (ii) Eurex Clearing has entered into a profit and loss pooling agreement with its 100% parent company Eurex Frankfurt AG. Therefore, any loss that might occur is to be recovered by Eurex Frankfurt AG.

Key Consideration 2

An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

Eurex Clearing holds liquid net assets funded by equity in such an amount that it can continue operations and services if it incurs general business losses. Art. 16 EMIR and corresponding ESMA regulatory technical standards demand a specific capital base for CCPs that consists of CET1 capital, retained earnings and reserves.

The ESMA regulatory technical standards further demand own funds for winding down/restructuring, operational/legal risk, credit risk, counterparty risk, market risk and business risk. Especially Art. 1 (2) (EU) 152/2013 requires a CCP to have procedures in place to identify all sources of risks that may affect its ongoing functions and must consider the likelihood of potential adverse effects on its revenues or expenses and its level of capital. Eurex Clearing complies with all regulatory requirements and reports its capital figures as well as the attributable parts for each risk type to the Executive Board, the EMIR Risk Committee and its national competent authority on a regular basis. The greater public is informed via independently testified annual financial statements, which are accessible via the website of Eurex Clearing.

When determining the time period necessary for winding down or restructuring, the first crucial question is whether the services of Eurex Clearing have to be closed / terminated (wind down) or whether a continuing of the business is still feasible (recovery). The decision about which strategy to take (winding down or recovery) depends on the situation at hand. Whereas in the vast majority of cases a recovery would be the most feasible solution, a winding down always serves as last solution. In addition, the decision whether a wind down or recovery shall be triggered might not be immediately possible. It might be the case that an initiated restructuring process fails and a wind down would become necessary. Eurex Clearing has documented procedures and policies in place for both cases. Next to the established Recovery Plan, which is updated at least annually and thoroughly reviewed by the national competent authority and independent external auditors, procedures for a wind-down are approved.

Key Consideration 3

An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.

Additionally, Eurex Clearing, as licensed credit institution, annually updates its recovery plan following the legal requirements of the SAG and as well as the Minimum Requirements for the Design of Recovery Plans (“Mindestanforderungen an die Ausgestaltung von Sanierungsplänen”; MaSan). As of March 2020, on national level additional arrangement for CCPs regarding recovery and resolution have been introduced to the German Recovery and Resolution Act.

Currently a European Regulation for CCP Recovery and Resolution is being developed (EU CCP RR). Eurex Clearing will be subject to this upcoming regulation. The new regulation includes an exemption of the BRRD and further banking related recovery and resolution requirements for CCPs licensed as a credit institution. Forthcoming, Eurex Clearing has only to comply with the European CCP RR once it becomes effective.

A central counterparty must have sufficient own funds for winding down or restructuring of its own business. Therefore, an appropriate time period for winding down or restructuring of its own business is to be estimated within the “Wind down or restructuring of Eurex Clearing AG’s business” that serves the purpose to determine the procedure and time period necessary to wind down or restructure the business.

Pursuant to Art. 2 paragraphs 1 and 4 (EU) 152/2013, the capital base required for winding down or restructuring is calculated as number of months needed for winding down or restructuring it business times the average gross operational expenses per month of the last audited financial.

According to the description within the wind-down plan according to Art. 2 paragraph 2 (EU) 152/2013, the winding down or restructuring period of Eurex Clearing is estimated with no longer than 6 months. Nevertheless, for the calculation of capital requirements the minimum of 6 months is set as winding down or restructuring period, as defined in Art. 2 paragraph 2 (EU) 152/2013.

Given the information above, the capital requirements for winding down / restructuring period are calculated as follows:

The gross operating expenses divided by 12 month, resulting in the gross operating expenses per month. Six months of winding down period times operating expenses per month result in the capital requirements for winding down / restructuring.

The recovery and wind-down documentation is reviewed at least once a year in the context of the update of the recovery plan. Within the review it is verified if the time periods expected are still valid.

Key Consideration 4

Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.

As outlined in Key Consideration 2 of this Principle, Eurex Clearing manages its general business risk and holds sufficient liquid resources to cover potential business losses.

Eurex Clearing's Treasury Policy outlines the objectives and general conditions of the treasury management of Eurex Clearing. Specifically, the investment of cash collaterals and own liquid funds are outlined, as well as the approved instruments and constraints of treasury management. The primary goal of treasury management is to ensure Eurex Clearing's ability to satisfy payment obligations at all times as well as minimizing counterparty and market risk in placements. Therefore, Eurex Clearing will only invest in cash or in highly liquid financial instruments with minimal market and credit risk that are capable of being liquidated rapidly with minimal adverse price effect. (Cf. Art. 47 (1) EMIR)

As a principle, the own funds of Eurex Clearing shall be invested applying the same mechanisms as the placement of Clearing Member funds. The preferred instrument is the reverse repo. Eurex Clearing may invest part of its own funds through direct securities purchases in correspondence to the criteria and limits as mentioned in the Treasury Policy.

To ensure the liquidity of Eurex Clearing, strict mismatch limits are established based on the stable balance of customer cash. Mismatch limits are reviewed at least on a quarterly basis.

In order to avoid counterparty concentration and related risks, the placements are spread to the extent reasonable taking into account counterparty quality. At least 95% of cash balances must be invested on a secured basis. This is in line with Art. 45 ("Highly secured arrangements maintaining cash") (2) (EU) 153/2013.

Placement of funds is subject to credit limits governed by the Credit Policy for Treasury Activities. Group Credit approves credit limits based on the quality of counterparties. Credit limits can only be approved within the authority, which has been delegated to Group Credit by the Eurex Clearing Executive Board. Furthermore, Group Credit undertakes a regular credit review of all Treasury counterparties as described in the Credit Policy for Treasury Activities. A credit review recommends continuing, changing or cancelling the relationship with a counterparty. To mitigate risks, placement amounts shall be spread in principle among institutions. Limits according to CRR apply.

Treasury has put strict controls in place to report any kind of limit breaches on a daily basis to the affected areas, including the Chief Risk Officer of Eurex Clearing, and even directly to the whole Executive Board of Eurex Clearing in case of extraordinary circumstances.

Key Consideration 5

An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.

Eurex Clearing as an authorized CCP under EMIR is obliged to have sufficient own funds for a winding down or the recovery of its own business (pursuant to Art. 2 (EU) 152/2013). Therefore, an appropriate time period for winding down/the recovery of its own business was estimated.

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Eurex Frankfurt AG, which is the 100% parent of Eurex Clearing AG, can increase Eurex Clearing's equity through a payment into Eurex Clearing's capital reserve. In case Eurex Clearing needs to raise additional equity, the Eurex Clearing Executive Board will address the Eurex Frankfurt Executive Board. As Eurex Clearing and Eurex Frankfurt are stock corporations formed and incorporated under German law, equity can only be raised pursuant to the German Companies Act (AktG).

To achieve an increase of equity easily and in a short time frame, a payment by the shareholders into the capital reserve is the most convenient way. The increase of capital reserve needs to be paid in cash or liquid low risk securities to meet the investment and liquidity requirements of the clearing business. The increase of equity would have its immediate effect once the approval process is finished and the cash is paid in. It is assumed that the shareholders are able and willing to pay the needed amount into the capital reserve. Legally, agreements and decisions of the Executive Board of Eurex Clearing and Eurex Frankfurt and, at least, a notification to the Supervisory Boards are necessary. An agreement of the supervisory authorities (Bafin/BuBa) is legally not required; however, a notification would be submitted. Operationally, it must be ensured that the backing of the parent company and the necessary decisions are available over the time horizon of the specific stress situation. Eurex Clearing increased its capital multiple times in past years, i.e. it has successfully passed this process before.

Assessment of principle:

Observed

Principle 16: Custody and investment risks

Principle 16: Custody and investment risks

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Key Consideration 1

An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

Eurex Clearing applies strict criteria and principles when selecting collateral locations in order to protect its own and its participant's assets.

The Clearing Members need efficient and operationally flexible allocation of the eligible securities collateral, either through a dedicated securities settlement and position holding on specific accounts, or through exposure management via tri-party collateral management services.

A main criterion in selecting a collateral location is the designation of a collateral location as operator of a regulated Securities Settlement System (SSS) according to Article 47 (3) EMIR, ideally with access to the European System of Central Bank (ESCB) facilities.

The services to be provided by a securities collateral location comprise safekeeping, collateral eligibility checks and valuation, protection of the assets posted in favor of the CCP as well as custody (incl. tax) processing and supporting Eurex Clearing's segregation models based on the legal concepts of pledge or transfer of title. Especially for the event of a participant's default/bankruptcy, Eurex Clearing requires legal certainty in terms of first ranking access rights including collateral portability in each respective jurisdiction of the involved parties.

The range of services provided by a collateral location must meet a diverse set of requirements in order to be connected to Eurex Clearing as service provider to its Clearing Members. The requirements cover regulatory, legal, operational and technical requirements as defined in Eurex Clearing's Security Collateral Location Framework. The connected collateral locations' fulfilment of the criteria is being monitored continuously by the responsible areas of Eurex Clearing. In addition, regular re-assessments are conducted.

Based on these requirements and principles, Eurex Clearing deposits financial instruments posted by the Clearing Members with the Securities Settlement Systems of Clearstream Banking AG, Frankfurt (CBF) and Clearstream Banking S.A., Luxembourg (CBL), both notified according to Article 10 of the Settlement Finality Directive (98/26/EC), as well as with SIX SIS Ltd., Switzerland, which is the operator of one of the systemically important payment and settlement systems in Switzerland and as such is overseen by the Swiss National Bank. Eurex Clearing's and its participant's assets are always protected, i.e. in the event of a participant's default, irrespective of the legal concept (pledge or transfer of title).

Eurex Clearing has legal certainty regarding the home country jurisdiction of the Clearing Member and of the location where the collateral is held, in connection with the German law applying to Eurex Clearing.

In addition, Eurex Clearing offers both omnibus and individual segregation to Clearing Members and clients at the collateral locations. Safety and efficiency are key principles of the models as well as flexibility in terms of available position and collateral account set-ups. Whilst the securities collateral of a segregated Disclosed Direct Clients is legally owned by Eurex Clearing, each clearing model serves different levels of protection as outlined in Principle 14 and on Eurex Clearing's website under <https://www.eurex.com/ec-en/services/risk-management/client-asset-protection-emir/client-asset-protection-26882>.

According to the Q&A on EMIR, the requirements apply to investments by the CCP that represent the reinvestment of margin and default fund contributions posted to the CCP in the form of cash.

Given this context, Eurex Clearing places Clearing Members' cash collateral and its own funds on a secured basis or, through direct investments, in highly liquid financial instruments. These are deposited with operators of a securities settlement system if available, or with authorized financial/credit institutions providing highly secure arrangements. Uninvested cash is deposited with the central bank of issue, if access has been granted. Where Eurex Clearing deposits cash other than with a central bank, cash is deposited with authorized credit/financial institutions, as defined under EMIR in conjunction with Directive 2006/48/EC of the European Parliament and of the council (EU Banking Directive), that have low credit risk based upon an internal assessment by the CCP. If the institution is not domiciled in one of the Member States, then EMIR requires the third country financial institution to be subject to and to comply with prudential rules that are considered to be as stringent as those laid down in the EMIR in conjunction with Banking Directive.

Eurex Clearing legally segregates the investment of own funds from those resulting from cash collateral as stipulated in Article 47 (5) EMIR. Operational accounts for the CCP business are segregated from accounts for proprietary business (except for the Bundesbank account). Cash is being transferred directly to the accounts of Eurex Clearing and invested mainly on a collateralized basis with counterparties of high creditworthiness.

For highly liquid financial instruments received through the collateralized investment of cash, the main criteria for choosing a (International) Central Securities Depository or custodian is that it operates a securities settlement system, ideally with access to the European System of Central Banks (ESCB) facilities, to ensure process stability and full protection of the instruments. The services to be provided by a securities collateral location comprise safe-keeping, collateral eligibility checks and valuation protection of the assets posted in favor of the CCP, as well as custody (incl. tax) processing and supporting Eurex Clearing's segregation models based on the legal concepts of pledge or transfer of title. Especially for the event of a participant's default / bankruptcy Eurex Clearing requires legal certainty in terms of first ranking access rights including collateral portability in each respective jurisdiction of the involved parties.

The range of services provided by a collateral location must meet a diverse set of requirements in order to be connected to the CCP, i.e. regulatory, formal/legal, operational and technical requirements as defined in Eurex Clearing's Security Collateral Location Framework. Only collateral locations that meet these criteria of the CCP can access Eurex Clearing as a service provider to its Clearing Members. The connected collateral locations are monitored continuously by the responsible areas of Eurex Clearing and Group Credit. In addition, it is re-assessed on a regular basis in line with the Review / Monitoring Procedure for recognized Collateral Locations. Eurex Clearing's and its participant's assets are always protected, i.e. in the event of a participant's default, irrespective of the legal concept (pledge or transfer of title). Eurex Clearing has legal certainty regarding the home country jurisdiction of the Clearing Member and of the location where the collateral is held, in connection with the German law applying to Eurex Clearing.

Key Consideration 2

An FMI should have prompt access to its assets and the assets provided by participants, when required.

Based on dedicated regulations (e.g. Financial Collateral Directive) and laws (e.g. the German InsO), Eurex Clearing ensures a sound legal basis by legal analyses and opinions through legal counsels coordinated by the Deutsche Börse Group Legal Department. The legal certainties include the foreign insolvency laws, i.e. home country jurisdictions of non-German Clearing Members as well as of each location where the collateral is held, in connection with the German jurisdiction of Eurex Clearing.

Accordingly, the regulations provide an appropriate legal environment to ensure access in normal cases, as well as in the case of a Clearing Member's insolvency in order to liquidate the collateral. Hence, Eurex Clearing has first ranking rights and prompt access to the financial instruments when required, regardless of the collateral type and whether it is pledged by the Clearing Members in favor of Eurex Clearing or transferred by title to Eurex Clearing.

The enforceable rights of appropriation of Eurex Clearing with regard to the securities held at a CSD is explicitly described in the Clearing Conditions of Eurex Clearing.

Currently, Eurex Clearing is not connected with collateral locations in time zones other than Central European Time (CET).

Key Consideration 3

An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

Eurex Clearing does not have material exposures to custodian banks as it mainly uses (I)CSDs for the deposit of securities collateral and highly liquid financial instruments. All (I)CSDs used are operators of securities settlement systems (SSS) and, as such, subject to prudential regulation and supervision.

Key Consideration 4

An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

The Executive Board of Eurex Clearing is ultimately responsible for the risk strategy of the CCP. The risk strategy defines the overall risk appetite, including the maximum loss the Executive Board is willing to take in one year, the tolerance in the light of the risk as well as the performance levels aspired. The Executive Board ensures that the risk strategy is integrated into the business activities throughout the entire CCP and that adequate measures are in place to implement the strategies, policies and procedures in line with the overall risk appetite. The investment strategy itself also follows this logic and is approved by Eurex Clearing's Executive Board.

The general principles of Eurex Clearing's investment strategy

- a) capital preservation and
- b) liquidity maximization

are disclosed to the general public on the CCP's homepage (<https://www.eurex.com/ec-en/services/collateral-management/cash-collateral-investment-policy-22304>).

The Executive Board of Eurex Clearing approves the eligibility criteria for the CCP's investments. In general, Eurex Clearing applies restrictive standards to financial instruments qualifying as investments. As the leading principle, financial instruments need to fulfil the conditions applicable to highly liquid financial instruments as laid out by the European Market Infrastructure Regulation and the relevant Commission Delegated Regulations. This is true for both a) secured money market transactions and b) direct purchases of debt instruments.

- a) Investments secured by high-quality obligors:

In secured money market transactions, the primary exposure is counterparty credit risk. Hence, Eurex Clearing assesses counterparties with an internal developed rating methodology, while Eurex Clearing refers to external ratings for the consideration of the quality of financial instruments underlying the reverse repo transactions. If an issuer's rating falls below the minimum rating requirements, the instruments shall be deemed to be ineligible with immediate effect and need to be replaced by the counterparty with eligible collateral.

- b) Claims on high-quality obligors:

For direct purchases of debt instruments, Eurex Clearing performs an internal assessment on its obligors to ensure low credit and market risk. In general, the assessment considers quantitative and qualitative criteria. The obligor's credit quality is expressed in the form of an internal rating. Eurex Clearing monitors and reviews the credit quality on a regular basis, at least annually. A reduction of credit quality may trigger a reduction or cancellation of the limit that has been allocated to this obligor.

Additionally, the so-called CreditWatch serves as an early warning indicator for obligors likely to require a reduction in the limit or rating downgrade in the near future. Factors that may affect counterpart's creditworthiness, e.g. downgrade by a major rating agency or deterioration of financials, are taken into account.

As a general principle, Eurex Clearing's investment activities are subject to a comprehensive limit framework. To ensure sufficient diversification of financial instruments, Eurex Clearing has established concentration limits at the level of individual financial instruments, types of financial instruments, types of issuers and individual issuers. Additionally, to avoid concentration on counterparty level credit, limits are granted based on counterparties' creditworthiness. All limits are approved by Eurex Clearing's Executive Board in line with its overall risk appetite.

Eurex Clearing does not invest participants' assets in the participants' own securities or those of its affiliates. First, participants own securities would not fulfil the eligibility criteria of the European Market Infrastructure Regulation, which requires debt instruments to be issued by a government, a central bank, a multilateral development bank and the EFSF or ESM. Second, to avoid wrong-way risk, Eurex Clearing would not accept these securities in collateralized investments.

Eurex Clearing's eligibility criteria shall ensure that the CCP purchases only highly liquid instruments, which can be converted into cash rapidly with minimal price impact even in stressed market conditions. In case that financial instruments need to be liquidated, Eurex Clearing can either a) sell or b) mobilize, e.g. repo out, these marketable assets.

Additionally, as Eurex Clearing is subject to the minimum reserve, it may immediately use eligible assets to collateralize all types of the Eurosystem's credit operations, i.e. intraday credit, marginal lending facility to obtain overnight liquidity and open market operations for maturities of up to 48 months, all against full collateralization.

Information on Eurex Clearing's investment strategy regarding participants cash margins is provided in the quarterly CPMI-IOSCO public quantitative disclosure on the "AggregatedDataFile" tab. Examples of these information are:

- Total cash received from participants as Initial Margin (16_1_1),
- Total cash received from participants as Default Fund contribution (16_1_2),
- Percentage of total participant cash held as cash deposits at central banks of issue of the currency deposited (16_2_2),
- Percentage of total participant cash held as cash deposits at other central banks (16_2_3),
- Percentage of total participant cash held as cash deposits at commercial banks [secured, including through reverse repo] (16_2_4),
- Percentage of total participant cash held as cash deposits at commercial banks [unsecured] (16_2_5),
- Percentage of total participant cash held as cash deposits in money market funds (16_2_6),
- Percentage of total participant cash held as cash deposits in other forms (16_2_7).

More information on issuer, currency, average maturity and risk of the investments is provided as well and can be found in further numbers of disclosure category 16_2. See the "Guide" tab in the disclosure file for more information.

Assessment of principle:

Observed

Principle 17: Operational risk

Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key Consideration 1

An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Eurex Clearing takes great care to mitigate risk and ensures that appropriate measures are taken to avoid, reduce and transfer – or intentionally take on – risk. This is ensured by having established a sound framework for the comprehensive management of all material risks, including documented policies, procedures and systems to identify, monitor and manage such risks. Eurex Clearing defined and maintains standards and workflows for its documentation, procedures and policies, which is in accordance to Section 25a German Banking Act and Sections AT 5 and AT 6 MaRisk issued by the German Federal Financial Supervisory Authority. The standards are regularly audited by Eurex Clearing's internal audit function as well as external auditors.

Eurex Clearing has established a Risk Management process that ensures identification, notification, assessment, controlling and reporting of all operational risks (see Group Risk Management Policy. The process is reviewed at least annually, and the model is validated in line with Article 3 (3) (EU) 152/2013.

The Risk Strategy defines operational risk 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 and from legal risks (cf. Art. 4 (2) (EU) 153/2013). The operational risk assessment is fully integrated into Eurex Clearing's Risk Management process. Its output is integrated into the assessment of Eurex Clearing's overall risk profile and therefore monitoring and controlling of operational risks are ensured, according to Article 3 (4) (EU) 152/2013.

The Group Risk Management Policy documents the enterprise-wide risk management concept by describing the risk management framework in terms of processes, roles and responsibilities applicable to all staff and organizations of DBG entities. The risk management process covers the following five key phases: Risk Identification, Risk Notification, Risk Assessment, Risk Control and Risk Reporting. The Risk Identification involves – to the most complete extent possible – the identification of all threats to DBG, as well as causes of loss and potential disruptions as described in the DBG risk tree. 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 can be reactive, following an incident. It should also be pro-active, based on regular review of processes in order to identify weak areas, or based on scenarios of failure taking into consideration all sources of issues. The Risk Identification also involves a phase of quantification implying the definition of parameters, which can be based on statistical data in case of actual process monitoring, or on subjective expert appraisal when no statistics are available. These parameters illustrate the risk and are determined by the relevant organizational unit in accordance with the Group Risk Management Policy. All organizational units and individual employees must identify and quantify by themselves potential risks in their area of responsibility. Newly identified risks shall be mapped by ERM to this existing risk classification. The Incident Notification Procedure stipulates the requirements, nature and deadlines for incident notifications to ERM and is intended to qualify statements in the Group Risk Management Policy regarding notification requirements. The procedure stipulates that organizational units are responsible for

the identification, measurement and control of the risk in their area of operations. ERM is responsible for the assessment and the reporting phase of the risk management process and assessing the adequacy of contingency measures. Specifically, this means that departments are responsible for the:

The risk framework is coordinated by the Enterprise Risk Management function, which is independent of the operational areas, reporting to Eurex Clearing's Chief Risk Officer. Furthermore, adequate monitoring is ensured by the quarterly ECAG Risk Report to the Eurex Clearing Executive Board and a yearly Operational Risk review.

Operational risks comprise of potential losses from inadequate or faulty systems and internal processes, from human or technical failure and from damage to tangible assets, as well as from legal and business practice risks. Particular risk drivers are availability, human errors, damage to physical assets, fraud, employment practice, business practice and contract risk. The most substantial operational risks Eurex Clearing faces relate to a malfunction or interruption in the provision of its core products, in particular, the clearing systems and the systems for calculating margin requirements.

Eurex Clearing currently uses scenario-based risk analysis as part of the operational risk process, as defined in the group's overall risk management framework. The scenario risk analysis includes, for example, disruption of clearing systems caused by hardware, network, software or even terrorist attack; disruption of services from external providers, including utilities services; internal human errors and omissions related to calculation of settlement prices and delivery of securities. The results of the scenario risk analysis are assessed by Enterprise Risk Management in due course and will be taken into account during the regular reviews of the Eurex Clearing Business Continuity Management Policy Appendix ECAG as well as the Business Continuity Plans.

Several data sources are used in operational risk management. Apart from internal data on operational risk events having materialized within DBG, external data may serve as another source. This means that information on operational risk events encountered by other companies is included into the DBG's own operational risk management process and considered during OpRisk scenario reviews. These external OpRisk events are stored in the OpRisk External Loss Database.

In addition, Eurex Clearing, together with Deutsche Börse Group, has implemented a group-wide incident and crisis management process and Eurex Clearing's BCM Plan will support a coordinated and rapid reaction to incidents in a controlled and effective manner. Eurex Clearing's BCM Plan is integrated into the overall Risk Management Framework and comprises information, guidelines and procedures in order to maintain the continuity of critical services, taking into consideration external links and interdependencies within the financial infrastructure and functions or services which have been outsourced to third-party providers. All business continuity arrangements are tested on a regular basis and in a comprehensive manner.

As far as operational risk is concerned, the key preventive measures consist of strong internal control processes, which are performed, and ongoing initiatives to further reduce errors and omissions. Further, the impact of a risk materializing is reduced by a number of measures, which will take effect at the time or after an incident, such as business continuity management and insurance programs.

Consistent with MaRisk, Eurex Clearing makes sure that employees and their deputies have the knowledge and experience required by their duties, competencies and responsibilities. Suitable measures are taken to ensure that the employees have the appropriate qualifications (AT 7 MaRisk).

In addition, Deutsche Börse Group rolled out a group-wide mandatory online training to foster the risk culture and risk awareness within the company. The focus of this training is the personal responsibility of every individual employee regarding risk management. This includes understanding compliance of internal and external regulations, policies and procedures.

The general responsibility for the prevention or detection of criminal acts lies with the respective business areas, specifically, with each employee and their respective supervisors. To this end, clear rules and responsibilities must be defined and existing policies and instructions must be observed.

In order to prevent fraud, which can pose a threat to the assets of the company, Deutsche Börse Group has created a business and customer-related safety system, primarily for its regulated entities, including Eurex Clearing.

The security system is described in detail in the Policy on the Prevention of Other Criminal Offences and consists of:

- the establishment of a “Central Function” for the prevention of fraud;
- the arrangements for the prevention of the anonymity of transactions;
- the appropriate behavior in cases of suspicion, including:
 - the arrangements for the investigation of suspicious circumstances
 - the principles of the filing of criminal charges
- the recording and safekeeping obligations and
- other security measures.

Other security measures include employee trainings, vulnerability analysis and controls, reporting to the Eurex Clearing Executive Board and the disclosure of verified fraudulent activities in an incident database.

The Project & Change Initiative Management Policy describes the fundamental framework that project management within Deutsche Börse Group will follow to achieve project goals on time, within budget and to high quality. The latter also means that a smooth functioning of the whole system is not disturbed by a rollout of any change or major project. An integral part of the Project & Change Initiative Management Policy is the Project Risk Management Guide, which extends the guidelines and processes described in the risk management section of the key project management responsibilities outlined in chapter 8 of the policy.

The key project management responsibilities are:

- Project management guidelines,
- Scope management,
- Schedule management,
- Budget management,
- Risk management,
- Impact Analysis,
- Quality management,
- Key project data,
- Archiving,
- Reporting,
- Control of documented information.

The risk management aspect requires that projects need to analyze their individual risk. Project risks must be identified, documented and managed on regular intervals. This includes the project risk analysis with

- a) an assessment of a risk's likelihood/probability,
- b) evaluating the risk's impact on the project's objectives and
- c) deriving the severity for each new risk identified, and, based upon that information, defining a suitable risk response (e.g. mitigating actions, acceptance, etc.).

Every project manager has the responsibility to timely notify project risks and risk responses to the steering body and as needed to Group Risk Management.

While project risk can be a key risk driver, it will materialize as financial and operational risk and its relevant sub-risks which are captured in the risk inventory. The impact of project risk is thus quantified and limited as part of operational risk and financial risk.

Key Consideration 2

An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.

The risk strategy assigns the Executive Board of Eurex Clearing as the ultimate responsible for managing the risks. The risk strategy further reflects the risk appetite, which defines the maximum loss the Executive Board is willing to take in one year. The Executive Board ensures that the risk strategy is integrated into the business activities throughout Eurex Clearing entirely and that adequate measures are in place to implement the strategies, policies and procedures.

Risks are openly and fully reported to the responsible level of management. The responsible management body is informed fully and timely about Eurex Clearing's risk profile, relevant risk(s) as well as about relevant losses. The Group Risk Management Policy states that the relevant boards and committees are timely and consistently informed about material risks - whether existing or potential - and the related risk control measures in order to take appropriate action. Adequate quality standards are established and reviewed on an ongoing basis.

The Chief Risk Officer of Eurex Clearing is heading the CCP's Risk Management department and is responsible to oversee Enterprise Risk Management.

A timely, complete and reliable risk management constitutes a general risk principle of the Eurex Clearing Risk Management Framework. The operational risk aspects as well as other risk categories are taken into account with adequate quality standards. Eurex Clearing's Executive Board reviews the Risk Management Framework on an ongoing basis.

In addition, a well-defined physical security policy is in place. The Corporate Security Policy of Deutsche Börse Group, duly adopted by the Executive Management of Eurex Clearing, defines the framework of all procedures, guidelines and practices for configuring and managing security in Deutsche Börse Group in order to protect people and property, and, consequently, integrity and reputation of Deutsche Börse Group from potential threats.

Consistent with MaRisk BT 2.1, the risk-based internal audit plan covers all relevant aspects of the CCP including the risk management processes and control mechanisms. Audits are planned at least on a yearly basis for areas assessed to be of "high" risk; every two years for "medium" rated and every three years for "low" rated areas. Independent audit opinions on the appropriateness of the risk control and risk management functions are given. In addition, the results of these examinations also feed into the risk management system. Furthermore, Chapter 3 of the Deutsche Börse Group Risk Management Policy mandates Internal Audit to support ensuring the suitability and effectiveness of the risk management process by independently auditing the process and the reporting system.

Consistent with MaRisk BT 2.3, it is ensured that special audits that are required at short notice, e.g. due to deficiencies, which have arisen, or certain informational requirements, can be performed at any time. The Internal Audit plan considers respective person days for special audits.

As Eurex Clearing is annually conducting its workspace and staff unavailability tests during business hours, relevant external parties are implicitly involved. The test results have been assessed by the BCM function. Any received feedback from the involved third parties will be processed and, where relevant, incorporated in the BCM plans or future tests.

In addition to the audits by Internal Audit, clearing operations, risk management processes, internal control mechanisms and accounts are subject to independent audits of an external audit company on an annual basis. The result of the audit is communicated to the board and the competent authority.

Key Consideration 3

An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

According to Eurex Clearing's risk strategy, timely, complete, and reliable risk management is one of the general risk principles at Eurex Clearing. Risk management is an elementary component of the management and the control of Eurex Clearing and the affiliated companies. Effective and efficient risk management is fundamental in protecting Eurex Clearing's interests. It enables Eurex Clearing to achieve its corporate goals and safeguards its continued existence. The risk management framework provides complete, timely and consistent information about risk. The risk-related information enables the risk to be identified, notified, assessed, controlled and reported appropriately. Adequate quality standards are established and reviewed on an ongoing basis.

Eurex Clearing employs risk-bearing capacity as its main risk management tool. It uses VaR at a confidence level of 99.98 % to calculate its required economic capital (EC) and compares it to its risk-bearing capacity in order to be able to cover financially even extreme events in the next twelve months. Eurex Clearing uses the equity on its balance sheet as the risk-bearing capacity for its economic capital. For control purposes, Eurex Clearing regularly calculates the ratio of EC to risk-bearing capacity, or "utilization of risk-bearing capacity", as an indicator.

Through this allocation, the Eurex Clearing Executive Board ensures that risk is limited regarding each risk type. Due to diversification effects across risk types, the sum of VaRs of the single risk types is not equal to the total VaR. Therefore, the absolute limits for individual risk types (i.e. operational risk and financial risk) in Euro is calculated as percentage of the sum of total risk-bearing capacity and diversification effect. It needs to be ensured that in total the risk does not exceed 100% of the defined risk-bearing capacity. Thus, in exceptional cases the limit for a single risk type may be exceeded.

In order to ensure capital adequacy to cover even more severe operational events, an effective set of stress tests provides Eurex Clearing with a better understanding of their operational risks, controls, indicators and potential losses but also indicate the interactions and causal relationships of risks.

Operational risk stress tests are performed in the course of the yearly review of operational risk scenarios. Hereby, the loss of extreme operational events as well as the occurrence of several severe losses within one particular year is benchmarked with the risk-bearing capacity allocated to operational risk. The approach, scenarios and the results of this stress test are reported to the Executive Management of Eurex Clearing.

The results of the VaR calculation are entered into a reporting system. Reporting includes both a quantification of risks but also qualitative information. The reporting of risks to the Executive Board of Eurex Clearing is carried out quarterly as well as ad-hoc if necessary. The Supervisory Board of Eurex Clearing receives quarterly reports.

Furthermore, Eurex Clearing strives to provide products and services with utmost reliability. It gives the highest importance to the resilience of its business to safeguard it against incidents and disasters, as the unavailability of core processes and resources represents a substantial risk for Eurex Clearing and potential systemic risk to the markets as a whole. Therefore, Eurex Clearing aims to satisfy itself and the markets of its ability to continue to operate under adverse conditions or in the face of unexpected events or disasters.

Consequently, Eurex Clearing implements and maintains effective and efficient business continuity plans designed to minimize the impact of unavailability of the key resources, i.e. ICT systems, workspace and facilities, staff, suppliers and other external dependencies. Eurex Clearing adopts industry standard best practices in line with its needs and regulatory requirements.

The business continuity plans specify how services, processes and resources will be reinstated to a predetermined level within pre-defined time scales after a disruptive incident. The functions, which are indispensable for the critical daily operations in view of the above objectives, are called mission critical and must be resumed within a Recovery Time Objective (RTO) of 2 hours following a disruptive incident, crisis or disaster (the RTO is the time period following a disruptive incident within which products, services or activities must be resumed or resources must be recovered). The resilience and disaster tolerance of critical processes and resources is commensurate with the business impact and the prevailing risks.

To ensure that Eurex Clearing is able to respond to an incident in a rapid, controlled and effective manner, an incident and crisis management process is in place for the timely detection, escalation and assessment of incidents and the prompt activation of the business continuity plans.

Business continuity plans are used, tested or exercised regularly in the most realistic way, without causing unacceptable business impact, to ensure their effectiveness and viability and in order to provide assurance that a real incident could be successfully managed. All relevant staff must be competent in the execution of incident and crisis management plans and business recovery procedures.

Key Consideration 4

An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

Information technology systems used by Eurex Clearing are secure and have an availability rate of more than 99.9% over the last 12 months, proving their reliability. The systems are capable of processing the necessary information to perform the activities and operations in a safe and efficient manner. System documentation on the information technology architecture is available and redundant system architecture with failover functions are in place to ensure that Eurex Clearing is scalable and can deal with operational needs and the risks faced, even in stressed market conditions. Additionally, regularly tested business continuity measures are in place. To assess the need for introducing new technology including clear reversion plans, Eurex Clearing monitors system performance constantly. Reports of this monitoring are reported to the management regularly.

Eurex Clearing's Executive Board defined the guiding principles on information security in the Information Security Policy of Deutsche Börse Group. This policy entails the roles and responsibility to provide for integrity, availability, authenticity and confidentiality of processed information.

Stringent testing is performed for each change to the system and changes are simulated in a separate technical environment including involvement of participants, vendors and other affected parties. Additionally, a permanent simulation environment is operated for testing. As part of the methodological framework for software engineering, the "build and test"-phase of a project consists of those modules, which provide the tasks necessary to construct and test the final system solution. In this phase, the specific technical components are programmed according to the documented output of the design phase. Furthermore, the planning, organization, preparation and execution of the system test and the acceptance test is covered in this phase. In addition to verifying that the system correctly performs all required business functions, it is essential to examine technical features as the start-up and shut-down procedures, interfaces between software and hardware components, back-up and recovery procedures and security measures. The system test must demonstrate that the system can handle the required volumes of transactions and perform within the specified parameters of speed and memory. The test also examines the behavior of the system under extreme and worst-case conditions. Additionally, the planning, organization, control and execution of the service implementation are addressed to external stakeholders and especially to external users of the new release.

Transaction volumes on Eurex Clearing's core systems are constantly monitored and reported to responsible board members following the Capacity Management Process. An overall capacity target for the critical transaction systems is defined by the responsible steering committee, consisting of the responsible board members and IT representatives. It is based on the peak historic transaction rates plus capacity headroom of 70% - 100% and is continuously monitored. In case of new peak transaction rates,

the target capacity is adjusted and an action plan to increase system capacity is initiated to meet the new capacity target.

Key Consideration 5

An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

An ISO 27001 based information security framework is in place to manage the information security risk. The Deutsche Börse group-wide Information Security Policy, is applicable to Eurex Clearing. This policy determines the approach and organizational roles and responsibilities with regard to Information Security Management, e.g it states that Executive Boards of the Group appoint Information Owners, approve information security policies and take risk management decisions in their area of responsibility. The aim is to provide clear direction for the protection of information and corresponding facilities, used for information processing and communication, of Deutsche Börse Group. Next to this policy, the Information Security Policy Framework contains Information Security Policies, Standards and Procedures and covers all ISO 27001 domains.

The Information Security Policy Framework contains physical security and information security, including secure software development.

The geographical position of Germany, and thus the location of Frankfurt, does not expose Deutsche Börse Group or its data centers to any large-scale natural disasters such as hurricanes, tornadoes, earthquakes, spring tides or flooding of any significant nature. Neither of the data center locations is near the landing zone of an airport or major roads, nuclear power or industrial plants that produce or process hazardous materials. A risk assessment containing a Security Controls Questionnaire is completed including these physical vulnerabilities. Essential utility lines for power and telecommunication are laid underground and are thus not exposed to adverse weather conditions such as storm or lightning. The construction and technical safety provisions in place at both locations adequately and reliably protect these data centers against the few environmental hazards that are to be expected in central Europe. The risk of fire is handled via the two separate data centers; each equipped with fire suppression systems.

Eurex Clearing currently uses a scenario-based risk analysis as part of the operational risk process, as defined in DBG's overall risk management framework. The scenario risk analysis includes, for example, disruption of clearing systems caused by hardware, network, software or even terrorist attack; disruption of services from external providers, including utilities services; internal human errors and omissions related to calculation of settlement prices and delivery of securities. The results of the scenario risk analysis are assessed by the BCM function in due course and will be taken into account during the regular reviews of the Business Continuity Management Policy Appendix ECAG as well as the BCM plans.

Based on increased protection needs of a data center, Deutsche Börse Group documents the data center-specific security and safety standards and requirements. Security is the process or means of delaying, preventing and protecting against external or internal dangers, loss, criminals, and other individuals or actions that to weaken, hinder or destroy a data center. Safety involves whatever contributes to maintaining the steady state of a data center. Safety means stability over time, continuity of function and reliability of structure. Safety threaten requirements are those requirements which cover all issues of quality, reliability, availability and maintainability.

Due to high availability requirements of Deutsche Börse Group's data centers, not only high security is required but also a safety infrastructure, which provides high available services. High available services mean, that the infrastructure of the data center is rigid to environmental conditions i.e. flooding and provides power and cooling even in case of bigger outages. To assure highest security standards and highest availability of a Deutsche Börse Group data center, a regular Physical Security Standards Data Centre (PSSDC) analysis is essential. Therefore, Deutsche Börse Groups's main data centers will be analyzed either ad hoc on relevant changes or every second year. Deutsche Börse Groups's points of presence (PoP) will be evaluated in a five years period. Results of analysis will be fed into the BCM and risk management process.

The overall Business Continuity Management Framework aims to ensure that Eurex Clearing secures the functioning and timely recovery of its crucial systems and processes in case of a disaster or emergency event.

Furthermore, Eurex Clearing has a robust information security framework in place to manage the information security risk. The Deutsche Börse Group-wide Information Security Framework is applicable to Eurex Clearing. The framework determines the approach and organizational roles and responsibilities with regard to Information Security Management. The aim is to provide clear direction for the protection of information and corresponding facilities, used for information processing and communication, of Deutsche Börse Group. The Information Security Framework contains, among others, information security standards & guidelines on application and local application security, access control and communication security and sensitive document access. The Information Security Framework is subject to regular updates to further strengthen information security controls within the organization and address evolving regulatory requirements.

End of 2019 Deutsche Börse Group performed a TSI assessment (Trusted Site Infrastructure) of the main data centers Hausen and Equinix FR2 in Frankfurt, supported by TÜVIT. This TSI assessment was based on the new "Data Centre Security Standard". This standard will be adopted by Deutsche Börse Group as successor of the PSSDC mid 2020. A corresponding risk assessment, handling the deviations to the standard, is planned for 2020.

Since 2016, Eurex Clearing follows the new vulnerability management processes, which requires regular scanning of infrastructure and applications and a holistic management of vulnerability closure processes.

Since 2017, all applications with critical production workload have to regularly test their application code (code scan and penetration testing). Going forward, Eurex Clearing will adopt the principles of cyber resilience as set forth in the CPMI-IOSCO Cyber Resilience guidelines published in 2016. This include compliance with both ISO 27001 and NIST cyber security framework controls.

Key Consideration 6

An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.

Eurex Clearing, as part of the Deutsche Börse Group, disposes of a group-wide BCM Program. The group-wide BCM Program is governed by the BCM Policy of Deutsche Börse which was approved by the Executive Board of Deutsche Börse on 28 February 2018 and subsequently approved by the Executive Board of Eurex Clearing. In 2019 a regular review was performed with minor editorial changes, so no reapproval is required. The BCM Policy describes the broad approach and organizational roles and responsibilities with regard to business continuity management. The BCM Policy provides a governing framework for the development, establishment, implementation, validation and maintenance of unit-specific Business Continuity Plans (BCP). The BCPs are developed by the various organizational units, since they are assigned the responsibility for the continuity and operational resilience of their respective business activities. The BCPs specify how critical processes, activities and resources will be reinstated to a predetermined level within pre-defined timescales after a business disruption affecting one or several of the key resources (i.e. staff, workspace and facilities, IT systems incl. networks or information, suppliers or external dependencies).

As a result of the EMIR requirements, Eurex Clearing has developed an appendix to the group-wide BCM Policy. The Eurex Clearing BCM Policy Appendix specifies minimum requirements in line with EMIR. The Eurex Clearing BCM Policy Appendix is applicable to all units or departments of the Deutsche Börse Group that provide critical services to the functioning of Eurex Clearing.

All BC Plans include a RTO to ensure that critical services, processes and resources are recovered in time before Eurex Clearing is impacted beyond tolerable limits. The Eurex Clearing BCM Policy Appendix prescribes a maximum RTO of 2 hours as an objective for all mission critical functions. In addition, it is recognized that depending on the nature of the incident, the actual recovery can be achieved quicker (e.g. in case of individual systems or power failure). The compliance with ESMA's 2 hours RTO requirement ensures that end of day procedures and payments shall be completed on the required time and day in all circumstances.

The Eurex Clearing BCM Policy Appendix requires that the BCM policy appendix and plans, including the crisis management function and business continuity test results be reported to the Eurex Clearing Executive Board on an annual basis.

Additionally, the Deutsche Börse Group disposes of a Crisis Management Procedures Maintenance Guideline, which requires a 6-monthly review of the divisional crisis management procedures. The group-wide Crisis Management Guideline includes provisions for both internal and external communication. The communication procedures included in the guideline ensure that all relevant external stakeholders such as competent authorities, Clearing Members, clients, settlement agents, securities settlement and payment systems and trading venues will be kept adequately informed.

The BC Plans are tested for systems, workspace, and staff unavailability. The Recovery Time Objective is part of the test objectives. The workspace and staff unavailability tests are not announced to the participating units and are planned by Eurex Clearing's BCM function. The systems unavailability tests are planned by the respective ICT department. Test reports are issued by Eurex Clearing's BCM function.

Systems failover tests are also performed after significant modifications or new releases.

Eurex Clearing regularly conducts tests of BC Plans involving scenarios of large scale disasters, involving the relocation of staff to the secondary site and switchovers between primary and secondary processing sites.

Key Consideration 7

An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

Eurex Clearing has identified several operational risks that could be caused by key participants, service and utility providers. The unavailability of services or service deficiency by service providers, e.g. telecommunication providers, or critical suppliers, e.g. SWIFT, are considered as root causes within several operational risk scenarios of Eurex Clearing. Furthermore, extreme actions of customers could have an impact on system capacities, which could lead to disruptions of Eurex Clearing's services. The operational risk profile is reviewed at least on a yearly basis. Regular monitoring is carried out by business units.

Eurex Clearing has implemented a business continuity management that is integrated into the overall BCM of Deutsche Börse. For all outsourced functions that are critical to the business of Eurex Clearing, the BCM rules of Eurex Clearing are applicable. This ensures that business continuity plans of all outsourced functions adhere to the EMIR and requirements with regard to business continuity and disaster recovery.

The proper interconnectedness of business continuity plans between outsourcing and insourcing company is already requested by the current national German framework for credit institutions. It is therefore implemented within both the business continuity framework and the outsourcing framework. In the course of the risk assessment, the proper functioning of the business continuity framework in an outsourcing relation is a crucial part and in assessing possible outsourcings the outsourcing coordinator will not recommend to the executive management any outsourcing where proper business continuity is not guaranteed and will also raise any problem detected by the business owner in that regards – on top of normal escalation processes within the business processes and risk management – to the executive management.

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Additionally, Clearing members, external providers and relevant institutions in the financial infrastructure with which interdependencies have been identified in the BCM plans in the testing process.

Assessment of principle:

Observed

Principle 18: Access and participation requirements

Principle 18: Access and participation requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Key Consideration 1

An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

A license issued by Eurex Clearing AG (Eurex Clearing) for each transaction type (each, a “Clearing License”) is required in order to be authorized to participate in the clearing of the relevant Transactions as a Clearing Member. Clear and transparent admission criteria per clearing license are determined by Eurex Clearing. All changes to existing as well as the introduction of new criteria are done in coordination with the Eurex Clearing Risk Committee.

The admission requirements are set forth in the Clearing Conditions in Chapter I, Part 1, Number 2.1.2 for the general prerequisites and in Chapters II-IX for special prerequisites for the relevant transaction types and in the FCM Regulations of Eurex Clearing.

In addition, Eurex Clearing (having been granted the status as a DCO since 2016) offers client-clearing framework in compliance with CFTC Regulation Part 22 under U.S. law for FCMs that clear client business (LSOC style). Admission criteria for FCM Clearing Members are set forth in Chapter I Number 2.2 of the FCM Regulations of Eurex Clearing and follow the same principles as mentioned above.

Eurex Clearing’s participation requirements are non-discriminatory, objective and do not limit access on grounds other than risk (e.g. sufficient own funds or equivalent regulatory capital, compliance with technical requirements, verification of the legal validity and enforceability of the Clearing Conditions, etc.). To ensure this purpose, Eurex Clearing assesses its admission requirements continuously. Any recommendations to amend the admission criteria are generally discussed in advance with market participants, Clearing Members, the Eurex Clearing Committees (Derivatives, Securities) and the Eurex Clearing Risk Committee.

Eurex Clearing requires Clearing Members to provide evidence of sufficient financial resources and operational capacity to meet their obligations and minimize the risk towards the CCP.

Eurex Clearing uses a risk-based approach to determine the level of financial resources that its Clearing Members need to prove.

Financial Requirements

The main financial requirements are listed below:

- Minimum own funds or equivalent regulatory capital requirements are defined and depend on the product and the type of clearing membership the new member applies for. A minimum liable equity capital requirement is defined for admission and Eurex Clearing additionally employs a dynamic component for own funds or equivalent regulatory capital requirements. The dynamic component ensures that the own funds or equivalent regulatory capital requirements are scaled to represent the risk of the individual Clearing Member. The dynamic component is calculated as a percentage of each Clearing Member’s margin requirement.
- If Clearing Members have insufficient own funds or equivalent regulatory capital for a clearing license, Eurex Clearing may determine that the shortfall may be made up by collateral in cash and/or securities (Clearing Conditions, Chapter I, Part 1, Number 2.1.2).
- With regards to FCM Clearing Members at the time of the application, it must have adjusted net capital, calculated in accordance with CFTC Regulation 1.17, in the minimum amount published by Eurex Clearing on its website. The minimum static amount required is equivalent to EUR 30 million whereas a dynamic component of 20% of the Initial Margin requirement applies if higher.

- Clearing Members must contribute to the Default Fund. The Default Fund contribution is determined as the maximum amount out of the minimum requirement of each Clearing Member (including FCM Clearing Members) and the requirement based on the risk exposure of a member firm. Clearing Members are required to deposit the higher of the following amounts (CCP Credit Risk Management Policy):
 - A minimum amount (static component) for the Default Fund (including OTC IRS)
 - a dynamic component based on recent and historic risk exposure

The Clearing Conditions / FCM Regulations further prescribe that Eurex Clearing may reject to grant a clearing license, if, based on its evaluation, Eurex Clearing determines that this is necessary to avoid or mitigate risks for the Clearing House. The evaluation will take the following criteria into account:

- credit ratings by generally accepted rating agencies relating to the applicant
- Eurex Clearing's internal credit ratings relating to the applicant
- market indications relating to the applicant (e.g. share price and CDS spreads)
- a state guarantee or state support relating to the applicant, and the type of clearing license applied for.

Operational Requirements

Eurex Clearing also assesses the participants' operational capability. Members must provide proof of the technical and functional connection, the use of appropriate technical equipment (back-office facilities) and sufficiently qualified back-office personnel (Clearing Conditions, Chapter I, Part 1, Number 2.1.2 / FCM Regulations, Chapter I, Number 2.2).

The Clearing Member or its service provider must in particular provide evidence of the required account infrastructure for cash and securities depending on the respective license, product coverage and individual set-up.

Clearing Members also need to fulfil participation requirements, which are required by law and regulation:

- Providing evidence of the registration of the applicant's principal office and/or branch office: an excerpt from the Register of Companies certified by a court or a notary (not older than one year).
- Confirmation of the supervisory authority: confirmation of the respective home member state supervisory authority that the firm is supervised.
- Clearing Members shall also conclude a legal Clearing Member Agreement with Eurex Clearing (FCM Clearing Members shall conclude a FCM Clearing Agreement).
- Evidence of required Tax Declarations.
- In addition, each specific license may require the fulfilment of additional legal prerequisites.

Certain governmental entities and supranational organizations may be exempted from certain requirements upon request, provided that initial minimum credit rating criteria are fulfilled and, after a risk assessment of Eurex Clearing, consent is granted with the option of revoking such exemption (Clearing Conditions, Chapter I, Part 1, Number 2.1.3).

Specific Repo and Specific Lender License

For a holder of a Specific Repo License and/or a holder of a Specific Lender License, certain general requirements do not apply (e.g. provision of margin asset, Default Fund Contribution, etc.) as the clearing of these dedicated transactions do not bear risk for Eurex Clearing and the non-defaulting Clearing Member in case of a default of a holder of a specific license.

Eurex Clearing has established a Member Compliance Framework to assess Clearing Members (incl. Clearing Members qualifying as Future Commission Merchants (FCM Clearing Members) compliance with the participation requirements set out by Eurex Clearing.

Clearing License for Client Transactions

Certain clearing licenses, which are relevant for the clearing of client transactions, provide for the admission of firms, which are appropriately licensed in their local jurisdiction to provide credit to customers

in relation to transactions of the respective market and receive collateral in the form of cash or securities, are financially sound and maintain appropriate operational infrastructure. In order to ensure that these criteria are fulfilled, Eurex Clearing requires potential clearing members to provide evidence of their:

- permission to credit customers in relation to transactions of the respective market and
- receive collateral in the form of cash or securities
- minimum own funds or equivalent regulatory capital requirements and
- appropriate technical infrastructure.

Right to Reject Applicants

Eurex Clearing has fair and objective access requirements enabling anyone who meets the requirements to participate. Admission can only be granted upon fulfilment of admission requirement. Nevertheless, Eurex Clearing reserves the right not to allow an applicant to become a member depending on the judgment made concerning the participation requirements. Applicants unable to fulfil the requirements cannot be admitted.

With respect to the Default Management Process, each Clearing Member (including FCM Clearing Member) is obliged to participate (i) in Default Management Committees (if selected to do so by Eurex Clearing in accordance with its rules), (ii) in default simulations and (iii) in auctions of a defaulted Clearing Member's positions, with respect to all asset classes such Clearing Member is active in (in accordance with Chapter I, Part 1, Number 7.5 of the Clearing Conditions and FCM Default Rules). In case of a Basic Clearing Membership, the Clearing Agent shall participate in any default management process with respect to all Basic Clearing Member Transactions of a particular Basic Clearing Member for which it acts as Clearing Agent. For more information please refer to the Eurex Clearing website: <https://www.eurex.com/ec-en/services/risk-management/default-management-process/auction>

Furthermore, each Clearing Member (including FCM Clearing Member and excluding the holder of a Specific Repo License and the holder of a Specific Lender License) is obliged to make a contribution to Eurex Clearing's Default Fund if required to do so in accordance with its rules. Assessments are capped for each non-defaulted Clearing Member to be two times its originally applicable contribution within any Capped Period which lasts for 20 business days.

In this context it should be noted that the Clearing Agent makes the contribution to the Default Fund with respect to its Basic Clearing Member's Transactions. For the avoidance of doubt, the Basic Clearing Member is in accordance with Article 2 (14) EMIR responsible for discharging the financial obligations arising from its participation in the Clearing as Basic Clearing Member (Clearing Conditions Chapter I, Part 6 Number 9).

Key Consideration 2

An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

The scope of the membership requirements encompasses a set of quantitative and qualitative criteria, catering for excellent credit quality, indicating the financial and operational strength of clearing members at the time of admission and on-going during their membership.

Admission criteria can be categorized according to the following criteria and requirements:

- 1) Own fund, equivalent regulatory capital or assets under management requirements
- 2) Acceptable credit quality (initial and on-going credit risk assessment)
- 3) Jurisdiction & regulatory oversight
- 4) Infrastructure requirements
- 5) Operational set up (including Qualified Clearing Staff)

- 6) Contribution to the Default Fund (a Clearing Member's admission requires the payment to the Default Fund)

Overview Clearing Memberships

Eurex Clearing offers the following types of Clearing Memberships:

- General Clearing Membership (in accordance with the Clearing Conditions of Eurex Clearing);
- Direct Clearing Membership (in accordance with the Clearing Conditions of Eurex Clearing);
- Basic Clearing License Membership (in accordance with the Clearing Conditions of Eurex Clearing);
- Specific Lender License (in accordance with the Clearing Conditions of Eurex Clearing Part IX);
- Specific Repo License (in accordance with the Clearing Conditions of Eurex Clearing Part (IV) and
- FCM Clearing License (in accordance with the FCM Regulations of Eurex Clearing)

Unless otherwise provided in the relevant Special Clearing Provisions, a General Clearing License entitles the holder thereof (a "General Clearing Member") (i) to clear Own Transactions, Client-Related Transactions or, in respect of OTC IRS U.S. Clearing Members, Own Transactions and (ii) to support the Clearing of Basic Clearing Member Transactions as a Clearing Agent subject to further requirements as set out in the Basic Clearing Member Provisions. A Direct Clearing License entitles the holder thereof (a "Direct Clearing Member") to clear Own Transactions, Undisclosed Direct Client-Related Transactions, Disclosed Direct Client Related Transactions referring to Transactions by Disclosed Client Market Participants affiliated with it. (Clearing Conditions, Chapter I, Part 1, Number 2.1.1)

The specific license entitles the respective holder to clear Own Transactions with specific product characteristics.

A Basic Clearing Member License entitles the holder thereof (a "Basic Clearing Member") to clear Own Transactions.

A FCM Clearing Member License entitles the holder thereof (a "FCM Clearing Member") (i) to clear Own Transactions and (ii) FCM Client Transactions in accordance with the FCM Regulations of Eurex Clearing.

To ensure that Clearing Members (including FCM Clearing Members) have necessary additional financial resources, different own funds or equivalent regulatory capital are required per Clearing Membership, cleared products and markets served. The different categories are shown in the table below.

No	Product	Market	GCM/FCM ⁴ CM own funds (or equivalent amount) required in EUR mn	DCM/BCM ⁵ own funds required in EUR mn	Credit against No. ⁶
1	Futures/ Options	Eurex Frankfurt	30	7.5	
2	Securities (Repos)	Eurex Repo/ NEX BrokerTec	200	50	
3	Securities (Equities)	FSE/Xetra	15	3.75	4

⁴ Only relevant for a limited scope of OTC Derivatives

⁵ Only relevant for Eurex Repo and OTC Derivatives

⁶ In general, own funds or equivalent regulatory capital required for multiple Clearing Licenses is the sum of the capital requirements for each Clearing License, except for the cases identified in column 'Credit against No.', i.e. own funds or equivalent regulatory capital for granting a Clearing License for FSE/Xetra Transactions

4	Securities Lending	CCP Services for Securities Lending	200	50	
5	OTC Derivatives Transactions	EurexOTC Clear	30	7.5	

Furthermore, different minimum requirements for the Default Fund contribution are applicable depending on the type of Clearing Membership. At admission, a Clearing Member's contribution to the Default Fund is as follows:

- GCM: EUR 5mn
- DCM: EUR 1mn
- BCM: EUR 1mn / 0.1 mn (depending on company type)
- FCM CM: EUR 5mn

In addition to the abovementioned distinctions, each specific license may provide for extra conditions such as specific technical connections, legal restrictions, etc.

By fulfilling certain criteria, certain governmental entities and supranational organizations may be exempt from the requirement to contribute to the Default Fund.

Key Consideration 3

An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

As part of each Clearing Member (including FCM Clearing Member) admission process, the Client Service, Trading & Clearing department ensures that the admission requirements are fulfilled. Timely access to the relevant information is ensured by a statement in the Clearing Conditions / FCM Regulations that prescribe that Clearing Members are obliged, at the request of Eurex Clearing, to provide evidence of compliance with the prerequisites for a Clearing License (Clearing Conditions, Chapter I, Part 1, Number 2.2.3, FCM Regulations Part I Number 2.2.12).

Eurex Clearing monitors the compliance of operational procedures and the adequacy of back-office staff of Clearing Members with the operational minimum standards established by its admission criteria.

Compliance with financial resource requirements is monitored on a regular basis. The Clearing Members must provide evidence of the level of their own funds or equivalent regulatory capital at admission and at least once a year. All Clearing Members (including FCM Clearing Members) are required to submit proof of own funds or equivalent regulatory capital annually by June 30 for the previous fiscal year to Client Service, Trading & Clearing (Department). A minimum own funds or equivalent regulatory capital requirement is defined for admission and Eurex Clearing additionally employs a dynamic component for own funds or equivalent regulatory capital requirements. The dynamic component ensures that the own funds or equivalent regulatory capital requirements are scaled to represent the risk of the individual Clearing Member. The dynamic component is calculated as a percentage of each Clearing Member's margin requirement.

The same process applies for the Default Fund contribution. A minimum contribution is required, and the dynamic component ensures scaling of the Default Fund contribution to represent the risk of the individual Clearing Member.

The overall risk exposure of the single Clearing Member (including FCM Clearing Member) towards the CCP is calculated regularly. Both, the own funds or equivalent regulatory capital requirement and the Default Fund requirement are newly determined at the end of each month or ad-hoc, if required. Monitoring is performed once a week for own funds or equivalent regulatory capital requirements against reported own funds or equivalent regulatory capital and collateral as well as for the Default Fund requirements.

Should the Clearing Member have insufficient own funds or equivalent regulatory capital for a Clearing License, Eurex Clearing may determine that the shortfall may be made up by collateral in cash or securities.

Eurex Clearing assesses and monitors the financial strength of its applying Clearing Members (including FCM Clearing Members) in the course of the admission process and afterwards on a yearly basis and, if required, on an ad-hoc basis by preparing credit assessments.

In addition, Eurex Clearing evaluates and monitors the operational strength of its Clearing Members (including FCM Clearing Members) on a regular basis and ad-hoc basis if required.

Regular monitoring of financial and operational strength will be announced in advance, whereas ad-hoc assessments will be triggered on a case-by-case basis.

In case of irregularities detected by the standard audit activities or in case of doubt regarding the compliance of the clearing member, the elements of the Member Compliance Framework can be triggered to investigate/confirm compliance. Beside internal evaluation, on-site audits can be considered as an escalation measure and for the investigation of specific irregularities.

Furthermore, on-site audits could be required to investigate an alleged breach of a Clearing Member (including FCM Clearing Member) with regards to its obligations to Eurex Clearing within the framework of Eurex Clearing's Disciplinary Procedure Rules.

The purpose and scope of the on-site audits has to be adapted to the situation of the individual Clearing Member (including FCM Clearing Member). If a Clearing Member or FCM Clearing Member is visited on-site, not only the areas where irregularities have been discovered have to be inspected but also other points can be in scope of the on-site inspection.

All procedures for the suspension, restriction and termination of Clearing Members (including FCM Clearing Members) are objectively and transparently regulated in Eurex Clearing's legal framework (Clearing Conditions Chapter I Part 2 Subpart A Number 6, Chapter I Part 4 Number 9, Chapter 1 Part 6 Number 10 together with Chapter I Part 1 Number 7.2 and FCM Regulations Chapter 1 Number 9).

If Eurex Clearing becomes aware of a termination event with regards to admission criteria with respect to a Clearing Member (i.e. failure to comply with Clearing License prerequisites), Eurex Clearing may one or more times suspend or restrict the clearing of transactions. If, taking into account all relevant circumstances of the specific case, Eurex Clearing determines in its discretion that it would be unreasonable to set a Grace Period or if the relevant Termination Event cannot be remedied, Eurex Clearing is entitled to deliver a Declaration of Termination immediately.

In case the clearing is restricted or suspended, Eurex Clearing will notify the Clearing Member and all disclosed clients of such Clearing Member of the decision to suspend or restrict the clearing. Eurex Clearing will specify in the notification, a reasonable period of time during which such suspension or restriction shall apply. Furthermore, if Eurex Clearing requests so, the relevant Clearing Member shall, at the Clearing Member's own expense, provide such information and evidence as Eurex Clearing may deem necessary, in the reasonable opinion of Eurex Clearing, to conduct an appropriate investigation of the facts and circumstances relating to the termination event.

In case a clearing license is terminated, Eurex Clearing will terminate all transactions between Eurex Clearing and such Clearing Member and initiate a Default Management Process. Any outstanding delivery obligation and/or cash payment obligation, including Variation Margin payments are either part of the difference claim or part of the porting process in accordance with the rules stipulated Clearing Conditions and FCM Regulations.

Assessment of principle:

Observed

Principle 19: Tiered participation arrangements

Principle 19: Tiered participation arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Key Consideration 1

An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

Eurex Clearing's rules, procedures and agreements are governed by the Clearing Conditions and FCM Regulations and other related legal framework. From a legal perspective, Eurex Clearing employs a principal-to-principal clearing model under the Clearing Conditions, where Eurex Clearing has contractual relationships with its Clearing Members only.

Also, in the LSOC model under the FCM Regulations, which is legally structured as a U.S agency clearing model the FCM Clearing Member is the sole contractual counterparty to Eurex Clearing, and Eurex Clearing treats the FCM Clearing Member as a principal, in respect of FCM Client transactions the FCM Clearing Member clears through Eurex Clearing. In effect FCM Clients have no rights against Eurex Clearing, and Eurex Clearing has no liability to FCM Clients in respect of FCM Client transactions.

Even though no direct contractual relationship between Eurex Clearing and a client exists, the functional set-up of Disclosed Clients of a Clearing Member as well as of FCM Clients of an FCM Clearing Member allow Eurex Clearing to gather relevant basic information to identify, monitor and manage relevant concentrations of risk relating to the provision of services to clients.

The contractual relationship between Eurex Clearing and its Clearing Member does however not oblige the Clearing Member to submit detailed information on disclosed or undisclosed, direct or indirect clients directly to Eurex Clearing. Furthermore, Eurex Clearing is also generally not in a position to monitor undisclosed clients of a Clearing Member directly.

The Member Compliance Framework foresees that Eurex Clearing requests information directly from the Clearing Members to confirm compliance with certain requirements in the Eurex Clearing rules and regulations within the yearly Due Diligence Questionnaire. This Due Diligence Questionnaire also considers a chapter with questions related to the Risk Management Framework of the Clearing Member (e.g. related to margin calculation for clients, monitoring of client portfolios for concentration and wrong way risks, stress testing of client positions, liquidity requirements from client defaults etc.).

Based on the Due Diligence Questionnaire, Eurex Clearing verifies if Clearing Members are able to comply with the requirements with respect to customer business of the Clearing Member.

In addition to the Due Diligence Questionnaire, Eurex Clearing can conduct on-site audits at the premises of the Clearing Members. The content of the on-site meeting will be adapted to the situation of the individual Clearing Member. The audits can also include the inspection of processes of the Clearing Members regarding their client business.

When selecting candidates for standard on-site meetings, Eurex Clearing takes into consideration criteria such as clearing volumes, trading volumes, margin requirements and significant changes to these indicators. This evaluation includes both proprietary and client business of a Clearing Member. Based on these criteria the annual audit schedule is defined, i.e. Clearing Members which have large trading and clearing volume in undisclosed client accounts as well as a high margin required caused by the undisclosed client activities will receive a high audit priority. In special cases, also the internal credit ratings are considered when defining the audit schedule.

In addition, the monitoring of Clearing Members' and their clients' business is ensured by a framework, which identifies, monitors and reports concentration & wrong way risks that may arise out of the clearing business of Eurex Clearing. This monitoring includes the level of exposure of a Clearing Member, the quality of the collateral pool as well as the overall trading activities. Events that are considered as concentrations of risk in the sense of this document could also be trigger events for requests for information or on-site meetings as described above.

Furthermore, the Clearing Member is required to separately demand or provide (additional) cover in respect of daily profits or losses arising in respect of the corresponding transactions with its clients in an amount not less than the Variation Margin Requirement applicable between the Clearing Member and Eurex Clearing. Equivalent rules exist also for the LSOC models in the FCM Regulations.

Eurex Clearing imposes additional obligations on its Clearing Members, with respect to Eurex Clearing's default management process and its Default Fund(s). Such additional obligations serve to protect the viability of the clearing system and are imposed on Clearing Members in proportion to their participation in the clearing system and are as such proportional to the risk generated by each respective Clearing Member.

Key Consideration 2

An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.

For Eurex Clearing main sources of material dependencies between direct and indirect participants are the ownership structure and risk concentrations between these entities. Eurex Clearing's account set-up and segregation models enable the identification and differentiation between direct and indirect participants' activities.

Ownership structure

In terms of ownership structure, Eurex Clearing defines a material dependency as a close link. A close link is a direct or indirect ownership or control via voting rights between two entities (which may be direct and indirect participants), in which an ownership of 50% or more of the voting rights or capital of an undertaking or a control agreement exists. Those close links are of special importance between issuers of instruments eligible as collateral and Clearing Members. These links are addressed by grouping all Issuer Identification Numbers of those entities that have an ownership structure that classifies them as close link and are regularly monitored. Clearing Members are not allowed to post financial instruments as collateral if those instruments were issued by an entity, which is highly interlinked with the Clearing Member. Furthermore, material dependencies are considered in determining the appropriate size of Eurex Clearing's default waterfall by considering not only the default of the Clearing Members in the stress tests but also the default of all their clients.

Risk concentration

As outlined above and in the Additionally Monitored Risks Framework, risk concentration is monitored e.g. by the monitoring of trading and clearing volumes as well as margin requirements caused by proprietary and client trading activities. Risk concentration could be represented by a client clearing through multiple Clearing Members, thereby interrelating these members. Such concentrations are considered in Eurex Clearing's stress testing program to ensure availability of sufficient collateral to cover potential losses in a default scenario.

Key Consideration 3

An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to

the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.

The supervision of indirect participants' activities is mainly the responsibility of the direct participants (Clearing Members including FCM Clearing Members). Nevertheless, Eurex Clearing has several measures, which allow monitoring of indirect participants in addition to the supervision conducted by direct participants.

- a) Eurex Clearing's account set-up and segregation models enable the identification and differentiation between direct and indirect participants' activities. Direct participants (Clearing Members including FCM Clearing Members) activities are reflected on the respective proprietary accounts, whereas indirect participants activities are reflected on the (disclosed or undisclosed) client accounts. Therefore, Eurex Clearing has the ability to identify the proportion of activity that each direct participant conducts on behalf of indirect participants. The posted collateral has to be sufficient to cover the direct as well as indirect participants' exposure. In addition, Eurex Clearing applies concentration limits at two levels; the CCP level and the Clearing Member level. Limits on the CCP level are applied across every Clearing Member (including FCM Clearing Member) and their clients at Eurex Clearing. Concentration limits at the member level apply per Clearing Member (including FCM Clearing Member), this includes the Clearing Member's own business and the business of their clients in the various Clearing Models. In the case that accounts demonstrate behaviors outside the typically observed standards, e.g. large transaction volume or position build up, Eurex Clearing can request information.
- b) Eurex Clearing has information about indirect participants to whom its direct participants are offering clearing services if these indirect participants are known to Eurex Clearing and thus is able to identify direct participants that act on behalf of a large number of indirect participants. In case indirect participants are not known to Eurex Clearing, large volumes and movements on client accounts can be caused by a Clearing Member serving a large client community. As stated above, large volumes and movements on accounts can be a trigger for activities based on the Member Compliance Framework (e.g. on-site visits). During on-site visits reasons for the high volumes, margin requirements or significant changes can be analyzed. Thus, it can be identified whether large volumes are caused by a large client community or by other reasons (e.g. few clients with high volumes).
- c) As stated in the response to b) for indirect participants known to Eurex Clearing, the proportion of their turnover in the systems is transparent to Eurex Clearing. For indirect participants not known to Eurex Clearing, information on clients responsible for a significant proportion of turnover in the system can be requested during on-site visits at Clearing Members. For its on-site meetings at Clearing Members (including FCM Clearing Members), Eurex Clearing has established a set of questions regarding the proportion of activity, the trade flow and volumes of the Clearing Member (including clients' business). Therefore, Eurex Clearing can request information about clients' business processes and at the same time monitors indirect clients.
- d) As stated in the response to a) Eurex Clearing has the ability to compare client activities with Clearing Members' proprietary activities and the associated margin requirement. Eurex Clearing has established the Additionally Monitored Risks Framework to monitor and identify concentration and wrong way risk. Especially, Eurex Clearing monitors the wrong way risk constellations in a Clearing Member's portfolio and its collateral pool as well as the overall trading activities. Events that are considered as concentrations of risk in the sense of this document could however also be trigger events for requests for information.

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Key Consideration 4

An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

All established policies and procedures are reviewed on an annual basis as well as ad-hoc if necessary.

Assessment of principle:

Observed

Principle 20: FMI links

Principle 20: FMI links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Key Consideration 1

Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

Eurex Clearing has links in place with Central Securities Depositories, central and commercial banks and trade repositories. Eurex Clearing has no link in place with another central counterparty.

Links with Payment and Correspondent Banks (for central and commercial bank money)

Eurex Clearing provides access to a broad range of currencies for the fulfilment of payment obligations that arise from the clearing process (e.g. variation margin, premiums, fees). For this purpose, Eurex Clearing is connected to a number of central banks and commercial banks serving as cash collateral locations and/or payment and correspondent banks. In order to ensure maximum safety, cash collateral should preferably be provided in central bank money by Clearing Members as it helps to mitigate risks adequately, especially counterparty and credit risk.

Given Eurex Clearing's reliance on the payment and correspondent banks for the efficient working of the clearing processes, predefined criteria are used to evaluate banks to take the decision whether to connect the bank or not. The criteria for the assessment of their appropriateness include creditworthiness, technical infrastructure (e.g. participation in SWIFT network and supporting SWIFT messages), operational effectiveness, operational reliability (e.g. BCM plans, holiday coverage, resolution of inquiries response time), credit facilities, bank status requirement (Systemically Important Financial Institution and shadow banks), Information Security risk management and Anti-Money Laundering.

The figure below gives an overview of the central and commercial banks Eurex Clearing is linked with for the processing of clearing related cash payments



* Eures Clearing generally requires the usage of central bank money for clearing related cash payments in the clearing currencies EUR and CHF (TARGET2 for EUR, Swiss National Bank for CHF). If evidenced that this is not possible, neither directly nor indirectly, access to a Settlement Bank may be granted and the Settlement Bank Fee shall be charged.

Admitted central and commercial banks of Eures Clearing AG.

Based on the defined criteria, Eures Clearing created a Monitoring Concept to regularly ensure compliance of those criteria by the connected commercial banks. Furthermore, for each commercial bank a Relationship Manager is assigned. Results of the monitoring are reported to the Executive Management of Eures Clearing beyond other relevant stakeholders. In case of non-performance, immediate actions are undertaken and monitored for remediation.

Settlement Locations of Eures Clearing

Eures Clearing needs to maintain link arrangements with so-called Settlement Locations in order to settle security transactions and fulfil subsequent related services, both within the DvP / FoP procedure as a part of the clearing process.

Due to the importance of those Settlement Locations for Eures Clearing's operability within the sphere of the financial market as a CCP, it is crucial for Eures Clearing to strictly limit any link-related risk exposure using predefined criteria. The usage of these criteria to assess any existing or potential future links to a Settlement Location ensures the efficiency of the clearing process with respect to the highest possible extent of trouble-free and smooth clearing operations. The criteria are based on necessary internal requirements of Eures Clearing as well as on all applicable regulatory requirements on an international and European level.

The term Settlement Location refers to any CSD or ICSD operating a Securities Settlement System for the usage of transfer and settlement of securities based on transactions, but also including custody services. Due to the applicability of a Settlement Location solely for the settlement of security transactions resulting from DvP / FoP and the fulfilment of subsequent related services, the term needs to be treated in isolation from a Security Collateral Location due to the different requirements (see below). However, a Settlement Location can act at the same time as a Security Collateral Location for Eures Clearing.

The applied criteria are clustered according to legal (i.e. contractual soundness, regulatory oversight, compliance, emergency and recovery plan sufficiency, Information Security risk management), tax (i.e. tax processing and reporting), technical (i.e. SWIFT message types and SWIFT message formats support,

STP processing, corporate actions processing, operating time coverage), operational (i.e. Online GUI access, reporting provision), treasury (i.e. credit facility granting, multi-currency processing) and creditworthiness aspects (i.e. credit rating accomplishment).

All criteria are applicable at the same time for new as well as existing Settlement Locations that are linked to Eurex Clearing via an arrangement.

An overview of CSDs Eurex Clearing is linked with for ensuring the settlement of transactions can be found under Principle 8 Key Consideration 1.

Eurex Clearing's approach to monitor its Settlement Locations is based on predefined criteria as depicted above. The Eurex Clearing Monitoring Concept provides a guideline to trigger and supervise the assessment of the predefined criteria as well as collects and stores information resulting out of the evaluation of Eurex Clearing's currently eligible Settlement Locations. Monitoring of Settlement Locations might be triggered either due to an annual review or as a consequence of an ad-hoc request.

For further information on CSDs please refer to Principle 8.

Security Collateral Locations

Eurex Clearing is linked to CSDs through the deposit of financial instruments posted as margins and default fund contributions.

Instruments are posted to Clearstream Banking AG, Frankfurt (Germany), and Clearstream Banking S.A., Luxembourg – both notified according to Article 10 of the Settlement Finality Directive (SFD, 98/26/EC).

In addition, a link to deposit the security collateral is existing with SIX SIS AG, Olten (Switzerland), that is a T2S participant fulfilling the ECB requirements to CSDs, and is the authorized operator of one of the systemically important payment and settlement systems (SECOM) in Switzerland and as such overseen by the Swiss National Bank (SNB), as well as by the Swiss Financial Market Supervisory Authority (FINMA) fulfilling the provisions of Art. 61 FinfraG. Hence, the full protection of the financial instruments is being ensured.

Eurex Clearing has defined access criteria in accordance with the regulatory requirements.

The locations' conformity is monitored and reviewed regularly and ad-hoc in the case of a material change or a market development or information.

Links with Trade Repositories (TRs)

Eurex Clearing is linked to a TR as Art. 9 EMIR requires transaction reporting service for derivative transactions for member states of the EU and the EEA. Eurex Clearing ensures the adequate fulfilment of the regulatory requirements by using Deutsche Börse's reporting service called TREMIR and own adequate regular monitoring of completeness and correctness. The Link to the European Trade Repository REGIS-TR has been set up and does not pose any material risk to Eurex Clearing. REGIS-TR is located in Luxembourg, supervised in Luxembourg by the Commission de Surveillance du Secteur Financier (CSSF) and offers its services under Luxembourg law. All governing documents (GTCs, member agreements, pricing schedule, and participant handbooks) of REGIS-TR comply with European Securities and Markets Authority (ESMA) requirements but already follow CPSS-IOSCO principles. On 7th of November 2013 the ESMA registered REGIS-TR as Trade Repository in accordance with Article 55 EMIR.

In addition, Eurex Clearing, in its capacity as an authorized Derivatives Clearing Organization (DCO), is linked to Trade Repositories (1) DTCC's Global Trade Repository (DTCC) and (2) CME Global Repository (CME) in order to fulfill swap data reporting requirements on basis of Dodd-Frank Act Title VII - CFR Title 17 Part 45, Part 39, OSC Rule 91-507 and FIEA in combination with the Cabinet Ordinance.

Eurex Clearing ensures the adequate fulfilment of the regulatory requirements by using Deutsche Börse's reporting and consultancy services. Within this reporting, it is essential to have a link to all relevant US

Swap Data Repositories. So far, links have been set up to DTCC and CME. The links are necessary for the required Dodd-Frank reporting services and do not pose any material risk for Eurex Clearing.

DTCC and CME are Swap Data Repositories (“SDR”) registered with the CFTC and operate as SDRs in the U.S. under U.S. law. They both also operate other repository services under multiple jurisdictions. CME and DTCC follow CPSS-IOSCO principles.

With the start of Eurex Clearing’s reporting obligation under §22 WPHG in connection with Article 26 (EU) 600/2014 (MIFIR), Eurex Clearing is connected to the Approved Reporting Mechanism Deutsche Börse to fulfil its transaction reporting requirements. Eurex Clearing ensures the adequate fulfilment of the regulatory requirements und MIFIR by using Deutsche Börse’s reporting and consultancy services. Within this reporting, it is essential to have a link to an “Approved Reporting Mechanism” (ARM), in cases an appropriate third party is used for the transaction reporting. Deutsche Börse has received the approval as ARM on 03 January 2018. The link does not pose any material risk for Eurex Clearing.

Eurex Clearing aims to assure itself of the continuous provision of critical supplier services to the extent possible through a regular due diligence review of suppliers’ BCM arrangements, provision of services by alternative suppliers if possible, service level agreements describing the minimum service levels expected from suppliers or definition of alternative contingency procedures.

Links with other financial market infrastructures

For multicurrency cash settlement, Eurex Clearing is linked with CLS Bank International. The CLS settlement is ensured via a dedicated bank acting as CLS third-party service provider.

Future links with financial market infrastructures

With respect to future links with financial market infrastructures, Eurex Clearing disposes of policies and procedures that describe the process which will be followed by Eurex Clearing after having received a formal request to set up a link. In addition, Eurex Clearing performs a proper due-diligence of the legal, operational, functional and risk-related aspects that arise from a potential link.

Key Consideration 2

A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

As outlines in Principle 1, Eurex Clearing has a legal basis providing a high degree of certainty for each aspect of its activities.

Eurex Clearing is supervised by BaFin. FMIs linked with Eurex Clearing are incorporated under various laws, e.g. German, Luxembourg, and UK. The legal agreements between Eurex Clearing and the linked FMIs clearly state the applicable law. Furthermore, all of the FMIs linked to Eurex Clearing are subject to the European regulatory framework (e.g. EMIR) or the Swiss regulatory framework containing rules that offer equivalent protection.

Eurex Clearing verifies whether the linked FMIs have valid accounting practices and safekeeping/internal control procedures in place, are appropriately regulated and have a strong financial position, as also required by the CPSS - IOSCO principles for financial market infrastructures. This assessment is performed on an annual basis and ad hoc if deemed necessary.

Before entering into any interoperability arrangement, Eurex Clearing initiates and coordinates changes of legal and regulatory documents (e.g. Clearing Conditions), if necessary. Furthermore, Eurex Clearing monitors the enforceability of the interoperability arrangements in all relevant jurisdictions on a regular basis.

<p><i>Key Consideration 3</i></p> <p><i>Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.</i></p>
<p>Not applicable</p>
<p><i>Key Consideration 4</i></p> <p><i>Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.</i></p>
<p>Not applicable</p>
<p><i>Key Consideration 5</i></p> <p><i>An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.</i></p>
<p>Not applicable</p>
<p><i>Key Consideration 6</i></p> <p><i>An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.</i></p>
<p>Not applicable</p>
<p><i>Key Consideration 7</i></p> <p><i>Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.</i></p>
<p>Eurex Clearing has no contractual relationships with other central counterparties in place.</p>
<p><i>Key Consideration 8</i></p> <p><i>Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.</i></p>
<p>Not applicable</p>
<p>Assessment of principle:</p> <p><i>Observed</i></p>

Principle 21: Efficiency and effectiveness

Principle 21: Efficiency and effectiveness

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Key Consideration 1

An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

Eurex Clearing has in place adequate processes for taking into account the needs of its participants and the markets it serves. First of all, Eurex Clearing is in continuous dialogue with its customers. Eurex Clearing hosts a number of specialist committees to inform and integrate members from all its market segments into the consultation process.

The following committees have been initiated to inform and integrate participants into the decision-making process for changes and new developments to the services offered by Eurex Clearing: EMIR Risk Committee, Fixed Income Board Advisory Committee, Eurex Derivatives Clearing Committee, Securities Clearing and Settlement Committee, Fixed Income Product Committee and the Default Management Committees.

The Supervisory Board has constituted the Audit and Risk Committee in compliance with CRD IV and EMIR that deals with audit matters particularly related to the preparation of the annual budget, the accounting process, internal and external audits, compliance and control systems.

More detailed information regarding the Eurex Clearing Committees is available in Key Consideration 2 of Principle 2.

In addition, Eurex Clearing determined a Technology Roadmap aiming to assure the safety and integrity of markets while providing innovation in risk management and clearing technology. Eurex Clearing's success has been built on the development of reliable and state-of-the art, customer-focused technology.

The Technology Roadmap, which comprises a variety of components across all trading and clearing layers, includes the implementation of software and hardware enhancements. By this, Eurex Clearing aims to minimize the impact on its members when upgrading software and launching new services. As a matter of course, Eurex Clearing continuously enhances its services for the benefits of customers and the wider financial marketplace. An example is the introduction of powerful risk management and clearing technology that both address the members' current needs, yet also anticipate future developments in the financial landscape.

In order to provide its members with innovative and cost-efficient technologies, Eurex Clearing's clearing interfaces use industry standards such as FIXML, which lets its members benefit from increased customization. This reduction in programming complexity allows further cost savings and operational efficiencies. Further information on the use of internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording can be found in Eurex Clearing's answer to the questions of Principle 22.

Another example of how Eurex Clearing tries to meet its clients' needs can be found in the cash management. Eurex Clearing ensures that members' cash liabilities are settled as quickly and securely as possible, bearing in mind the currency mix of its business. Eurex Clearing offers its members an attractive payment infrastructure. The broad payment network offers members a high degree of flexibility in terms of payment locations for multiple currencies. Eurex Clearing holds accounts with multiple commercial and central banks allowing the choice of where to pay and receive funds. Money settlement risk is kept at a minimum. Cash is deposited only with selected banks and subject to appropriate limits as detailed in the

Treasury Policy. The Treasury Policy of Eurex Clearing states that the primary goal of treasury management is to ensure Eurex Clearing's ability to satisfy payment obligations at all times (liquidity management) as well as the minimisation of market and counterparty risk in placements, thereby clearly indicating the focus on effectiveness.

Furthermore, news updates on the Eurex Clearing website (public and section for members only) complemented by reporting obligations make sure that stakeholders are well-informed.

Key Consideration 2

An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

As part of conducting the business of Eurex Clearing in accordance with §76 German Stock Company Act, the Executive Board establishes the objectives and strategies for Eurex Clearing. Consistent with §111 German Stock Company Act, the Supervisory Board oversees the work of the Executive Board.

The objectives and strategies for Eurex Clearing are established by the Executive Board and approved by the Supervisory Board (as described above). The governance structure of Eurex Clearing contains an adequate system of checks and balances that help ensuring that the performance of the management bodies is monitored.

Eurex Clearing ensures accountability with respect to achieving goals and objectives to its stakeholders. One aspect thereof is the provision on information on the performance of the company. This is done via news updates on the Eurex Clearing website for the public. Clearing Members and customers receive information (e.g. clearing volumes, generated profit) through reports and on the Eurex Clearing webpage in the section for members only.

In order to ensure reasonable assurance achieving the corporate objectives in accordance with applicable laws and regulations, the Executive Board of Eurex Clearing bears the overall responsibility for the implementation and effective operation of the ICS. The ICS is a key management instrument designed to provide reasonable assurance achieving the corporate objectives regarding effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations. The ICS is an essential component of good corporate governance.

The Business Continuity Management approach of the Deutsche Börse Group (DBG), which is also applicable to Eurex Clearing, aims to provide products and services with utmost reliability. It thus gives the highest importance to the resilience of its business to safeguard it against incidents and disasters, as the unavailability of core processes and resources. The functions, which are indispensable for the critical daily operations in view of the above objectives, are called mission critical and must, as indicated above be resumed within a RTO of 2 hours following a disruptive incident, crisis or disaster.

Eurex Clearing has clear objectives of its technology development in order to assure the safety and integrity of markets while providing innovation in risk management and clearing technology as well as cost-efficient technologies. Eurex Clearing's information technology systems are secure and strive towards a high availability rate, which is monitored continuously. The systems are capable of processing the necessary information to perform the activities and operations in a safe and efficient manner. System documentation on the information technology architecture is available and redundant system architecture with failover functions are in place to ensure that Eurex Clearing is scalable and can deal with operational needs and the risks faced, even in stressed market conditions.

Furthermore, Eurex Clearing has high quality Client Asset Protection services that efficiently and effectively protect customer positions and deposited collateral.

Key Consideration 3

An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

The group-wide ICS, as described in the Deutsche Börse Group Internal Control System Policy (ICS Policy), is a key management instrument designed to provide reasonable assurance achieving the corporate objectives regarding effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations. The ICS is an essential component of good corporate governance. The ICS consists of safeguards and controls embedded in the organizational structures, in particular within the business processes, of the group companies to ensure that business processes and activities run in an orderly fashion.

The ICS Policy of the Deutsche Börse Group applies to all Deutsche Börse Group companies including Eurex Clearing. The ICS Policy is applicable to all individuals as well as organizational functions that are in charge with management and control of processes within the legal entities of Deutsche Börse Group. The ICS Policy was approved by the Eurex Clearing Executive Board.

Internal Audit shall review the effectiveness of measures taken in the business areas and shall also assess the effective operation of the ICS. Internal Audit uses a risk-based approach in defining specific areas of the organization to audit. If necessary, the Executive Management may request additional audits to be performed as well as ad-hoc assurance services. Provided that the internal audit function maintains its independence, it may provide advisory support and consulting services to management or other organizational units of the financial institution within its domain of competences.

In addition, Eurex Clearing has in place procedures to control its operational costs. All budgets are reviewed and approved by the management. Every month, the Financial Accounting and Controlling department issues a set of financial reports that are distributed to the Executive Management and certain line managers. These documents include comparison of budgets with actual and previous year's figures. They are prepared following the IFRS commercial format. A forecast for the entire year is also produced and revised periodically; additionally, a rolling forecast has been implemented.

The review of service levels, operational reliability as well as the capacity levels is seen as vital for the daily business of Eurex Clearing. These are performed on a regular basis. An ongoing profit and loss analysis is conducted, and the outcome is provided to the Executive Board of Eurex Clearing regularly. Across the serviced products, member meetings are held on a regular basis to discuss new product developments and service enhancements. The forums are used to gather direct, specific feedback for the respective new offering, but as well the forum to raise enhancement requests. The meetings take place on at least three times per year for derivatives and at least twice per year for the cash products cleared. The technical interfaces provided are standardized across the same type of products, where feasible, and either meets market practice or is at this stage the most cost-effective solution.

Assessment of principle:

Observed

Principle 22: Communication procedures and standards

Principle 22: Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key Consideration 1

An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

Eurex Clearing uses the following internationally accepted standards for their external communication with Clearing Members, Trading Participants and Financial Markets Infrastructure:

- FIX (Financial Information eXchange) Protocol standard (<http://www.fixtrading.org/overview>)
- Financial Products Markup Language (FpML) standard (<http://www.fpml.org>)
- SWIFT ISO 15022 messaging standard (<http://www.swift.com/standards>)
- Advanced Message Queuing Protocol (AMQP) standard (<http://www.amqp.org>)

FIX, FpML, SWIFT and AMQP are internationally accepted standards that improve efficiency to a large extent, also in cross-border operations. As such, the Futures Industry Association (FIA)/Futures and Options Association (FOA) initiative for standardized post-trade processing chose FIX as the standard communication protocol. CFTC decided to accept FIX (FIXML syntax) and FpML as permissible for OTC derivatives regulatory reporting in the US.

Eurex Clearing uses FIX for the vast majority of its communication with Clearing Members as well as to obtain on-book and off-book trades from the Eurex Exchange's trading system (T7) for listed derivatives. Deutsche Börse Group (DBG) is a FIX Premier Global Member and actively supports the development of the FIX Family of Standards (<http://www.fixtrading.org/standards/>). DBG is a member of the FIX Global Steering Committee and co-chairs the FIX Global Technical Committee for the EMEA region.

FIX is a standard that supports a number of syntaxes. Based on the XML Standard, FIXML is the globally preferred syntax for listed derivatives. FIX has been extended in recent years to natively cover the area of OTC derivatives. Previously, this was the sole domain for FpML, whereby FIX allows embedding FpML syntax within FIXML in order to define the OTC derivative product. FpML is developed under the auspices of ISDA.

Back in 2007, the FIA / FOA initiative for standardised post-trade processing chose FIX as the standard communication protocol. In the context of the Dodd-Frank Act, the CFTC as regulator for derivatives in the US chose in 2011 to offer regulatory reporting interfaces for both FIXML and FpML, recognizing their importance in this area.

The Eurex Clearing FIXML Interface provides Eurex members with a highly flexible, standards compliant and cost-effective way to use Eurex Clearing services. FIX Protocol is an open standard and does not require a specific kind of system or software. The FIXML interface uses AMQP, an open standard to allow secure connections and a standardised transport. AMQP Version 1.0 is an ISO standard (ISO/IEC 19464). Deutsche Börse Group was an active member of the AMQP Working Group that originally developed the standard.

Eurex Clearing maintains detailed FIXML Interface and AMQP documentation on its website.

Eurex Clearing had collaborated with Calypso in 2009 to offer clearing services for OTC derivatives, acting as a central counterparty and using the FpML and AMQP standards for communication. Eurex Clearing maintains detailed FpML Interface documentation in the member section of its website. The AMQP documentation for this service is already covered by those mentioned above in the context of the FIXML Interface.

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Eurex Clearing uses SWIFT ISO 15022 for the central counterparty services in the securities market related to gross delivery management and numerous reports. Eurex Clearing maintains detailed interface documentation on its website.

Additionally, Eurex Clearing uses SWIFT ISO 15022 and ISO 20022 for delivery instructions in the FX market as well as for payment services in the derivatives market. The SWIFT messages are sent from our systems (CARMEN and the upcoming C7 CPS – Cash Payment Service) to AnaSys, the SWIFT Service Bureau which acts as a standard gateway for communication.

Eurex Clearing uses ISO standards where applicable to identify financial instruments and counterparties. These are ISINs (ISO 6166) for products and underlyings, currency codes (ISO 4217), MICs (ISO 10383) for exchanges and clearinghouses, LEIs (ISO 17442) for member firms (internal mapping).

Eurex Clearing uses AMQP (ISO 19464) for the message transport layer towards its Clearing Members.

Assessment of principle:

Observed

Principle 23: Disclosure of rules, key procedures, and market data

Principle 23: Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Key Consideration 1

An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

Eurex Clearing participants are subject to the Clearing Conditions or the FCM Regulations in the conduct of their clearing business.

The Clearing Conditions are governed by German civil law and are structured as general terms and conditions (Allgemeine Geschäftsbedingungen) within the meaning of Sections 305 et seqq. of the BGB. The first chapter of the Clearing Conditions contains general provisions regulating the clearing relationship between Eurex Clearing and its Clearing Members. The other chapters (chapters (II) to (IX)) contain market specific provisions.

FCM Regulations: The LSOC clearing models are regulated in the FCM Regulations. The FCM Regulations comprise general and LSOC model-specific rules in Chapter I of the FCM Regulations as well as product-specific provisions for swaps in Chapter II of the FCM Regulations. The FCM Regulations are governed by U.S. law and the laws of New York.

The FCM Regulations are supplemented by separate FCM Default Rules, which are governed by German law containing rules relating to the default of FCM Clearing Members.

Eurex Clearing published rules and procedures relating to the roles of participants determined in the Clearing Conditions and the FCM Rules. The following documents are disclosed:

- Clearing Conditions of Eurex Clearing
- FCM Regulation of Eurex Clearing
- Statutes for the EMIR Risk Committee
- Default Management Committee Rules
- Default Management Auction Rules
- Statutes for the IRS Product Committee
- Auction Terms of Eurex Clearing AG
- Statutes for the Disciplinary Committee
- Disciplinary Procedures Rules
- Dispute Resolution Rules
- Price list of Eurex Clearing AG
- General Terms and Conditions to the Agreement on Technical Connection to the Clearing EDP of Eurex Clearing AG
- Price List to the Agreement on Technical Connection to the Clearing EDP of Eurex Clearing AG

Furthermore, Eurex Clearing published rules and procedures relating to the default of an FCM Clearing Member:

- FCM Default Rules

Transparency of all these rules and regulations is also provided by disclosing them to the public via the Eurex Clearing website to allow applicants of the system to assess their rights, risk and obligations (<https://www.eurex.com/ec-en/rules-regs/rules-and-regulations>). Other documents are available for involved parties and can be found in the member section on the website. The competent authority has access to all documents.

Eurex Clearing ensures that its rules, procedures and contractual arrangements are clear, comprehensive, in writing and in compliance with EMIR as well as all other applicable regulatory and supervisory requirements. These rules, procedures, and contractual arrangements and any accompanying material are accurate and up to date. Eurex Clearing identifies and analyses the soundness of the rules, procedures and contractual arrangements of Eurex Clearing. There is no indication that rules and regulations are not internally coherent.

The processes for changing Eurex Clearing's rules and procedures form an integral part of the Clearing Conditions as available via the Eurex Clearing website. As described in Chapter I, Part 1, Number 17.2, Eurex Clearing has in place adequate rules to make amendments to the Clearing Conditions. Affected Clearing Members, ICM Clients, Basic Clearing Members and/or other customers have the right to object to amendments. The steps to be taken after such objection depend on the individual circumstances of the case. In case of an objection, discussions will take place with the respective Clearing Member to get this issue resolved.

Key Consideration 2

An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

Eurex Clearing publishes two disclosure documents pursuant to Article 39 (7) of EMIR with respect to

- the Clearing Conditions ("Disclosure pursuant to Article 39 (7) of Regulation (EU) 648/2012 of the European Parliament and the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories ("EMIR") with respect to the Clearing Conditions of Eurex Clearing AG"), and
- the FCM Regulations ("Disclosure pursuant to Article 39 (7) of Regulation (EU) 648/2012 of the European Parliament and the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories ("EMIR") with respect to the FCM Clearing Conditions of Eurex Clearing AG").

Both documents set out the information required to be disclosed under Article 39 (7) EMIR. They provide a summary description of the client clearing models currently offered by Eurex Clearing under the Clearing Conditions and the FCM Regulations that provide for different levels of client segregation, including information on the main legal implications of the respective levels of segregation and applicable insolvency law. Both documents can be found on the Eurex Clearing's website.

With respect to the FCM Regulations, Eurex Clearing additionally publishes the "FCM Client Disclosure Statement for FCM Clients clearing Swaps at Eurex Clearing AG". The purpose of this document is to provide prospective clients with a written disclosure of certain risks associated with clearing swaps at Eurex Clearing through a FCM. The document provides for a brief overview on the following items: (a) certain provisions of the FCM Clearing Conditions providing a general overview on the levels of protection and segregation under the relevant LSOC Models, (b) the holding of Eligible Margin Assets in the form of securities with Clearstream Banking AG, and (c) the operation Framework 2 of the CFTC Part 190 Regulations.

The operational and technical requirements to get access to Eurex Clearing are detailed in Chapter I, Part 1, Number 2 Clearing Conditions. Technical requirements to connect to Eurex Clearing are further specified in the Connection Agreement, General Terms and Conditions and Price List on Technical Connection to the Clearing EDP of Eurex Clearing.

The area Technology / Eurex Clearing's C7 of the Eurex Clearing website provides system documentation on Eurex Clearing's new clearing architecture to help Clearing Members with the ability to connect to and make use of Eurex Clearing's clearing architecture (<https://www.eurexclearing.com/clearing-en/technology/c7/system-documentation-c7>). The documentation is grouped into the following areas:

- Overview and Functionality
- Eurex Clearing Interfaces

- Network Access
- Production
- Eurex Clearing GUIs
- Eurex Reports
- Simulation

Further details can also be found in Key Consideration 1 of Principle 22.

Further, Eurex Clearing publishes detailed information on the margin methodology on Eurex Clearing's website the Eurex Clearing PRISMA brochure describes the PRISMA methodology which is available on Eurex Clearing's website. The information on the website further elaborate on Clearing Member's and FCM Clearing Member's margin requirements. Eurex Clearing deploys real-time margining in order to provide Clearing Members and FCM Clearing Members with permanent risk assessments on their own exposures as well as the exposure of their clients based on current market conditions and intraday changes in price volatility. Margins required for deposit are reviewed for each Clearing Member and FCM Clearing Member on an intraday and daily basis, since new positions may have been created during the trading day and existing positions closed out through offsetting transactions.

Moreover, Eurex Clearing points out the risks that Clearing Members and FCM Clearing Members are exposed to by requiring a Default Fund to cover any additional risks. Thereby, the Clearing Member or FCM Clearing Member is made aware of the specific risks that it is exposed to in case of another Clearing Member's or FCM Clearing Member's default. The amount of a dynamic Default Fund contribution clearly indicates the relevance of the default risk of another Clearing Member or FCM Clearing Member.

Additionally, Eurex Clearing discloses the risk methods and the requirements to contribute to the Default Funds. This provides Clearing Members and FCM Clearing Members with the information on the risk they face from the CCP. Eurex Clearing is obliged to regularly determine the contribution to the Default Fund to be paid and maintained by a Clearing Member or FCM Clearing Member based on the contribution calculation method that is published on Eurex Clearing's website. The recalculation process to assess the adequate Default Fund contribution is triggered every month of a calendar year or ad-hoc if required.

As outlined in Key Consideration 1 of this Principle, Eurex Clearing provides documentation on all committees established to allow applicants and participants to assess their rights, risk and obligations related to Eurex Clearing.

Key Consideration 3

An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

Eurex Clearing deals with educated/sophisticated financial market participants and thus assumes a certain level of basis knowledge of the clearing process and the risks associated with the clearing process. In addition, Eurex Clearing applies strict admission criteria for Clearing Members which are necessary to ensure that Clearing Members have the necessary financial and technical resources and the know-how. Consequently, one requirement among others is to provide evidence that a sufficiently qualified member of staff works in the Clearing Member's back-office to orderly fulfil the clearing obligations during the business day and to be available as a reliable contact person via telephone.

Furthermore, Eurex Clearing offers a wide variety of training courses and education materials. A robust and reliable CCP needs to operate with qualified clearing staff on its members' side. To maintain high qualification levels of Clearing Member staff in a rapidly changing environment, Eurex Clearing requires from its members at least one qualified employee, referred as "Qualified Clearing Staff (QCS)". This requirement applies to all General Clearing Members and Direct Clearing Members. Eurex Clearing offers an individual test for each clearing license, consisting of one so-called Basic Module, which is about core clearing knowledge and a Market Module for the respective clearing license. Sufficient qualification is assumed to be reached if the respective clearer test is passed successfully. If this requirement can no longer be confirmed, Eurex Clearing can decide to treat this as a breach of admission requirements and

act accordingly. Depending on the severity of the detected irregularity, the escalation measure (e.g. spot test, on-site meeting, third party confirmation) is decided.

Every Clearing Member enters into a so-called clearing agreement with Eurex Clearing. These standard clearing agreements are publicly available as Appendices 1-7, 10, 11 of the Clearing Conditions. Therefore, Eurex Clearing may not have a direct contractual relationship with any client. Only the Clearing Members have a complete overview of all clients that they offer a clearing service. This legal setup has to be taken into account to adequately assess the disclosure requirements of a CCP. The general education of the private clients that are not members of Eurex Clearing lies within the responsibility of financial institutions or financial service providers that deal with this group of clients. It is required that the Clearing Member informs its clients of the costs and level of protection associated with the choice between omnibus client segregation and individual client segregation. The Clearing Member has an obligation to disclose clearing model related information to the client. Eurex Clearing discloses the price information used to calculate the end-of-day exposures. This information is sent to the Clearing Members in so-called Price Files or reports and can be found in the Member Section of the Eurex Clearing website. Eurex Clearing's competent authorities have access on request to this information based on the applicable disclosure requirements.

These file services include in particular theoretical price data and all necessary data to compute prices depending on the valuation of a product. It also contains theoretical values and parameters for equities, which are required for the risk-based margining of the day, theoretical values and parameters for subscription rights on equities, theoretical values and parameters for bonds and coupon dates and rates for all bonds, which are required for the risk-based margining of the day. Both end-of-day and intraday data is available. Additionally, relevant risk parameters are published under the Risk Management tab of Eurex Clearing's website to provide Clearing Members with margin parameters, haircuts and a specification of accepted collaterals.

The website further provides Clearing Members with necessary data to compute option prices using different pricing models. As already mentioned, this data comprises the theoretical values and parameters for various products, which are required for the margining of the day.

Key Consideration 4

An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.

Eurex Clearing publicly discloses the prices and fees associated with the services provided for clearing. Chapter I, Part 1, Number 5.1 of the Clearing Conditions in combination with the Price List of Eurex Clearing AG (Price List) outline the fees charged by Eurex Clearing to its Clearing Members for admission as a Clearing Member as well as a regular charge for holding a clearing license,

- a one-time fee upon conclusion of the first Clearing Agreement,
- an annual fee for the granting of a Clearing License, payable by the Clearing Member on January 31 of each year,
- further fees for certain actions (e.g. general service fees) and transactions (listed ETDs as well as OTC derivatives) and
- collateral service fees for cash and non-cash (securities) collateral provided to Eurex Clearing to cover margin requirements as well as default fund contributions.

The public availability of Eurex Clearing's fees and incentive models as well as the uniform application to all market participants results in adequate transparency, also for the purpose of comparison.

The Clearing Conditions as well as the Price List are both publicly available via the Eurex Clearing website. Transaction fees and incentive schemes are either published via the Price List or via Eurex Clearing Circulars. A summary of all available fees and incentives is provided on the Eurex Clearing website by the file "Overview of transaction fees and incentives". Eurex Clearing provides a transparent, non-discriminatory fee and rebate scheme. No bilateral agreements exist. Additionally, Eurex Clearing

maintains a close contact to Clearing Members and Disclosed Direct Clients by informing of any envisaged fee amendments in publicly available circulars with at least 10 business days of prior notice.

Key Consideration 5

An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

Eurex Clearing's objectives are fully compliant with regulatory standards for CCPs. Eurex Clearing reviews its methodologies and risk management practices regularly against the Recommendations for Central Counterparties developed by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) and discloses the results on its website.

Eurex Clearing publishes a comprehensive set of quantitative data based on the CPMI-IOSCO public quantitative disclosure template. Quarterly updates are provided on Eurex Clearing's website (<https://www.eurex.com/ec-en/find/about-us/regulatory-standards>) in accordance with the frequencies set out by CPMI-IOSCO.

Eurex Clearing's File Services include theoretical price data and all necessary data to compute prices depending on the valuation of a product. It also contains theoretical values and parameters for equities, which are required for the risk-based margining of the day, theoretical values and parameters for subscription rights on equities, theoretical values and parameters for bonds and coupon dates and rates for all bonds, which are required for the risk-based margining of the day. Both end-of-day and intraday data is available. Additionally, relevant risk parameters are published under the Risk Management tab of Eurex Clearing's website to provide Clearing Members and the broader public with margin parameters, haircuts and a specification of accepted collaterals.

Eurex Clearing also discloses the price information used to calculate the end-of-day exposures. This information is sent to the Clearing Members in so-called Price Files or Reports and can also be found in the Member Section for Files Services of the Eurex Clearing website. Eurex Clearing's competent authorities have on request access to this information based on the applicable disclosure requirements. The website further provides Clearing Members with necessary data to compute theoretical option prices using certain pricing models.

Volumes of the cleared transactions for each class of instruments cleared by the CCP on an aggregated basis along with other statistics are published on the Eurex website on a monthly basis. Eurex Clearing provides a monthly view of the number of cleared trades and the cleared volumes across all market segments (<http://www.eurexclearing.com/clearing-en/resources/volume-statistics>).

Assessment of principle:

Observed

Principle 24: Disclosure of market data by trade repositories

Principle 24: Disclosure of market data by trade repositories

A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Key Consideration 1

A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.

Key Consideration 2

A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their respective regulatory mandates and legal responsibilities.

Key Consideration 3

A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analysed.

As outlined in Key Consideration 1 of Principle 1, Eurex Clearing is an authorised CCP under EMIR and not a trade repository. Therefore, Eurex Clearing deems Principle 24 as not applicable.

Assessment of principle:

Not applicable

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