CME Clearing:
Principles for Financial Market Infrastructures Disclosure

The information provided in this disclosure is accurate as of November 30, 2017. This disclosure can also be found at www.cmegroup.com/pfmidisclosure
For further information, please contact CMEPFMIResponse@cmegroup.com
I. Executive summary

CME Group Inc. (“CME Group”), on behalf of its subsidiary Chicago Mercantile Exchange Inc. (“CME Inc.”) supports the work of the Committee on Payments and Market Infrastructures (“CPMI”) and the International Organization of Securities Commissions (“IOSCO”) to encourage the clear and comprehensive disclosures set forth in the Principles for financial market infrastructures: Disclosure framework and Assessment methodology (the “Disclosure Framework”).

CME Inc. operates CME Clearing (or “the Clearing House”), which provides clearing and settlement services for a broad range of exchange-traded futures and options on futures contracts and over-the-counter (“OTC”) derivatives (also, referred to as “cleared swaps”). CME Inc. is registered with the U.S. Commodity Futures Trading Commission (“CFTC”) as a Derivatives Clearing Organization (“DCO”) and Designated Contract Market (“DCM”). In July 2012, CME Inc. was designated as a Systemically Important Financial Market Utility (“SIFMU”) under Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank Act”) by the Financial Stability Oversight Council (“FSOC”).

CME Clearing employs various risk management practices to prudently manage the risks to which it is exposed through the provision of its clearing and settlement services. Some of these practices include:

- Real-time risk monitoring;
- Counterparty risk management;
- Daily mark-to-market;
- Initial margin collection; and
- An established financial safeguards waterfall.

These risk management practices are described in detail below.

II. Summary of major changes since last update

Consistent with guidance under the Disclosure Framework and CFTC Regulation 39.37(b), CME Clearing updates its disclosure framework (“CME Clearing PFMI Disclosure document”) at least every two years and following material changes to its practices of the environment in which it operates. The version published on November 30, 2017 includes the following primary changes, since the last version was published on December 31, 2015:

- Role of Clearing House Oversight Committee (“CHOC”);
- Maintenance of accounts at the Federal Reserve Bank of Chicago;
- Practice of re-sizing the Base Guaranty Fund on monthly, opposed to quarterly basis;

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1 CPMI was formerly known as “CPSS” or “Committee on Payment and Settlement Systems”.

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• Enactment of the end of waterfall rules.

Other revisions were made to the CME Clearing PFMI Disclosure document to clarify language describing CME Clearing’s current risk management practices as of November 30, 2017.

III. General background on CME Clearing

A. General description

The exchanges for which CME Clearing provides clearing services offer a wide range of benchmark products across all major asset classes, including futures and option on futures based on interest rates, equity indexes, foreign exchange (“FX”), energy, metals, agricultural, and commodities products. CME Clearing also provides clearing services for interest rate swap (“IRS”) and credit default swap (“CDS”)

2 products. CME Clearing has arrangements to provide clearing services for the Dubai Mercantile Exchange (“DME”) and Eris Exchange (“ERIS”). The CME Group Exchanges – CME Inc., the Board of Trade of the City of Chicago, Inc. (“CBOT”), the New York Mercantile Exchange, Inc. (“NYMEX”), and the Commodity Exchange, Inc. (“COMEX”) – serve the hedging, risk management, and trading needs of their global customer base by facilitating transactions through the CME Globex (“Globex”) electronic trading platform, open outcry trading facilities in Chicago, and through privately negotiated transactions. CME Group provides hosting, connectivity, and customer support for electronic trading through its co-location services. CME Clearing also maintains connectivity to market infrastructures that serve the OTC market, such as existing trade affirmation platforms (“Affirmation Platforms”), swap execution facilities (“SEFs”), and swap data repositories (“SDRs”). CME Group also offers a wide range of market data services including live quotes, delayed quotes, market reports, and a comprehensive historical data service.

CME Group understands its importance to the global financial markets infrastructure, its role in assuring the safety and soundness of the markets for which it provides clearing services, and the importance of ensuring that CME Clearing’s clearing members (“Clearing Members”) and their clients are able to assess the risk profile of their activity through appropriately articulated, transparent risk management standards supported by public documents available on the CME Group website (e.g. CME Group Exchange Rulebooks, as defined below). As financial markets and the economy have evolved, CME Clearing has worked to adapt its clearing services to meet the needs of its market participants. CME Clearing applies robust risk management standards and enforces and facilitates compliance with applicable CFTC customer protection standards for exchange-traded and cleared swaps derivatives products.

CME Clearing’s integrated clearing function is designed to ensure the safety and soundness of its markets by serving as the counterparty to every trade – becoming the buyer to each seller and the seller to each buyer. Moreover, CME Clearing’s clearing model is based on an “agency” relationship between its Clearing Members and their underlying clients. Use of an agency clearing model enhances

portability and certainty in Clearing Member default scenarios. CME Clearing is responsible for clearing trades, collecting and maintaining performance bond\(^3\) funds, and reporting trading data.

CME Clearing has a diverse set of entities approved as its Clearing Members, which include some of the largest bank-affiliated, broker-dealer, and financial services firms in the world. Many of these Clearing Members are also registered with the CFTC as Futures Commission Merchants ("FCMs") and therefore, can provide client clearing services for CME Clearing’s markets. A list of CME Clearing’s Clearing Members, can be found on the CME Group website.\(^4\)

CME Clearing utilizes a combination of risk management tools to assess Clearing Member’s aggregate and individual account exposure levels for all three of its major asset classes (Base,\(^5\) IRS, and CDS), 24-hours a day, six days a week. These risk management tools include, novation and netting, real-time risk monitoring, and the collection of initial margin, among others. CME Clearing marks open positions to market at least once a day for all products and at least twice daily for exchange-traded products and as such, eliminates exposures through facilitating the exchange of settlement variation by requiring payments from Clearing Members whose positions have lost value and making payments to Clearing Members whose positions have gained value.

CME Clearing maintains three independent financial safeguards waterfalls for each of its major asset classes. CME Clearing’s financial safeguards waterfalls are for:

- Base, which primarily includes exchange-traded products;
- IRS products; and
- CDS products.

CME Clearing’s financial safeguards waterfalls are designed to ensure that sufficient resources are in place to manage multiple clearing member default events under extreme, but plausible market conditions.

**B. General organization**

The Board of Directors of CME Inc. is comprised of the same individuals as the Board of Directors CME Group (collectively referred to as “the Board”). The Board recognizes the important role CME Clearing plays in the marketplace and the importance of providing active governance designed to ensure the safety and soundness of its operations, as noted in CME Group’s publicly available Corporate Governance Principles.\(^6\) As part of fulfilling its oversight and governance responsibilities, the Board has established dedicated committees to focus on specific governance matters of the organization. The committees of most relevance to CME Clearing are the CHOC, Risk Committee, Clearing House Risk Committee ("CHRC"), IRS Risk Committee ("IRSRC"), and CDS Risk Committee ("CDSRC").

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3 In the context of the CME Clearing PFMI Disclosure document the term “performance bond” refers to either initial margin or maintenance margin, unless otherwise specifically referenced – e.g., initial performance bond. The term “performance bond” may be used interchangeably with “margin.”


5 Base products include exchange-traded futures and options on futures, DME products, ERIS products, and all non-IRS and non-CDS swaps products.

management responsibilities of the CME Group organization, which include CME Inc. and its clearing services, are divided into divisions led by the Management Team. The President of CME Clearing is a member of the Management Team and the individuals that lead departments within CME Clearing report directly to him – this includes the Chief Compliance Officer (“CCO”) of CME Clearing and the Chief Risk Officer (“CRO”) of CME Clearing.

C. Legal and regulatory framework

CME Group is the holding company and ultimate parent of four DCMs, including CME Inc., CBOT, NYMEX, and COMEX. Each DCM remains a separate self-regulatory organization with three unique rulebooks for CME Inc., CBOT, and NYMEX/COMEX. In order to provide a common framework, the rulebooks for CME Inc., CBOT and NYMEX/COMEX (“CME Group Exchange Rulebooks”) have been harmonized, making the rules parallel in structure, numbering, and language, to the extent practicable.

CME Clearing’s primary regulator is the CFTC. Additionally, as a SIFMU designee by FSOC, CME Clearing conforms with regulations defined by the CFTC under Part 39 of CFTC Regulations for systemically important DCOs (“SIDCOs”).

Further, CME Clearing adheres to the CPMI-IOSCO’s Principles for financial market infrastructures (“PFMI”) published in April 2012, as is demonstrated by this document. CME Clearing also publishes a quantitative disclosure document in line with the recommendations laid out under CPMI-IOSCO’s Public quantitative disclosure standards for central counterparties published in February 2015. CME Clearing’s quantitative disclosure document (“CME Clearing Quantitative PFMI Disclosure document”) is updated on a quarterly basis and provides a comprehensive view into key quantitative metrics that are pertinent to understanding CME Clearing’s clearing services.

D. System design and operations

CME Group offers a number of exchange-traded products for trading and clearing and avenues for clients to execute transactions electronically via proprietary and third-party front-end systems. These systems are listed on the CME Group website. Trade submission platforms are open nearly 24-hours a day, throughout the trading week, though trades may be booked to the next business day depending on the time during the trading day that they are submitted for clearing.

Prior to being accepted for execution, Globex trades must successfully pass Globex Credit Controls that are required to be implemented by Clearing Members. Globex Credit Controls allow Clearing Members to specify limits on their clients, with limits subject to review by CME Clearing. Similar limits are utilized for IRS and CDS products.

Regardless of execution venue, once a trade has been executed, it is submitted to CME Clearing’s clearing system, and clearing trade confirmation data is sent to the Clearing Member. Additionally, transaction data is sourced to necessary systems for regulatory reporting and business analysis, as appropriate. Specific trading data is also sent to the Market Data Platform where quote vendors and other third parties can access that information.

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Risk management systems pull in necessary transaction data for the calculation of settlement variation obligations and performance bond requirements. This includes calculations for all major asset classes, using the Standard Portfolio Analysis of Risk system (“SPAN”) for exchange-traded products, a historical value-at-risk (“HVaR”) methodology for IRS and FX swaps products, and a multi-factor model for CDS products. Trades are also included in daily valuations, or mark-to-market calculations. All trades are marked to market at a minimum at the end of each trading day and performance bond requirements are also recalculated. At least twice a day, CME Clearing’s exchange-traded products are marked to market and performance bond requirements recalculated. Trading hours for the CME Group Exchanges are defined on a per product basis available on the CME Group website.9

Daily settlement pricing is performed for exchange-traded and cleared swaps products based on industry accepted trading conventions, as detailed on the CME Group website. The financial settlement system creates settlement instructions after the risk management calculations have been completed, for review and approval by CME Clearing. Once approved, the banking system submits these settlement instructions to CME Clearing’s settlement banks and reports are generated for Clearing Members.

CME Clearing has an established timeline for the movement of funds for intraday and end-of-day settlements cycles for performance bond and settlement variation requirements, as summarized below:

- 7:30AM CST – Settlement banks confirm credits to CME Clearing’s accounts for the prior day’s end-of-day settlement cycle;
- 8:30AM CST – Settlement banks confirm debits to CME Clearing’s accounts for the prior day’s end-of-day settlement cycle;
- 12:30PM CST – Intraday settlement cycle instructions distributed;
- 1:30PM CST – Settlement banks confirm debits and credits for the intraday settlement cycle; and
- 3:00AM CST – End-of-day settlement cycles instructions distributed.

The full timeline is also available on the website.10

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8 References to “FX swaps products” includes reference to the FX non-deliverable forwards, FX cash settled forwards, and OTC FX options transactions for which CME Clearing provides clearing.
9 See http://www.cmegroup.com/trading_hours/
### IV. Key terms and abbreviations

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<td>BCM</td>
<td>Business Continuity Management</td>
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<td>BCP</td>
<td>Business Continuity Plan</td>
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<td>CBOT</td>
<td>The Board of Trade of the City of Chicago Inc.</td>
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<td>CDS</td>
<td>Credit Default Swaps</td>
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<td>CDSRC</td>
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<td>CEA</td>
<td>The Commodity Exchange Act</td>
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<td>CFTC</td>
<td>U.S. Commodity Futures Trading Commission</td>
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<td>CHOC</td>
<td>Clearing House Oversight Committee</td>
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<td>CHRC</td>
<td>Clearing House Risk Committee</td>
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<td>CLS</td>
<td>Continuous Linked Settlement</td>
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<td>CME Clearing or “the Clearing House”</td>
<td>The Clearing Division of CME Inc.</td>
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<td>CME Group</td>
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<td>CME Inc.</td>
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<td>COMEX</td>
<td>The Commodity Exchange, Inc.</td>
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<td>DCM</td>
<td>Designated Contract Market</td>
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<td>DCO</td>
<td>Derivatives Clearing Organization</td>
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<td>DSRO</td>
<td>Designated Self-Regulatory Organization</td>
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<td>ERM</td>
<td>Enterprise Risk Management</td>
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<td>CME Group Exchanges</td>
<td>CME Inc., NYMEX, COMEX, and CBOT</td>
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<td>FCM</td>
<td>Futures Commission Merchant</td>
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<td>FICC</td>
<td>Fixed Income Clearing Corporation</td>
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<td>FMI</td>
<td>Financial Market Infrastructures</td>
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<td>FMU</td>
<td>Financial Market Utilities</td>
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<td>FRS</td>
<td>Financial and Regulatory Surveillance Department</td>
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<td>FX</td>
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<td>IRS</td>
<td>Interest Rate Swaps</td>
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<td>IRSRC</td>
<td>IRS Risk Committee</td>
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<tr>
<td>Major asset class</td>
<td>The class of products covered by a particular “financial safeguards waterfall” – e.g. Base, IRS, or CDS</td>
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<td>MOS</td>
<td>Mutual Offset System</td>
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<td>MROC</td>
<td>Market Regulation Oversight Committee</td>
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<td>NYMEX</td>
<td>The New York Mercantile Exchange, Inc.</td>
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<td>OCC</td>
<td>Options Clearing Corporation</td>
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<td>OTC</td>
<td>Over-the-counter</td>
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<td>RMF</td>
<td>Risk Management Framework</td>
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V. Principle-by-principle narrative disclosure

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.

Summary Narrative

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.

CME Clearing accepts for clearing trades executed on or through regulated trading facilities and matched OTC trades executed bilaterally. CME Clearing substitutes itself as buyer to each seller and seller to each buyer. During the life cycle of each of the positions created by the novation of the original trade, CME Clearing:

- Collects and manages performance bond collateral to support each position or portfolio of positions;
- Collects and disburses funds to mark positions to market daily and reduce residual debt in the system; and
- Manages the liquidation of positions by netting, final settlement, and physical delivery, in conformance with contract terms.

Each of these activities requires legal certainty. CME Clearing’s evaluation of the legal basis for its core activities focuses on jurisdictions that may have an impact on:

- The credit or liquidity risks that CME Clearing faces;
- Custody risks with respect to the location of the collateral held by CME Clearing; and
- Operational risks associated with CME Clearing’s daily operations and resolution of a Clearing Member default or other crisis situation.

Credit, liquidity, and custody risks relate to the jurisdictions that govern the activities of CME Clearing’s Clearing Members, settlement banks and custodians, and the financial institutions that participate in CME Clearing’s credit facility. United States law is the governing law and the United States is the critical venue for the vast majority of CME Clearing’s operations and legal certainty as to the foregoing risks. Further, the operations of CME Clearing are impacted by New York and Illinois state laws. Under U.S. law, the legal framework in which CME Clearing operates is sound, tested, and provides a high degree of assurance that CME Clearing will be able to conduct its material clearing and settlement activities on an ongoing basis and in resolving a Clearing Member default. CME Clearing’s legal framework consists of the Commodity Exchange Act (“CEA”), associated regulations of the CFTC, CME Group Exchange Rules\(^\text{11}\) and related policies and procedures, and U.S. Bankruptcy Code.

\(^{11}\) The CME Clearing PFMI Disclosure document makes specific references to the “CME Group Exchange Rules” and the “CME Group Exchange Rulebooks” and these references collectively refer to either specific rules under the exchange rulebooks of CME Inc., CBOT, and/or COMEX/NYMEX or such exchange rulebooks collectively.
In the United States, the CFTC is the federal agency responsible for administration of the CEA and regulatory oversight of commodity derivatives markets. The CFTC is charged with the oversight of clearing systems and market participants, deterrence and prevention of disruptions to market integrity, ensuring the financial integrity of transactions, and the avoidance of systemic risk. Under the CEA, CME Inc. is registered with the CFTC as a DCO and is subject to the CFTC’s regulatory oversight. CME Inc. has also been designated as a SIFMU, and as such is also overseen by the Board of Governors of the Federal Reserve System under delegation from FSOC.

The CEA establishes a clear framework under which the rules of a CFTC-regulated DCO are adopted and enforced. The ability of CME Clearing to enforce its rules and policies to accomplish its core activities, in ordinary and extraordinary circumstances, has been repeatedly tested and confirmed. The CEA sets forth an extensive set of core principles that govern the operation of a DCO (“Core Principles”). The Core Principles have been supplemented by regulations and other guidance adopted by the CFTC to more granularly define the obligations of a DCO. In general, it is well-established that state laws that impair the operation of a DCO are preempted by the CEA.

In 2010, the Dodd-Frank Act amended the CEA and added new Core Principles that govern the operation of a DCO. Core Principle R, Legal Risk, is one such new principle, and it directly addresses the legal basis for DCO operations. Core Principle R requires that a DCO operate pursuant to a well-founded, transparent and enforceable legal framework. In 2011, the CFTC adopted regulations implementing and expanding upon Core Principle R. These CFTC regulations require that a DCO’s legal framework provide for netting arrangements, its interest in collateral, steps to address a default of a clearing member, the settlement of funds transfers, operational requirements, and risk management procedures. Furthermore, CFTC Regulations require that a DCO be duly organized, legally authorized to conduct business, and remain in good standing at all times in any relevant jurisdiction.

Each DCO is required to adopt rules that comport with the Core Principles and implementing CFTC Regulations, and to enforce those rules. As further described under CME Clearing’s disclosures for Key Consideration 2 of this Principle, the CME Group Exchange Rulebooks set forth the legal basis of CME Clearing’s clearing and settlement activities and the terms and conditions under which CME Clearing and its Clearing Members and market participants operate. Separate chapters in the CME Group Exchange Rulebooks set forth the contract specifications of all contracts cleared by CME Clearing.

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12 Section 3(b) sets out the regulatory purposes of the CEA.
13 U.S. courts have held that such rules are enforceable; see, e.g., McMahon v. Chicago Mercantile Exchange, 221 Ill. App. 3d 935, 944 (Ill. App. Ct. 1st Dist. 1991) (“It is quite settled that a stock or commodity exchange has the power to adopt and enforce reasonable rules to govern its members, including the admission of members and the control of business transactions between members. The constitution and rules of an exchange constitute a contract between all members of the exchange with each other and with the exchange itself.”).
14 CEA Section 5b(c)(2)(R).
15 CFTC Regulation 39.27(b).
16 CFTC Regulation 39.27(a).
17 Where CME Clearing provides clearing services to another Clearing House, swap execution facility or other trading platform, the contract specifications may be set forth in the CME Group Exchange Rulebook of the other Clearing House, swap execution facility, or trading platform.
In addition to the CME Group Exchange Rulebooks, which constitute a contract between CME Clearing and its members, CME Clearing relies upon legal agreements executed with financial institutions that serve as settlement banks and custodians for providing daily settlement services between CME Clearing and its Clearing Members and custody services for collateral on deposit with CME Clearing on behalf of its Clearing Members, respectively. CME Clearing’s cash settlement agreements, FX settlement agreements, and custody agreements are primarily governed by U.S. law. Moreover, as further described under CME Clearing’s disclosures for Key Considerations 4 and 5 of this Principle, CME Clearing predominantly deals with U.S.-domiciled institutions as Clearing Members and counterparties. Prior to accepting a foreign-domiciled institution as a Clearing Member, or contracting with a foreign financial institution as a settlement bank, collateral custodian, or party to any other contract that is material to CME Clearing’s operations, CME Clearing evaluates the related legal risks, and secures legal opinions necessary to evaluate the enforceability of CME Clearing’s legal and contractual rights and obligations vis-à-vis that counterparty.

U.S. law also establishes a clear framework for the resolution of a Clearing Member default and even the highly unlikely failure of a DCO.\(^{18}\) The U.S. Bankruptcy Code includes a number of safe harbors that protect a DCO’s right to immediately realize the collateral it holds to margin positions and to guarantee performance of its Clearing Members’ obligations to CME Clearing.\(^{19}\) CME Clearing holds collateral in a manner that perfects the security interest of CME Clearing. Part 190 of CFTC Regulations provides a well-tested road map for the liquidation of a commodity broker that is insolvent.

**Key consideration 2:** An FMI should have rules, procedures and contracts that are clear, understandable, and consistent with relevant laws and regulations.

The laws and regulations governing CME Clearing’s operation as a DCO and CME Group Exchange Rulebooks and related policies and procedures, and contractual provisions for its participants are clearly stated, internally coherent, and readily accessible to participants and the public. The CEA and CFTC Regulations are clear and publicly available on the CFTC’s website and through other public sources. The CEA outlines the Core Principles that a DCO must initially satisfy to become a DCO and continue to satisfy on an ongoing basis. CME Clearing has adopted rules and multiple policies and procedures in accordance with the CEA and Part 39 of CFTC Regulations to clarify the manner in which CME Clearing complies with, and requires Clearing Members to comply with, those legal requirements. The CME Group Exchange Rulebooks are publicly available on the CME Group website. Changes to CME Group Exchange Rules are also filed with the CFTC and Board of Governors of the Federal Reserve System, as applicable, and such filings are publicly available through the CFTC’s website and the CME Group website.\(^{20}\) Additionally, CME Clearing publishes new policies and procedures and material changes to existing policies and procedures that impact its market participants through Clearing Advisories and Financial & Regulatory Surveillance Advisories, which are also available on the CME Group website. Interested parties may also subscribe to receive such Clearing Advisories and Financial & Regulatory Surveillance Advisories by email.

\(^{18}\) To date no DCO has ever been put into insolvency proceedings.

\(^{19}\) 11 U.S.C. §§ 556 and 560.

CME Group Exchange Rules and policies are transparent and clearly organized, and CME Clearing staff are available to answer questions regarding the interpretation or application of specific rules. Market participants are bound by and must comply with CME Group Exchange Rules.

Pursuant to CME Group Exchange Rules 804, 8F005, 8H05, and 8G05, for exchange-traded products, cleared swaps derivatives (other than IRS and CDS), cleared CDS, and cleared IRS, respectively, CME Clearing becomes substituted through novation as the legal counterparty to every buyer and every seller of a trade upon CME Clearing’s acceptance for its clearing. CME Group Exchange Rules 801 through 856, and related rules in Chapters 8F, 8G, and 8H specific to cleared swaps set forth the basic contractual provisions and operational requirements that apply to both CME Clearing and Clearing Members with respect to, among others:

- Submitting transactions for clearing;
- The acceptance of transactions for clearing;
- Daily and final settlements;
- Performance bond (margin) requirements;
- Netting and offset;
- Guaranty Fund (i.e., Clearing Member contributions to the financial safeguards waterfall); and
- CME Clearing’s right to realize on the collateral it holds to margin positions and to guarantee performance of its Clearing Member’s obligations to the Clearing House.

Specifically, CME Group Exchange Rule 805 sets forth, for most cleared positions, the specific point in time as of when a transaction submitted for clearing is deemed accepted and CME Inc. becomes legally obligated to guarantee performance.21 CME Group Exchange Rule 820 describes CME Clearing’s rights and obligations with respect to performance bond collateral posted by Clearing Members in satisfaction of their obligations, and CME Group Exchange Rules 819, 8F008, and 8H08 grant CME Clearing a first-priority unencumbered lien against performance bond collateral and Guaranty Fund contributions of exchange-traded, cleared swaps (other than CDS), and CDS Clearing Members, respectively. CME Group Exchange Rules 802, 8G802, and 8H802, describe in detail the actions that CME Clearing will take, upon the default of a Clearing Member in the Base, IRS, and CDS Guaranty Funds, respectively.

CME Group Exchange Rules 900 through 983 (and related rules under Chapters 8G and 8H) set forth highly detailed requirements that apply to Clearing Members, particularly with respect to clearing membership, performance bond, and customer protection. CME Group Exchange Rule 901 sets forth many specific terms and conditions of clearing membership, including that Clearing Members agree to abide by and be responsible for any violations of CME Group Exchange Rules. CME Group Exchange Rule 901 also directly sets forth each Clearing Member’s obligation to guarantee and assume responsibility for all transactions for which it clears.

As a registered DCO, CME Group Exchange Rules are required to be consistent with the CEA’s Core Principles for DCOs and applicable CFTC Regulations. New CME Group Exchange Rules or changes to

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21 CME Group Exchange Rules 526, 538, and 853 set forth the timing of acceptance with respect to transactions executed as block trades, exchange of futures for physicals trades, and positions that are transferred pursuant to CME Group Exchange Rules.
existing rules must go through a process whereby they are reviewed by the CFTC, who are routinely in communication with CME Clearing and conduct periodic detailed reviews of CME Clearing’s compliance with its statutory and regulatory obligations.

Further, on at least an annual basis, CME Clearing is subject to a Title VIII DCO Exam, which is conducted by the CFTC with the support of the Board of Governors of the Federal Reserve System. Through this process, CME Clearing’s risk management tools are reviewed and evaluated for consistency with applicable CFTC Regulations.

**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.

CME Clearing routinely describes the legal basis for its activities to relevant authorities, participants, and even the general public. As noted above, the CME Group Exchange Rules, Clearing Advisories, and many other policies are publicly available on the CME Group website. CME Clearing also publishes a wide variety of educational materials to the general public, including CME Clearing’s Risk Management and Financial Safeguards Brochure. CME Clearing also refers participants and customers to additional industry resources that explain and evaluate legal risk issues, including the CFTC, which offers a wealth of information to the public on its websites.

In addition, the CFTC makes available to the public, through its website, the CEA and CFTC Regulations. The CFTC is also an IOSCO member and participates in and contributes to IOSCO member surveys and reports, as well as those done in coordination with CPMI that discuss regulatory regimes in various jurisdictions, including the United States. These surveys and reports are made available to the public and typically contain explanations of the regulatory regime established by the CEA and CFTC Regulations with respect to a particular topic.

**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.

CME Clearing’s activities are generally governed by U.S. law, specifically the CEA and CFTC Regulations promulgated thereunder. CME Clearing’s legal rights vis-à-vis Clearing Members and other market participants are also generally governed by U.S. law. With respect to a default by a Clearing Member, and CME Clearing’s ability to resolve such a default in accordance with CME Group Exchange Rules, including closing-out or liquidating open positions, liquidating collateral and/or liquidating or transferring customer positions and collateral, CME Clearing’s operations are governed by the U.S. Bankruptcy Code and Part 190 of CFTC Regulations.

As described under CME Clearing’s disclosures to Key Consideration 1 of this Principle, there is a high degree of certainty that CME Clearing will be able to act under and enforce CME Group Exchange Rules without being subject to stays, or such Rules being voided, or CME Clearing’s actions being reversed. It is well-established in the United States that a DCO’s rules are enforceable against its clearing

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22 See [http://www.cmegroup.com/clearing](http://www.cmegroup.com/clearing)
members and participants, and no court of law with jurisdiction over the business of CME Clearing has ever held that that the CME Group Exchange Rules were unenforceable. Additionally, under U.S. law, state law claims that would affect the trading or operations of a futures market or Clearing House are pre-empted by the CEA, limiting the risk that actions in a state or local court could undermine CME Clearing’s interpretation or application of CME Group Exchange Rules and ensuring that any claims against CME Clearing related to its regulated activities must be pursued in U.S. federal courts under the CEA’s comprehensive legal framework.  

With respect to the default or insolvency of a Clearing Member, the U.S. Bankruptcy Code establishes a well-tested regime designed to limit systemic risk in the clearing context, including specific provisions directed at FCM insolvencies that extend certain authority to the CFTC and protections for a DCO’s actions. The commencement of a case under the U.S. Bankruptcy Code occurs with a filing of a petition by either the debtor or the debtor’s creditors that generally institutes an automatic stay to preserve the bankrupt estate. In the absence of an exception, such a stay could interfere with a DCO’s operations and resolution of a Clearing Member default in a crisis situation. The U.S. Bankruptcy Code, however, provides various “safe-harbors” and exceptions designed to mitigate disruptions to clearing regimes when a counterparty to certain financial contracts or agreements becomes a debtor under the U.S. Bankruptcy Code. There are specific exceptions to an automatic stay that permit the exercise of certain contractual rights, such as offset, netting out, payment, or transfer obligations, by, among others, a DCO. The U.S. Bankruptcy Code emphasizes that these specific exceptions to the automatic stay “shall not be stayed by any order of a court or administrative agency in any proceeding” under the U.S. Bankruptcy Code. Furthermore, U.S. courts have recognized that such exceptions to a stay in a bankruptcy proceeding are consistent with legislative intent to avoid systemic harm to clearing regimes and market integrity. In addition to exceptions to an automatic stay, the U.S. Bankruptcy Code protects a non-debtor party’s contractual right to liquidate, terminate, or accelerate commodity contracts and swap agreements. The U.S. Bankruptcy Code also generally limits a bankruptcy trustee’s powers to reclaim property transferred prior to a bankruptcy filing, if the transfer was made by, to, or for the benefit of a “commodity broker,” which would include CME Clearing.

Part 190 of CFTC Regulations have a detailed system regarding what will occur if there is a shortfall in customer property in the event of an FCM bankruptcy. For example, in the event of a bankruptcy of a Clearing Member that is an FCM, a customer’s claim against the bankrupt estate is calculated in accordance with CFTC Regulation 190.7(b) by netting the customer’s claim in respect of commodity contracts against any obligations of the customer to the insolvent FCM Clearing Member. Furthermore, Part 190 of CFTC Regulations prevent an insolvent FCM Clearing Member from exercising any right to rehypothecate customer margin or offset the FCM Clearing Member’s

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24 See Am. Agric. Movement, Inc. v. Bd. of Trade of the City of Chi., 977 F.2d 1147, 1154-56 (7th Cir. 1992) (concluding that CEA preempts all state law claims if they “would directly affect trading on or the operation of a futures market”).
25 These financial contracts include commodity contracts, swap agreements, and master netting agreements, among others. See 11 U.S.C. § 362(b)(6), (17) and (27).
27 See e.g., In re Weisberg, 136 F.3d 655, 659 (9th Cir. 1998).
29 11 U.S.C. § 546(e), (g), and (j).
30 11 U.S.C. § 101(6) (noting, defines “commodity broker” to include a clearing organization).
obligations. Part 190 of CFTC Regulations also provide a system for the transfer of customer accounts in the event of an FCM bankruptcy.

Additionally, in line with Chapter 9 of the CME Group Exchange Rulebook and pursuant to CFTC Regulations, in order for a Clearing Member to act as an FCM, it must meet minimum capital requirements equaling or exceeding the higher of the adjusted net capital requirements set by the CFTC, a registered futures association of which it is a member, or, if it is also a securities broker dealer, the Securities Exchange Commission (“SEC”).\textsuperscript{31} In addition, FCM Clearing Members must demonstrate moral and operational fitness, disclose information regarding the organization of its business to the CFTC,\textsuperscript{32} submit certain operational policies and procedures for approval, and segregate client assets that are deposited with a third party depository, as appropriate given their activities.\textsuperscript{33} Additionally, prior to accepting foreign-domiciled firms as Clearing Members, CME Clearing obtains comprehensive legal memoranda to evaluate any risks concerning the enforceability of CME Group Exchange Rules against such Clearing Members. This analysis ensures that CME Clearing has similar rights and protections in foreign jurisdictions, as afforded under CFTC Regulations and the U.S. Bankruptcy Code for U.S. Clearing Members.

Similarly, CME Clearing conducts a formal evaluation of legal risk prior to contracting with any foreign-domiciled financial institution as a CME Clearing settlement bank or custodian for CME Clearing or Clearing Member collateral. CME Clearing evaluates the applicable foreign legal and regulatory regime of the counterparty, and determines that there is a high degree of certainty that the terms and conditions of CME Clearing’s settlement and custody agreements are enforceable and not subject to a material risk of actions being stayed or the agreements being voided.

**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.**

CME Clearing evaluates and mitigates legal risk arising from potential conflict of laws across jurisdictions in a number of ways. Most importantly, as described above, CME Clearing relies upon the U.S. legal framework under which its rules are adopted and enforceable, and to which all Clearing Members agree to be bound. The enforceability of the CME Group Exchange Rules under the CEA is established and accepted under U.S. law. Additionally, as noted above under CME Clearing’s disclosures for Key Consideration 4 of this Principle, any state or local claims that could interfere with the operation of CME Clearing or the application of the CME Group Exchange Rules are preempted by the CEA.

With respect to potential conflict of laws across international jurisdictions, CME Clearing carefully evaluates any such risks and takes appropriate action to limit them. When determining whether to accept a new Clearing Member, settlement bank, or collateral custodian that is domiciled in a foreign jurisdiction, CME Clearing further evaluates any legal risk arising from potential conflicts of laws notwithstanding that the terms and conditions of clearing membership and the legal agreements governing settlement bank and custodian arrangements are specifically subject to U.S. law. CME

\textsuperscript{31} CFTC Regulation 1.17(a)(1)(i).
\textsuperscript{32} CFTC Regulation 3.10.
\textsuperscript{33} CFTC Regulation 1.20(a).
Clearing will not accept for clearing membership or as a settlement bank or collateral custodian any institution as to which the laws of a foreign jurisdiction may materially impede CME Clearing’s ability to enforce the CME Group Exchange Rules or to access, liquidate, and apply collateral to a Clearing Member’s obligations to CME Clearing. As further described below with respect to CME Clearing’s Principle 2 disclosures, such evaluation will also be reviewed by the appropriate CME Clearing Risk Committee (CHRC, IRSRC, or CDSRC) prior to accepting the Clearing Member and by CHOC relating to the acceptance of any settlement bank or collateral custodian.

Additionally, risks arising from potential conflict of laws across jurisdictions are further mitigated by the manner in which collateral supporting Clearing Members’ obligations are held by CME Clearing. Collateral, regardless of type posted by a Clearing Member to CME Clearing as performance bond or Guaranty Fund contributions is held by CME Clearing in cash or custody accounts in the name of CME Inc. directly, subject to certain account naming conventions and regulatory requirements as to accounts that hold funds posted with respect to customer positions, giving CME Clearing immediate control over, perfecting its security interest, and direct rights to access such collateral. Such accounts are further governed by written settlement agreements or custody agreements between CME Inc. and the financial institution that set forth CME Clearing’s rights to access, liquidate, and apply collateral and that are specifically governed by U.S. law. Additionally, under CME Group Exchange Rules 819 8F008, and 8H08, CME Clearing has a first-priority unencumbered lien against performance bond collateral and contributions to the Guaranty Fund of exchange-traded, cleared swaps (other than CDS), and CDS Clearing Members, respectively. Pursuant to such rules, all Clearing Members must execute any documents required by CME Clearing to create and enforce such lien. As noted above, the manner in which CME Clearing holds collateral in conjunction with CME Rules 819, 8F008, and 8H08 support CME Clearing’s unimpeded ability to liquidate collateral of all types.

CME Group Exchange Rule 905, which is an enforceable contract upon Clearing Members, implements a choice of law provision for adjudicating any action, claim, dispute or litigation between CME Clearing and a Clearing Member. Additionally, said Rule also requires all Clearing Members to waive any sovereign immunity claim that a Clearing Member could otherwise assert. CME Group Exchange Rule 905 requires a Clearing Member to waive any immunity on the grounds that would subject the Clearing Member to jurisdiction of U.S. courts, injunctive relief, order for specific performance or for recovery of property, attachment of assets, and execution or enforcement of any judgment.
**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.

**Summary Narrative**

**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.

CME Inc., which operates CME Clearing, is a wholly-owned subsidiary of CME Group, a Delaware corporation, with its shares of Class A Common Stock publicly traded on the NASDAQ Global Select Market, currently rated AA- / Aa3 by S&P and Moody’s, respectively, for its long-term debt. The Board of Directors of CME Inc. is comprised of the same individuals as the Board of Directors CME Group (collectively referred to as “the Board”).

The Board believes that sound risk management practices, among other core values that promote the protection of CME Group’s clients and business practices helps maximize share value, which ensures proper support of the Core Principles from the Board and senior management. CME Clearing is committed to ensuring the integrity of the contracts it clears and the stability of the financial system, in which it plays an important role. Further, as a Systemically Important DCO (“SIDCO”), CME Clearing is required to have governance arrangements in place that explicitly support the stability of the broader financial system and public interests of relevant market stakeholders. As such, CME Group’s publicly available Corporate Governance Principles highlight its governance arrangements’ prioritization of the safety and efficiency of CME Clearing and support the stability of the broader financial system.

The Clearing House Division performs its risk management function independent from the commercial and business divisions of CME Inc., demonstrating CME Clearing’s commitment to supporting the financial stability of the marketplace. CME Clearing is able to leverage information garnered through other divisions of CME Inc. in performing its risk management function. In particular, this is exemplified through CME Inc.’s registration with the CFTC as a DCM and DCO and, therefore, CME Inc.’s products, exchange operations, clearing operations, and market oversight practices are all governed by the CEA, CFTC Regulations, and other applicable law. CME Inc. has also been named a SIFMU and as such, is also overseen by the Board of Governors of the Federal Reserve System under delegation from the U.S. FSOC.

CME Inc.’s regulators conduct regular and thorough reviews of CME Inc.’s operations and activities, with the goal of ensuring and promoting compliance with regulatory objectives that support the public interest in fair and efficient markets and sound financial risk management. CME Clearing’s practices also conform with the CPMI-IOSCO’s PFMs released in April 2012.

As a DCM and a DCO, CME Inc. is highly committed to supporting the public’s interests in fostering fair and efficient markets, employing and enforcing sound and comprehensive risk management practices, and offering a market-leading financial safeguards package.
CME Clearing’s objective is to provide services designed to address its customers’ needs to manage and contain their business and counterparty risks. As the financial markets and economy have evolved, CME Clearing has worked to adapt its clearing services to meet the needs of its customers. CME Clearing applies robust risk management standards and enforces and facilitates applicable CFTC customer protection standards for exchange-traded products and cleared swap derivatives. CME Clearing continually monitors and reviews its Clearing Members’ outstanding risks, capital adequacy, and compliance with customer protection rules and regulations. CME Clearing utilizes a combination of risk management capabilities to assess Clearing Members and their account exposure levels for all asset classes, 24 hours a day, six days a week. This integrated clearing function is designed to ensure the safety and soundness of the markets served by the Clearing House. CME Clearing’s risk management practices and financial safeguards are also described on the CME Group website34. As described in its Risk Management and Financial Safeguards Brochure35, CME Clearing’s integrated clearing function is designed to ensure the safety and soundness of CME Group’s markets, as well as other markets cleared by CME Clearing, and serve the risk management needs of customers around the globe by offering clearing services for a wide range of global benchmark products.

Trade practices and market surveillance activities are conducted by the Market Regulation Department as described on the CME Group website,36 including in the CME Group Exchange Rulebooks and market regulation advisory notices. The Market Regulation Department’s objectives include:

- Protecting market integrity by maintaining fair, efficient, competitive, and transparent markets;
- Issuing, monitoring and enforcing rules to protect all market participants from fraud, manipulation, and other abusive trading practices; and
- Proactively identifying and mitigating potential risks in order to prevent damage to the marketplace.

Further, the CME Clearing’s risk management staff (“Risk Management team”) leverages the information from the Market Regulation Department in their daily monitoring processes, which encompasses actively managing and monitoring changing market, credit, and liquidity risks to which CME Clearing may be exposed.

CME Clearing’s performance is assessed by, among other things, participating in industry and customer forums, and soliciting feedback. As noted above, CME Clearing is subject to the oversight of the CFTC and the Board of Governors of the Federal Reserve System and is regularly subject to regulatory reviews by such organizations. One means by which this review occurs is through the Title VIII DCO Exam, led by the CFTC. These reviews typically include extensive requests for documentation relating to internal processes and procedures and formal discussions with key personnel.

34 See http://www.cmegroup.com/clearing
36 See http://www.cmegroup.com/market-regulation
**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.

CME Clearing’s governance structure and processes reflect the Boards’ commitment to CME Group’s shareholders and to the institutions and individuals who rely on CME Group to provide fair, efficient, and secure markets in some of the most widely used financial instruments in the global marketplace. CME Group’s governance approach also supports its important role as a self-regulatory organization, subject to oversight by the CFTC.

CME Group is a Delaware for-profit corporation. As a corporation, the business of CME Group is subject to the oversight of its Board and its day-to-day operations are led by the Management Team. The biographies of the members of the Board and Management Team, as well as organizational documents are available on the CME Group website.\(^\text{37}\)

CME Group’s Corporate Governance Principles\(^\text{38}\) govern the operations of the Board. The Corporate Governance Principles have been implemented to assist the Board in the exercise of its responsibilities and were established to reflect the Board’s commitment to monitor the effectiveness of policy and decision making both at the Board and senior management levels.

In accordance with the Corporate Governance Principles, the Board represents the shareholders’ interest in perpetuating a successful business and optimizing long-term financial returns consistent with legal requirements and ethical standards. A key prong of optimizing long-term financial returns is through the Board’s employment of a governance structure that supports the protection of the broader financial system. The Board recognizes the important role CME Clearing plays in the marketplace and the importance of providing active governance designed to ensure the safety and soundness of its operations. The Board is responsible for establishing the general oversight framework, including identifying and taking reasonable actions, intended to achieve these goals. The Board’s principal oversight functions are to:

- Review, approve and monitor the CME Group’s major strategic, financial and business activities and opportunities, including declarations of dividends and major transactions;
- Review, approve and monitor the CME Group’s annual budget;
- Review, monitor and take reasonable actions with respect to the CME Group’s financial performance;
- Review, assess and provide oversight of the CME Group’s risk management practices, the integrity and adequacy of its Enterprise Risk Management program, which is designed to identify, manage and plan for its compliance, financial, market structure, operational, reputational and strategic risks, including the Compliance & Ethics Program.
- Select, evaluate and compensate the Chairman and Chief Executive Officer and, if necessary, appoint a replacement.
- Review and monitor plans for the succession of the Chairman and Chief Executive Officer and other members of senior management; and
- Identify, evaluate and nominate candidates for Equity Director.

\(^{37}\) See http://investor.cmegroup.com/investor-relations/leadership.cfm

\(^{38}\) See http://investor.cmegroup.com/investor-relations/principles.cfm
In performing its functions, the Board has established committees to which it delegates certain responsibilities. The Board has established ten committees comprised entirely of Board member representatives: Audit Committee, CHOC, Compensation Committee, Executive Committee, Finance Committee, Governance Committee, Market Regulation Oversight Committee (“MROC”), Nominating Committee, Risk Committee, and Strategic Steering Committee. Each these committees, referenced collectively as the “Board Committees” has a written charter that sets forth its responsibilities in detail, available on the CME Group website. The Audit Committee, Compensation Committee, Governance Committee, MROC and Nominating Committee are required to consist entirely of independent directors. MROC consists entirely of public directors as defined by the CFTC. To oversee its risks in relation to each its clearing services and gain input from other market stakeholders, the Board has established three committees chaired by members of the Board and comprised of key market stakeholders and experts: CHRCIRSRC, and CDSRC, which are collectively referred to as the “CME Clearing Risk Committees”.

The Board meets at least five times a year. The Chairman and Chief Executive Officer provides regular reports to the Board, which are included in the agenda for each Board meeting. During these reports members of the Management may be called upon to deliver updates relating to the key initiatives within their area of responsibility. These reports are designed to provide the Board with updates on CME Group’s recent activities and key initiatives. The Board’s agenda also includes reports from the Board Committees’ Chairmen, to the extent such committees met prior to the Board meeting, to provide an update on the activities of the particular committee. In addition, the Co-Chairmen or Chairman, as applicable, of CHRC, IRSRC, and CDSRC provide regular updates during meetings of the Board. Further, under the CME Group Corporate Governance Principles, the members of the Board have complete and open access to members of management and, as appropriate, to outside advisors of CME Group.

**Board Member Comprised Committees**

**Audit Committee**

The Audit Committee is a separately-designated standing committee established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act and assists the Board in fulfilling its oversight responsibilities with respect to: the integrity of the CME Group’s financial statements; compliance with legal and regulatory requirements; the qualification and independence of CME Group’s independent registered public accounting firm; the performance of the internal audit functions and the external auditors; and the effectiveness of the CME Group’s internal controls. The Audit Committee performs this function by monitoring the financial reporting process and internal controls and by assessing the audit efforts of the external auditors and the Global Assurance Department which is responsible for internal audit functions. The Audit Committee has ultimate authority and responsibility to appoint, retain, compensate, evaluate, and where appropriate, replace the external auditors.

*Clearing House Oversight Committee*

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39 See [http://investor.cmegroup.com/investor-relations/committees.cfm](http://investor.cmegroup.com/investor-relations/committees.cfm)
CHOC works cohesively with the Board in advising it on its oversight of the risk management activities (other than operational risk management) of the Clearing House, including the effectiveness of CME Clearing’s risk management programs. CHOC in fulfilling its role, as outlined in its publicly available charter:

- Reviews the adequacy of the financial safeguards waterfalls;
- Reviews and approves substantive changes to the method by which the Clearing House calculates the Guaranty Funds and performance bond policies;
- Reviews and approves the Model Validation Framework and in this function, reviews the results of independent model validations of the risk models and oversees any such remediation plan, as necessary;
- Reviews the terms and conditions of the Credit Facility and recommends the approval, where appropriate, of the Credit Facility to the Board or the Executive Committee;
- Reviews and approves new classes of products that could have a significant impact on the risk profile of the Clearing House;
- On at least an annual basis, reviews and makes recommendations to the Board regarding the approval of the Risk Management Framework and Liquidity Risk Management Framework; and
- Reviews and approves substantive changes to the Clearing House sections of the CME Group Exchange Rulebooks.

CHOC will recommend to the Board any changes to CME Clearing’s financial safeguards that would have a significant impact on the risk profile of the Clearing House.

The CRO and the Chief Compliance Officer for CME Clearing have indirect reporting lines to CHOC. CHOC is also responsible for reviewing and making recommendations with respect to succession planning and management development for the roles of President, CRO and Chief Compliance Officer.

All activities of CHOC are undertaken with a mindset of prioritizing the safety and efficiency of the Clearing House to support the stability of the broader financial system, while considering the legitimate interests of CME Clearing’s Clearing Members and its customers and taking into account prudent risk management standards and industry best practices that mitigate systemic risk.

**Compensation Committee**

The Compensation Committee assists the Board in fulfilling its responsibilities with regards to the compensation of members of the Board and senior management and oversees the compensation programs for the CME Group’s employees.

**Executive Committee**

The Executive Committee exercises the authority of the Board when the Board is not in session, except in cases where action of the entire Board is required by the articles of incorporation, bylaws, or applicable law. The Executive Committee also may review and provide counsel to senior management regarding material policies, plans, or proposals prior to submission of such items to the Board.
particular, the Executive Committee may review and approve the annual goals, priorities and performance measures of the executive officers.

**Finance Committee**

The Finance committee assists the Board in fulfilling its oversight responsibilities with respect to CME Group’s financial policies, strategies, capital structure, and annual operating budget.

**Governance Committee**

The Governance Committee assists the Board by making recommendations on the Corporate Governance Principles and other policies in the area of corporate governance.

**Market Regulation Oversight Committee**

MROC provides independent oversight of the policies and programs of CME Group’s Market Regulation Department and its Financial & Regulatory Surveillance Department to ensure effective administration of its self-regulatory responsibilities. MROC reviews the size of the regulatory budget and regulatory staff on an annual basis, in addition to addressing the adequacy of such resources during executive sessions with senior regulatory personnel. MROC is also apprised of the hiring and termination of key regulatory personnel and reviews their compensation. The Chief Regulatory Officer, the Head of the Financial & Regulatory Surveillance, and the Compliance Officers for the Clearing House as well as the Swap Data Repository have indirect dotted line reporting relationships to MROC. They meet with MROC in an executive session on a regular basis and are provided an opportunity to present any issues or concerns. This enables an appropriate level of independent oversight to allow MROC to determine that these individuals are able to implement their applicable self-regulatory responsibilities free from improper interference or influence. The Committee receives regular reports from CME Clearing staff to ensure that it is fulfilling its oversight role including:

- Regular status reports of ongoing investigations and other regulatory activities, including statistical information on the overall number of investigations and disciplinary actions being taken across the four DCMs;
- Regular status reports from representatives of the Financial & Regulatory Surveillance Department on recent activities relating to the monitoring of Clearing Members for compliance with financial requirements;
- Executive sessions/private meetings with key leaders in the Market Regulation and Financial & Regulatory Surveillance Departments to ensure effective communication of any CME Group Exchange related issue;
- Executive sessions/private meetings with the chairmen of the CME Group Exchanges’ disciplinary committees;
- Reports on the results of the CFTC’s rule enforcement reviews of the CME Group Exchanges as well as the outcome of any CFTC’s reviews of non-CME Group exchanges; and
- Reports on industry issues that may have an impact on the roles performed by the Market Regulation and Financial & Regulatory Surveillance Departments.

**Nominating Committee**
The Nominating Committee reviews qualifications of potential candidates for equity director (those directors elected by Class A and Class B shareholders) and recommends to the Board the slate for election at CME Group’s annual meetings.

Risk Committee of the Board of Directors

The Risk Committee has primary remit to review, assess, and provide of oversight of CME Group’s Enterprise Risk Management (“ERM”) program, the Compliance & Ethics Program, the Global Information Security Program and the Business Continuity Program. The Committee also is responsible for overseeing other risks that are not otherwise assigned to another committee or to the Board. The Risk Committee is responsible for periodically performing a gap analysis of the division of risk-related responsibilities among the Board appointed committees to ensure effective oversight of CME Group’s key risks and make recommendations for enhancing such oversight to the Board, as necessary.

Strategic Steering Committee

The Strategic Steering Committee assists and provides guidance to management and the Board in fulfilling its responsibilities to oversee the CME Group’s long-range direction, corporate strategy, and competitive position.

CME Clearing Risk Committees

In addition to the foregoing committees, the Board has established a CME Clearing Risk Committee for each major asset class for which CME Clearing supports clearing services, the CHRC, IRSRC, and CDSRC. These committees are chaired by members of the Board, which are designed to provide transparency and consistent communication between the Board and the CME Clearing Risk Committees, as well as to ensure alignment between the Board’s risk management focus and CME Clearing Risk Committees’ activities.

In particular, the CME Clearing Risk Committees provide additional expertise relating to CME Clearing’s policies to the senior management of CME Clearing and the Board, including CHOC. The CME Clearing Risk Committees generally include representatives from the Board, Clearing Members, and other market participants (including independent members), in order to garner the expertise and necessary input from a diverse set of market stakeholders.

Each CME Clearing Risk Committee must be chaired or co-chaired by a member of the Board and the members of each CME Clearing Risk Committee are appointed by the Board. The CME Clearing Risk Committees’ members represent a set of cross-functional expertise in various aspects of clearing and trading from both buy-side and sell-side firms and thus, members represent a diverse set of market and client segments. In addition, the CME Clearing Risk Committees include independent members with industry expertise. While serving as a member of any CME Clearing Risk Committee, members are required to operate in the best interest of the Clearing House and its markets, aiming to maximize the stability of the broader financial markets, and maintain strict confidentiality of information discussed by the committees.

For each major asset class, Base, IRS, and CDS, the relevant CME Clearing Risk Committee provides guidance to the Clearing House on issues relevant to the major asset class under their purview. With the authority granted by their respective Charters, the CHRC, IRSRC, and CDSRC opine on the following
matters relevant to the major asset class in which they have responsibility (i.e., Base, IRS, and CDS, respectively) through actions that include, but are not limited to:

- Advising on the relevant risk management policy and practices, including where appropriate, reviewing proposed changes to the CME Group Exchange Rulebooks and recommending their approval to CHOC;
- Responsibility for approving Clearing Members, including the review and approval of clearing member applications, mergers, and withdrawals, which also encompasses providing guidance to the Clearing House in relation to the financial condition of Clearing Members;
- Review of the adequacy of the relevant financial safeguards waterfall, which encompasses receiving regular risk reports from the Clearing House on the effectiveness of its risk management program and approving and recommending any such related substantive changes to CHOC for its approval;
- Providing guidance on the relevant performance bond policies, in addition to reviewing and approving substantive changes to such policies and recommending to CHOC the approval of such changes;
- Advising on the risk implications on the Clearing House of proposed programs, including the review and approval of new classes of products that significantly impact the risk profile of the Clearing House in relation to the major asset class in which the committee has oversight and further, recommending to CHOC the approval of such changes; and
- Undertaking any other matters as the Board may from time to time prescribe.

Additionally, CHRC, unlike the IRSRC and CDSRC, is charged with providing oversight on major risk management policy issues impacting broader functions of the Clearing House as it pertains to the financial safeguards waterfall. In its function, oversees the financial surveillance activities of the Finance & Regulatory Surveillance Department.

Each of the CME Clearing Risk Committees, like the Board and CHOC, is required to prioritize the safety and efficiency of the Clearing House in order to support the stability of the broader financial system, while considering the legitimate interests of Clearing Members and their customers and taking into account prudent risk management standards and industry best practices that mitigate systemic risk.

Default management committees will be convened as necessary, to assist the Clearing House in managing Clearing Member defaults. These committees are the IRS Active Default Management Committee, Active CDS Default Management Committee, and Base Active Default Management Committee – collectively referred to as the “Active Default Management Committees”. The Active Default Management Committees consist of traders with expertise in the relevant products comprising each of the major assets classes. The Active Default Management Committees are responsible for providing guidance to the Clearing House and relevant CME Clearing Risk Committee on areas related to a potential or actual default of a Clearing Member carrying swaps positions at CME Clearing. CME Group has several risk assessment processes to identify and manage risks. These processes require management to identify significant risks in their areas of responsibility and to implement appropriate measures to address those risks. These processes have identified risks resulting from the nature of the services CME Group provides and management has implemented various measures to manage those risks.
CME Group maintains a Global Assurance Department, which is responsible for internal audit functions and serves the Audit Committee of the Board and management to provide independent, objective assurance and consulting activities that are designed to add value and improve CME Group’s operations.

**Global Assurance Department**

The Global Assurance Department assists CME Group in accomplishing its objectives by working autonomously from or partnering with management as appropriate to provide solution oriented quality internal audit services. The Global Assurance Department also brings a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, control, and compliance processes.

The scope of work of the Global Assurance Department is to determine whether CME Group’s network of risk management and control processes, as designed and represented by management, is adequate and functioning effectively towards the accomplishment of CME Group’s defined objectives.

The Global Assurance Department performs its responsibilities in accordance with its Charter, stating its mission, scope of work, independence, objectivity, responsibility, authority, and professionalism principles. Additionally, the Global Assurance Department governs itself by adherence to the Institute of Internal Auditors’ mandatory guidance including the Definition of Internal Auditing, the Code of Ethics, and the International Standards for the Professional Practice of Internal Auditing. The Global Assurance Department is subject to an independent review of its processes every five years.

To provide for the independence of the Global Assurance Department, its personnel report to the Head of Global Assurance, who reports functionally to the Audit Committee and administratively to the head of the Legal Department. Global Assurance has established policies to ensure the internal audit activity remains free from undue interference by any element in the organization including matters of audit selection, scope, procedures, frequency, timing, or report content to permit maintenance of necessary independence and objectivity.

The Head of Global Assurance and staff of the Global Assurance Department are authorized to have unrestricted access to all functions, records, property, and personnel, with full and free access to the Audit Committee. On the other side, the Head of Global Assurance and staff of the Global Assurance Department are not authorized to perform any operational duties for CME Group and its subsidiaries.

As noted above, the Audit Committee oversees the internal audit function and reviews the Global Assurance Department’s activities on a regular basis. As addressed in its Charter, the Audit Committee:

- Approves the appointment, compensation, replacement and performance of the Chief Audit Executive and Head of Global Assurance;
- Annually reviews and approves changes (if any) to the Global Assurance Charter;
- Reviews the Global Assurance Department’s audit budget, resources, activities and organizational structure with the goal of ensuring that the Department has the required resources to complete its internal audit plan; and
- Provides ongoing assurance that there are no unjustified restriction or limitation to the functioning of the Global Assurance Department.
It is the Global Assurance Department’s responsibility to:

- Develop, implement, and communicate to the Audit Committee and management an annual audit plan using an appropriate risk based methodology;
- Issue periodic reports to the Audit Committee and management summarizing the results of internal audit activities, including reporting of significant issues, potential improvements, timing for any management corrective action via a written report at the conclusion of each audit, and provide information concerning such issues through resolution;
- Keep the Audit Committee informed of emerging trends and successful practices in internal auditing; and
- Periodically communicate to the Audit Committee the adequacy of the Global Assurance Department’s staffing resources.

The internal audit function reports directly to the Audit Committee functionally and meets privately with the Audit Committee on a regular basis. In addition, informal meetings are regularly held between members of the Global Assurance Department and the Audit Committee Chairman to discuss Audit Committee initiatives and other matters relating to auditing and accounting matters. The reporting structures enhances the Global Assurance Department’s ability to maintain its independence and objectivity and have access to the appropriate executives, support, and resources while also ensuring straightforward, efficient lines of communication.

**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 Board is responsible for the general oversight and governance arrangements of CME Group, including CME Clearing, as is discussed above. In relation to CME Clearing specifically, the Board has governance and oversight responsibility of the safety and efficiency of CME Clearing. This includes CME Clearing’s operation in accordance with applicable regulations and subject to governance arrangements that prioritize the safety and efficiency of the Clearing House, generally support the stability of the broader financial system and consider the legitimate interests of Clearing Members and customers of Clearing Members and take into account prudent risk management standards (including systemic risk mitigation) and best practices in the industry.

To fulfill these responsibilities the Board and the committees it has established, as outlined in CME Clearing’s disclosures for Key Consideration 2 of this Principle, interact regularly with senior management to oversee, among other things, the strategic direction of CME Group, including its financial performance, progress on key initiatives, Enterprise Risk Management Program, and Global Corporate Compliance & Ethics Program. Further, the Board receives regular updates from CHOC on the activities undertaken by the Clearing House.

Consistent with Core Principle P of the CEA, CME Inc. has adopted policies and procedures to address and minimize potential conflicts of interest. The Board’s governance structure is designed to ensure that the interests of participants are considered. The focus is on operating exchanges and a Clearing
House that conform to industry best practices and ensuring that market participants are treated fairly and consistently. As such, the Board has adopted a code of ethics, a conflict of interest policy, and a related party approval policy that are designed to ensure that the Board effectively avoids or minimizes conflicts of interests and quickly resolves any that arise. In accordance with these policies, members of the Board are required to act in the best interests of the organization, disclose any potential for the member to receive any private benefit in connection with a matter being presented to the Board, and to preserve the confidentiality of information provided to them, as well as not use their positions for their personal benefit. Additionally, certain transactions, commonly referred to by the SEC as “related party transactions,” in which a director or executive officer would have a material benefit, must be reviewed by the Audit Committee. As an example, members of the Board must recuse themselves from both the deliberations and voting with respect to any “Significant Action” as defined in CME Group Exchange Rule 234, if the Board member knowingly has a direct and substantial financial interest in the result of the vote based upon either CME Group Exchange or non-CME Group Exchange positions that could reasonably be expected to be affected by the action or is otherwise conflicted based on existing CME Group Exchange policy.

CME Group has also adopted a Code of Conduct that applies to all employees, including the Management Team. The provisions of the Code of Conduct address potential and actual conflicts of interest. On an annual basis, employees are required to certify that they have received and agree to abide by the provisions of the Code of Conduct.

As described in the Corporate Governance Principles, the Board annually reviews its own performance, structure, and processes in order to assess how effectively it is functioning. The assessment is implemented and administered by the Governance Committee through an annual board self-evaluation survey. In addition, each of the Board established committees, other than Executive Committee, conduct an annual self-assessment. To enhance its performance, the Board self-evaluation process includes an assessment of the performance of the individual directors.

CME Clearing requires members of CHRC, CDSRC, and IRSRC to execute written agreements certifying their obligations of confidentiality, to disclose conflicts of interest, and to abstain from voting as to any matters directly affecting a Clearing Member of whom the committee member is a representative (except insofar as a matter impacts all Clearing Members similarly). CME Clearing Risk Committee members are specifically charged with evaluating the matters before them with regard to maintaining the financial integrity of the Clearing House, rather than with regard to the interests of any Clearing Member from whom the CME Clearing Risk Committee member is sourced, which is a standard set forth in the agreements signed by each member and in the CHRC Charter, CDSRC Charter, and IRSRC Charter. Members of all committees established under the direction of the Board are also subject to CME Rule 300.F, which prohibits use or disclosure of material non-public information obtained by committee members as a result of their participation on such committees.

40 See http://investor.cmegroup.com/investor-relations/BODCodeOfEthics.cfm
41 See http://investor.cmegroup.com/investor-relations/conflict_of_interest.cfm
42 See http://files.shareholder.com/downloads/CME/1668493258x0x206511/cfe83e50-87a7-4f01-a46e-06d87769a940/RelatedParty.pdf
**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).

The policy of the Board is to remain an interactive, independent, thoughtful, highly qualified and collegial combination of individuals with diverse knowledge, skills and experience, so that the directors, working together, possess the competencies required to effectively carry out the Board’s responsibilities.

In considering candidates for the Board, the Nominating Committee, composed entirely of directors who are independent under applicable listing standards, considers the entirety of each candidate’s credentials. With respect to the nomination of continuing directors for re-election, the individual’s contributions to the Board are also considered. In assessing new candidates for the Board, we do not have specific minimum qualifications that an individual must meet to be considered. The Board and its Nominating Committee seek members having the characteristics essential for effectiveness as a member of our Board, including but not limited to:

- Integrity, objectivity, sound judgment and leadership;
- The relevant expertise and experience required to offer advice and guidance to the Chairman and Chief Executive Officer and other members of senior management;
- The ability to make independent analytical inquiries;
- The ability to collaborate effectively and contribute productively to the board’s discussions and deliberations;
- A commitment to enhancing long-term shareholder value;
- An understanding of the CME Group’s business, strategy and challenges;
- The willingness and ability to devote adequate time and effort to Board responsibilities and to serve on committees at the request of the Board;
- Is not a Disqualified Person (as defined in the Corporate Governance Principles); and
- Whether the individual meets the composition requirements of the CFTC and the applicable listing standards.

On an annual basis, the Governance Committee and the Nominating Committee meet jointly to assess the current and future needs of the Board and will make recommendations to the Board in the event they identify a need to recruit for an additional member of the Board. The Board believes it is essential that its members represent diverse viewpoints. The Governance and Nominating Committee have agreed to consider the diversity of the Board in the event the Board identifies a need for a new candidate.

The Corporate Governance Principles require that the Board be composed of at least a majority of independent directors. Additionally, in accordance with listing standards, applicable to CME Group as a public company, the members of the Audit, Compensation, Governance, and Nominating Committees must be independent. For a director to be considered independent, the Board must affirmatively determine that the director has no direct or indirect material relationship with CME Group and its subsidiaries, including CME Inc. The Board has adopted the Categorical Independence Standards to assist it in making its determinations regarding independence. The Categorical Independence Standards conform to and exceed the independence criteria specified in the listing
standards of NASDAQ. The Categorical Independence Standards specify the criteria by which the independence of the directors will be determined, including relationships and transactions between each director, any member of his or her immediate family, his or her affiliates, charitable organizations with which he or she is affiliated, and CME Group.

A predominant majority of the members of the Board are non-executive directors and further, the Board believes that its non-executive directors act independently of, and effectively monitor and oversee the actions of, management. Additionally, in accordance with its Corporate Governance Principles, the Board must be comprised of at least a majority of independent directors. On an annual basis, the Board assesses each of its members to determine whether they should be classified as “independent” in accordance with applicable listing standards and CME Group’s Categorical Independence Standards as well as whether they meet the definition of a public director as defined by the CFTC. The results of the annual assessment are disclosed in CME Group’s annual proxy statement filed with the SEC and available on the CME Group website.

Some of CME Group’s directors are members of the CME Group Exchanges, which provides them with access to the open outcry trading floor, lower trading fees, the ability to vote on certain matters relating to the operation of the trading floor, and for members of CME Inc., the ability to elect six directors. Directors who are members of the CME Group Exchanges may make payments directly to CME Group or indirectly through their Clearing Members in connection with their trading activity on a CME Group Exchange. To ensure that such payments did not exceed the monetary thresholds set forth in the listing standards of NASDAQ, the Governance Committee reviewed the directors’ and their affiliated Clearing Members’ trading activities and relationships with the CME Group Exchanges as part of its independence determination. The Governance Committee and the Board noted that all payments were made in the ordinary course of business, were on terms consistent with those prevailing at the time for corresponding transactions by similarly situated unrelated third parties and were not in excess of the applicable payment thresholds. After considering information provided by the directors and director nominees in their annual questionnaires, the payments made to CME Group relating to trading activities of directors and director nominees who are members of a CME Group Exchange, as well as additional information gathered by the Office of the Secretary, the Governance Committee recommended and the Board determined, which directors and nominees should be classified as independent.

CME Group is also required to ensure compliance with the Core Principles of the CFTC, which among other requirements maintain processes and procedures to address potential conflicts of interest that may arise in connection with the operation of the CME Group Exchanges. Significant representation of individuals who do not have relationships with the CME Group Exchanges, referred to as “public directors” in CFTC Regulations, play an important role in CME Group’s processes to address potential conflicts of interest. The Board has assessed which directors would be considered “public” directors based upon their lack of relationship with the CME Group Exchanges and the industry per CFTC Regulations. Further, MROC is composed solely of public directors.

Board members are provided compensation commensurate with their workload, risk, and opportunity costs. The compensation program is designed to compensate directors based on their respective level of Board participation and responsibilities, including service on committees directed by the Board. CME Group generally targets the 50th percentile of the competitive market for compensation of the
Board, while also reviewing the range of values around the median, including the 25th and 75th percentiles. The primary components of the Board compensation package consist of an annual equity stipend of the CME Group’s stock, an annual cash stipend, committee meeting fees, and chairperson retainers for Board Committees. CME Group also believes that due to its status as a significant financial institution, service on the Board brings with it a level of prestige that attracts qualified candidates to the Board. CME Group’s annual proxy statement contains additional information on the compensation program for Board members.

**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.**

The Management Team is responsible for the day-to-day management of CME Group. Each member of the Management Team is responsible for the performance of their applicable business area and is ultimately accountable to the Board, including the Chairman and Chief Executive Officer. The organization takes seriously the performance of its management and their goal setting. Key strategic goals are tracked at the Management Team level and reported to the Board as necessary and appropriate. The Board conducts an annual evaluation of the Chairman and Chief Executive Officer against established goals. Among the Board’s key oversight responsibilities is the hiring and if necessary termination of the Chairman and Chief Executive Officer. Members of the Management Team have their performance assessed against their established goals on an annual basis by the Chairman and Chief Executive Officer or their direct managers, which are subject to the oversight of the Chairman and Chief Executive Officer. To the extent a member of the Management Team fails to live up to expectations it is within the purview of the direct manager to recommend his or termination to the Chairman and Chief Executive Officer who would turn make a recommendation to the Board regarding the executive officers’ service.

CME Group operations are divided into multiple divisions, which are directly overseen by either the Chairman and Chief Executive Officer, the President of CME Group, or one of their direct reports. Generally, the leaders of each of the divisions are members of the Management Team. Collectively the divisions carry out the objectives of the Board’s strategic plan and focus on areas related to technology, clearing, operations, finance, sales, legal and regulatory, human resources, research and development, and marketing.

One of the divisions of CME Group is the Clearing House Division. The Clearing House Division clears and guarantees all matched transactions occurring through its facilities. The Clearing House Division establishes and monitors financial requirements for Clearing Members and sets minimum performance bond levels for all products traded on markets for which it provides clearing services. The Clearing House Division deals exclusively with Clearing Members for guarantee and risk management purposes, holds Clearing Members accountable for positions regardless of whether such positions are for the accounts of individual members, non-clearing member customers, or the Clearing Member’s own account. Conversely, as the contra side to every position, the Clearing House is held accountable to its Clearing Members for financial performance of all open positions. The Clearing House Division provides clearing services to all of CME Group’s DCM subsidiaries, CME Inc., CBOT, NYMEX, and COMEX.
CME Clearing is headed by a President, whose appointment is approved by the Board, as set forth in CME Group Exchange Rule 801. The President of CME Clearing further delegates authority for certain aspects of the daily operation of CME Clearing to its senior management team, including the CRO, whose appointment is also approved by the Board, as set forth in CME Group Exchange Rule 801 and the CCO.

**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.**

As required under CFTC Regulations,44 CRO is responsible for implementing the Risk Management Framework of CME Clearing, which is reviewed and approved by CHOC and Board at least annually. The Risk Management Framework, which encompasses the Clearing House’s policies with regards to, general risk management as well as daily risk management, is discussed further in CME Clearing’s disclosures for Principle 3.

In addition to his role in implementing the Risk Management Framework, CME Clearing’s CRO makes recommendations concerning procedures, policies, and controls, directly to the applicable CME Clearing Risk Committees and CHOC. The CRO is a member of the CME Clearing senior management team, reporting directly to the President of CME Clearing and is ultimately responsible for supervising employees engaged in the risk management activities of CME Clearing. The CRO also has a direct access to two non-executive directors on the Board who serve on CHOC, CHRC, CDSRC, and IRSRC. Additionally, risk management matters relating to CME Clearing are also managed by certain members of the senior management team of CME Clearing, also reporting to the President of the Clearing House, including CME Clearing’s CCO, which CME Clearing has named, consistent with CFTC Regulations45 and the Head of Financial & Regulatory Surveillance. CME Clearing’s CCO is responsible for developing and enforcing appropriate compliance policies and procedures for CME Clearing, reviewing CME Clearing’s compliance with the Core Principles and all other applicable legal and regulatory requirements, resolving conflicts of interest issues relating to Clearing House matters, and any non-compliance issues that may arise. The CCO has an additional dotted line reporting relationship to the Global Chief Compliance Officer of CME Group. CME Clearing’s Head of the Financial and Regulatory Surveillance is responsible for overall management of the Financial and Regulatory Surveillance Department, which reviews Clearing Member compliance with applicable CFTC Regulations and CME Group Exchange Rules, in accordance with CME’s responsibilities as a Designated Self-Regulatory Organization (“DSRO”). The Head of Financial & Regulatory Surveillance has an additional indirect reporting relationship to MROC, a committee of the Board, as described in detail under CME Clearing’s disclosures for Key Consideration 2 of this Principle.

As described in CME Clearing’s disclosure for Key Consideration 2 of this Principle, CHOC and CME Clearing Risk Committees – CHRC, IRSRC, and CDSRC – also provide oversight on relevant risk management issues. CHOC and CME Clearing Risk Committees are responsible for reporting to the

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44 CFTC Regulation 39.13(c).
45 CFTC Regulation 39.10(c).
Board on matters under their purview and escalating to the Board matters set forth in their respective charters.

While senior management has primary responsibility for managing CME Group’s risk on a day-to-day basis, the Board has the responsibility for overseeing risk management activities and the overall programs designed to identify, assess, manage and monitor risks and opportunities, such as CME Group’s ERM program. The Board oversees the business of CME Group, including senior management performance and risk management programs and results, to ensure that the long-term interests of the shareholders are being served and to meet its governance and oversight responsibility for the safety and efficiency of the Clearing House. The Board has an active role, as a whole and also at the committee level, in overseeing management of CME Group’s risks, with its focus on the risks facing the company.

CME Group’s business exposes it to compliance, financial, market structure, operational, reputational and strategic risks. The ERM program promotes and facilitates the evolution and alignment of consistent and transparent risk management practices at CME Group. Through the ERM program, CME Group takes a comprehensive approach to risk management and endeavor, in an ongoing manner, to ensure the enterprise risks are identified, assessed, measured, prioritized and updated. The Risk Committee is primarily responsible for reviewing, assessing and providing oversight of risk management practices with respect to those risks enumerated in its charter and assisting the Board in its oversight of the effectiveness of policies and processes to identify, manage and plan for risks. The Risk Committee approves the ERM framework, the risk universe and reviews and recommends to the Board the various levels of acceptable appetite for managing key risks associated with CME Group’s business and strategy, including those relating to the Clearing House.

In addition to the Risk Committee, the Board also assigns risks to other committees, such as CHOC. This structure is designed to increase the effectiveness of the Board’s oversight by considering the background and experience of the various board committees, including their interactions with management. Each committee reports on its activities to the full Board. The appendix to the charter of the Risk Committee provides additional detail on the allocation of risk oversight responsibilities to the various committees. The charter for the Risk Committee is available on CME Group’s website.

The ERM Program is led by the Global Chief Compliance Officer, who reports indirectly to the Risk Committee.

The ERM Charter is reviewed and approved on an annual basis by the Risk Committee. All material changes to the program are reviewed by the cross-functional Risk Management Team, reported to the Management Team, and presented to the Risk Committee for review and approval.

Enterprise risks are identified, assessed, measured, prioritized, and updated regularly by management through the Risk Management Team. The Risk Committee and the Board receive detailed Enterprise Risk Profile Reports regarding CME Group’s risk universe.

The Enterprise Risk Management Framework ("ERMF") utilizes the “Three Lines of Defense” architecture. These are:
I. **Lines of business:** Senior management from the operating divisions are responsible for managing the day-to-day operations of the business and the treatment of risks. Each line of business ensures that it is operating within the risk tolerance of CME Group.

II. **Risk and Compliance functions:** Includes the ERM, Global Corporate Compliance, Business Continuity, Global Information Security, and Crisis Management teams, which provide oversight of the “First Line of Defense.” ERM reviews, monitors, and reports on the risk universe at the CME Group level and changes in its risk profile are reported to the Management Team, Risk Committee, and Board of Directors. The Risk Committee provides oversight of the ERM Program and process.

III. **Internal Audit:** Internal audit, performed by the Global Assurance Department, provides assurance that management’s assertions about the risk and control environment are correct. Global Assurance reports into the Audit Committee of the Board.

Under certain circumstances, the Board and CME Clearing Risk Committees are afforded additional risk management powers in the CME Group Exchange Rules. Under CME Group Exchange Rule 230.K, the Board has the power to take actions to protect CME Clearing’s markets in an emergency in which the free and orderly market is likely to be disrupted, the financial integrity of CME Inc. is threatened, or the normal functioning of a CME Group Exchange has been or is likely to be disrupted. Each of the CME Clearing Risk Committees has authority to take certain actions under the CME Group Rules in the event of emergencies. Under CME Group Exchange Rule 403.C, CHRC may declare an emergency and take any appropriate action to respond to the emergency. CME Group Exchange Rule 403.C requires that both the Board and the CFTC be notified of any such emergency action. CME Group Exchange Rules 975, 8G975, and 8H975 further set forth procedures for empaneling the Emergency Financial Committee for Base, IRS, and CDS, respectively, if the President of the Exchange or the President of CME Clearing determines that an emergency condition exists as to a Clearing Member or one of its affiliates; the Emergency Financial Committee is granted broad authority to take action to alleviate any risk to the integrity of the Clearing House or potential negative impact to the financial markets. CME Group Exchange Rules 8G27 and 8H27 grant similar authority with respect to the emergency actions that may be taken by the IRSRC and CDSRC for IRS and CDS products, respectively.

**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.

Per CME Group’s governing documents, the Board in relation to its oversight of CME Clearing, CHOC, and CME Clearing Risk Committees in fulfilling their responsibilities must consider the legitimate interests of Clearing Members and their customers. Further, as noted above under CME Clearing’s disclosure for Key Consideration 2 of this Principle, CME Clearing has risk management, business, legal, trading, and overall expertise on its CHRC, IRSRC, and CDSRC through participation from individuals from Clearing Members, settlement banks, and independent members. In particular, the CHRC, IRSRC, and CDSRC members are sourced from Clearing Members with a wide distribution of clearing activity designed to ensure diverse Clearing Member representation on the CME Clearing Risk Committees. The CME Clearing Risk Committees assist in framing overall risk management policies at CME Clearing, subject to approval by CHOC and the Board, as required. Additionally, CME Clearing has Active Default
Management Committees for the swaps products it clears that are convened as necessary that assist the Clearing House in managing an actual or potential Clearing Member default.

CME Clearing also actively participates with the Futures Industry Association, International Swaps and Derivatives Association, Managed Funds Association, Commodity Markets Council, and OTC Working Groups to contribute to industry solutions and best practices and also to solicit feedback to help inform overall policy and procedures within CME Clearing. Further, CME Group actively participates in discussions on clearing topics and best practices within the industry brought to CCP12 and the World Federation of Exchanges.

CME Clearing undertakes to provide accurate and transparent information regarding the operation of its markets to its participants. CME Group uses a number of resources in order to disseminate such information that include:

- **Corporate Website**:\(^{46}\) utilized for communication to stakeholders, including market participants and Clearing Members;

- **Press Releases**:\(^{47}\) utilized for distributing significant updates regarding the operation of CME Group’s business, including new product launches;

- **Online Rulebooks**:\(^{48}\) set forth the particular requirements for the CME Group Exchanges, including contract specifications and Clearing Member requirements;

- **Special Executive Reports**:\(^{49}\) utilized to provide additional information regarding changes to CME Group Exchange procedures, such as changes to existing products and new product listings and other changes to the CME Group Exchange Rulebooks;

- **Clearing Advisories**:\(^{50}\) utilized by CME Clearing to provide information targeted at Clearing Members and other market participants, such as changes in performance bond requirements, option expiration procedures, and system updates; and

- **Market Regulation Advisory Notices**:\(^{51}\) utilized by the Market Regulation Department to provide guidance on the interpretation of the CME Group Exchange Rules.

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\(^{46}\) See [http://www.cmegroup.com/](http://www.cmegroup.com/)

\(^{47}\) See [http://cmegroup.mediaroom.com/](http://cmegroup.mediaroom.com/)


\(^{49}\) See [http://www.cmegroup.com/tools-information/advisorySearch.html](http://www.cmegroup.com/tools-information/advisorySearch.html)

\(^{50}\) See [http://www.cmegroup.com/tools-information/advisorySearch.html](http://www.cmegroup.com/tools-information/advisorySearch.html)

**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.

**Summary Narrative**

**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.

CME Clearing’s Risk Management Framework, which encompasses the risk management policies and methodologies, is used to meet its rigorous standards for prudent risk management. These policies and procedures conform to the current regulatory regime under which CME Clearing operates, including CFTC Regulation 39.13(b), requiring each DCO to maintain written risk management policies.

The Risk Management Framework and all other risk management policies and procedures are developed by risk management staff and leadership. Teams thoroughly research proposed risk policies, determining effectiveness and feasibility of each proposal through a variety of methods, including backtesting results, external resources (i.e., academic papers, market standards, etc.), and compliance with regulatory requirements. Policies and procedures are reviewed by the appropriate committees, internal or external, for their approval. In addition, all risk frameworks are provided to the relevant regulators of CME Clearing, where necessary. Each policy and procedure has a defined review schedule, during which risk management staff is responsible for updating and maintaining the policy or procedure. The Risk Management Framework is reviewed and approved by CHOC and Board at least annually.

The Risk Management Framework describes CME Clearing’s approach for managing risks facing the Clearing House, including policies which address:

- Credit Risk;
- Counterparty Risk and Reviews;
- Liquidity Risk;
- Concentration Risk;
- Market Risk;
- Model Risk;
- Default Risk and Default Management; and
- Operational Risk.

CME Clearing maintains policies to supplement and support the Risk Management Framework, which more granularly address the ways in which CME Clearing manages certain risks to which it is exposed and similar to the Risk Management Framework are subject to at least an annual review and approval process. The Credit Policy and Collateral Policy supplement the Risk Management Framework in addressing the credit and counterparty risks that are borne by the activities of CME Clearing, which is further addressed in CME Clearing’s disclosures for Principle 4. The Credit Policy and Collateral Policy primarily encompass credit exposure and collateral adequacy, respectively. In addition to the Risk...
Management Framework, liquidity risk is also addressed through CME Clearing’s Liquidity Risk Management Framework, which is further addressed in CME Clearing’s disclosures for Principle 7.

Concentration and market risks are considered in the margin calculations used for each major asset class and the real-time monitoring of market participants’ exposures, which are elaborated on in the Risk Management Framework. Measurement and coverage calculations are designed to capture the unique risks attributed to each particular major asset class. The models for these calculations are regularly backtested, which is in addition to CME Clearing’s regularly conducted sensitivity analysis to protect the Clearing House against a variety of identified risks, including model risk. The Risk Management Framework lays out CME Clearing’s procedures for the real-time monitoring of trading activity and price movements 24 hours a day, 6 days a week. CME Clearing monitors position exposures and profit and loss at various levels of granularity, from the Clearing Member level to the individual account level. CME Clearing risk systems identify Clearing Members holding individual accounts with more risk sensitive profiles, allowing the Risk Management team to monitor these Clearing Members more granularly. Additionally, CME Clearing maintains the ability to apply Clearing Member level limits for every major asset class individually, which is in addition to the requirement for Clearing Members to set credit limits on their customers. CME Clearing has a view into these limits and their utilization for every major asset class. Concentration and market risks are discussed within CME Clearing’s disclosures for Principle 6.

CME Clearing mitigates default risk and default management through the financial safeguards waterfalls and default management procedures laid out under the Risk Management Framework and publicly available CME Group Exchange Rulebooks. These procedures, described further in CME Clearing’s disclosures for Principle 13, are designed to help identify potential Clearing Member defaults and take preemptive actions to reduce CME Clearing’s exposure to the default of a Clearing Member, while protecting the Clearing Member’s customers.

CME Clearing utilizes a variety of tools to monitor Clearing Member activities and evaluate the resultant risks, as defined in CME Clearing’s policies and procedures. These systems are vetted internally by senior risk management as well as qualified and independent parties. Further, CME Clearing risk management systems are subject to annual regulatory reviews. Where appropriate, systems can aggregate exposure by accounts across a major asset class to ensure the Clearing House can manage the total risk posed by a participant. Further, risk systems can aggregate risk exposures across customers at various Clearing Members, allowing CME Clearing to monitor and measure exposures for customer accounts and market concentration.

Further, operational risk management is managed through CME Clearing’s Operational Risk Management Framework, which is further elaborated on in CME Clearing’s disclosures for Principle 17. Operational risk in part is managed through continuous observations of its systems – on a 24 hours a day, 6 days a week basis – to ensure proper functionality and assist Clearing Members with any operational issues. CME Clearing manages operational risk on a daily basis. Multiple shifts are staffed across the globe to ensure consistent coverage of system performance, including monitoring the performance of key systems.
The standards described in the Risk Management Framework and other risk management policies are tested for effectiveness at least annually, or more frequently if necessary, as defined in each policy. Changing risk profiles and market environment shifts are monitored by CME Clearing staff and management at periodic meetings, such as the weekly Risk Management team meeting and the Collateral Committee, discussed in CME Clearing’s disclosures for Principle 5 and the monthly Model Risk Committee and Stress Testing Committee, discussed in CME Clearing’s disclosures for Principles 6 and 4, respectively. Identified risks may result in further action, such as execution of policy enhancements or changes to practice, if deemed necessary by the senior staff in attendance at such meetings. In addition to internal reviews, the CFTC completes annual reviews of, among other things, risk management practices and policies.

Specific policies and models are subject to regular independent validation. Further, certain risk management policies are subject to regular review by regulatory authorities. Senior risk management reviews the results from all evaluations and provides the analyses and any resultant proposed changes to the relevant governance committee(s), as appropriate. In particular, CHOC reviews the results of all independent validations of CME Clearing’s risk models and oversees related remediation plans, if required.

**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.**

Certain chapters of the CME Group Exchange Rulebooks establish the standards to which CME Clearing and its Clearing Members are held, covering the full range of CME Clearing’s operations. Included in these chapters is CME Group Exchange Rule 982, which prescribes the risk management standards to which CME Clearing holds its Clearing Members. Cleared swaps Clearing Members are further required to adhere to the obligations described in CME Group Exchange Rule 8F010. These CME Group Exchange Rules, available on the CME Group website, require Clearing Members to maintain written policies that ensure the Clearing Member is able to perform certain basic risk and operational functions at all times. CME Clearing has defined these to include:

- Monitoring the credit risks of accepting trades, including give-up trades, of specific customers;
- Monitoring the risks associated with proprietary trading;
- Limiting the impact of significant market moves through the use of tools, such as stress testing or position limits;
- Maintaining the ability to monitor account activity on an intraday basis, including overnight;
- Ensuring order entry systems include the ability to set automated credit controls or position limits or requiring a Clearing Member employee to enter orders; and
- Defining sources of liquidity for increased settlement obligations.

Clearing Members are required to submit to CME Clearing and to the CFTC as applicable to their registration status any information or documentation regarding these policies as necessary.

CME Clearing has a well-established policy of regularly reviewing all entities that pose a material risk to the Clearing House, including Clearing Members as well as firms with settlement and custody relationships with CME Clearing. In addition, CME Clearing applies exposure limits to its counterparties...
based on its credit evaluation of them. CME Clearing’s review of all entities that pose a material risk are conducted onsite at least biennially, but can be conducted more frequently as market environments or entities risk profiles change. Clearing Members with inactive portfolios or negligible exposures are reviewed at least biennially without an onsite visit. These reviews cover credit, market, and liquidity risks through a series of topics including:

- Customer credit risk monitoring and control;
- Proprietary trading risk monitoring and control;
- Risk management, monitoring, and stress test reports;
- Demonstration of risk management systems;
- Demonstration of credit control functionality;
- Counterparty credit risk management;
- Internal funding process;
- Internal risk system for settlement variation pays/collects;
- Collateral policy;
- Settlement bank relationships; and
- Liquidity/capital plans in case of assessment to CME Clearing.

The Risk Management team also discusses each Clearing Member’s recent activity and volume during a risk review to address any trends or unusual trades, as well as any specific individual or Large Trader accounts (customer accounts identified as having particularly significant activity that are monitored throughout the day) that require additional inquiry. This includes a summary of Globex activity, overnight trading volumes, and monthly volumes. This allows the Risk Management team to understand the trading activity of the Clearing Member, while providing a more holistic view of the risk profile of the Clearing Member.

All risk review results are presented at the weekly Risk Management team meeting, which is comprised of CME Clearing’s risk managers with a diverse set of expertise and includes representation from staff- and senior-level employees. Additionally, any material issues identified through risk reviews are presented to the appropriate CME Clearing Risk Committee. Risk review reports are also made available to regulatory bodies as necessary or requested.

Clearing Members found to have inadequate risk management based on their business profiles may be subject to a variety of enhanced requirements at CME Clearing, which are employed to ensure Clearing Members are properly incentivized to maintain robust risk management processes. CME Clearing may decide to require additional margin requirements, as described in CME Group Exchange Rules 824, 8G824, 8H824 for Base, IRS, and CDS products, respectively or more frequent risk reviews as deemed necessary by the Risk Management team. CME Clearing may recommend to the relevant CME Clearing Risk Committee, dependent on the level of severity that a Clearing Member be subject to additional capital requirements, restricted in its clearing ability, suspended from the Clearing House, or that other actions be taken as appropriate. The appropriate CME Clearing Risk Committee may also independently decide to impose such restrictions on Base, IRS, and CDS Clearing Member as they deem necessary, as described in CME Group Exchange Rules 403, 8G27, and 8H27, respectively.

CME Clearing is committed to providing its Clearing Members with a full view of their risk profile, including regular reports on initial margin, settlement variation, collateral (including haircuts), and
In addition, CME Clearing provides a variety of tools to help market stakeholders, both Clearing Members and their customers, estimate their performance bond requirements. This includes a web-based solution through CME CORE, as well as up-to-date SPAN files for futures and options products. Utilization of these tools allows Clearing Members to thoroughly assess their portfolio risk exposures to CME Clearing or with respect to individual client exposures.

Additionally, CME Clearing provides Clearing Members with Globex Credit Control functionality, allowing Clearing Members to protect themselves against potential risks posed by their customers’ electronic futures and options trading. The Globex Credit Controls execution varies by Clearing Member, depending on how Clearing Members provide Globex account access through their configured structures. Clearing Members retain the ability to implement Globex Credit Controls in a manner that is most appropriate for their customers and business, with oversight from CME Clearing. CME Clearing also offers credit control functionalities for IRS and CDS products. In addition, some Clearing Members have developed internal methodologies and practices for setting credit controls on their customers and deploy various risk controls through both internal or vended tools. Through CME Group Exchange Rule 949, CME Clearing has mandated that all Clearing Members implement credit controls for their customers.

In addition to CME Clearing’s risk management policies, Clearing Members that are FCMs are required to comply with CFTC Regulation 1.73 and Swap Dealers and Major Swap Participants are required to comply with CFTC Regulation 23.609. These regulations require FCM, Swap Dealer, and Major Swap Participant Clearing Members of the Clearing House to meet specific risk management obligations, such as establishing and applying risk based limits on proprietary and customer accounts, as well as have the ability to monitor individual trades and portfolios for adherence to these limits. These Clearing Members are further required to complete regular stress tests and credit line tests as well as confirm their capacity to meet performance bond requirements and complete an orderly liquidation of accounts. Written procedures and records indicating compliance with these regulations must be maintained and made available to the CFTC or other regulators as necessary.

**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.

CME Clearing has established membership requirements to permit objective and open access for Clearing Members, while maintaining prudent risk management standards at CME Clearing to manage the material risks borne from CME Clearing’s exposures to these entities. CME Clearing performs initial and ongoing assessments of the credit profile of Clearing Members and other counterparties to ensure the level of scrutiny and ongoing monitoring is consistent with the counterparty’s respective risk profile.

As a central counterparty, CME Clearing intermediates transactions between its Clearing Members with support from a variety of entity types, such as collateral depositories, collateral issuers, and commercial banks that provide settlement services (i.e., payment and receipt of settlement variation and initial margin from/to the account of CME Clearing on the books of the bank, to/from the account of the Clearing Member on the books of the bank). Additionally, CME Clearing partners with other central counterparties and exchanges to meet its obligations under its cross-margining and transaction programs, respectively, as described in CME Clearing’s disclosures for Principle 20.
Additionally, CME Clearing is indirectly dependent upon the Fedwire, which ensures the prompt payment of settlement obligations across settlement bank relationships. CME Clearing relies on the Continuous Linked Settlement Group ("CLS") indirectly as a third-party provider for settlement services, described in CME Clearing’s disclosures for Principle 10.

CME Clearing recognizes the risks assumed by maintaining relationships with any counterparty, which are a necessary product of doing business as a Clearing House. To manage the inherent counterparty risks associated with this broad set of relationships, CME Clearing has developed a comprehensive policy for reviewing counterparty credit quality. This policy ensures that CME Clearing’s counterparties are held to rigorous standards for credit quality in order to protect CME Clearing against excessive credit and counterparty risks.

CME Clearing, using industry data and internal expertise, classifies each of its counterparties into one of four entity types to ensure that each counterparty is assessed based on the risks specific to its business profile. Each counterparty is subject to the same credit review using the same model criteria, though the criteria in the final rating will be weighted differently depending on the entity type of the firm. The Risk Management team determines the specific weightings for each entity type via the Credit Committee, an internal committee primarily comprised of members from the Credit Risk team and CME Clearing senior management, described further in CME Clearing’s disclosures for Principle 7. Any changes to the weighting system are proposed by the Risk Management team to the Credit Committee, whose approval is required to execute such changes.

The four entity types for which CME Clearing classifies its counterparties are:

- Banks;
- Financial Services;
- Corporates; and
- Clearing Members.

As a result of CME Clearing’s credit evaluation, each counterparty is assigned an internal credit rating. This credit rating is established using quantitative and qualitative metrics to assess the credit profile of the counterparties, derived from both public and private information.

The Risk Management team has established a series of internal risk tolerances for Clearing Members based on their internal credit ratings; tolerances are used to flag Clearing Member settlement variation and/or initial margin payment obligation amounts to CME Clearing that are treated as exceptions, requiring a member of the Risk Management team to investigate and/or escalate as appropriate. Clearing Members with strong ratings are given higher tolerance thresholds, while those with weaker ratings are assigned more conservative thresholds and are subject to more frequent review schedules.

Internal credit ratings are reviewed at least annually and updated as necessary to reflect the current market information. Additionally, metrics that could yield a change in a counterparty’s internal credit rating or more rigorous reviews are monitored daily. Thresholds are set to alert the Risk Management team of notable movement in credit default swap price, stock price, or rating agency ratings. Further, the Risk Management team sends alerts to senior management in the event of other material changes to a firm’s creditworthiness as necessary due to observed market conditions.
CME Clearing uses two structures, a Watch List and a Weak List, to highlight firms whose creditworthiness requires additional monitoring and reporting to senior management. These firms meet CME Clearing’s standards required to continue their relationship with CME Clearing, but have been identified by the Risk Management team as requiring additional surveillance on their activities.

The Risk Management team is charged with maintaining both the Watch List and Weak List, including recommending changes to the lists to the Credit Committee. The Risk Management team can recommend a firm be added to or removed from the list for any number of reasons, including, but not limited to changes in:

- Earnings, which could materially impact the firm’s ability to meet its financial obligations;
- Systemic risk conditions;
- Public regulatory action(s);
- Documented risk management practices; and
- External credit rating(s).

Watch List and Weak List counterparties are under greater scrutiny from CME Clearing. This may lead to more frequent margin change/call reviews at the end of each clearing cycle and reporting during daily market risk observations, including more detailed daily position monitoring. Counterparties on the Watch Lists or Weak Lists may be required to take steps to mitigate some of the additional risk their reduced creditworthiness implies, which can include posting additional performance bond or holding additional capital, among other things.

The Credit Committee is responsible for the oversight of all policies, methodologies, procedures, and tools used to review and manage risks posed by and born from external entities. The Credit Committee reviews all of these tools regularly as well as in response to severe market movements or extreme stress experienced by an external entity. Policies, methodologies, and procedures are further subject to review on a regular basis by CME Clearing and the CFTC.

Additionally, CME Clearing is exposed to risk from and presents risk to SGX through the Mutual Offset System (“MOS”), which allows market participants to transact in MOS-eligible products on CME Clearing or SGX and seamlessly transfer the resulting trade exposure to the Clearing House of the contra exchange. To facilitate the transfer of trade exposure between clearing houses, each clearing house has established “holding accounts” on the books of the contra clearing house – e.g., CME Clearing has a holding account on the books of SGX and vice versa.

CME Clearing also maintains cross-margining relationships with Options Clearing Corporation (“OCC”) and Fixed Income Clearing Corporation (“FICC”). Both cross-margining programs are subject to CME Clearing’s standard risk management procedures, including daily market risk management monitoring. The mutual risks to which the cross-margining OCC and FICC are exposed, including potential credit and default risks, are managed through contractual agreement terms. Each agreement details the treatment of performance bond deposits and settlement variation, which are used to cover risks across both CME Clearing and the relevant, participating clearing house.

CME Clearing’s cross-margining agreement with OCC operates in a single account structure, where performance bond deposits is centrally held with CME Clearing and OCC jointly holding a lien on the positions and collateral in the cross-margin account. CME Clearing and FICC support a dual account
structure, whereby performance bond deposits are held separately with CME Clearing and FICC guaranteeing payment to each other in the event of a loss due to the liquidation of a cross-margin participant. CME Clearing has defined specific rules for MOS relationships, described in Chapter 8A of the CME Group Exchange Rulebook and cross-margining relationships, described in CME Group Exchange Rule 830.

Every cross-margining account is subject to the same prudent risk management standards, defined in CME Clearing policies and procedures for all the other accounts CME Clearing supports. These accounts are monitored through CME Clearing’s risk management systems and governed by the same approvals and committee structures as CME Clearing’s other accounts.

CME Clearing exposes its Clearing Members to the risk of its own default as a central counterparty. The CME Group Exchange Rulebooks address the obligation of CME Clearing to these firms in the event of a number of scenarios, including the default of CME Clearing. In the event that CME Clearing fails to comply with undisputed payment obligations over a set timeframe, CME Inc. may have to undertake special obligations or file for bankruptcy. A failure of CME Clearing to perform on its obligations for the Base, IRS or CDS major asset classes would trigger CME Clearing’s limited recourse provisions under CME Group Exchanges Rules 802.B.9, 8G802.B.2, and 8H802.B.2, respectively. These limited recourse provisions prevent the uncured losses arising from a Clearing Member default event related to one major asset class from impacting the clearing operations of the other major asset classes. Additionally, where a close-out netting scenario applies under CME Group Exchange Rule 818, Clearing Members have the right to close all positions held at CME Clearing immediately. At the time of closing, all obligations of the Clearing House to Clearing Members and customers would be netted separately, in accordance with current regulatory regimes and the U.S. Bankruptcy Code. As a requirement of clearing membership, Clearing Members agree to be bound by the terms articulated in Chapter 1 of the CME Group Exchange Rulebooks.

CME Clearing describes its risk management and mitigation approach in the Risk Management Framework discussed in CME Clearing’s disclosure for Key Consideration 1 of this Principle. The Risk Management Framework is reviewed at least annually by senior risk management and reviewed and approved at least annually by CHOC and the Board.

**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.

CFTC Regulation 39.11(a)(2) requires a DCO to maintain financial resources sufficient to enable the DCO to cover its operating costs for a period of at least one year, calculated on a rolling basis. CFTC Regulation 39.11(e)(2) provides that with respect to such financial resources, at least six months of operating costs must be maintained in the form of unencumbered, liquid financial assets (i.e., cash and/or highly liquid securities), provided that if any portion of such financial resources is not sufficiently liquid, the DCO may take into account a committed line of credit or similar facility for the purpose of meeting this requirement. To meet such financial resource requirements, CME Inc. monitors the primary drivers of operational expenses and CFTC required amounts on a monthly basis.
In accordance with CFTC Regulation 39.39(c)(1), CME Inc. has identified scenarios that may potentially prevent it from being able to meet its obligations and provide its critical operation and service as a going concern. CME Inc. has assessed the effectiveness of a full range of options for recovery and orderly wind-down. CME Inc. has addressed severe stress scenarios in the Recovery and Wind-down Plans which CME Inc. has identified as having the possibility of threatening the CME Clearing’s viability as a going concern, no matter how unlikely CME Clearing believes it is that such scenario might occur.

CME Clearing has divided the identified scenarios into two categories. Each severe stress scenario which could be triggered by the concurrent default of three or more Clearing Members and create uncovered credit losses and/or liquidity shortfalls is referred to as a “Member Default.” Each identified scenario which could be triggered by something other than a Member Default relates to general business risk, operational risk or any other risk that threatens the DCO’s viability as a going concern and is referred to as a “Non-Default Loss.”
**Principle 4: Credit Risk**

An FMI should effectively measure, monitor, and manage its credit exposure 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 largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

**Summary Narrative**

**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.

CME Clearing describes the management of credit exposures and risks within the Risk Management Framework and related underlying policies, as discussed in CME Clearing’s disclosures for Principle 3. The Risk Management Framework is reviewed and approved by CHOC and Board at least annually or more often to reflect significant changes in policy. Procedures pertaining to the Risk Management Framework are produced within CME Clearing and updated at least annually or when there are significant changes to CME Clearing’s risk management practices. These procedures outline the specific execution of risk management practices outlined in the Risk Management Framework and the frequency that they occur.

In addition to the risks addressed in the Risk Management Framework, CME Clearing maintains an internal Credit Policy, which describes the Clearing House’s methodology for managing credit risk exposure, both from Clearing Members as well as custody and settlement banks. The Credit Policy is approved by the Credit Committee and CHRC, as described further in CME Clearing’s disclosures for Principle 7.

**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.

In developing appropriate risk management policies, CME Clearing has identified a number of credit risks faced in the normal course of business of the Clearing House. In general, these risks are created through the normal relationships formed between the Clearing House and the other institutions necessary to maintain clearing operations and offer the market stabilization its Clearing Members depend on to continue their business in CME Clearing’s markets. CME Clearing faces these risks against its Clearing Members through their potential non-performance on their obligations to the Clearing House. CME Clearing also faces credit risks from settlement and custody banks through their potential non-performance on their agreements to provide deposit arrangements for CME Clearing and its Clearing Members.
CME Clearing assesses the credit risk posed by each entity it faces during its rating process, described in CME Clearing’s disclosures for Principle 3. Additionally, CME Clearing has developed tools to monitor and measure credit exposures across different major asset classes based on current portfolios and risk factors utilizing real-time pricing and position information. These systems are designed to allow CME Clearing to review potential risks at a number of levels of granularity: major asset class, Clearing Member, account, and individual customer. This approach allows CME Clearing to monitor all products horizontally across Clearing Members, as well as vertically within each Clearing Member. Using these tools, CME Clearing can also assess potential concentrations in either Clearing Member client or house portfolios.

Risk monitoring at CME Clearing is managed continually on a 24-hours a day, 6 days a week basis using real-time market data to assess risk exposures across Clearing Members and customer accounts. This includes running at least daily margin calculations for all products, but twice daily for most products. Escalation policies ensure that atypical exposures are noted and approved by appropriate members of the Risk Management team, with additional follow-up as necessary with Clearing Members, settlement banks, or other entities as appropriate.

CME Clearing provides its Clearing Members access to its internally developed pre-trade credit control systems; by CME Group Exchange Rule Clearing Members are required to impose credit control on their customers. These tools, available for CME Globex and cleared swaps products, allow FCM Clearing Members to limit their total exposure to their customers’ electronic trading accounts through credit limits and kill switch capabilities. These systems allow risk managers at both CME Clearing and Clearing Members to gain insight into credit exposures at the execution account level. These risk controls support the reporting and escalation structures in place for credit risk management at CME Clearing. The escalation structure includes appropriate levels of notification and potential action for CME Clearing, settlement banks, and/or Clearing Members based on the particulars of the activity and risk potential.

All CME Clearing risk tools are continually assessed to ensure adequacy and effectiveness across all potential situations and evaluated against prevailing industry best practices to ensure tools are properly measuring potential risks facing the Clearing House.

In addition to its daily risk monitoring practices, CME Clearing is also authorized to use a number of powers specified in the CME Group Exchange Rulebook that allow it to effectively manage credit risk, particularly non-business as usual circumstances. The Clearing House and the CHRC maintain the power under CME Group Exchange Rule 824, to call for additional performance bond deposits from a single or multiple Base Clearing Member(s) if unstable conditions relating to one or more products exists. Under CME Group Exchange Rules 8G824 and 8H824, IRSRC for IRS Clearing Members and CDSRC for CDS Clearing Members, as well as the Clearing House can take similar actions to those prescribed under CME Group Exchange Rule 824. Additional performance bonds would be called for in order to safeguard the Clearing House and its Clearing Members.

Further, CME Group Exchange Rule 403 describes extraordinary measures that may be taken by the Clearing House, under the authority of the CHRC to protect the markets which it clears and non-defaulting Clearing Members. Under CME Group Exchange Rule 403, CHRC has the power to increase performance bond, Guaranty Fund or capital requirements, or impose position limits on a Base Clearing Member, who in the opinion of CHRC, in consultation with CME Clearing senior management
poses additional risk to the Clearing House. Emergency powers also give CME Clearing the right to require liquidation of Base Clearing Member positions for portfolios that present significant risks to the Clearing House. Similar extraordinary measures can also be taken by IRSRC for IRS Clearing Members and CDSRC for CDS Clearing Members under CME Group Exchange Rules 8G27 and 8H27, respectively.

**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.

N/A

**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.

CME Clearing utilizes a variety of methods to cover current and potential future exposures. This includes the regular mark-to-market and settlement of all product exposures, which is completed at least daily, with most products subject to twice daily mark-to-market and settlement. These mark-to-market cycles drive settlement variation obligations as well as the calculation of performance bond requirements, which ensures the risk of current Clearing Members’ exposures are measured and funds are moved between Clearing Members accordingly. CME Clearing reserves the right to make ad hoc settlement variation and initial margin calls to cover Clearing Member risk as market activity dictates. In conjunction with this, CME Clearing also adheres to a policy of prudent collateral standards, described in CME Clearing’s disclosures for Principle 5, to reduce potential future exposures with a high degree of confidence.

CME Clearing applies prudent margin coverage standards based on the liquidity characteristics and market structures for the products which it clears. At a minimum, CME Clearing employs the following margin periods of risk under its margin models: at least one-day for futures and options; at least one-day for swaps on agricultural commodities, energy commodities, and metals; and five days for all other
swaps.\textsuperscript{52} To ensure the coverage of potential future exposures, CME Clearing has set margin levels for products and portfolios to meet at least a 99% coverage standard on an ex post basis within the defined margin period of risk for the product and portfolio. CME Clearing employs customer gross margining for customer accounts, which ensures each customer account is fully margined rather than being offset against other customers at the same Clearing Member, providing additional margin coverage. CME Clearing’s collection of customer gross margin improves its ability to port the customers of a defaulting Clearing Members and also, reduces the likelihood of procyclical margin calls in managing a market stress event. Additionally, CME Clearing monitors Clearing Members’ customer and house portfolios for concentration risks and other risk factors and may require additional performance bond if risk profiles warrant.

In addition to the coverage of day-to-day risks, CME Clearing has established separate financial safeguards waterfall arrangements for each of its major asset classes to manage multiple Clearing Member defaults. CME Clearing’s three independent financial safeguards waterfalls are for: Base (exchange traded futures, options on futures, and certain OTC derivatives, such as OTC FX and some agricultural swaps), IRS, and CDS products. As described above, under CME Group Exchange Rules, limited recourse provisions are in place for each of CME Clearing’s major asset classes. In the event of a default of a Base, IRS, or CDS Clearing Member, CME Clearing may only access the resources specific to the clearing service in which the default occurs in the following order:

- Defaulted Clearing Member performance bond and Guaranty Fund contributions;
- The CME Contribution;
- Mutualized Guaranty Fund contributions of non-defaulting Clearing Members; and
- Assessments against non-defaulting Clearing Members.

To the extent that a Clearing Member is a participant in multiple clearing services and is in default to CME Clearing, CME Clearing may under certain circumstances utilize the resources of the defaulted Clearing Member related to one clearing service to cure losses related to another clearing service in which the Clearing Member participates.

The Guaranty Funds for each major asset class function to cover the tail risk, beyond the 99% coverage level achieved through margin collection, and are sized through employment of statistical tools via stress testing that measure extreme but plausible market scenarios. CME Clearing’s Guaranty Funds for each major asset class are sized to cover the losses caused by the default of the two largest Clearing Members and their affiliates under extreme but plausible market conditions – these losses exceed the size of a Clearing Members available margin funds. In the unlikely event, a Clearing Member’s funds, including its margin and Guaranty Fund contributions, are not sufficient to cure the losses caused by its default, the first layer of the financial safeguards waterfall, the CME Contribution, will be utilized. This contribution is held at CME Inc., described in CME Group Exchange Rules 802, 8G802, and 8H802, for Base, IRS, and CDS products, respectively. The amount of the contribution is determined per major asset class. In managing a default, if CME Clearing exhausts the CME Contribution, the remaining loss will be cured by the next layer in the financial safeguards waterfall, the mutualized Guaranty Fund.

\textsuperscript{52} Consistent with CME Group Exchange Rule 826, certain proprietary positions (generally those that are not related to agricultural products) are margined using a minimum margin period of risk of two-days.
which are funds contributed by the non-defaulting Clearing Members to meet their Guaranty Fund requirement.

Additional financial safeguard resources are available through the assessment powers, which permit CME Clearing to call for additional funds from Clearing Members in the event that losses have exceeded all other pre-funded resources. These powers are sized using the same stress tests as those used to size the relevant Guaranty Fund.

CHOC and the appropriate CME Clearing Risk Committee oversee the financial safeguard waterfalls, including methodology as well as coverage, which are periodically reviewed by them. The policy supporting the Guaranty Fund sizing methodologies is maintained in the Risk Management Framework, which is reviewed and approved by CHOC and full Board. Specifics dictating the sizing methodologies are reviewed by CHOC and appropriate CME Clearing Risk Committee and the Risk Management Framework is then updated as needed.

In addition to the protections provided by the financial safeguards waterfalls, CME Clearing maintains a 364 day, fully secured, committed credit facility with a consortium of U.S. and non-U.S. banks to help ensure the continuation of the Clearing House’s ability to maintain critical operations. As of November 30, 2017, the credit facility is sized at $7 billion, expandable to $10 billion. Under the terms of the credit facility agreement, CME Clearing may use the proceeds to provide temporary liquidity in the event of a Clearing Member default, a liquidity constraint, or default by a depository institution (custodian of collateral). The credit facility may also be accessed if there is a temporary problem with the domestic payments system that would delay payments of settlement variation between CME Clearing and its Clearing Members. This credit facility thus provides CME Clearing with additional capacity to pay settlement variation to all Clearing Members even if financial obligations to CME Clearing have not been met.

**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.

The overall size of each Guaranty Fund, as described in CME Clearing’s disclosure for Key Consideration 4 of this Principle, is determined through daily stress testing of numerous scenarios that capture extreme but plausible market conditions. Results of each of the financial safeguard stress tests are analyzed daily by the Risk Management team and reported to CME Clearing’s internal Stress Testing Committee, which is comprised of staff- and senior-level risk managers for each major asset class, at least monthly, or more frequently as market conditions warrant. These reviews help ensure that the
calculated size of each Guaranty Fund is appropriate to cover the risk of the exposures within each major asset class.

On at least a monthly basis the Base, IRS and CDS Guaranty Funds are re-sized; although, CME Clearing maintains the ability to re-size each of its Guaranty Funds on an ad hoc basis, as market conditions warrant, supported by the daily review of stress testing results. Further, at least on a monthly basis and more frequently as necessary, each major asset classes’ stress tests are reviewed by CME Clearing through the Stress Testing Committee through analysis of stress test and Guaranty Fund results. This includes a review of processes, models, underlying parameters, and scenarios to determine if adjustments are necessary to ensure sufficient financial safeguards coverage. The results of these reviews are either confirmation of the adequacy of CME Clearing’s internal stress testing practices, or result in changes to the current approach, which are signed off by the CRO, after review by Stress Testing Committee. Significant changes to stress testing practices are brought to the appropriate CME Clearing Risk Committee, CHOC, and the full Board for review and approval. The stress testing assumptions and Guaranty Fund sizing methodologies are independently validated at least on an annual basis by qualified resources, external to the Clearing House.

**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.

CME Clearing has defined a number of stress testing scenarios that capture a variety of extreme but plausible market conditions. Scenarios are used to estimate worst case losses upon a given Clearing Member’s default, size the Guaranty Fund, and assess portfolio liquidation risks.

The key objective of CME Clearing’s approach for its stress testing framework is to prudently account for extreme but plausible market fluctuations. The scenarios-based approach CME Clearing implements achieves this goal through utilizing both historical and hypothetical scenarios that identify extreme movements in price, volatility, and liquidity across various risk factors, as well as identifying extreme correlation breaks. For each major asset class, scenarios are selected to ensure that extreme historical events are captured through utilizing data that demonstrates periods of extreme volatility. CME Clearing’s scenario selection process is supported by its prudent look-back period for each of its major asset classes, which captures some of the most extreme market moves observed in history.

Under CME Clearing’s stress testing framework for each major asset class, the historical and hypothetical scenarios CME Clearing utilizes capture relevant peak historical price volatilities, shifts in price determinant and yield curves, multiple defaults over various time horizons, and simultaneous pressures in funding and asset markets. Further, stress tests are designed using a set of shocks to simulate extreme but plausible market conditions. Shocks are determined using historical analysis of individual product movements to identify the impact of significant price volatility. In addition, the Risk Management team defines hypothetical, forward-looking scenarios, and shock values to replicate potential market instability based on market expertise and discussions with market participants. All stress values are compared to current market activity and future modeling and expectations to ensure
the stress tests capture the worst observed circumstances and the worst estimate of potential future market circumstances.

CME Clearing analyzes stress test results for Clearing Member portfolios across different major asset classes in an uncorrelated fashion – e.g., Base stress test results are viewed independently from IRS stress test results, even if a single Clearing Member maintains clearing memberships in both major asset classes. Where applicable, a Clearing Member’s (including affiliates) customer and house positions are stressed separately and worst-case losses are determined for each individually. This shows the greatest potential loss if a Clearing Member were to suffer both a customer and a house default simultaneously.

As noted under CME Clearing’s disclosure for Key Consideration 5 of this Principle, on at least a monthly basis, the internal Stress Testing Committee reviews stress testing scenarios per major asset class and assesses if any changes need to be made or additional scenarios need to be added to the stress testing framework. Additionally, summary stress testing results are provided to the appropriate CME Clearing Risk Committee and CHOC. CME Clearing’s stress testing framework is also evaluated through the annual validation process.

CME Clearing also routinely conducts reverse stress testing, which is designed to identify market conditions that may cause the exhaustion of CME Clearing’s Guaranty Funds. These results are reviewed at least monthly to help inform overall policies and analyze overall exposures to CME Clearing. Each scenario offers insight into the potential results of severe and unexpected changes to the markets or market participants.

New products are subject to analysis to determine their impact on current stress tests, prior to being approved for clearing. Depending on the attributes of the proposed product, the current stress tests may be updated or new stress tests created. All new products are reviewed based on historical market data and similar, currently cleared products. The Risk Management team designs stress tests for new products considering volatility, liquidity, curve shifts, and effects of shifts in related products, among other metrics. Material changes to stress testing procedures or parameters are approved by the CRO and/or applicable CME Clearing Risk Committee and Clearing House Oversight Committee.

**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.

CME Clearing has established explicit rules around the default of one or more Clearing Members for each major asset class defined in CME Group Exchange Rule 802 (for products in Base major asset class), CME Group Exchange Rule 8G802 (for products in the IRS major asset class), and CME Group Exchange Rule 8H802 (for products in the CDS major asset class). These CME Group Exchange Rules take into account legal and regulatory mandates, prior experiences, and prudent risk management practices to maintain the solvency of the Clearing House. CME Group Exchange Rules detail the use of
a defaulted Clearing Member’s collateral and the financial safeguards waterfalls for each major asset class to cover the losses associated with the default event.

If the defaulted Clearing Member’s resources are exhausted before the losses have been cured, CME Clearing will apply CME Contributed funds. In the unlikely event there are remaining losses after the application of those funds, CME Clearing will apply the Guaranty Fund contributions of non-defaulting Clearing Members, limited to the financial safeguards waterfall of the major asset class(es) associated with the Clearing Member default event. Following the unlikely exhaustion of the relevant mutualized Guaranty Fund(s), CME Clearing would assess non-defaulting Clearing Members that maintain membership(s) in the major asset class(es) for which the default occurred. For the Base financial safeguards package, assessment powers cannot exceed 2.75 times each non-defaulting Base Clearing Member’s Base Guaranty Fund requirement for a single default. For multiple defaults in a five-day period, non-defaulting Base Clearing Member cannot be assessed more than 5.5 times their Base Guaranty Fund contributions. For IRS and CDS financial safeguards waterfalls, assessment powers are sized to cover the potential default of the Clearing Members that would result in 3rd and 4th largest losses in each major asset class.

In the event that the Guaranty Fund is drawn on to cover losses caused by a Clearing Member default, each non-defaulting Clearing Member is required to replenish its Guaranty Fund contributions by close of business the business day following the utilization of the Guaranty Fund, subject to any applicable cooling off periods – 5 business days for the Base financial safeguards waterfall and 25 business days for the IRS and CDS financial safeguards waterfalls.

Within CME Clearing’s rules and procedures, there are provisions for addressing uncovered credit losses. These provisions would be triggered where multiple Clearing Member default events lead to losses larger than the available financial resources, both funded and un-funded, as described in CME Group Exchange Rules 802, 8G802 and 8H802 for Base, IRS, and CDS, respectively. Under the limited recourse structure, established for each of CME Clearing’s major asset classes, CME Clearing will fulfill settlement variation payments to the extent resources attributable to the major asset class are available, but where an uncovered credit loss event is triggered settlement variation gains may be haircut for market participants with positions that are “in the money” to offset the uncovered losses. Additionally, CME Clearing has the right to execute contract tear-ups for the Base, IRS, and CDS major asset classes under CME Group Exchange Rules 802.B.8, 8G802.B.7, and 8H802.B.7, respectively. For Base, subject to the appropriate governance, CME Clearing has the right to execute either partial or full contract tear-ups. For the IRS and CDS financial safeguards waterfalls, only full contract tear-ups can be executed – e.g., upon the full contract tear-up for CME Clearing’s IRS major asset class, CME Clearing would cease to offer IRS clearing services at that point in time.
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.

Summary Narrative

Key consideration 1: An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

Under CME Clearing’s Collateral Policy, it employs a policy for establishing and reviewing its criteria for acceptable collateral deposited with the Clearing House to meet performance bond and Guaranty Fund requirements. The Collateral Policy is managed by the Collateral Committee, which is comprised of staff- and senior-level members of the Risk Management team and the overall policy framework is overseen by the CHRC. CME Clearing’s Collateral Policy is consistent with CFTC Regulation 39.13(g)(10) thru (14), which establishes criteria for the type of assets a DCO may accept for collateral. The Collateral Policy also sets criteria for appropriate collateral valuation and haircuts and specifies concentration and pledge criteria.

CME Clearing’s collateral policy allows for the acceptance of a diversified set of collateral for deposit with CME Clearing. The guidelines used to identify eligible collateral ensure that CME Clearing accepts collateral with minimal credit, market, and liquidity risks. Risks associated with various forms of acceptable collateral are mitigated through ongoing review, daily valuation, prudent haircuts, and limits. The collateral accepted by CME Clearing from its Clearing Members is used to satisfy performance bond requirements (which is further distinguished by performance bond requirement type – e.g., customer segregated, cleared swaps customer, or Clearing Member “house, non-segregated”) or Guaranty Fund requirements, and is dedicated to this purpose only and cannot be used by CME Clearing to cover general business risk and is bankruptcy remote from the potential insolvency of the Clearing House.

Collateral is evaluated on the basis of two main elements: stability of price movements that meet an acceptable volatility level and liquidity of collateral for conversion into cash in an appropriate time frame. For some collateral types, or subsets of collateral types, liquidity resources serve to backstop CME Clearing’s liquidity needs. CME Clearing does not accept collateral from a Clearing Member whose issuer is associated with the Clearing Member or collateral that is highly correlated with a default of the Clearing Member. CME Clearing continually monitors for wrong way risk factors through its day-to-day monitoring of collateral and risk assessment process.

CME Clearing analyzes acceptable collateral types on a daily basis to highlight impacts of market events and general market developments. CME Clearing reviews any findings as a result of daily observations during the weekly Collateral Committee meetings. CME Clearing has staff that are dedicated to the management of credit and liquidity risk, which encompasses the evaluation of CME Clearing counterparties and monitoring of acceptable collateral types, among other activities. CME Clearing utilizes internally developed systems and relies on experienced personnel to ensure that collateral program asset type limits and any other applicable limits are observed or revised, as
appropriate. Daily reviews are performed on Clearing Member collateral holdings to assure adherence to CME Group Exchange Rules and CME Clearing guidelines.

Recommendations for acceptance of new forms of collateral or changes to current collateral guidelines are presented to the Collateral Committee for its approval using detailed analysis of collateral related data, including market conditions, limits, and haircuts. While CME Clearing consistently applies its Collateral Policy to all forms of acceptable collateral, the terms under which CME Clearing will accept various forms of collateral vary per collateral asset class. A list of acceptable collateral can be found on the CME Group website. Under exceptional circumstances the Collateral Committee can meet on an ad hoc basis to expedite changes to CME Clearing’s existing Collateral Policy.

**Key consideration 2:** An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

CME Clearing marks collateral to market at least daily, or more often as appropriate, and has the system capacity to override prices as necessary. Exception reports are utilized to validate prices that exceed market risk defined thresholds for intraday price moves. CME Clearing reviews the exception reports to validate current market prices with approved third-party data sources.

Haircuts are applied to eligible collateral, considering foreign exchange risk to ensure that upon liquidation in a time of market stress, the funds received would at least equal the value of the collateral after the haircut. CME Clearing formally reviews collateral haircuts and limits for potential changes at least on a monthly basis or more frequently as market conditions warrant, consistent with CFTC Regulation 39.11(d)(1).

Ad hoc haircuts can be applied if significant volatility is observed in markets relevant to acceptable collateral, these markets are monitored on a daily basis. Haircuts are determined using at least a one-day 99% confidence intervals over a prudent lookback period of at least 12 months. Additional quantitative and qualitative information to capture tail risks, utilizing data over the last four years is included in the analysis to monitor haircuts as well. Qualitative analysis helps identify and account for factors that affect market fundamentals, but may not yet be reflected in the quantitative information.

**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.

CME Clearing’s Collateral Policy is designed to apply stable and prudent haircuts that are calibrated to reduce the likelihood of procyclical adjustments in times of stress. Collateral haircuts are set to provide coverage through a broad range of market environments and to remain stable. Current haircuts can be found on the CME Group website.53

**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.

The Collateral Policy at CME Clearing requires regular reviews of collateral concentrations, completed by the Collateral Committee. The Collateral Policy articulates collateral diversification criteria. Clearing Members may satisfy 100% of their margin requirements with the most liquid forms of collateral, such as U.S. dollar cash and U.S. Treasuries and to the extent less liquid forms of collateral are utilized to meet obligations, collateral limits are employed in line with the CME Clearing Collateral Policy, which are disclosed on the CME Group website.\(^5^4\) CME Clearing accepts collateral with a short-term liquidation horizon or collateral that can be utilized to acquire cash promptly.

CME Clearing considers potential collateral concentrations when analyzing collateral held and when conducting simulated collateral liquidation drills. Liquidation drills are performed with contracted liquidation agents at least on an annual basis. The Risk Management team monitors concentrations periodically and reviews any concerns with the Collateral Committee. At least quarterly, CME Clearing completes a thorough haircut coverage analysis, which is presented to the Collateral Committee.

**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.

CME Clearing adheres to the requirements under CFTC Regulation 1.49 for the denomination of customer funds and location of depositories in its consideration for the acceptance of cross-border collateral. Cross-border collateral is reviewed and analyzed for all major risks, including liquidity risk, before being accepted. CME Clearing also considers the legal implications of the acceptance of cross-border collateral types as part of its initial and ongoing review. CME Clearing evaluates operational movements associated with various forms of cross-border collateral for time zone impacts, and verifies a custody bank’s operational capability to move such collateral. In addition, CME Clearing confirms the ability to pledge cross-border collateral to its committed secured credit facility.

Credit and market risks are evaluated for cross-border collateral and monitored for developments that could require changes to eligibility for acceptance. CME Clearing limits the acceptance of cross-border collateral through the utilization of individual collateral type limits that account for cross-border risk as well as FX risk.

**Key consideration 6:** An FMI should use a collateral management system that is well-designed and operationally flexible.

Collateral is managed and maintained by a robust system that allows for timely collateral valuation and management of collateral holdings, according to various rules and limit structures. The collateral system is flexible and CME Clearing has the ability to establish new performance bond deposit types, limits, and other enhancements on an ongoing basis. Staffing to support the collateral system is determined to take into account peak utilization periods. CME Clearing also designed the system to accept a wide variety of collateral and is parameterized to allow efficient and timely changes according to articulated risk management standards. CME Clearing’s collateral holdings are reviewed periodically to ensure their ability to provide robust coverage during times of market stress.

CME Clearing has established a clearly defined and transparent timeline for Clearing Member collateral deposit and withdrawal transactions, calculation of value of performance bond assets, and

reporting. The timeline is established for the benefit of all participants that facilitate the collateral and performance bond process. Operational risk is mitigated through the collateral management systems process, system automation, and the efficiency of the timeline itself. CME Clearing can also perform ad hoc collateral valuation cycles as needed. CME Clearing reconciles its internal systems against its holdings at custody banks and institutions daily.

CME Clearing maintains the appropriate control of collateral, as each Clearing Member grants to CME Clearing a first-priority and unencumbered lien as security for all obligations to the Clearing House against any property and collateral deposited with CME Clearing by the Clearing Member. This arrangement is further described in CME Group Exchange Rules 819, 8F008 and 8H08, for exchange-traded and cleared swaps (other than CDS), and CDS products, respectively. CME Clearing continually analyzes and assesses the quality of its claim via robust legal examination of its collateral acceptance mechanisms. The majority of collateral is transferred on a “free delivery” basis into an account in CME Clearing’s name at a custody bank which guarantees simultaneous possession and control. CME Clearing also accepts pledges of “control only” collateral in instances where CME Clearing has satisfied internal due diligence check to ensure that the mechanisms for exercising the Clearing House’s control are sound.
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.

Summary Narrative

**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.

CME Clearing’s risk management model uses both performance bond and settlement variation to mitigate the risk of default by a Clearing Member. Performance bond and settlement variation are collected at least daily for all CME Clearing products, twice daily for most. CME Clearing also reserves the right to perform ad hoc settlement cycles as market conditions warrant or to call for additional performance bond deposits as necessary. CME Clearing employs the following portfolio risk assessment models to determine Clearing Member’s performance bond requirements:

- SPAN: exchange traded derivatives and a small number of cleared swaps products (e.g., agricultural swaps);
- Historical value-at-risk: IRS and FX swaps products; and
- Multi-Factor Algorithm: CDS products.

Performance bond policy is established to ensure appropriate coverage for all products and portfolios, while allowing CME Clearing the flexibility to adjust settings or model parameters as market conditions warrant. CME Clearing also complies with CFTC Regulation 39.13(g)(8)(ii), which requires, in relevant part, a DCO to require its clearing membership to collect customer initial margin, for non-hedge positions, that is greater than 100% of the DCO’s initial margin requirements. CME Clearing employs the appropriate margin period of risk for the products it clears considering the liquidity characteristics and market structure of the product. In light of these considerations, CME Clearing applies margin periods of risk of at least one-day for futures and options; at least one-day for swaps on agricultural commodities, energy commodities, and metals; and five days for all other swaps.\(^{55}\)

Margin methodologies utilized to calculate portfolio risk are defined to account for product and portfolio specific risk profiles, including the potential for jump-to-default risk, concentration risk, and liquidity risk, among others. Representative products and portfolios for each product type are used to determine the appropriate margin methodology. In evaluating portfolio risk assessment methodologies, CME Clearing evaluates existing market convention, and is open to input from market participants. For any substantive change CME Clearing seeks to make to an existing portfolio risk assessment methodology, the appropriate CME Clearing Risk Committee and CHOC will be consulted and their approvals sought. Where changes could have a significant impact to the risk profile of the Clearing House, CHOC would also seek the review and approval of the full board.

Additionally, CME Clearing monitors Clearing Members’ customer and house portfolios for other risk exposures and may require additional margin depending on concentrations or other risks that the

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\(^{55}\) Consistent with CME Group Exchange Rule 826, certain proprietary positions (generally those that are not related to agricultural products) are margined using a minimum margin period of risk of two-days.
portfolios pose. The basic purpose of this practice is to better calibrate margins against expected liquidity profiles of certain portfolios in times of market stress. In conducting this review of product or portfolio liquidity profiles, CME Clearing may seek to increase the margin period of risk for particular products directly within the portfolio risk assessment methodology, or alternatively, by addressing liquidity issues through “add-ons” to the basic portfolio risk assessment algorithm calculation.

CME Clearing calibrates its models to achieve their required coverage level of at least 99% on an ex post basis using a robust time series. Backtesting is employed to ensure appropriate coverage levels are achieved, with a focus on the stability of portfolio risk calculations. Additionally, CME Clearing takes into account a variety of other factors in evaluating portfolio risk assessment algorithms, such as liquidity, volatility, the potential for jump-to-default risk, and concentration characteristics. CME Clearing also seeks to ensure the accuracy of its time series through interaction with dealer and other market sources to ensure parameters reflect fair values. Further, CME Clearing’s methodologies for generating initial margin requirements, including its theoretical models, are reviewed and validated by a qualified and independent party, on a regular basis.

CME Clearing provides margin methodology overviews on its website and provides software replication of the margin models to its Clearing Members and their clients. Descriptions of subsequent changes to the methodology are disseminated to each Clearing Member through normal communication channels, such as Clearing Advisories and rule filings.

Settlement cycles are conducted on a routine basis, on a defined and publicly announced schedule. CME Clearing maintains procedures requiring explicit approval of funds due to the Clearing House by a certain time for each settlement cycle and trading day. The Clearing House employs controls to ensure that payment has been made and maintains sufficient, qualified staff to support Clearing Members during each cycle as necessary.

Any shortage of payment by a Clearing Member to the Clearing House is treated as a failure to perform to CME Clearing, which is defined as a default event, and may trigger CME Group Exchange Rules 802, 8G802, or 8H802, as appropriate. The resulting actions by CME Clearing, designed to minimize losses to customers and non-defaulting Clearing Members, are described in CME Clearing’s disclosures for Principle 13.

**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.

CME Clearing’s primary sources of price data are derived from “direct” sources, including trades, quotes, and other market information gathered from product market transaction activity. CME Clearing augments price data received from direct sources with information derived from other sources and solicits additional market data to gather relevant price information. Additionally, for certain less liquid instruments, CME Clearing leverages data from more liquid and correlated instruments to better calibrate pricing and settlement information. Further information on the settlement price approach can be found under CME Group Exchange Rule 813.

CME Clearing maintains processes to ensure robust settlement prices, which serve as the primary information for performance bond calculations. CME Clearing has a process where daily settlements
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.

CME Clearing covers at least 99% of the forecasted price moves for a product or portfolio of products over a minimum of one-day for futures and options on futures; one-day for swaps on agricultural commodities, energy commodities, and metals; and five days for all other swaps. CME Clearing determines appropriate margin levels using a variety of unique risk factors per product that may include:

- Historical Volatility: daily price changes measured over various time periods;
- Intraday Volatility: price changes within a market session;
- Implied Volatility: forward looking measure of potential volatility, derived from analysis in the options markets;
- Seasonal Volatility: volatility changes associated with specific points in the calendar due to the nature of the product;
- Liquidity: the overall depth of the market and the instruments of the cleared product;
- Open Interest: the amount of open positions maintained by market participants in a particular product;
- Market Concentration: the size of Clearing Members’ positions relative to the market as a whole; and
- Jump-to-Default: the potential moves associated with accounts rapidly moving into or out of a contract due to an individual market factor changing a single instrument.

In addition, factors such as current and anticipated market conditions, potential close-out risk, and other relevant information are used in establishing appropriate performance bond levels. Coverage levels are defined for individual products and/or on a portfolio basis and are tested daily through rigorous backtesting. CME Clearing monitors performance bond coverage by comparing realized price volatility against current performance bond levels. Margin model parameters for IRS and CDS products are calibrated each day and results are reviewed by the Risk Management team. Historical market volatility parameters are monitored through quantitative methods and models to determine if observed market movements are appropriate variables to establish margin levels.
CME Clearing evaluates contract liquidity based on product specific metrics, for example, open interest and volume. CME Clearing also gives weight to market feedback in evaluating the liquidity characteristics of particular products. While CME Clearing complies with regulatory minimum margin periods of risk per CFTC Regulation 39.13, CME Clearing sets its margin periods of risk for products considering the liquidity characteristics and market structures related to the product cleared. Further, CME Clearing may require additional margin for portfolios or products that are subject to additional liquidity risk through incorporating liquidity risk parameters within the margin model or through add-on charges that are calibrated utilizing a separate methodology.

Consistent with its approach to evaluating product or portfolio liquidity characteristics, CME Clearing also incorporates a number of other risk characteristics into its analysis of portfolio risk assessment algorithm margin sufficiency. These risk characteristics include, the level of standardization of a product, as less standardized products may be more difficult to liquidate in stressed market conditions. Similarly, transparency, market depth, and market structure are taken into account when evaluating the risk characteristics of a product class.

Exchange traded products are margined under the SPAN methodology, a widely accepted model in the industry. The SPAN methodology was developed using expertise from market participants and independent resources; current parameter utilization has been reviewed by CHRC. SPAN utilizes a representative number of various market simulations of underlying price and/or implied volatility changes, along with time to expiration reduction, defined by CME Clearing for each applicable product. The shock magnitudes for both price and volatility, as well as changes in time to expiry are defined by the Risk Management team to cover a myriad of potential market moves. The volatility measures CME Clearing utilizes for setting margin levels for exchange-traded products are anti-procyclical by nature and designed to ensure that margins are at least as stable and conservative as those calculated using volatility estimated over a 10-year historical lookback period or applying a 25% margin buffer that could be temporarily eroded during periods of stress.

In applying SPAN to applicable exchange traded product portfolios, the total potential loss is calculated across all products for each scenario. The scenario resulting in the largest total loss is identified and defined as the performance bond requirement (sometimes referred to as total “scan risk”) for that applicable portfolio.

The margin model for IRS and FX swap derivatives is based on a HVaR methodology with exponentially weighted moving average (“EWMA”) volatility forecasting. For these particular products, performance bond coverage is set to at least 99% of potential losses over a 5-day period. In the HVaR framework, past events are used for generating possible future scenarios, with more recent events weighted more heavily. HVaR is used for both its scalability across multiple currencies as well as its transparency to the industry; it is a standard, well understood model for many financial services firms and is easily replicable. Additionally, IRS performance bond requirements are set to be at least as conservative as those calculated using volatility estimated over a 10-year historical lookback period in order to address procyclical risk. Procyclical risk for FX swaps products is mitigated through the use of a stressed value-at-risk (“SVaR”) component, which complements the HVaR based margin component of the FX swaps margin methodology. The SVaR component incorporates scenarios that capture the dates when the largest historical moves of the risk factors occur.
The CDS margin model uses the sum of various risk factors to capture the potential risks associated with the CDS products eligible for clearing at CME Clearing. The methodology was developed using expertise from market participants and independent resources. Of the risk factors used in the CDS margin model, market risk and interest rate sensitivity factors consider macroeconomic risk, representing market-wide impacts on CDS prices, including factors affecting both the general price level and the term structure of CDS prices. Additional risk factors model potential losses caused by idiosyncratic and liquidity/concentration risks, specific to CDS contracts and the CDS market. At least a 25% weight is applied to stressed observations within the defined lookback period in the CDS margin model for determining the total CDS performance bond requirement. Added together, these individual risk factors define the total performance bond requirement for a single portfolio. By adding these risk factors together, CME Clearing’s model provides sufficient performance bond levels in the event that each underlying risk event occurs simultaneously.

These risk factors are designed to ensure CDS portfolio exposures cover at 99% of potential portfolio losses over a 5-day period, inclusive of unwind costs. The model accounts for risk factors affecting all CDS products currently offered for clearing at CME Clearing, to provide coverage for changing market conditions and portfolio compositions as the CDS clearing business expands. The risk factors considered in the CDS margin model represent the potential daily variations in CDS spreads across all contracts in the portfolio, which contain positions in index CDS contracts.

All margin models are reviewed and approved by the appropriate CME Clearing Risk Committee and CHOC before implementation, as well as prior to any material changes to the model. Material changes would also be approved by the Board. In conjunction with the margin calculations described above, CME Clearing maintains concentration margin programs for each major asset class. Clearing Members are subject to a concentration margin charge if they hold positions that are sufficiently large to trigger the concentration charge in the position’s respective major asset class. Each major asset class maintains a unique trigger for its concentration charge that allows for prudent additional margin coverage. The purpose of concentration margin is to recognize the potential market exposures due to large positions relative to the overall market or the financial resources available to support those positions. Concentration margin is currently employed as a separate margin calculation for exchange-traded, IRS, and FX swaps products and is incorporated directly into the CDS margin model.

CME Clearing also maintains the right to increase margin requirements, limit overall positions, limit individual contracts, and/or restrict trading in a certain product for either individual accounts or Clearing Members based on CME Clearing’s assessment of the risk exposures and firm specific risks. This information is outlined in the Rulebook under CME Rules 824 and 930.L.

All of the CME Clearing’s margin methodologies look to balance its prudent margin coverage standards with the impact of procyclicality to the marketplace. CME Clearing utilizes both short-term and longer-term volatility movements to appropriately calibrate margin coverage, while fostering overall stability to margin rates. CME Clearing’s margin models are designed to ensure a balance is struck between maximizing volatility coverage and minimizing large step margin changes.

CME Clearing also actively manages wrong way risk and it does not allow Clearing Members to post collateral that has been issued by itself, as the Clearing Member or any of its affiliates. To further protect against wrong way risk in Clearing Members, CME Clearing has implemented CME Group Exchange Rule 930.C, which prohibits Clearing Members from accepting performance bond deposits
for accounts that have been issued by the account holder. Additionally, CME Clearing does not accept any corporate bonds from CDS Clearing Members to meet any collateral obligations.

**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.

CME Clearing performs mark-to-market settlement variation and performance bond settlement cycles for most products twice per day and for all cleared products at least once per day to appropriately limit the build-up of risk exposures. CME Clearing reserves the right to execute settlement cycles more frequently as warranted by market conditions in accordance with CME Group Exchange Rule 814. Also, under CME Group Exchange Rule 824, 8G824, and 8H24 for Base, IRS, and CDS products, respectively, CME Clearing has the ability to call for additional performance bond where unstable conditions relating to one more products arise.

Settlement variation is calculated at least daily using current market prices based on updated positions. Intraday settlement variation calculations use a combination of current market prices and theoretical prices. End-of-day mark-to-market settlement obligations are calculated using settlement prices established by CME Clearing through a robust settlement process described in CME Clearing’s disclosures for Principle 8. In the rare instance that CME Clearing determines that a settlement price is an inaccurate representation of the market, the Clearing House maintains the right to change the settlement price to properly reflect the market. CME Clearing has defined this process to ensure prudent risk management, while maintaining a balance between operational efficiency and operational burden.

CME Clearing also monitors mark-to-market exposures throughout the day and night based on real-time price and position information to evaluate account level and Clearing Member risks based on new positions activity and/or market moves. This helps inform the decision of CME Clearing on whether to call for additional collateral through ad hoc settlement cycles or additional performance bond calls.

**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 authorized to offer cross-margining, they must have appropriate safeguards and harmonized overall risk-management systems.

CME Clearing offers margin reductions across products that are cleared at CME Clearing based on relationships between products, while adhering to prudent risk management margin standards. Additionally, CME Clearing participates in cross-margin programs with other CCP’s, and allows for cross-product risk offsets as a part of these cross-margin programs. Risk offsets between any product pair are subject to similar methodologies. A number of factors are incorporated in the margin reduction methodologies which include, but are not limited to correlations between products, seasonality, and comparative liquidity characteristics of the products in question.
After CME Clearing has determined appropriate product risk offsets, candidate risk offsets are backtested to establish the margin offset level. The margin reduction is compared to the backtest data to ensure the 99% coverage standards are met for all product combinations. The liquidation time horizon for the margin offset utilizes whichever product has the longest liquidation period. In the event that CME Clearing needs to liquidate cross-margin positions held with an external CCP, CME Clearing would work with the contra-CCP to efficiently liquidate the cross-margin product pair.

To ensure adequate margin coverage, product risk offsets are subject to review on at least a monthly basis, along with a review of “outright margin” levels. Margin reductions are adjusted or eliminated where appropriate, based on changing market conditions or cross-product correlations.

In evaluating cross-product risk offsets that are offered in conjunction with a cross-margin program, CME Clearing adheres to the cross-margining agreements with the participating CCPs, as described in CME Group Exchange Rule 830. All products that are eligible for cross-margining risk offsets must conform to the same policies that CME Clearing uses for determining margin reductions for the products it clears and are reviewed with the same frequency. These processes are agreed upon during approval of the cross-margin agreements with the participating CCPs.

CME Clearing maintains rigorous standards for product risk offsets, including its cross-margining portfolios. This consists of independent evaluation of margin models and daily monitoring of the risk of individual portfolios. Additionally, CME Clearing monitors overall creditworthiness and financial safeguards of the cross-margining CCP to ensure that it is appropriately covering the risks of the products included in the cross-margin agreement. Legal and operational considerations are reviewed and agreed to by the appropriate CME Clearing Risk Committee.

**Key Consideration 6:** A CCP should analyze and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting 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.

Backtesting is thoroughly incorporated in margin model design, development and implementation, and the overall Risk Management Framework. This policy ensures that proposed and existing margin models pass through proper vetting during the stages of development. Once model development is completed, the model is subjected to a series of backtesting exercises to ensure adequate coverage is achieved over historical time frames, sufficient to cover periods of extreme market moves. Once internal backtesting has been completed with satisfactory results, the models are validated by a qualified, independent team. This validation process ensures that the model achieves the appropriate margin coverage under various volatility periods and is theoretically sound. Once the validation is completed, the model is taken to the appropriate CME Clearing Risk Committee and CHOC for approval. Upon receiving approval from the appropriate CME Clearing Risk Committee and CHOC, the model is thoroughly tested through an implementation process including, quality assurance testing and production simulation, and then the model is introduced into production. If at any point through the process the model does not perform as expected then the model is not implemented in production environments until it can be corrected to perform as necessary.
CME Clearing conducts backtesting on a daily basis on portfolios, along with a monthly review of backtesting results on certain products and spreads. On an ongoing basis, backtesting processes are run daily for each major asset class to ensure calculated margin requirements for each Clearing Member continue to meet the required coverage standard within the liquidation time frame. The backtesting process is designed to cover observed market moves over the specified holding period for a variety of portfolios. CME Clearing analyzes the backtesting results regularly to assess that the margin model and its parameters are performing as expected and meeting the required target coverage standards. In addition to backtesting all Clearing Member portfolios, additional portfolios may be constructed for inclusion in the backtesting process using a representative sample of the CME Clearing universe of cleared products. Backtesting may also be run on individual products within the broader major asset classes to observe the behavior of specific products and/or market risks to CME Clearing and Clearing Members. Additional backtesting may be completed on new products prior to their launch to confirm that applicable margin models will provide sufficient coverage.

The time period used for backtesting is specific to the products and portfolios. Backtesting time frames may represent a static number of days or specific periods of time historically, chosen for their volatility or significance to the marketplace.

CME Clearing uses backtesting to confirm that margin models are performing as they were intended and are meeting the coverage standards defined for each product. Any backtesting violations trigger analysis exercises to assure model parameters are appropriately tuned to existing market conditions. Backtesting failures are escalated to the senior Risk Management team, who determines the necessary steps to address the failure. If necessary, the issue will be raised with senior management of CME Clearing, the appropriate CME Clearing Risk Committee, and/or CHOC.

Monthly sensitivity testing is performed on the margin models to allow CME Clearing to assess the impact of each factor on the overall performance bond levels on the products and portfolios the margin models cover. This practice is designed to ensure that appropriate risk factors are calibrated at levels that protect the Clearing House, even in stressed market environments by producing adequate margin coverage levels. The results of CME Clearing’s sensitivity analysis are reviewed by the Model Risk Committee on a monthly basis. The Model Risk Committee is comprised of staff- and senior-level members of the Risk Management team, including the CRO who have expertise that spans across the major asset classes in which CME Clearing provides clearing services.

**Key Consideration 7:** A CCP should regularly review and validate its margin system.

Margin model validations are performed at least once per year, more often if there are significant changes in the model, by qualified resources independent from the model development and approval process, which is overseen by the Model Risk Committee and CHOC. Margin model validations cover the appropriateness of the model for the products covered, review of backtesting results, ensuring the model achieves its desired coverage standard, and review of the model parameters, among other items. Validation results are reviewed by the Model Risk Committee and CHOC and any proposed model adjustments based on validation recommendations are investigated for appropriateness by the Risk Management team. The remediation of any validation findings is overseen by CHOC. Validation results and CME Clearing responses are shared with the appropriate CME Clearing Risk Committee and relevant regulatory authorities, as appropriate.
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.

Summary Narrative

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.

CME Clearing manages liquidity risk in adherence with its Liquidity Risk Management Framework and the requirements for the liquidity risk management under CFTC regulations. The Liquidity Risk Management Framework is reviewed and approved on at least an annual basis by CHRC, CHOC, and the full Board. The implementation of the Liquidity Risk Management Framework is overseen by CME Clearing’s internal Credit Committee, which is also responsible for reviewing liquidity risk and resources. The Credit Committee consists of members of staff and senior management of Financial & Regulatory Surveillance and the Risk Management team, which encompasses expertise in the management of credit risk, market risk, and liquidity risk, among others. Further, the CRO is a member of the Credit Committee.

The calculation of the largest liquidity need for CME Clearing is driven by scenarios relating to the default of a Clearing Member. Generally, in the event of a Clearing Member default, CME Clearing would convert a defaulted Clearing Member’s collateral into cash to meet settlement variation payments, according to customer protection rules, and facilitate the porting of the defaulted Clearing Member’s customer book, if applicable. Since Clearing Member default scenarios determine the largest liquidity need, liquidity resource sizing is primarily determined by considering actual Clearing Member profiles. Liquidity risks are measured and monitored through daily liquidity stress testing. A detailed analysis of liquidity stress testing results is brought to the Credit Committee on a quarterly basis. Additional detail around the methodology and governance can be found in CME Clearing’s disclosures for the following Key Considerations of this Principle.

Indirect liquidity risk is also considered including, but not limited to: assessing the liquidity impacts of scenarios including the insolvency, bankruptcy, or operational failure of a bank which provides settlement, custodial, or liquidity services to CME Clearing. CME Clearing seeks to maintain a diverse set of financial counterparty relationships which are monitored for multiple risks, including concentration, through counterparty reporting. Understanding that many of CME Clearing’s counterparties provide multiple services in a variety of roles (e.g., settlement bank, collateral issuer, Clearing Member), CME Clearing evaluates multiple ways in which affiliated counterparties face each other. CME Clearing assesses the overall counterparty credit risk and the liquidity risk of affiliated counterparties pose.
CME Clearing manages liquidity risk daily through measurement and regular monitoring of its Clearing Members, settlement banks, liquidity providers, letter of credit banks, custodian banks, as well as any other counterparty. The Risk Management team reviews monthly aggregate exposures to counterparties along with the counterparty’s associated credit assessment. Daily market indicators are monitored as well; these indicators include but are not limited to CDS spreads, stock prices, bond prices, interbank funding markets, repo markets, external rating changes, earnings, and news sentiment. The goal of CME Clearing’s liquidity risk assessment approach is to assure that potential liquidity exposures, particularly those driven by a Clearing Member default event do not exceed available liquidity resources which are detailed below. CME Clearing aims to mitigate potential liquidity risk from the deterioration of a counterparty’s credit health. The Risk Management team may recommend actions to reduce potential liquidity risk posed by a counterparty to CME Clearing. Liquidity risk is mitigated through CME Clearing’s exposure and resource profile, which is as discussed in CME Clearing’s disclosures for Principles 4 and 5.

**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.

Pursuant to its regulatory requirements as a DCO, CME Clearing measures settlement and funding flows through accounting for the movement of funds associated with settlement variation and performance bond obligations. Generally, the physical delivery of an underlying product relevant to a contract that has a physical delivery component, remains the responsibility of the Clearing Members on each side of the contract to deliver to the physical commodity. CME Clearing’s role in physically delivery contracts is discussed further in CME Clearing’s disclosures for Principle 10.

CME Clearing employs internally developed and regulatory reviewed systems to identify, measure, and monitor settlement flows. CME Clearing’s settlement banks confirm funding of these settlement variation flows once communicated to Clearing Members. CME Clearing’s systems allow the Risk Management team to monitor positions and settlement variation exposures in real-time both day and night. CME Clearing staff monitors the settlements and the interaction with the settlement banks to perform on the obligations communicated to Clearing Members. These systems additionally provide the ability to flexibly analyze Clearing Member settlement variation exposures by Clearing Member, Clearing Member account, account class, and product.

CME Clearing communicates expected settlement variation requirements throughout the day to Clearing Members and settlement banks prior to the execution of periodic settlement cycles to mitigate risks as well as to remain transparent to key settlement process participants. Additionally, if the current observed activity of a Clearing Member exceeds its typical settlement activity based on historically observed activity in normal and stressful times, exception reporting is triggered, alerting the Clearing House of the unusual activity. CME Clearing would notify the Clearing Member of the estimated settlement variation amount to provide early notice of large movements and to ensure accuracy of data. CME Clearing has further developed specific credit risk monitoring tools, as discussed in CME Clearing’s disclosures for Principle 4, that allow the Clearing House to continually monitor the risks posed by Clearing Members’ credit profiles. The settlement system, discussed in CME Clearing’s disclosures for Principle 9, ensures the efficacy of CME Clearing’s settlement flows through settlement bank due diligence and regular monitoring.
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.

N/A

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.

CME Clearing is responsible for meeting payment obligations associated with settlement variation and where appropriate, replacement costs associated with the physical delivery of a contract in the event one of its Clearing Members defaults. Please note that in this section, references to CME Clearing payment obligations will refer to these movements of funds. CME Clearing is not a party to the final exchange of securities, foreign currency, or other goods in settlement of expired futures contracts going through delivery; CME Clearing does not have any settlement or other payment obligations related to contracts with physical delivery.

CME Clearing employs liquidity stress testing to model liquidity risk scenarios that forecast potential payment obligations that could be owed during the settlement process determined by the Stress Testing Committee. The Stress Testing Committee has determined that the largest payment obligation in an extreme but plausible market condition would be driven by the default of a Clearing Member and its affiliates. CME Clearing analyzes all Clearing Members in liquidity stress testing and identifies the two Clearing Members and their affiliates posing the largest potential payment obligations to report to the Credit Committee. Clearing Members’ potential payment obligations are aggregated by related entities and across Guaranty Funds to determine the largest two obligations by currency and in aggregate.

Liquidity stress testing is performed daily with predetermined parameters. At least monthly, CME Clearing performs a comprehensive analysis of stress testing scenarios and underlying parameters to ascertain their appropriateness. The Risk Management team or the Stress Testing Committee can recommend more frequent analysis if markets are more volatile, less liquid, the size or concentration of positions held by Clearing Members increases significantly, or otherwise where appropriate. The Credit Committee reviews and considers the top two liquidity needs by currency and in aggregate as provided by the Risk Management team and determines the appropriate level of liquidity resources required under extreme but plausible market conditions. These discussions and decisions are recorded in the Credit Committee’s minutes.
CME Clearing maintains qualifying liquidity resources to meet the largest potential payment obligations resulting from a Clearing Member default in aggregate and by currency on a same day basis. The size of these payment obligations determines the minimum liquidity resource requirement. The adequacy and liquidity resources available are submitted for review and approval to the Credit Committee on at least a quarterly basis. Additional details on this process can be found in CME Clearing’s disclosures to the following Key Considerations of this Principle.

**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.

CME Clearing’s minimum liquidity resource requirement is determined from the largest liquidity need detailed in CME Clearing’s disclosure for Key Consideration 4 of this Principle. The expected outflows as a result of forecasted settlement variation payments owed are required to be covered by qualifying liquidity resources which are laid out under CFTC Regulation 39.33. These resources include:

- a) Cash in the currency of the requisite obligations, held either at the central bank of issue or at a creditworthy commercial bank;
- b) Committed lines of credit;
- c) Committed foreign exchange swaps;
- d) Committed repurchase agreements; and
- e) Highly marketable collateral, including high quality, liquid, general obligations of a sovereign nation, which must be readily available and convertible into cash pursuant to prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions.

CME Clearing’s qualifying liquidity resources are described below. Resources can be determined to be qualifying liquidity resources based on the categorization of the actual resource or appropriate funding arrangement supporting the resource. In determining its funding arrangements, CME Clearing employs committed facilities or other arrangements which meet the standard of being a “highly reliable and prearranged funding under extreme but plausible conditions”. The majority of CME Clearing’s performance bond and Guaranty Fund collateral are highly liquid assets and can be deemed qualifying liquidity resources due to the liquid nature of the assets and funding arrangements that support it. For example, select shares of the S&P 500 can be deemed a qualifying liquidity resource but only up to the amount that a funding arrangement is available to pledge the shares to receive cash. Since funding arrangements vary in terms of size and conditional criteria, CME Clearing may limit the amount of any collateral it may accept from its Clearing Members. Additional detail is provided for each qualifying liquidity resource below.

**CME Clearing Qualifying Resources**
<table>
<thead>
<tr>
<th>Collateral Type</th>
<th>Qualification of Liquid Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Independently qualifies</td>
</tr>
<tr>
<td>Interest Earning Cash Deposits</td>
<td>Independently qualifies</td>
</tr>
<tr>
<td>Letters of Credit</td>
<td>Independently qualifies</td>
</tr>
<tr>
<td>U.S. Treasury Securities</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>U.S. Government Agency Securities</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>U.S. Government Agency MBS</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>U.S. Treasury Inflation Protected Securities (TIPS)</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>U.S. Treasury STRIPS</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>Foreign Sovereign Debt including discount bills and notes issued by sovereign nations and provincials</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>Money Market Mutual Funds backed by the U.S. Government</td>
<td>Counts as qualifying liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>Physical Gold</td>
<td>Counts as qualifying liquid resources where supported by credit facility</td>
</tr>
<tr>
<td>U.S. Equities and Exchange Traded Funds</td>
<td>Counts as qualifying liquid resources where supported by credit facility</td>
</tr>
<tr>
<td>U.S. Corporate Bonds</td>
<td>Counts as qualifying liquid resources where supported by credit facility</td>
</tr>
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</table>

Further description of CME Clearing’s qualifying liquidity resources is provided below, not necessarily in the order in which CME Clearing expects to utilize them. CME Group Exchange Rule 822 details the order and method by which liquidity will be achieved, or otherwise provided for in select circumstances where a liquidity shortfall situation may be experienced.

_Cash in Currency of Need_
CME Clearing can utilize performance bond cash if it is in the same currency of need from a defaulting Clearing Member.

CME Clearing maintains balances of cash for de minimis FX cash needs that are not available with other committed or prearranged funding agreements, described below.

**Liquidation Agent Agreement**

CME Clearing has executed legal agreements and established accounts with a liquidation agent that has market expertise in collateral liquidation assessments. Although, U.S. Treasury securities meet the High-Quality Liquid Asset standards as detailed by Bank of International Settlement and confirmed by the Board of Governors of the Federal Reserve System’s interpretation of these assets, CME Clearing performs additional due diligence to determine the amount of U.S. Treasury securities that are readily available and can be converted to cash on an intraday and multiday time horizon in extreme but plausible market conditions. CME Clearing utilizes a contracted liquidation agent to validate expected cash flows for intraday and multiday liquidity resources. CME Clearing would rely on the liquidation agent to execute liquidation transactions to the best of its ability under the terms of the agreement. CME Clearing clearly defines the requirements and expectations of extreme but plausible market conditions to the liquidation agent, has established accounts, and executed the necessary legal agreements. CME Clearing selects its liquidation agent based on market expertise to meet the funding arrangement requirements. CME Clearing conducts regular tests with the liquidation agent to ensure the agent is capable of meeting these requirements.

**Uncommitted Repo Lines**

CME Clearing currently maintains multiple master repurchase agreements that could facilitate its access to cash secured by U.S. Treasuries.

CME Clearing also has in place CME Group Exchange Rule 901.Q, which establishes guidelines for Clearing Members that are U.S. Government Securities Broker Dealers or have affiliates that are U.S. Government Securities Broker Dealers to execute master repurchase agreements with CME Clearing. CME Group Exchange Rule 901.Q augments CME Group Exchange Rule 822, discussed further below, as a means of expanding the list of CME Clearing’s repo counterparties, which enhances the diversification of the Clearing House’s available liquidity sources.

**Letter of Credit Commitment from Bank**

CME Clearing can draw on letters of credit that are used to meet Base performance bond requirements and access funds via a bank commitment detailed in letter of credit terms. These are committed lines of credit from a qualified bank.

**Commitment from Syndication of Banks**

CME Clearing can access its credit facility up to the amount that it has resources to pledge to secure a draw. All acceptable performance bond and Guaranty Fund collateral types can be pledged to the credit facility to secure a draw, except for certain non-G7 currencies for which CME Clearing holds de minimis amounts and has de minimis settlement variation flows. The facility is drawable up to $7 billion in U.S. dollar and in additional FX currencies up to the defined limits for each currency. The
additional FX currencies for which CME Clearing can draw down from its credit facility are CAD, EUR, GBP, CHF, SEK, DKK, NOK, AUD, HKD, JPY, CZK, MXN, NZD, PLN, and SGD. The credit facility also includes an expansion feature that could allow for an increase up to a total of $10 billion. CME Clearing has reviewed its committed credit facility to ensure that the facility does not include clauses that would preclude CME Clearing from drawing on the facility in times of stress, including review of material, adverse market condition changes. CME Clearing’s credit facility can be accessed within one hour upon notification to the credit facility’s banking group. The credit facility can be utilized in the event of a Clearing Member default, a liquidity constraint or default by a depository, or in circumstances where a money gridlock situation affects CME Clearing’s operations.

**CME Group Exchange Rule 822 Guaranty Fund Substitution**

CME Group Exchange Rule 822 in effect establishes an intermediate repo facility. CME Group Exchange Rule 822 details the basic order in which liquidity resources are to be employed, and, under certain conditions, actions that may be taken if a Liquidity Event is declared. Under a Liquidity Event, generally, after using certain uncommitted and committed arrangements, CME Clearing can substitute a defaulted Clearing Member’s U.S. Treasury securities in exchange for cash amounts contributed by the defaulting and non-defaulting Clearing Members to a Guaranty Fund. CME Clearing can require Clearing Members that are U.S. Government Securities Broker Dealers or have affiliates that are U.S. Government Securities Broker Dealers to replace U.S. Treasury securities in the Guaranty Fund with cash. A “Liquidity Event” is also broadly defined by CME Group Exchange Rule 822, and the Rule contemplates that Guaranty Fund cash resources may also be used in a scenario where a settlement bank is unable to process settlement variation payments, for example. Thus, CME Clearing has determined that CME Group Exchange Rule 822 establishes a highly reliable and prearranged funding arrangement even in extreme, but plausible market conditions.

**U.S. Treasury Sale to Meet Clearing House Settlement Variation Obligations**

Pursuant to CME Group Exchange Rule 822.A.2, in the event a liquidity shortfall remains after the substitution of Guaranty Fund cash with U.S. Treasury securities provided by Rule 822.A.1, CME Clearing may satisfy a settlement variation obligation to a Clearing Member that is (or has an affiliate that is) a U.S. Government Securities Broker Dealer with U.S. Treasuries using a valuation based on the prior day’s closing prices with prevailing CME Clearing haircuts applied. The amount of settlement variation that can be satisfied in this manner is subject to a limit equal to the receiving Clearing Member’s Guaranty Fund contributions at such time.

These cash resources, committed resources, uncommitted resources, and general obligations of the United States that are readily available and convertible into cash pursuant to prearranged and highly reliable funding arrangements mentioned above, even in extreme but plausible market conditions, comprise CME Clearing’s qualified liquidity resources.

**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.

CME Clearing maintains conservative resource guidelines to supplement liquid resources and considers central bank eligibility of particular forms of collateral in its assessment. Nearly all of the collateral that would be subject to market liquidation, generally 99%, is available for pledge to the central bank. CME Clearing maintains qualified liquid resources to meet its minimum liquidity resource requirements.

**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.

CME Clearing manages its liquidity relationships, provides robust details of liquidity needs, and regularly analyzes its liquidity requirements. Liquidity procedures, operational requirements, and liquidity relationships are regularly reviewed and documented. These are outlined in the Liquidity Risk Management Framework, which is reviewed and approved by the Credit Committee, CHRC, CHOC, and the full Board at least annually. CME Clearing maintains default management procedures to facilitate the process to meet potential liquidity needs.

CME Clearing performs credit due diligence on liquidity providers to determine if the provider meets CME Clearing’s minimum credit criteria. A liquidity provider’s capacity to fund the liquidity resource to be provided is also assessed in a stressed market environment. Liquidity analysis is also completed on settlement banks, custody banks, and other financial counterparties as part of its regular credit review process. Additionally, the liquidity component of a financial institution’s internal credit rating is a key component in the overall score and is reviewed thoroughly by the Risk Management team. The internal credit ratings and funding requirement for liquidity providers are presented to the Credit Committee on a quarterly basis as part of counterparty reporting. CME Clearing requires that liquidity resource providers maintain a minimum internal credit rating; the relationships with liquidity resources providers are reviewed at least annually. CME Clearing analyzes liquidity providers on a standalone basis and does not consider access to the central bank as a criterion to fulfill the necessary liquidity requirements.

In assessing liquidity needs, CME Clearing assesses the liquidity profile of the highly marketable collateral it accepts from its Clearing Members, through collateral liquidation drills and input from market participants. CME Clearing executes at least on an annual basis liquidity drills with liquidation agents and test draws with committed credit facility providers. The results of these drills and draws are reported to the Credit Committee for its review to evidence reliability. CME Clearing, in its established due diligence process used to analyze its counterparties, considers access to central bank funding and gives consideration to the role that U.S. Government Securities Broker Dealers counterparts play as outlined in CME Groups Exchange Rules 822 and 901.Q.
CME Clearing communicates with liquidity providers the information that it needs to assess its liquidity risks, requirements, and obligation to perform. This is communicated either through the CME Group Exchange Rules, legal agreements, or provider diligence. Further, the obligations of Clearing Member’s under CME Group Exchange Rule 822 are capped. In particular, the obligations under CME Group Exchange Rule 822.A of Clearing Members that are U.S. Government Securities Broker Dealers or have an affiliate that is a U.S. Government Securities Broker Dealer are capped at the size of said Clearing Members Guaranty Fund deposits. For Clearing Members that are not U.S. Government Securities Broker Dealers nor have an affiliate that is a U.S. Government Securities Broker Dealer the obligations under CME Rule 822.A are capped at the amount of cash deposited to meet their Guaranty Fund requirement. The CME Group Exchange Rulebooks are publicly available on the CME Group website.

**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.

CME Inc. maintains accounts at the Federal Reserve Bank of Chicago for depositing proprietary and customer U.S. dollar performance bond funds. CME Inc. also maintains accounts at the Bank of Canada for depositing customer and proprietary Canadian dollar performance bond funds.

As part of its systemically important designation from FSOC, CME Inc. may also receive discount and borrowing privileges from a Federal Reserve Bank under unusual or exigent circumstances. CME Clearing does not currently have access to a Federal Reserve Bank’s Discount Window, nor does CME Clearing consider access to a Federal Reserve Bank’s Discount Window in constructing its liquidity risk management program. CME Clearing operates under the assumption that access to a Federal Reserve Bank’s Discount Window will not be needed and does not consider access to a Federal Reserve Bank’s Discount Window as a liquidity enhancement to determine liquidity needs or adequacy.

**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.

CME Clearing employs liquidity stress testing to determine liquidity planning, as described in its Liquidity Risk Management Framework. The Liquidity Risk Management Framework describes CME Clearing’s liquidity stress test methodology as well as the model employed by CME Clearing and provides the foundation for its liquidity assessment. The assumptions and parameters of the liquidity risk model and methodology are reviewed and analyzed on a monthly basis by the Stress Testing Committee. The liquidity resource adequacy is approved by the Credit Committee on a quarterly basis.
The approvals are documented in these committees’ meeting minutes. The liquidity risk management model is validated by a party independent of the model development process on an annual basis.

Overall liquidity stress testing takes into account several factors, including but not limited to, relevant peak historic price volatilities, shifts in price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a range of forward-looking stress scenarios in a variety of extreme but plausible market conditions. The stress tests also take into account various conditions, such as a sudden and significant increase in position and price volatility, position concentration, and change in market liquidity. CME Clearing’s liquidity needs in all currencies for which it has exposures are determined by the stress testing methodology overseen by the Stress Testing Committee. The size of the potential payment obligations for each currency, as well in aggregate across currencies is determined across Guaranty Funds and related Clearing Members (including affiliates). As such, a single liquidity need is calculated for each Clearing Member (including affiliates) by aggregating potential payment obligations for each asset class with adjustments made to account for settlement cycles, the timing of payments, and the synchronization of stress scenarios. The two largest potential payment obligations in aggregate and by currency are presented to the Credit Committee to evaluate them against CME Clearing’s available liquidity resources. As a policy CME Clearing considers in aggregate and by currency the top two largest liquidity needs and its qualified liquidity resources at a minimum must cover CME Clearing largest potential payment obligation.

Liquidity stress tests are designed to review cash flow scenarios associated with stressed market events. Liquidity stress tests are designed to estimate the size and nature of the liquidity needs, as well as potential sources of liquidity risk, and consider plausible cash flows that can reasonably be expected in a stressed market environment. The stress test model assesses collateral profiles relative to potential settlement variation payment requirements by currency and available resources by currency. CME Clearing analyzes the liquidation of a collateral profile through stress testing and the conversion of the collateral to cash based on market liquidity capacity and considering funding arrangements to meet liquidity needs. The potential multiple roles of key entities (such as affiliated Clearing Members or liquidity provider relationships), and the associated effects on liquidation resources is accounted for in CME Clearing’s liquidity stress tests. CME Clearing’s liquidity stress testing scenarios take into account the settlement structure and timing required for liquidity needed from settlement cycles. CME Clearing’s liquidity risks are highlighted to the Credit Committee along with the overall stress tests at their regular meetings. Ad hoc Credit Committee meetings could be held to review possible parameter changes if risks were identified during the daily monitoring discussed earlier in CME Clearing’s disclosures for this Key Consideration.

CME Clearing assesses exposure and risks to financial entities which include settlement banks and custody banks on a monthly basis, which is in addition to the daily monitoring CME Clearing does of all of its counterparties. Through this, CME Clearing monitors, manages, and limits its credit and liquidity risks arising from these banks. CME Clearing has established strict criteria for its settlement banks that take into account the banks’ credit risk profiles. Through this assessment, CME Clearing takes into account, among other things, the banks’: regulation and supervision, suitability to the roles they perform for CME Clearing, creditworthiness, capitalization, access to liquidity, and operational reliability. CME Clearing utilizes this analysis to monitor and manage the concentration of credit and liquidity exposures to its settlement banks. CME Clearing also monitors and manages exposures to all
counterparties including liquidity providers through daily monitoring and monthly risk assessment reports.

**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.

As described above, CME Clearing defines its potential payment obligations as the movement of funds related to settlement variation and where applicable, replacement costs. CME Clearing has rules and procedures to effect, at least, same day and in most instances intraday settlement of payment obligations. CME Group Exchange Rule 814 provides that CME Clearing may call for additional settlements if market conditions or price fluctuations require. Under CME Clearing’s default rules, it maintains the ability to utilize defaulted Clearing Members’ resources to fulfill settlement obligations.

A liquidity shortfall as a result of a Clearing Member default event would be managed in accordance with CME Clearing’s financial safeguards waterfall structure, described in CME Clearing’s disclosures for Principles 4. CME Clearing’s waterfall structure provides for utilization of performance bond deposits of a defaulting Clearing Member. Additionally, the defaulting Clearing Member’s Guaranty Fund, membership requirement, and other resources are available to meet any loss due to CME Clearing. CME Group Exchange Rules 802, 8G802, and 8H802 for exchange-traded, IRS, and CDS products, respectively, also specify terms under which any unmet loss is satisfied by the ordered application of CME Clearing’s funds and non-defaulting Clearing Member’s Guaranty Fund contributions. CME Clearing’s right to collateral is clearly defined in the CME Group Exchange Rulebooks which provide for a first-priority lien on Clearing Member’s collateral, as described in CME Clearing’s disclosures for Principle 5.

Losses caused by a Clearing Member default that exceed the performance bond and Guaranty Fund deposits of that Clearing Member will be paid first by the CME Contribution to that waterfall. If that is exhausted and losses remain, the mutualized Guaranty Fund will be accessed, followed by CME Clearing’s assessment of non-defaulting Clearing Members. In the event that the relevant Guaranty Fund is drawn upon to pay towards losses caused by a Clearing Member default, each non-defaulting Clearing Member will be required to replenish their Guaranty Fund contributions by close of business the business day following the commencement of the cooling period.

In managing a potential liquidity shortfall that is caused by the default of a Clearing Member, CME Clearing would generally first attempt to liquidate collateral assets of the defaulted Clearing Member through market action, but has the following qualifying liquidity resources at its disposal, as is described in Key Consideration Five of this Principle:

- Liquidation agent relationships;
- Master repurchase agreements;
- Committed credit facility; and
- Rules-based liquidity arrangements.
CME Clearing has the ability to replenish funding arrangements, such as its committed credit facility or uncommitted repo, by directing the counterparty to liquidate the collateral being used to secure the draw or unwinding the trade, respectively.
**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.

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**Summary Narrative**

**Key consideration 1:** An FMI’s rules and procedures should clearly define the point at which settlement is final.

CME Clearing conducts two settlement cycles a day for most products, but at least one settlement cycle for all products. Each settlement cycle facilitates the exchange of settlement variation and makes calls for performance bond. The point at which settlement is final is clearly outlined in CME Group Exchange Rule 814, which is consistent with CFTC Regulation 39.14. CME Clearing’s settlement process utilizes settlement banks that are contractually committed to communicate acceptance of CME Clearing settlement variation and performance bond settlement instructions within defined times. Settlement variation and performance bond settlement finality is defined in CME Clearing’s agreements with its settlement banks. Legal certainty is defined in the agreements between CME Clearing and its settlement banks as described in CME Clearing’s disclosures for Principle 1. Link relationships, defined in CME Clearing’s disclosures for Principle 20, are incorporated into the normal course of business and abide by established settlement variation and performance bond settlement finality arrangements.

**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 (Large-Value Payment System) or SSS (Securities Settlement System) should consider adopting RTGS (Real Time Gross Settlement) or multiple-batch processing during the settlement day.

CME Clearing conducts settlement variation and performance bond settlement twice daily for most products, and all products are settled at least once daily. CME Clearing has the operational capability and contractual right to conduct ad hoc, off-cycle settlement cycles, as described in CME Group Exchange Rule 814.

CME Clearing has never experienced a delay in final settlement due to events not contemplated and planned for in its internal procedures. Scheduling of settlement cycles takes into account relevant holidays as described in CME Clearing’s procedures and communicated to market participants through established channels in preparation for such an event. Settlement variation and performance bond settlement occurs on the books of CME Clearing’s settlement bank.

Clearing Members have access to CME Clearing’s system for settlement variation and performance bond settlement reports detailing settlement variation pays and collects and performance bond calls and releases. Availability of settlement variation and performance bond settlement information at intraday normally occurs between 11:30 AM - 1:00 PM Chicago time. Availability of settlement variation and performance bond settlement information at end-of-day normally occurs between 10:00 PM - 12:00 midnight Chicago time. All settlement variation obligations are denominated in the currency of trade and all initial performance bond calls, when a Clearing Member does not have enough performance bond collateral on deposit with CME Clearing, are made in U.S. dollar cash.
**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.

Pursuant to CME Group Exchange Rule 814, CME Clearing settlement variation and performance bond settlements are final, irrevocable, and unconditional upon communication from the settlement bank to CME Clearing that a settlement variation and/or performance bond settlement instructions are accepted. Settlement banks are contractually bound to approve end-of-day settlement variation and/or performance bond settlements by 8:30 AM Chicago time the following trading day, and any intraday settlement and/or performance bond settlements within time frames defined by the settlement bank agreements, typically by 1:30 PM Chicago time. However, the settlement bank agreement provides specific instances where a settlement variation and/or performance bond settlement instruction can be amended or revoked and includes prescribed conditions such as the correction of errors. Although highly unlikely, CME Clearing’s senior management may determine it is necessary to revoke an instruction due to an operational issue. The settlement instruction in question would be revoked via SWIFT, with verbal and written communications involving the settlement bank and Clearing Member(s).
**Principle 9: Money Settlements**

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 risk arising from the use of commercial bank money.

**Summary Narrative**

**Key consideration 1:** An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

CME Clearing’s Clearing Members are a diverse set of entities that are banks, bank affiliated entities, and non-bank affiliated entities, making it less practical for the Clearing House to use a central bank to conduct its money settlements. Notwithstanding the impracticality of using central banks to conduct money settlements because of the diversity of CME Clearing’s membership, CME Clearing would likely be unable to use a Federal Reserve Bank to conduct FX settlements. CME Clearing uses commercial banks to facilitate its money settlements across the different currencies that it clears. CME Clearing maintains contractual relationships with commercial banks for payment and receipt of settlements.

**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.

CME Clearing settles financial obligations in cash. Settlement variation obligations are denominated in the currency of the underlying product. This process ensures the financial obligation is met with minimal credit or liquidity risk. Settlement banks are selected according to selection criteria established by CME Clearing’s Credit Policy, as described in CME Clearing’s disclosures for Principle 4. Settlement banks must have and maintain a minimum internal credit rating and meet requirements assessed in annual due diligence visits by the Risk Management team. Additional detail on this is provided in CME Clearing’s disclosures for Key Consideration 3 of this Principle.

Please note that physical deliveries are not payment obligations and as such, are discussed in CME Clearing’s disclosures for Principle 10.

**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.

Consistent with CFTC Regulations 39.14 and 39.36(g), CME Clearing monitors, manages, and limits the credit and liquidity risks presented from its settlement banks, as described in CME Clearing’s disclosures for Principle 4 and Principle 7. CME Clearing evaluates all settlement banks with the following criteria: capitalization, creditworthiness, access to liquidity, operational reliability, and regulation or supervision of such banks. Creditworthiness is determined through its internal credit review process, as discussed in CME Clearing’s disclosures for Principle 4. The credit risk assessments result in an internal credit rating that must remain at a satisfactory level to remain or become a
settlement bank. Settlement banks are also monitored on a daily basis for market metrics and news sentiments and significant items are reported by the Risk Management team to CME Clearing senior management.

CME Clearing also performs a settlement bank review process. New applicant settlement banks are subject to preliminary in-person risk management due diligence visits and reviewed by CHRC, while current settlement banks are subject to at least annual due diligence visits. Prior to or during the visits, each current or applicant settlement bank is given a questionnaire to review policies, procedures, staff, and operational expertise to help assess the current and potential performance of settlement services. All settlement banks must also demonstrate a sufficient financial position, as well as an understanding and acceptance of the responsibilities of being a settlement bank for CME Clearing.

Further, settlement banks’ financial statements are reviewed at least annually to monitor credit assessment, liquidity resources, and overall counterparty strength. Assessments are also performed during the annual due diligence visit, in which information is attained in regard to credit controls and liquidity resources.

CME Clearing maintains a diverse set of high-quality settlement bank relationships, monitored as described above, in order to minimize the potential impact of the highly unlikely failure of any one settlement bank. CME Clearing seeks diversification across its commercial settlement banks to avoid concentration risk. Settlement bank relationships are publicly disclosed on the website per currency and major asset class. The Risk Management team reviews settlement concentration metrics and the distribution Clearing Members among settlement banks. Settlement bank default impact assessments are reviewed by the Credit Committee with respect to concentration metrics and Clearing Member settlement bank distribution.

**Key consideration 4:** If an FMI conducts money settlements on its own books, it should minimize and strictly control its credit and liquidity risks.

Generally, CME Clearing conducts all settlements through its commercial settlement banks. Additionally, CME Clearing offers a functionality called “Combined Cash Flow”, where a Clearing Member can elect to have its settlement variation gains credited to its performance bond account and can have settlement variation losses debited from its performance bond account in the currency of need. With Combined Cash Flow, gains are deposited and held by CME Clearing as performance bond, as opposed to being wired to the Clearing Member’s settlement bank account. Losses are debited from the Clearing Member’s excess performance bond cash on deposit with CME Clearing where available or debited from the performance bond account at the Clearing Member’s settlement bank account if excess cash is not available. Combined Cash Flow is available to be used for any currency at the request of the Clearing Member. In particular, Combined Cash Flow allows CME Clearing to conservatively manage its credit and liquidity risks for foreign currency denominated products.

**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

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by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

As discussed in CME Clearing’s disclosures for Principle 8, the settlement bank agreements between CME Clearing and its settlement banks clearly state the point at which settlement finality and irrevocability occurs. Payments for value date are made in same-day funds and are immediately transferrable. Further, the finality of settlement is transparent to market participants under CME Group Exchange Rule 814.
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.

Summary Narrative

Key consideration 1: An FMI’s rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

CME Group Exchange Rule 702 specifies that in the event a Clearing Member fails to perform on its delivery obligations, CME Clearing will be responsible for the financial performance (i.e. replacement cost) with respect to the delivery. CME Clearing is not obligated to make physical delivery on behalf of a Clearing Member that failed to fulfill its delivery obligation. In particular, CME Group Exchange Rule 743.C, outlines in detail the mechanism by which CME Clearing guarantees financial performance in regard to physically deliverable FX products, which is consistent with CPMI-IOSCO’s guidance for the Clearing of deliverable FX instruments to have in place a committed FX swap. The obligations of Clearing Members and CME Clearing in regard to physical delivery are outlined throughout the CME Group Exchange Rulebooks, in particular under Chapter 7.

CME Group lists physically delivered contracts in the following product classes:

- Agriculture;
- CDS;
- Energy;
- FX;
- Interest Rates;
- Metals; and
- Environmental.

CME Group’s DCMs collectively list derivatives contracts for trading across a diverse set of products, all of which are cleared and settled by CME Clearing. A variety of contracts provide for physical delivery of the underlying product in final satisfaction of the contractual obligation. As further outlined in CME Clearing’s disclosures for Key consideration 2 of this Principle, CME Clearing assists in the facilitation of deliveries and provides certain services. CME Clearing is not a guarantor or party of the contract. The obligations of the contract with respect to the delivery of a physical instrument or commodity are specified in the respective contract’s rules.

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.

CME Clearing provides a variety of services to facilitate physically delivered contracts:

57 http://www.bis.org/cpmi/publ/d143.pdf
58 http://www.cmegroup.com/rulebook/CME/I/7/7.pdf
1. Facilities approval: Specify and approve facilities that may be utilized by Clearing Members to satisfy physical deliveries.

2. Delivery assignment: CME Clearing matches ‘delivery short’ with ‘delivery long’, typically by assigning shorts to longs, based on the long open interest holder with the oldest long date.

3. Provision of escrow services: CME Clearing may escrow cash or accept other suitable financial instruments in order to secure the performance by a Clearing Member delivery obligor, and thus assure that delivery performance risk is suitably controlled.

4. CME Clearing may otherwise utilize Delivery versus Payment (“DvP”) or Payment versus Payment (“PvP”) mechanisms to suitably control delivery performance risk, and thus assure the timely exchange of cash for the physical product that is the subject of the delivery obligation.

It is useful to note that some commodities employ a mix of the services described above. Additionally, CME Clearing has been very open to adapting delivery service infrastructure over time in order to reduce the costs or risk profile associated with a particular delivery process, as appropriate. For example, from a legacy perspective, CME Clearing employed a pure escrow model to facilitate all currency deliveries. CME Clearing required Clearing Members who were long a currency future to pay the full value of the delivery to a CME Inc. bank account on a “value date minus one” (“V-1”) basis. On value date, “V”, CME Clearing’s agent bank would await CME Clearing instructions to pay out the long currency upon confirmation of receipt of the short currency. Over time, CME Clearing introduced Order to Pay (“OTP”), as an alternative for delivery long to utilize instead of posting cash to a CME Inc. bank account on V-1. CME Clearing’s Clearing Members would await CME Clearing instructions to pay out the long currency upon confirmation of receipt of the short currency. Over time, CME Clearing introduced Order to Pay (“OTP”), as an alternative for delivery long to utilize instead of posting cash to a CME Inc. bank account on V-1. CME Clearing’s Clearing Members utilized a paired delivery method for accessing CLS to effectuate their foreign exchange physical delivery obligations, where each Clearing Member gains access to CLS through a CLS member. Today, CME Clearing supports two methodologies to allow Clearing Members to satisfy their delivery obligations. Clearing Members utilize the legacy “OTP” methodology to satisfy their delivery obligations for non-CLS eligible, physically delivered foreign exchange futures, but Clearing Members generally utilize CLS and its PvP methodology to satisfy their delivery obligations for CLS eligible foreign exchange futures.

Please see the chart below, which seeks to outline the delivery service model for particular CME Clearing cleared products:

<table>
<thead>
<tr>
<th>Service/product</th>
<th>Non-CLS eligible currency futures</th>
<th>CLS eligible currency futures</th>
<th>30 year US Treasury bond futures</th>
<th>Grain futures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilities approval</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Delivery assignment</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Escrow services</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>DvD/PvP</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

Delivery obligations associated with physically delivered contracts are the sole obligations of the parties participating in the contract and not CME Clearing. As discussed in Key Consideration 1 of this
Principle, the Clearing House provides facilities through which the parties can complete the settlement process and provides reasonable replacement costs due to a failed delivery, for which the Clearing House would typically utilize the performance bond of the Clearing Member that failed to cover such costs. Delivery margin requirements are incorporated into the margin methodology where appropriate and monitored within the overall risk profile of the Clearing Member on an individual basis.

CME Clearing also performs a number of administrative tasks designed to support the delivery function of Clearing Members and clients. The CME Group Exchanges perform a role in reviewing and approving delivery facilities, which meet defined requirements for storage and delivery. CME Clearing also reviews third parties that participate in the delivery process, such as CLS. CME Clearing facilitates and monitors the delivery of physical instruments and commodities in satisfaction of terms of CME Group’s exchange contracts.

CME Clearing works with Clearing Members and delivery facilities to ensure the facility, position, open interest, and delivery of technical information, such as long date reporting, is accurate and timely. These reports are published on a daily basis on the CME Group website.  

For certain deliverable product types, CME Clearing matches open short contracts to open long, older contracts using the longest dated contracts first. This ensures that the oldest open dated contract, based on when the position was established, will be selected for delivery first.

For certain products, CME Clearing maintains an electronic delivery system that inventories electronic warehouse certificates and warrants, consistent with contract physical delivery specifications. Procedural documents are available to the market participants on the CME Group website to describe and assist with the operational process.

CME Clearing has documented procedures to ensure Clearing Members and their respective customers have the ability to make or take delivery prior to the delivery period, including monitoring the economics of the cash market as well as the availability of deliverable supply, as appropriate. CME Clearing also works with Clearing Members to ensure their arrangements to make delivery are sufficient. Further, CME Clearing engages key cash market participants and facility operators to confirm their ability to physically load out and transport product as well as to estimate the timeline to complete such movements. These participants also provide information around the end product in areas outside of CME Group’s business, such as transportation dynamics, end product quality, and availability and delivery performance of participants. This communication channel helps mitigate potential market congestion in physically delivered contracts.

For deliverable agricultural commodities and ethanol products, the CME Group Exchanges’ process new regularity applications, renewals, and handles the maintenance of current regularity applications, as described in CME Group Exchange Rule 703 related to warehouses. This includes the inspection of facilities to verify that they continue to meet the requirements associated with its current Application for Regularity on file with CME Group, which includes reviewing facilities to ensure proof of insurance.

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and that bonding is current and up-to-date. CME Group also conducts due diligence to confirm the facilities and their clearing agents continue to meet CME Group’s minimum financial requirements and CME Group maintains the right to take action if the financials are noncompliant.

Under CME Group Exchange Rule 701, the Chief Executive Officer, President of the Exchange, Chief Operating Officer, or their delegates may make a determination that a delivery or final settlement cannot be completed as a result of a Force Majeure. Force Majeure is defined in the CME Group Exchange Rulebooks as “any circumstance (including but not limited to an act of God, strike, lockout, blockage, embargo, governmental action or terrorist activity) which is beyond the control of the buyer or seller and precludes either party from making or taking delivery of product or precludes the Exchange from determining a final settlement.” Any declaration of a Force Majeure is considered binding upon all parties that hold exposures within the contract and is reported to the CFTC as soon as possible. Force Majeure may result in a suspension of delivery, changes in the settlement price process, or other actions deemed necessary by the Clearing House. Clearing Members and facilities are required to notify CME Clearing of any situation which may result in a declaration of Force Majeure.

There have been very few extreme situations that have led the Clearing House to declare a Force Majeure. One notable example was in 1985, when the Mexican central bank imposed restrictions on trading Mexican peso in foreign jurisdictions. This action and the ongoing Mexican financial crisis led CME Clearing on November 20, 1985 to declare an emergency condition within the Mexican Peso futures contracts and suspend trading in the Mexican Peso contracts and liquidate all options positions at the closing settlement price for that day. This was in an effort to limit the impact of the crisis and reduce the risk facing the Clearing House and its Clearing Members.

Other declarations of Force Majeure have been called in the event of natural disasters, such as Hurricane Sandy in 2012. When the hurricane made landfall in New York, many institutions were negatively impacted, through power outages, flooding, and other structural damages. One of the precious metal depositories utilized by CME Group to facilitate delivery of several precious metals, including gold and platinum, was affected and CME Clearing chose to temporarily suspend delivery from this facility. Clients awaiting delivery through the affected facility were instructed to use a local alternative facility, with the affected facility compensating clients for any additional costs incurred. Other contracts on the metals were unaffected and the settlement price process was unchanged.

In April 2013, CME Clearing, through its CBOT Exchange, declared Force Majeure at the majority of shipping stations along the Illinois River due to extreme flooding conditions in the area. This resulted in an inability to load barges for Corn or Soybean delivery for the April 30 deliveries for the three business days defined in the CME Group Exchange Rules, delaying shipment for a number of days. Once the flooding abated, CME Clearing removed the Force Majeure for the affected contracts.

CME Clearing does not necessarily call for a suspension of delivery in all cases where it declares Force Majeure. CME Clearing is also given the right to adjust settlement pricing under Force Majeure if the usual pricing mechanisms are unavailable or not representative of the true market value. In the fall of 2013, facing a U.S. government shutdown and the interruption of prices from the USDA, an affected government entity, CME Clearing was unable to use its standard settlement pricing mechanism for Lean Hog futures. Using a volume weighted average, CME Clearing established a fair, market-based price for October contracts with internal data under a declaration of Force Majeure.
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.

Summary Narrative

**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 occur.

CME Clearing is not an exchange of value system. CME Clearing does make facilities available for its Clearing Members to use for settlement. Details on settlement of physically delivered contracts are available in CME Clearing’s disclosures for Principle 10 and money settlements are discussed in CME Clearing’s disclosures Principle 9.
**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.

**Summary Narrative**

**Key consideration 1:** 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.

CME Clearing rules and procedures allow CME Clearing to take timely action to contain losses and to quickly meet its obligations in the event of a Clearing Member default. CME Clearing has effective and clearly defined rules and procedures to manage such a default event. CME Group Exchange Rules define a default by a Clearing Member to be the failure of such Clearing Member to promptly discharge any obligation to the Clearing House or such Clearing Member becomes subject to any bankruptcy or insolvency proceeding. Upon declaration of a Clearing Member default event, CME Clearing would notify relevant regulatory agencies and market participants.

CME Clearing maintains default procedures which allow it to effectively manage Clearing Member default events when they occur. CME Clearing’s default procedures are developed to address the unique characteristics of products cleared at CME Clearing and are developed in consultation with the appropriate CME Clearing Risk Committee.

Further, CME Group Exchange Rules 975, 8G975, and 8H975, allows the President of the Exchange or President of the Clearing House to empanel the respective Emergency Financial Committee when he determines that the financial or operational condition of a Clearing Member or one of its affiliates is such that to allow that Clearing Member to continue its operation would jeopardize the integrity of the Exchange, or negatively impacts the financial markets by introducing an unacceptable level of uncertainty, volatility or risk, whether or not the Clearing Member continues to meet the required minimum financial requirements. Such Emergency Financial Committee is authorized upon a unanimous vote, to order:

- An immediate position limitation;
- An immediate suspension of the Clearing Member;
- That all open trades of said Clearing Member be for liquidation only;
- The liquidation or transfer of all or a portion of the open positions of the Clearing Member;
- Additional performance bond to be deposited with the Clearing House; and/or
- Any other action necessary to protect the financial integrity of the Clearing House.

These CME Group Exchange Rules allow CME Clearing to protect non-defaulting Clearing Members and protect the integrity of markets for which it clears. The Board and the CME Clearing Risk Committee.

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Committees are also afforded similar powers as those listed above in other rules of the CME Group Exchange Rulebooks in order to protect the safety of the Clearing House. CME Clearing and aforementioned governing bodies would only elect to utilize the powers afforded under such rules in a manner that protects the broader financial system and allows for market stability, while also protecting non-defaulting market participants.

**Use and sequencing of financial resources**

Following a Clearing Member default event, CME Clearing would conduct its normal settlement cycles. Pursuant to the CME Clearing’s default rules, in the event of a Clearing Member being declared in default, CME Clearing is authorized to apply the defaulting Clearing Member’s performance on deposit, Guaranty Fund contribution, proceeds from the sale of any memberships, and any other available assets held or pledged to satisfy performance obligations including current and future settlement obligations. However, at no time is it permitted for customer performance bonds to be used to satisfy losses associated with a Clearing Member’s house account.

CME Clearing would initially use performance bond and Guaranty Fund contributions of the defaulted Clearing Member with respect to the financial safeguards waterfall in which the default event occurred, first to satisfy any losses associated with such products covered under such Guaranty Fund. After satisfying all losses associated with products for a particular Guaranty Fund, CME Clearing may use any excess assets of the defaulted Clearing Member associated with such waterfall to satisfy losses associated with products in one of the other guaranty funds. For example, if a Clearing Member is clearing products associated with the Base Guaranty Fund and IRS Guaranty Fund and excess performance bond or Base Guaranty Fund deposits of such Clearing Member remains after resolution of all losses of such Clearing Member associated with the Base products, CME Clearing may apply such excess resources to cover the losses of such Clearing Member’s losses associated with its exposures in IRS products.

In the unlikely event the defaulted Clearing Member’s performance bond, Guaranty Fund, and other available assets are insufficient to cover its losses, CME Clearing would utilize the resources in the financial safeguards waterfall in which the Clearing Member default event occurred in the following order:

i. The CME Contribution to the financial safeguards;

ii. The Guaranty Fund deposits of non-defaulting Clearing Members for the particular financial safeguard waterfall; and

iii. CME Clearing’s assessment of non-defaulting Clearing Members for the particular safeguard waterfall up to the limits prescribed under the CME Group Exchange Rulebooks.

As described in CME Group Exchange Rule 817, subject to certain limitations, assets deposited by a defaulting Clearing Member to satisfy Guaranty Fund and performance bond requirements may be applied to secure a draw on any liquidity facility maintained by CME Inc. for the purpose of providing immediate liquidity. CME Clearing maintains a fully secured committed credit facility with a

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62 As of November 30, 2017, the CME Contribution to the Base financial safeguards was $100 million, to the IRS financial safeguards waterfall was $150 million and to the CDS financial safeguards waterfall was $50 million.
consortium of domestic and international banks that may be used in certain situations. Under the terms of the credit facility agreement, CME Clearing may use the proceeds of the advances to provide temporary liquidity in the unlikely event of a Clearing Member default, in the event of a liquidity constraint or default by a depository institution (custodian of the collateral), or if there is a temporary problem with the domestic payments system that would delay payments of settlement variation between CME Clearing and Clearing Members. CME Group Exchange Rule 822, described in CME Clearing’s disclosures for Principle 7, describes the order in which the Clearing House will obtain liquidity under extreme circumstances.

Replenishment of resources following a participant default

As described in CME Rules 802.F, 8G802.F and 8H802.F, for products under the Base, IRS, and CDS financial safeguards waterfalls, respectively, in the event that the Guaranty Fund is drawn on to cover losses caused by a Clearing Member default, each non-defaulting Clearing Member is required to replenish its Guaranty Fund contributions by close of business the business day following the utilization of the Guaranty Fund, subject to any applicable cooling off periods. The cooling off periods are 5 business days for the Base financial safeguards waterfall and 25 business days for the IRS and CDS financial safeguards waterfalls, as described in CME Group Exchange Rules 802.H, 8G802.H, and 8H802.H for products under the Base, IRS, and CDS waterfalls, respectively.

Further, the CME Contribution to each of the financial safeguards waterfalls is subject to be replenished upon the commencement of the cooling off period to ensure the financial safeguards waterfall as articulated under the CME Group Exchange Rulebooks are re-established.

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.

CME Clearing’s default procedures are developed in consultation with and regularly reviewed by the relevant CME Clearing Risk Committee. CME Clearing conducts default drills on a regular basis across all product classes to test its default procedures and pursue continuous improvement through application of lessons learned and best practices. The results of each default drill are reviewed with the relevant CME Clearing Risk Committee and changes to default processes are implemented when warranted. By design, CME Group Exchange Rules and default procedures provide reasonable discretion to the Clearing House in managing a default in order to provide CME Clearing with flexibility to manage each unique Clearing Member default scenario, protect the broader financial system and allow for market stability, and protect non-defaulting market participants.

In addition to established rules and procedures described within the CME Group Exchange Rulebooks and in accordance with CFTC Regulation 39.16, CME Clearing maintains and regularly updates operational and financial procedures to manage a Clearing Member default event. The procedures describe the designated role and responsibility for each of CME Clearing’s departments. Along with the parties designated within the CME Group Exchange Rules, CME Clearing maintains a detailed contact directory of all relevant regulatory agencies, designated persons, relevant stakeholders, and various interested parties for timely communication of information related to a default.

Key consideration 3: An FMI should publicly disclose key aspects of its default rules and procedures.
CME Clearing’s default rules are contained in the CME Group Exchange Rulebooks, which are publicly available on the CME Group website. CME Group Exchange Rules 802.A, 8G802.A and 8H802.A provide the Clearing House the ability to declare a Clearing Member to be in default upon either: i) a failure by the Clearing Member to promptly discharge any obligation to the Clearing House; or ii) where the Clearing Member becomes subject to any bankruptcy, reorganization, arrangement, insolvency, moratorium, or liquidation proceedings, or other similar proceedings under U.S. federal or state bankruptcy laws or other applicable law. Such declaration of default is made by the President of the Clearing House, the CRO, or any of their delegates and such declaration is communicated to the marketplace.

Upon the default of a Clearing Member, the Clearing House liquidates all house/proprietary positions of such Clearing Member and its affiliates clearing through the proprietary account, as quickly as practicable and seeks to port all customer positions to non-defaulting Clearing Members. In the event of the default of a Clearing Member’s affiliate entity, only assets associated with the Clearing Member’s house account can be used to cure the resultant losses. Additionally, in order to increase the likelihood of successful customer porting and in accordance with CME Group Exchange Rules 802.G, 8G802.I and 8H802.I, the Clearing House ceases variation netting for the cleared swaps customers of the defaulted Clearing Member. Though this is not required by CFTC regulations, CME Clearing opts to cease variation netting to provide enhanced customer protections in managing the default of a Clearing Member.

Following a Clearing Member default event, cleared swaps customers would likely settle with the Clearing House directly in accordance with the mechanisms established by the Clearing House. In the event a cleared swaps customer fails to make a payment when due, the Clearing House would apply such customer’s performance bond against such obligation and may declare the customer in default and proceed to liquidate the portfolio.

CME Clearing (together with the relevant Active Default Management Committees) would also determine if it should enter into any hedging transactions for the defaulting Clearing Member’s proprietary and/or customer positions. CME Clearing would then conduct an auction of such positions among Clearing Members and market participants pursuant to the CME Group Exchange Rules.

CME Group Exchange Rules further provide that upon such default, the Clearing House will apply all relevant performance bonds, Guaranty Fund, and all other assets held by, or pledged to, the Clearing House to discharge the Clearing Member’s obligation to the Clearing House. Initially, the performance bond and Guaranty Fund deposit of the defaulted Clearing Member for the major asset class associated with a financial safeguard waterfall in which the default even occurred would be used to discharge the obligation of the defaulted Clearing Member in that waterfall (i.e. IRS performance bond and Guaranty Fund contributions will first be used to satisfy losses of the Clearing Member associated with IRS products prior to being used to satisfy any other obligations of the Clearing Member). After satisfaction of all losses associated with the major class in which the default event occurred, any excess performance bond and/or Guaranty Fund deposits and other assets of the defaulted Clearing Member may be used by the Clearing House to satisfy losses attributed to other financial safeguards waterfalls. Additionally, as discussed further herein, the Clearing House maintains a credit facility that may be used to covert certain assets of the defaulted Clearing Member to cash.
**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.

Consistent with CFTC Regulation 39.13, Clearing Members (and non-clearing members where appropriate as determined by CME Clearing) participate in semi-annual default management drills across products in all three financial safeguards waterfalls. These default drills afford Clearing Members and non-clearing member participants the opportunity to become familiar with CME Clearing’s default management procedures and provide a forum for such participants to test their ability to evaluate sizable portfolios under extreme but plausible default scenarios. Additionally, the Active Default Management Committees for relevant swaps products assist the Clearing House in an actual default event.

CME Clearing conducts default drills for varying portfolios across each major asset class at least twice a year. These drills are structured consistent with existing Clearing Member exposures, containing large and complex portfolios. Each drill consists of a hedging phase, where appropriate and an auction and/or liquidation phase of the theoretically defaulted Clearing Member’s positions. Additionally, CME Clearing periodically tests its access to its credit facility to ensure prompt receipt of cash against performance bond and Guaranty Fund deposits.

CME Clearing also conducts annual testing with its liquidation agent, as described in CME Clearing’s disclosures for Principle 7.
**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.

**Summary Narrative**

**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.

The segregation and portability arrangements of CME Clearing comply with Section 4(d) of the CEA and the CFTC Regulations promulgated thereunder that require customer positions and performance bond to be margined on a gross basis and segregated from the positions and performance bond of its Clearing Member for customer segregated and the cleared swaps customer account classes.

In particular, for cleared swaps, CME Clearing complies with Part 22 of CFTC Regulations, requiring the implementation of the LSOC account structure, which provides that the collateral value of a cleared swaps customer’s performance bond cannot be used to cover the losses of another cleared swap customer. CME Clearing’s treatment of LSOC is further described in CME Clearing’s disclosure for Key Consideration 2 of this Principle. Additionally, as discussed under CME Clearing’s disclosures for Principle 13, upon the default of a Clearing Member, the Clearing House would cease netting settlement variation for the cleared swaps customers of such Clearing Member and such cleared swaps customers would likely settle directly with the Clearing House. This ensures that customers remain in compliance with performance bond requirements in order to increase the likelihood of successful porting.

To further improve the probability of successful porting of customer positions, CME Clearing examines the customer portfolios of a Clearing Member that appears to be under distress to identify stable Clearing Members with similar or complimentary customer profiles who may be well-placed to absorb the transferred customer accounts. This practice minimizes the amount of time necessary to port customers once a Clearing Member default event is declared.

CME Group Exchange Rules provide CME Clearing with the immediate right to transfer customer positions and associated performance bond value to another Clearing Member, when the Clearing Member default event did not occur in such customer account.\(^\text{63}\)

In the ordinary course of business, a customer may initiate an instruction to transfer its account to another Clearing Member. Under NFA Rule 2-27, FCMs are required to process such transfers within two business days. In the event of Clearing Member distress, the Clearing Member or CME Clearing, if it is determined to be in the best interest of the Clearing House, can initiate a porting of customer accounts. In the event of an FCM Clearing Member’s insolvency, the U.S. Bankruptcy Code and Part 190 of CFTC Regulations generally provide that the trustee of such FCM may not avoid a transfer of

customer accounts that occurred prior to the entry for relief under the U.S. Bankruptcy Code and for seven days after an entry for relief provided that the CFTC has not disapproved of such transfer.

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.

CME Clearing protects customer positions and collateral against fellow customer risk through the application of the prudent margining, segregation, and reporting requirements, which are consistent with CFTC Regulations regarding segregation and the use of customer collateral by a DCO to cure losses created by an FCM Clearing Member’s default. Customer positions and collateral are segregated by the FCM Clearing Member, CME Clearing, and relevant settlement banks and custodians from the positions and collateral of the FCM. Additionally, DCM-listed customer positions and collateral are segregated from swaps customer positions and collateral, unless relief has been provided to allow for portfolio margining. Fellow customer risk is the risk that one or more customers of an FCM Clearing Member will default on their obligations to the FCM Clearing Member and that such loss will be so great that the FCM Clearing Member, in turn, will default on its obligations to CME Clearing (also known as a “double default”). CFTC Regulations and CME Group Exchange Rules prohibit CME Clearing from using customer collateral to satisfy any obligation of the FCM Clearing Member in respect of its proprietary positions and from using DCM-listed customer collateral to satisfy swaps customer obligations and vice-versa.

Fellow customer risk is mitigated by gross margining by CME Clearing for customer positions plus the requirement under CME Group Exchange Rules that a FCM Clearing Member maintain a targeted amount of additional funds belonging to it in its customer accounts, in excess of the aggregate collateral collected by it from its customers. Additionally, for swaps customers Part 22 of CFTC Regulations and CME Group Exchange Rules ensure that CME Clearing knows the positions and collateral value contributed at the individual customer level, and prohibit CME Clearing from using the collateral value contributed by one customer to satisfy losses created by another customer, further limiting any fellow customer risk. CME Clearing also made available the option for FCM Clearing Members to transfer specifically identifiable cleared swap customer performance bond value in excess of the amount required by CME Clearing. However, in a double default situation, CME Clearing may use the collateral of customers within the same account, as long as it is not an LSOC account, to cure losses of the defaulted customer(s).

Each account containing customer performance bond is identified as belonging to the customers. CME Clearing obtains an acknowledgement letter from each depository and custodian holding customer moneys that acknowledges that such funds are customer funds and complies with other CFTC Regulations for holding customer funds. Consistent with CFTC Part 22 Regulations, CME Clearing requires daily reporting of the amount and identity of cleared swap customer performance bond as well as customer position information.

CME Clearing prioritizes the interests of non-defaulting customers of a defaulted Clearing Member during default situations. In the event of an under-segregation or customer default situation, CME

64 See CFTC Regulations 1.20 and 22.5 requiring acknowledgment letters.
Clearing works with the trustee, if one is appointed, and the defaulted firm to preserve collateral and minimize the impact to customers resulting from the situation.

**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.**

In the ordinary course of business, CME Clearing is able to effect efficient and complete portability of a Clearing Member’s customer positions and performance bond. Customers may elect to transfer their accounts to a new Clearing Member subject to the execution of new account documentation and CME Group Exchange Rules. Transfer of positions and performance bond between Clearing Members at the request of a customer is standard industry practice, and it can be done very quickly and in almost all circumstances within one business day. Additionally, CME Clearing may also intervene when any Clearing Member does not promptly execute the transfer of a customer’s positions and performance bond to another Clearing Member, and CME Clearing can honor the customer’s request to be transferred.

In the event of a Clearing Member default, CME Clearing is able to process transfers on an expedited basis through an established and well-tested legal regime under the U.S. Bankruptcy Code and CFTC Regulations. Such transfer activity takes place quickly, and customer accounts may move to other non-defaulting Clearing Members through either proactive measure of such Clearing Members or with the assistance of CME Clearing. This process is enhanced by the CFTC requirement of customer gross margining, which ensures that customer accounts are fully margined at the CME Clearing, thus increasing the flexibility of CME Clearing to port customers to a single or multiple FCM Clearing Members in the event of an FCM Clearing Member default and improving the likelihood of successful porting. CME Clearing’s systems and operations are designed to handle the prompt transfer of positions at either the customers’ direction, or in the absence of a customer request, CME Clearing can direct a bulk transfer where CME Clearing believes porting is in the best interest of customers based on the condition of the defaulted Clearing Member. Positions are generally transferred at the prior day’s settlement price. For any transfers of customers initiated by CME Clearing, the defaulting Clearing Member will generally send a “negative consent” letter to its customers giving them the opportunity to remain at the defaulting Clearing Member but with the intent that a customer’s silence is their consent to be transferred to the receiving Clearing Member. CME Clearing then arranges the transfer of the clients from the defaulting Clearing Member to the non-defaulting Clearing Member(s). Following being transferred, customers who have been transferred to a non-defaulting Clearing Member have the right to transfer their accounts to a new Clearing Member, subject to the execution of the requisite account documents.

As discussed above, CME Clearing and its Clearing Members also comply with legal and regulatory requirements that customer performance bond and positions are identifiable and legally segregated. Although customer performance bond and positions may be held in an omnibus account, a Clearing Member is required to identify the performance bond attributable to a particular customer. In the

65 CME Group Exchange Rule 853
event of a Clearing Member default, CME Clearing is able to facilitate expeditious bulk transfers of customer omnibus accounts from the defaulting Clearing Member to one or more non-defaulting Clearing Members. Furthermore, in the event of a shortfall of customer performance bond, CME Clearing is capable of processing partial transfers of customer accounts to other Clearing Members.

CME Clearing has the ability to administer transfer of performance bond value from the Clearing House account of the defaulting Clearing Member to the account of the receiving Clearing Member to the extent such performance bond is on deposit in a CME Clearing controlled bank or custody accounts and to the extent practical and legally permissible. For performance bond that remains on deposit at the Clearing Member level, CME Clearing facilitates coordination between the defaulting and receiving Clearing Members. In either case, CME Clearing also coordinates with the CFTC, all affected Clearing Members, and the bankruptcy trustee, if one has been appointed.

**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.

The segregation and portability arrangements of CME Clearing are contained in the CME Group Exchange Rules and are compliant with the CEA and CFTC Regulations. Customer collateral is held on an omnibus basis and protected in accordance with the CEA, U.S. Bankruptcy Code, and CFTC Regulations. CME Group Exchange Rules are publicly available on the CME Group website. Additionally, CME Clearing publishes the “CME Clearing Risk Management and Financial Safeguards Brochure”, which is also available on the CME Group website. The Brochure provides an overview of the safeguards afforded to trades cleared through CME Clearing, including CME Clearing’s risk controls, Clearing Member surveillance, performance bond, mark-to-market, financial safeguards available to each waterfall, customer protections, and Clearing Member requirements.

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**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 materialize. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

**Summary Narrative**

**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.

As previously described, CME Inc., the entity designated systemically important by FSOC, operates CME Clearing. CME Group, the parent company of CME Inc., maintains management and financial controls that track key financial performance measures allowing CME Group to establish short, medium, and long-term financial projections to protect against business and financial risks, while permitting investment in continued growth.

The key processes for financial management are:

- Annual strategic and planning process;
- Annual budget process; and
- Monthly financial forecast.

The results of these processes are used to create a comprehensive financial plan that estimates the firm’s ability to produce the necessary levels of earnings and cash flows to support proposed business plans and protect against business risks, including market downturns or poor execution of business strategy. These estimates are developed using market, economic, and volatility projections to establish core product and market revenue opportunities and approximate future expenses and capital flow. CME Group uses external analysts to validate internal market estimates. The parameters of the projection models are regularly reviewed and refined based on anticipated shifts in revenue estimates.

Additionally, CME Group utilizes sensitivity analysis methodologies to gauge its ability to cover costs and capital commitments during periods of reduced growth and market contraction. This also enables CME Group to establish contingency plans for deteriorating financial conditions. The strength of these plans were confirmed during the 2009 credit crisis, following the bankruptcy of Lehman Brothers, during which the financial durability of CME Group proved sufficient to continue to support both capital commitments and dividends.

To ensure that senior management is properly able to manage CME Group’s financial situation and exposure to business and financial risks, CME Group has defined a thorough reporting structure to enable oversight and monitoring of various exposures and risks. These include daily, monthly, and quarterly reviews to ensure both proper granularity and trend analyses are available to management.

**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.

Pursuant to CFTC Regulations 39.11(a)(2) and 39.11(e)(2), CME Inc. maintains sufficient financial
resources to cover its DCO’s operating costs for a period of at least one year, calculated on a rolling
basis, with at least six months’ operating costs maintained in the form of unencumbered, liquid
financial assets. To meet such financial resource requirements, CME Inc. monitors the primary drivers
of operational expenses and CFTC required amounts on a monthly basis. On a quarterly basis, CME
Clearing submits a financial resources report to the CFTC.

CME Inc.’s equity, excluding the earmarked CME Contribution to the financial safeguards waterfalls,
would cover CME Inc.’s projected operating costs for at least one year operating costs of a wind-down.

**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.

In accordance with CFTC Regulation 39.39, CME Inc. maintains Recovery and Wind-down Plans. CME
Inc.’s Recovery and Wind-down Plans are described in CME Clearing’s disclosures for Principle 3.

As described above, pursuant to CFTC Regulations 39.11(a)(2) and 39.11(e)(2), CME Inc. maintains
sufficient financial resources to cover its DCO’s operating costs for a period of at least one year,
calculated on a rolling basis, with at least six months’ operating costs maintained in the form of
unencumbered, liquid financial assets. To meet such financial resource requirements, CME Inc.
monitors the primary drivers of operational expenses and CFTC required amounts on a monthly basis.

**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 previously noted, as prescribed by CFTC Regulation 39.11, CME Clearing actively manages its
general business risk and holds sufficient liquid resources to cover potential business losses, including
one year of operating costs with resources for six months of such operating costs held in sufficiently
liquid assets, such as cash and cash equivalents. CME Clearing defines eligible funds for compliance
with these requirements in accordance with guidance provided by the CFTC. The assets required to
cover these costs must be held in cash or highly liquid securities; additionally, the Clearing House has
access to an Intercompany Loan Agreement between CME Group Inc. and CME Inc. which permits
CME Inc. to borrow up to $400 million solely for general operating expenses. Additionally, CME Inc.
maintains appropriate insurance policies, which cover various out of the ordinary events that could
pose general business risk.

CME Inc.’s Recovery and Wind-down Plans also cover scenarios that could threaten CME Clearing’s
ongoing viability as a result of general business risks.
**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.

CME Inc. has established and maintains a financial plan (the “Financial Plan”) in accordance with CFTC Regulation 39.39(e) to raise additional financial resources, including, where appropriate, capital in a scenario in which CME Inc. is unable, or virtually unable, to comply with any financial resources requirements set forth in Part 39 of the CFTC’s Regulations. Pursuant to CFTC Regulation 39.39(e), the Board approves the Financial Plan annually.

In the unlikely event that – despite CME Inc.’s robust financial resources – CME Inc. is unable, or virtually unable, to comply with any financial resources requirements set forth in Part 39 of the CFTC’s Regulations, CME Inc. plans to raise additional financial resources as reflected in its Financial Plan.
**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.

**Summary Narrative**

**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.

CME Clearing holds its assets and the assets of its Clearing Members at regulated commercial settlement and custody bank entities, primarily domiciled in the United States, in line with the requirements for eligible depository institutions laid out under CFTC Regulation 1.49. Each of CME Clearing’s depositories are regulated as banking institutions within the jurisdictions in which they are domiciled and utilize acceptable international accounting standards and Generally Accepted Accounting Principles for U.S. firms. Custody and settlement banks act as intermediaries between CME Clearing and its Clearing Members. Clearing Members maintain accounts at these banks to deposit collateral to meet their obligations at CME Clearing and provide CME Clearing access to these accounts, allowing CME Clearing to withdraw funds as needed to meet funding requirements.

CME Clearing obtains an acknowledgement letter from each depository institution holding customer moneys that acknowledges that such funds are customer funds. The assets of customers of Clearing Members are held only at entities that comply with applicable CFTC Regulations.

In compliance with CFTC Regulation 39.15, CME Clearing is required to:

- Comply with applicable segregation requirements under the CEA;
- Hold funds and assets belonging to Clearing Members and customers in a manner which minimizes the risk of loss or delay in access;
- Have rules for prompt transfer of customer positions without requiring close-out and re-booking; and
- Only invest funds and assets of customers in instruments with minimal credit, market, and liquidity risks and in compliance with Regulation 1.25 – CME Clearing also applies this standard to the investment of Clearing Members own funds and assets.

CME Clearing employs a credit review process to determine the creditworthiness of all custody and settlement banks approved by CME Clearing’s Credit Committee and the CHRC and CHOC, where applicable. As a part of this process, CME Clearing has conducted an analysis of the risk associated with the varying types of bank accounts it utilizes. CME Clearing also conducts regular reviews of settlement and custody banks’ financial statements and regulatory compliance, which would include accounting practices, safekeeping procedures, and internal controls. These practices are in addition to the daily monitoring CME Clearing does of all its counterparties and the on-site reviews it does of its settlement and custody banks.
CME Clearing has custody agreements in place with each of its custody banks. The custody agreement terms clarify that the assets of CME Clearing and its participants held in custody are the exclusive property of CME Clearing and its participants, and do not constitute general assets of the bank. Consistent with CFTC Regulation, CME Clearing requires that its custody and settlement banks provide segregation letters verifying that they adhere to CFTC segregation requirements with regards to customer funds held by FCM Clearing Members that settle through them.

**Key consideration 2:** An FMI should have prompt access to its assets and the assets provided by participants, when required.

Any form of collateral accepted by CME Clearing is held in accordance with CME Clearing’s custody agreements with its approved custody banks. The terms of these agreements and the attendant account structures formalize CME Clearing’s first-priority security interest in the collateral posted by its Clearing Members, ensuring that CME Clearing has prompt access to collateral assets held at its custody banks. CME Clearing submits instructions directly to custody banks to transfer, deposit, distribute, or otherwise dispose of the assets. As described in CME Group Exchange Rules 819, 8F008, and 8H08 for exchange-traded, cleared swaps (other than CDS), and CDS products, respectively all assets must be and remain unencumbered.

**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.

The Risk Management team evaluates counterparty risk independently according to its credit review process, described in CME Clearing’s disclosures for Principle 4, and according to the Credit Policy. The Risk Management team evaluates exposures across CME Clearing, including its custody banks. CME Clearing performs reviews at least annually or as deemed appropriate to assess its custody banks’ creditworthiness, liquidity resources, and overall counterparty strength, as well as the concentration of the counterparty’s exposure to CME Clearing across all of its business relationships.

**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.

CME Clearing’s investment of assets is defined by its Investment Policy, which is designed to ensure that principal is preserved and, as fully as possible, protected from losses borne by CME Clearing directed investment activity. Investments are made to minimize liquidity risk, so that CME Clearing can meet its daily liquidity demands. Return on investment is of secondary importance, behind the security and liquidity objectives of CME Clearing. CME Clearing considers concentration and counterparty risks in developing its Investment Policy. CME Clearing does not permit investment in CME Group securities or the securities of its Clearing Members to avoid wrong way risk in its investments.

CME Clearing’s Investment Policy is reviewed and approved at least annually by Credit Committee and CHOC; any substantive changes to the Investment Policy require the approval of CHOC. CME Clearing bears the losses and gains resulting from CME Clearing directed investments. CME Clearing’s Investment Policy is disclosed to its prudential regulator.
Consistent with CFTC regulations, CME Clearing only invests customer collateral in high-quality, low-risk instruments that are permitted under CFTC Regulation 1.25. CFTC Regulation 1.25 also sets forth concentration limits and other requirements with respect to the investment of customer funds that are designed both to ensure a high-level of safety and ready access to liquidity. Although it is not required by regulation, under its Investment Policy, CME Clearing also adheres to the standards under CFTC Regulation 1.25 with respect to the investment of non-customer collateral (e.g., house performance bond and Guaranty Fund deposits).
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.

Summary Narrative

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

CME Clearing manages operational risk under the guidelines established in its Operations Risk Management Framework, which describes CME Clearing’s core processes used in risk identification, measurement and mitigation. The Operational Risk Management Framework establishes decision controls to facilitate operational risk management and the communication and escalation of operational risk. The Operational Risk Management Framework is approved by the Risk Committee and the full Board on an annual basis.

The three core clearing processes of CME Clearing are:

i. Ability to accept executed trades for clearing;
ii. Ability to view and manage market and credit risks; and
iii. Ability to process and manage settlement and collateral.

As a SIDCO, CME Clearing’s primary responsibility to its Clearing Members and market participants is to consistently provide trade processing and settlement services within a defined timeframe.

CME Clearing operates 24 hours a day, six days a week and requires continuous monitoring to prevent operational interruptions. CME Clearing supports multiple operating units responsible for monitoring various operational components of its functions to mitigate operational risk.

Operational risk is managed through a number of independent processes, including system and process surveillance, performance as measured in accordance with Service Level Agreements ("SLAs") and use of risk and payment systems to mitigate any operational risk that could introduce financial and or reputational risk to CME Group and its affiliates.

CME Clearing Operations

CME Clearing’s Operations team monitors, in real-time, a messaging queue dashboard for inbound and out bound message traffic and queue depths to identify potential issues. The Operations team also monitors certain types of message traffic which can impact the risk profile of the Clearing Members.

CME Clearing is staffed from Sunday at 5:00 PM Chicago time through Saturday at 2:00 AM Chicago time to assist Clearing Members with any operational issues. Staff members are available to Clearing Members outside of these hours to resolve any other problems that may arise. On a daily basis,
multiple shifts, are staffed to ensure consistent coverage of system performance, including monitoring of the identified core clearing processes.

CME Clearing is in frequent communication with Clearing Members and the CFTC, and actively participates, with the FIA’s Operations Americas Division, regarding how CME Clearing systems and processes are performing, and they are notified of any potential industry-wide impacts.

The Operational Risk Management Framework is maintained under the umbrella of CME Clearing’s Risk Management Framework, with the documents designed to work cohesively in upholding CME Clearing’s prudent risk management standards.

In the event of a business disruption, CME Clearing has defined a Business Continuity Management ("BCM") program to mitigate the potential impact, define procedures that safeguard CME Clearing and its Clearing Members, and the steps to be taken following a business continuity event. The BCM program is described further below.

CME Group Staff

CME Group has in place a workforce succession planning process in which critical roles within the organization are identified and readiness plans for potential successors are developed and reported to the Board on an annual basis. The Board and its Governance Committee are responsible for the succession planning process for the Chairman and Chief Executive Officer with the Strategic Steering Committee overseeing the process for other members of senior management and key roles within the organization. Notably, the Board is responsible for approving the appointments of the President of CME Clearing and CRO of CME Clearing. CHOC is responsible for succession planning for key Clearing House roles, including the President, CRO and CCO.

CME Group has in place a global Compliance & Ethics Program, which is designed to be effective, as measured against the U.S. Federal Sentencing Guidelines. The Global Chief Compliance Officer is responsible for this program which is overseen by the Board. The primary compliance policy for employees is the Code of Conduct which is published on the CME Group website. The Code of Conduct sets forth CME Group’s business principle of leading with conviction and integrity and its expectations that employees comply with all applicable laws. In accordance with the Code of Conduct and its related policies, all employees are required to raise issues of non-compliance, including instances of fraud, to the organization through one of the available reporting avenues. To facilitate raising compliance issues, including anonymous reports, CME Group maintains a helpline (EthicsPoint), which is administered by an independent third party. Reports received via EthicsPoint are categorized and communicated to certain members of CME Group’s Global Corporate Compliance and Ethics team and, in instances of fraud, to the Chairman of the Audit Committee. CME Group also has in place internal controls designed to detect and prevent fraudulent activity.

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 Board is responsible for the governance of CME Group and ensuring that there is proper oversight over senior management. In addition to regular reviews of the Operational Risk Management
Framework, the Board sets CME Group’s strategy and objectives, which form the context within which risk is managed. Specifically, in relation to operational risk, its key responsibilities are to approve and periodically review the CME Group’s framework for managing operational risk, including:

- Satisfying itself that appropriate systems are in place to identify, evaluate, and manage the significant risks faced by CME Group;
- Ensuring that staff throughout CME Group are clear as to their own roles and responsibilities;
- Providing senior management with clear principles underlying the framework;
- Receiving reports on operational risk exposure as part of its oversight function, so that it can ensure appropriate action is taken.

The Risk Committee has oversight responsibility for the enterprise risk management program on behalf of the Board. The Risk Committee’s oversight activities include reviewing and discussing CME Group’s Enterprise Risk Management Framework and underlying processes, summary level reporting of enterprise risk management activities, and senior management’s assessment of CME Group’s most significant risks and the steps taken to manage these risks.

CME Group utilizes qualified auditors to provide an independent assurance evaluation function, which validates senior management’s assertions about the effectiveness of risk management processes and the internal control environment. These evaluations are provided to the Audit Committee and Risk Committee and senior management. Both internal and external auditors are used to provide these services. Internal audit functions are performed by the Global Assurance department and are part of the ongoing monitoring of the system of internal controls. The scope of work of the Global Assurance department is to determine whether the CME Group’s network of risk management and control processes, as designed and represented by senior management, is adequate and functioning in a manner to ensure:

- Risks are appropriately identified and managed;
- Interaction with the various compliance groups occurs as needed;
- Significant financial, managerial, and operating information is accurate, reliable, and timely;
- Employees’ actions are in compliance with policies, standards, procedures, and applicable laws and regulations;
- Resources are employed effectively and efficiently;
- Assets are appropriately safeguarded;
- Programs, plans, and objectives are achieved;
- Quality and continuous improvement are fostered under CME Group’s control processes; and
- Significant legislative or regulatory issues impacting CME Group are recognized and addressed appropriately.

Additionally, the Global Assurance department, develops, implements, and communicates to the Audit Committee and management an annual audit plan using an appropriate risk-based methodology. The plan gives consideration to risks, control concerns, and special projects identified by management and the Audit Committee. To address changing risk situations, modifications to the plan may be made on an ongoing basis, subject to approval by the Audit Committee. The Global Assurance department issues periodic reports to the Audit Committee, the Risk Committee and
management summarizing the results of internal audit activities. This includes reporting significant issues, potential improvements, timing for any management corrective action via a written report at the conclusion of each audit, as appropriate, and provides information concerning such issues throughout their resolution.

CME Clearing further verifies the effectiveness of its systems and procedures through regular drills with participants as part of an annual drill hosted by the Futures Industry Association. These drills include customers, partner exchanges, and other CCPs. Results are reviewed by members of the senior Risk Management team.

**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.

CME Clearing has clearly defined operational reliability objectives as described in the Operational Risk Management Framework. The three primary operational reliability objectives related to CME Clearing’s key operational considerations, as described in CME Clearing’s disclosures for Key Consideration 1 of this Principle, are to consistently provide its core clearing processes, maintain the ability to view and manage risk, and support its settlement and collateral management services. To achieve these objectives CME Clearing has invested in systems, infrastructure, business processes, and monitoring tools to track progress against these objectives. All critical functional components that support CME Clearing’s services are required to have a backup with the ability to switch from primary to back up without affecting the recovery times set forth in the SLAs.

Support teams monitor the systems infrastructure 24 hours a day, 6 days a week and procedures are established to restore service in the event of component failures. CME Group has an established set of defined SLAs for all customer facing clearing processes. CME Clearing monitors these standards with real-time metrics for items such as message latency and application uptime, and batch metrics for items with monitoring policies adhering to the CME Clearing SLA targets.

The SLAs define the minimum service levels that CME Clearing has committed to offer to its participants. To measure its performance against these, CME Clearing generates a series of reports on a daily basis reflecting observed performance against SLA standards. Among other things, CME Clearing has defined its minimum functionality with regards to trade capture and message processing, as well as the completion and timing of specific file production and distribution, as appropriate.

In the unique scenarios, where CME Clearing misses a target of its SLAs, it has a dedicated team to follow-up on such matters to determine the cause and make recommended changes to prevent the recurrence of the identified causes and issues. Weekly status updates on performance against service level agreements are provided and discussed amongst Clearing Operations and other key functional departments. This process allows CME Clearing to identify any changes required to be made to current practices or if new service level agreements need to be initiated and the broader monitoring process needs to be enhanced.

Additionally, pursuant to CFTC Regulation 39.38(a), CME Clearing must efficiently and effectively design its clearing and settlement arrangements and use of technology. CME Clearing believes it necessary to provide its services with a high degree of operational reliability. The monitoring CME Clearing undertakes against its service level agreements provides a mechanism for CME Clearing to
evaluate the effectiveness and efficiency of the design of its clearing and settlement arrangements and use of technology and, therefore, its operational reliability. As such, CME Clearing’s monitoring processes against its defined performance targets under its service level agreements provides CME Clearing a high degree of operational reliability. Additionally, the manner in which CME Clearing’s systems are structured and supported and the provision of backup optionality for systems that are necessary for CME Clearing to perform its critical functions provide a high level of operational reliability.

**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.

CME Clearing maintains scalable capacity to address increased volumes, while maintaining service-level objectives. Capacity planning is an ongoing cyclical process that involves defining service SLAs, monitoring production systems, modeling CME Clearing’s capacity for anticipated future growth, testing the performance of the system under load, upgrading capacity, and resetting SLAs. When defining the SLAs, CME Clearing identifies internal milestones that lead up to those SLAs and establishes real-time performance goals. Production is monitored to validate performance against the established SLAs and goals ensuring effective capacity levels for current operational needs. Forecasts of future transactional and service SLA needs are turned into models to use in estimating future capacity needs. The systems are tested against the models to identify if and when capability upgrades are necessary. When the system has been upgraded, the SLAs and performance goals are updated to remain current with business service objectives, particularly as it related to CME Clearing’s key operational reliability objectives.

The capacity planning process is implemented to encompass all aspects of capacity management for critical systems. The mission of the capacity planning process’ design is to use an appropriate combination of modeling and monitoring to prevent any capacity issues from impacting core systems. It is CME Clearing’s practice to have a minimum of two times the last known peak load for any given application system. The long-term capacity model for CME Clearing’s systems is monitored, adjusted, and reviewed and further, presented in a report to senior management on a quarterly basis. The long-term capacity process is used to develop resource allocation and architecture decisions. The capacity planning process is further designed to avoid a situation where operational capacity is neared or exceeded.

**Key consideration 5:** An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

CME Clearing maintains comprehensive physical and information security policies.

**Physical Security**

CME Group security personnel is comprised of CME Group employees and contracted armed and unarmed security officers, including off-duty police officers that provide 24 hours a day, 7 days a week monitoring of internal premises and the perimeter. CME Group’s security personnel also engage in frequent drills with local partners, such as the fire and police departments, and other tenants and building management that is designed to ensure best practices in preparedness are adopted.
Access to all data centers and office locations is controlled through proximity/swipe cards on a strictly as needed basis for all staff, market participants, and vendors. Prior to receiving access these groups are subject to fingerprint and criminal background checks. Packages and deliveries are scanned or inspected prior to entering CME Group spaces. Visitors to CME Group spaces are registered and entered into a database and must be escorted by CME Group staff or security personnel. All visitors’ bags, briefcases, and purses, among other personnel items are scanned and inspected. Visitors must pass through a metal detection magnetometer prior to entering CME Group headquarters.

The CME Group security staff’s response to any situation is directed by the CME Group’s manned state-of-the-art Global Security Command Center ("GSCC"). The GSCC is managed around the clock by a security supervisor and analysts. These supervisors, along with their relevant counterparts throughout CME Group, coordinate all security functions and event responses to ensure that all communication and direction coming from the GSCC are accurate, timely, and effective. They supervise teams of security officers and manage closed-circuit television systems ("CCTV"), security software, intrusion detection, and access control systems, as well as communicate with relevant regional business and global security teams.

CME Group security management team maintains a high degree of collaboration and cooperation with local, state, federal, and international law enforcement and intelligence agencies including the Chicago and New York police departments, Federal Bureau of Investigation, Secret Service, Department of Homeland Security, and Scotland Yard. Through these relationships, CME Group receives timely intelligence briefings and threat assessments.

Information Security

CME Clearing is governed by the CME Group Information Technology and CME Group Information Security policies which defines standards, procedures and controls which govern its information security management practices. Both policies as well as the Global Information Security Program are based on accepted international, national and industry-level industry frameworks and guidelines.

The mission of CME Group’s Information Security Program is to safeguard the confidentiality, integrity, and availability of information through a structured program designed to mitigate security risks and threats to CME Group. CME Group’s Global Information Security department supports the integrity of the global markets it supports, maintains customer and employee trust, enables the business to achieve its objectives and contributes to shareholder value, and protects CME Group’s information assets in order to defend CME’s reputation and good name. In order to support its mission, technical, physical, and administrative safeguards are implemented to protect our customers, employees, and other confidential and sensitive information in its stewardship.

Global Information Security has developed and maintains a core set of programmatic components to enable the information security mission and objectives, as well as CME Group’s business, compliance, and privacy requirements. The information security program components also include cross-functional areas outside of Global Information Security, but with accountabilities for information security. The Global Information Security program components are as follows:

- Information Security Risk and Compliance;
- Identity Access Management ("IAM") Services;
- Security Operations;
- Security Architecture;
• Global Information Security Project Delivery; and
• Operations and Execution.

The following areas further support the information security missions and objectives and are governed by teams within the broader Technology Division:

• Asset Management;
• Change and Release Management;
• Configuration Inventory and Management;
• Patch Management;
• System Development Life Cycle; and
• Incident Management.

As part of its strategic priority to manage risk, teams within the Technology Division conduct independent quality assurance reviews of software changes and of its controls framework, take mandated training on secure coding practices, assess software for security vulnerabilities, and control access to source code as part of standard practices.

The CME Group Patch Management Functional Standard details the requirements to manage the patching of software assets and requires that processes are created to endure the timeliness, frequency and management of software patches and updates. The Patch Management Functional Standard is supported further by the CME Group Patching Requirements and Standard Operating Procedures document (“Patching SOP”). The Patching SOP details the patching process, related controls and escalation requirements for CME Group’s overall patch and vulnerability management program. The document contains the instructions, procedures and requirements for the CME Group Vulnerability Management Program, including identification, remediation, awareness, team organizations, senior leadership awareness and metrics/reporting. The document outlines defined practices related to:

• Asset management;
• Patch management;
• Vulnerability scanning; and
• System monitoring.

CME Group has a well-founded framework which is considerate of plausible sources of information security vulnerabilities and threats. CME Group is continually assessing and enhancing its practices for managing risks to its information security program.

**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.

CME Group’s BCM program reflects objectives, policies and procedures that allow for the rapid recovery and timely resumption of critical operations following a wide-scale or major disruption. The BCM program is designed to mitigate potential impacts to the markets and customers CME Clearing
serves. The BCM program defines procedures which safeguard the interests of key market stakeholders, and establishes steps necessary to protect the Clearing House’s reputation and brand, following a disruption. The BCM program helps to ensure CME Group’s resiliency, including CME Clearing’s through:

- Aligning with U.S. and international standards for business continuity management;
- Implementing incident response, information technology/disaster recovery and business recovery strategies that are both flexible and agile;
- Building effective partnerships across the company to effectively manage risk;
- Employing tested exercise models that evolve with the environment and architecture;
- Identifying opportunities for enhanced resilience;
- Establishing collaborative relationships with external entities, partnerships and agencies; and
- Continually monitoring and adjusting program components to meet both domestic and international regulatory requirements, and that reflect any material changes to the business.

CME Clearing ensures it can continually meet its recovery time objectives, as further described below by conducting disaster recovery exercises at least twice annually, and participates in the annual Futures Industry Association industry-wide drills. Further, CME Clearing staff located outside of the U.S. region are cross trained to cover and manage critical processes to help ensure the Clearing House can complete processing and settlements in the event where personnel in the production location are not able to do so.

CME Group has implemented a streamlined data center approach, which includes housing all production systems within one data center and all backup systems in a second, out-of-region data center; both data centers rely on separate infrastructure. CME Clearing transaction data is replicated in near real-time to both primary and secondary sites. In the event CME Group were to experience a regional outage impacting its production data center, it would failover to its out-of-region, secondary data center. Additionally, at least twice a year, all critical applications are failed over from production to disaster recovery; the results of the failover tests are documented in after-action reports. CME Group also conducts additional incremental testing, outside of the two tests mentioned above, to further validate the recovery strategy.

The BCM program also utilizes incident response teams to ensure CME Group, including CME Clearing continuity meets its defined operational objectives after a disruption within its defined recovery time objective.

The Crisis Management Team is accountable for managing incidents and is led by the Crisis Management Team Commander. The Crisis Management Team is comprised of senior leaders across CME Group business lines and is supported by the Global Incident Response Team, which is made up of representatives from critical areas across the organization that directly support, both operationally and logistically, the response to and recovery from an incident. The response teams are primarily responsible for ensuring CME Group’s priorities are met during the recovery.

There also are active Regional Incident Response Teams within each major regional office, which are led by a senior manager in that office and are made up of local representatives who coordinate the response to an incident occurring in their region. If multiple events were occurring, the recommended
action by the Regional Incident Response Teams will be submitted to the Chief Operating Officer, who is the Crisis Management Team Commander, to ensure overall coordination and cooperation.

Given the developed disaster recovery and business continuity planning CME Clearing has in place, CME Clearing is confident that is would be able to meet its recovery time objective upon a disruption. CME Clearing’s clearing and settlement processes are recoverable, upon a disruption in no more than two-hours, in line with CFTC Regulation 39.34(a). The remaining systems are recoverable, upon disruption in no more than four hours. Both CME Clearing’s Operational Risk Management Framework and CME Group’s business continuity policies address the two-hour requirement; however, different sets of events may trigger responses from each framework. The Operational Risk Management Framework is limited to operational disruptions primarily resulting from internal failures and under the control and responsibility of CME Clearing, whereas major external events are likely handled through the Business Continuity Plan.

**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.

CME Clearing is able to identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. CME Clearing employs several monitoring and controls over other FMIs including:

- Systematic monitoring of networking communications and data transfers which generate alerts during failures;
- Applying risk-based change control procedures to plan, analyze, test, and implement system changes or upgrades;
- Utilizing credit control limits on trade executions to ensure trading is within applied limits by Clearing Members;
- Running market observations around the clock to determine positions are within established clearing thresholds;
- Partner exchange account managers holding regular meetings with FMIs to address issues and plan future projects;
- Establishing clear lines of communications and escalation procedures to address production issues;
- Running regular disaster recovery tests that include FMIs; and
- Participating in annual disaster drills hosted by the Futures Industry Associate which include partner exchanges and other CCPs.

CME Group has a service agreement with the SWIFT for all daily payable/receivable settlements. The SWIFT system is monitored by CME Clearing during both the intraday and end-of-day settlement cycles. Monitoring is completed to ensure the system settlement wires are created, routed, and processed per arrangements with both Clearing Members and settlement banks. Technical support for the SWIFT system is managed by CME Group’s Enterprise Application Support team, and security access is managed by PC Support and Server Services team to control system access, user profiles, and authentication.
CME Clearing utilizes settlement banks to fulfill Clearing Member financial obligations. Each Clearing Member must have at least one account at one of CME Clearing’s settlement banks. Settlement banks submit copies of their respective contingency plans to CME Clearing on an annual basis.

CME Clearing also adheres to the following principles, which are largely demonstrated through the implementation of the practices described above:

- Enterprise wide business continuity governance residing with senior executives and ultimately the Board;
- Implement planning and testing procedures across all CME Group businesses and technologies;
- Geographic diversification of critical operations and technology processing centers;
- Utilization of remote, real-time data replication designed for rapid systems recovery and protection from data loss;
- Audit backup telecommunications circuits, in an effort to ensure routes that are fully diversified from primary circuits;
- Use of alternative, independent telecommunications carriers with infrastructure independent of other service providers; and
- Maintain backup systems that meet or exceed processing and regulatory requirements.

CME Clearing has clear processes and procedures, as described throughout CME Clearing’s disclosures to this principle to address its FMI relationships.
**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.

**Summary Narrative**

**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.

To ensure transparency of clearing membership requirements and to facilitate fair and open access to its services, CME Clearing provides a full summary of the participation requirements – including operational, financial, reporting, and risk – on its website. By developing and enforcing these requirements, CME Clearing can confirm the ability of its Clearing Members to meet expected future obligations, thus better ensuring the security of the Clearing House and its existing Clearing Members. The requirements are designed to support a baseline of capabilities within the Clearing Member base without being excessively onerous.

These comprehensive Clearing Member participation requirements ensure that sufficient resources are available to cover future obligations and achieve a balance between capital necessity and participant access. The table below provides a summary of the requirements for CME Clearing membership.

### General Requirements

- A Clearing Member must be a corporation, partnership, or cooperative association.
- A Clearing Member shall agree to abide by all exchange rules and to cooperate in their enforcement.
- A Clearing Member shall be engaged in or demonstrate immediate capacity to engage in the conduct of business of a Clearing Member.
- A Clearing Member shall agree to guarantee and assume complete responsibility for: (a) all trades executed or directed to be executed by floor brokers and traders qualified by it; and (b) all orders that floor brokers qualified by it negligently execute or fail to execute.
- A Clearing Member shall comply with all credit control policies developed by the Exchange for customer and proprietary transactions.

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All Clearing Members must maintain bank and securities safekeeping accounts at one or more settlement banks for purposes of posting cash and securities to meet mark to market variation, performance bond, and Guaranty Fund requirements.

Clearing Member that will clear exchange-listed futures and/or options on futures and/or cleared swaps for customers must be registered with the CFTC as an FCM.

Clearing members that will clear exchange-listed futures and/or options on future and/or cleared swaps for customers must be registered with the CFTC as an FCM.

### Additional General Requirements for Cleared Swaps Derivatives

- A Clearing Member shall agree to guarantee and assume responsibility for all cleared swaps derivatives trading activity executed via outside means and submitted for clearing to the Clearing House by any customer authorized by the Clearing Member.
- A Clearing Member that clears IRS and/or CDS must have appropriate risk management capabilities, operational infrastructure, and experience to support their CDS and/or IRS clearing activity.

### Membership Requirements

- To become an exchange Clearing Member, the firm must purchase and/or have assigned the required number of exchange memberships for the desired exchange.

### Guaranty Fund Requirements

All Clearing Members must deposit with the Clearing Division a Guaranty Fund deposit for their obligations. The minimum Guaranty Fund deposit for a Clearing Member that clears:

- Exchange-listed futures and options is the greater of $500,000 or its proportionate share of the aggregate Base Guaranty Fund;
- Exchange-listed futures and options and cleared swaps products (excluding CDS and IRS) is the greater of $2.5 million or its proportionate share of the aggregate Base Guaranty Fund;
- CDS is the greater of $50 million or its proportionate share of the aggregate CDS Guaranty Fund; and
- IRS is the greater of $15 million or its proportionate share of the aggregate IRS Guaranty Fund.

### Capital Requirements
All Clearing Members must maintain a minimum amount of capital defined as the greater of the minimums listed or their risk based capital requirement.

- For non-bank Clearing Members, capital is defined as Adjusted Net Capital as computed in accordance with CFTC Regulation 1.17. For bank Clearing Members, capital is defined as Tier 1 Capital.

The minimum capital requirement for a Clearing Member is the greater of the CFTC or SEC capital requirement or:

- For a non-bank Clearing Member: i) $5 million if it will clear only exchange-traded futures and options; ii) $20,000,000 if it will clear exchange-traded futures/options and it will guarantee NYMEX Floor Members pursuant to the program referenced in CME Group Exchange Rule 992; iii) $5 million if it will clear agricultural swaps derivative products; iv) $50 million if it will clear swaps derivative products (other than agricultural cleared swaps); or v) 20% of aggregate performance bond requirement for all customer and house accounts containing CME Clearing cleared CDS and IRS products.

- For a bank Clearing Member: i) $5 billion if it will clear exchange-traded futures and options; ii) $50 million if it will clear only clear swaps derivative products; or iii) 20% of aggregate performance bond requirements for all customer and house accounts containing CME Clearing cleared CDS and IRS products.

Financial Reporting Requirements

- Non-bank Clearing Members are subject to monthly financial statement reporting requirements. This typically requires submitting monthly CFTC Form 1-FR or SEC FOCUS reports (if a U.S. registered broker-dealer). Clearing Members which are banks are required to file all financial reports which are filed with its primary banking regulator with such reports filed on at least a quarterly basis. These financial reports must demonstrate compliance with the exchange minimum capital requirements.

- Clearing Members must submit an annual certified financial statement. Clearing Members which are banks must submit such an annual statement five days after the statement filed with its primary banking regulator.

- Clearing Members which are not banks must comply with the requirements set forth in CFTC Regulations 1.10, 1.12, 1.17, and 1.18 unless an exemption is granted by the Clearing House.

- Clearing Members which are FCMs must submit daily customer segregated and cleared swaps account statements and bi-monthly reports on segregated and cleared swaps investments.

Notification Requirements

69 A minimum of no higher than $50 million in capital is defined by CFTC Regulation 39.12.
A Clearing Member must provide written notice to the Financial & Regulatory Surveillance Department whenever the Clearing Member:

- Fails to maintain minimum capital;
- Fails to maintain early warning capital;
- Fails to maintain sufficient funds in customer segregated and cleared swaps customer accounts;
- Fails to maintain current books and records;
- Determines the existence of a material inadequacy as specified in CFTC Regulations;
- Fails to comply with additional accounting, reporting, financial and/or operational requirements as prescribed by the CME Group Exchange or CME Clearing;
- Changes its fiscal year; or
- Changes its public accountant.

Additional notification is required for:

- Significant business transactions or changes in operations;
- Changes to and review of up-to-date personnel contact information; and
- Any ownership changes.
- An FCM Clearing Member’s Chief Executive Officer or Chief Financial Officer must approve a 25% or greater disbursement of Clearing Member funds from customer segregated and cleared swaps accounts.

### Other Clearing Membership Requirements

- All Clearing Members are required to have a written anti-money laundering and economic sanctions compliance program approved by senior management.
- All Clearing Members must have written risk management policies and procedures in place to ensure they are able to perform certain basic risk and operational functions at all times.
- All Clearing Members must have written disaster recovery and business continuity policies and procedures in place.

All Clearing Members must provide the means and commitment to facilitate CME Clearing’s operational requirements by offering robust back office services to clients such as trade processing, production of monthly statements, and collateral services. Clearing Members must maintain a strong level of understanding of the mechanics to support the products it clears operationally.

All IRS and CDS Clearing Members are required to participate in default management drills and bid on defaulted Clearing Member’s portfolios; exchange-traded Base Clearing Members assist in exchange-traded default drills and default management situations, as determined by CME Clearing.

CME Clearing conducts an initial onsite review of each applicant Clearing Member during which the prospective Clearing Member must demonstrate a strong risk management infrastructure and the
ability to analyze its transactions for all products for which it is applying to clear as stated in CME Group Exchange Rule 982. Additionally, the prospective Clearing Member must show a well-built screening process for client suitability for all products, if they intend to clear for client business. All applicant Clearing Members are presented to the appropriate CME Clearing Risk Committee for approval, prior to becoming admitted as a Clearing Member. CME Clearing continues to review all Clearing Members’ risk management infrastructures on at least a biennial basis, in addition to being subject to ongoing monitoring as described in CME Clearing’s disclosures for Principle 3.

**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.

CME Clearing’s Clearing Member requirements establish appropriate capital, operational, and risk requirements that are vetted by the appropriate CME Clearing Risk Committee, which include industry participants as well as independent market experts to ensure insight from various perspectives are considered. Operational and risk requirements are designed to scale with Clearing Member exposures to the Clearing House to ensure Clearing Members are able to manage the additional positions and have the financial wherewithal to add exposure without compromising the security of CME Clearing. Scaling also ensures that smaller Clearing Members with lower exposures may enjoy the benefits of clearing membership without being subject to requirements in excess of the risk brought to CME Clearing by them.

CME Clearing provides fair and open access in accordance with CFTC Regulation 39.12, which requires a DCO to establish appropriate admission and continuing participation requirements that are objective, public, and risk-based. The criteria for clearing membership at CME Clearing are contained in the CME Group Exchange Rules, which are available on the CME Group website. The CME Clearing membership application is also available on the CME Group website. Clearing Members are approved by the appropriate CME Clearing Risk Committee and are subject to stringent capital, operational, and risk management standards. These requirements include, but are not limited to:

- Evaluate actual and theoretical market events on portfolio returns on an ex-post or ex-ante basis;
- Mark positions to market on at least a daily basis;
- Conduct independent daily stress tests on position carried;
- Use historical data to model future behavior of risk factors including correlation, volatility, and optionality;
- Monitor product trading and profit/loss swings;
- Maintain access to markets in order to liquidate positions which it clears;
- Ability to force liquidation of all or parts of clearing level portfolios, on immediate notice; and
- Maintain sufficient excess capital to support ongoing activities.

As discussed under CME Clearing’s discloses for Principles 3 and 4, Clearing Members’ risk management capabilities are regularly assessed through onsite due diligence reviews.
**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.

CME Clearing monitors all Clearing Members’ adherence to CME Clearing’s clearing member requirements and in particular, CFTC and CME Clearing financial and regulatory requirements on an ongoing basis. The Financial & Regulatory Surveillance Department of CME Clearing has established and clearly defined procedures and standards to check for compliance with the CME Group Exchange Rulebooks. CME Group Exchange Rules 970 and 971, provide that non-bank Clearing Members must report monthly financial statements, daily customers segregated and cleared swap customer account statements, and bi-monthly segregated investment detail reports, while bank Clearing Members must submit financial statements quarterly as is submitted to the banking regulator.

Additionally, the Risk Management team performs reviews at least once every two years checking compliance with the risk management requirements of each Clearing Member. In addition, a review of the Clearing Member’s internal controls is conducted during regulatory examinations.

Financial testing is performed by reviewing each Clearing Member’s procedures for reconciling its account balances, presenting financial information, computing net capital, and reporting customers segregated and cleared swaps customer amounts. The following areas are examined:

- Cash at banks;
- Securities at market value;
- Receivables from/payables to and deposits with U.S./foreign commodity clearing organizations;
- Receivables from/payables to registered FCMs and foreign commodity brokers;
- Receivables from traders on U.S. and Foreign Boards of Trades;
- Open trade equities in customers,’ non-customers,’ and general partners’ commodity accounts;
- Liabilities subordinated to claims of general creditors;
- Results of subsequent reviews; and
- Statement of the computation of the minimum capital requirements.

Compliance testing is performed to ensure FCM Clearing Members, their branch offices, and their guaranteed introducing brokers are in compliance with applicable requirements. A review of internal and other regulatory examination reports, commissions generated (to identify high volume brokers), and customer complaints is performed for the FCM Clearing Member’s branch offices and guaranteed introducing brokers at the start of each examination. CME Clearing’s surveillance programs look at the following factors in determining the compliance requirements:

- Books and Records: To confirm Clearing Member’s procedures for handling customer orders are adequate and to ensure that transactions are properly recorded and reported to the customer;
- Customer Accounts: Check that adequate documentation exists to protect Clearing Member’s customers;
• Discretionary Accounts: To ensure that adequate protection exists for the Clearing Member, customers, and exchanges against unauthorized discretionary trading;

• Margins: To ensure the Clearing Member’s margin procedures are adequate and in compliance with exchange and industry rules;

• Anti-Money Laundering: Verify the Clearing Member’s anti-money laundering policies and procedures, provide for the requirements as set forth in the Patriot Act, the Bank Secrecy Act, and any other self-regulatory organization rules;

• Disaster Recovery: Ensure that the Clearing Member’s written business continuity and disaster recovery plan is adequate and in compliance with applicable self-regulatory organization rules;

• Sales Practice: Confirm that adequate review of promotional material is performed prior to use and that all sales solicitation materials are in compliance with self-regulatory organization rules; and

• Privacy Rules: Check that appropriate procedures for notifying retail customers of the Clearing Member’s privacy policies are in place.

In the event that a Clearing Member no longer fulfills the clearing membership requirements, and requests from CME Clearing to the Clearing Member to restore compliance are not followed in an appropriately timely fashion, CME Clearing has the right to recommend to the appropriate CME Clearing Risk Committee that the privileges of the Clearing Member be suspended.

In the event that a Clearing Member is noncompliant with clearing membership requirements, the appropriate CME Clearing Risk Committee may determine to suspend a Clearing Member as defined in CME Group Exchange Rules. Any suspended Clearing Member may appeal the decision of the appropriate CME Clearing Risk Committee or the Board.
Principle 19: Tiered Participation Arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Summary Narrative

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.

Clearing Members are the direct participants with CME Clearing. Indirect participants include Clearing Members’ customers and their non-Clearing Member affiliates, who may pose a risk to the Clearing House if they experience extreme losses, large enough to cause distress to a direct Clearing Member. CME Clearing monitors the risks presented by indirect participants through real-time monitoring of Large Trader position reporting and individual client account reporting. Indirect participant risk is further managed through the Clearing Member by CME Clearing information requests or additional risk measures that may be imposed to support customer positions. In addition, CME Clearing is able to manage the risk created vis-à-vis tiered participation through CME Group Exchange Rule 418, which stipulates that any person executing a transaction directly or through an intermediary on the CME Group Exchanges and any person for whose benefit the transaction has been executed on the CME Group Exchanges consents to the jurisdiction of CME Clearing and to be bound by and comply with the CME Group Exchange Rules.

The Clearing House has the ability to gather information from tiered participation agreements from Clearing Members for all major asset classes according to CME Group Exchange Rule 561.A, which states “[c]learing members, omnibus accounts and foreign brokers shall submit to the Exchange a daily large trader position report of all positions required to be reported as set forth in the Position Limit, Position Accountability and Reportable Level Table.” These positions are captured by internal CME Clearing systems where the information is organized to gather basic information on tiered participation arrangements. This information includes all the details about the indirect participant’s trades, which are reportable.

Moreover, through the implementation of CFTC Regulation 39.13, customer gross margining provides CME Clearing with access to daily customer positions. Customer gross margining ensures transparency into individual clients’ exposures across major asset classes, with the exception of foreign broker omnibus accounts. Additionally, under Part 22 of CFTC Regulations, which implements the LSOC account structure, CME Clearing has insight into additional information on cleared swap customer accounts because Clearing Member are required to report the identity of cleared swaps customers.

CME Clearing also has access to additional customer information from regulatory Large Trader reporting that allows CME Clearing to view client risk exposures at each Clearing Member and in aggregate across Clearing Members. This is included in regular risk management processes and is monitored on a daily basis. CME Clearing has the right to adjust performance bond requirements in response to Large Trader reports to mitigate risks posed by such activity.
**Key consideration 2:** An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.

CME Clearing examines the material dependencies between direct and indirect participants on an ongoing basis. For example, CME Clearing assesses the financial and operational wherewithal of a Clearing Member to act as guarantor to CME Clearing for the transactions of indirect participants.

Though CME Clearing monitors customer clearing activity through credit controls submitted by Clearing Members for their customers’ clearing accounts, FCM Clearing Members remain the primary risk managers for their clients and CME Clearing is reliant on these Clearing Members to manage client accounts overall risk exposures, including liquidity and funding obligations. Further details are available in CME Clearing’s disclosure for Key Consideration 3 of this Principle.

**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.

CME Clearing utilizes internal systems to identify and monitor indirect participants, who bring significant volume trading exposures to their Clearing Member(s). The Risk Management team is able to monitor indirect participants with high levels of exposure at one direct participant or across all direct participants and conducts regular stress tests and reviews of accounts that have large transaction volume or position buildup, as well as accounts that demonstrate behaviors outside the typically observed activity. CME Clearing maintains an open line of communication with its Clearing Members, in particular to discuss and understand the larger indirect participant exposures it carries.

CME Clearing also manages the risks arising from indirect participant transactions through its review of all Clearing Members, which is conducted at least once every two years, or more often as the Clearing Member’s risk profile or market conditions warrant, which is in addition to daily monitoring of activity and risk levels. Through these reviews, CME Clearing is able to conduct more thorough investigations of large customer accounts. Clearing Members are monitored for their risk management procedures, as well as the following risk related issues:

- Risk management methodologies and operations for all customer accounts;
- Operational risks that include system capabilities;
- Credit controls and specific controls for high volume participants; and
- Liquidity management.

**Key consideration 4:** An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

The Risk Management team utilizes internal systems to continually assess the risk profile of indirect participants’ portfolios. The Risk Management team also reviews accounts that have significant risks arising from concentration of positions, breadth of positions, and concentrations of deliverable supply, among other factors. Further, CME Clearing maintains the right to instruct an indirect participant with the assistance of its Clearing Member to make changes to its portfolio in order to reduce its risk profile, including through moving an account from one Clearing Member to another, reducing positions,
and/or depositing additional performance bond, among other possibilities, depending on the particular situation. The policy related to CME Clearing’s review of Clearing Member and indirect participant exposures is contained in the Risk Management Framework, which is reviewed and updated at least on an annual basis and approved by CHOC and the full Board.

Additionally, internal policies of FCM Clearing Members for monitoring and managing their customers are covered in the risk reviews conducted by CME Clearing and FCM Clearing Members are required to provide documentation to CME Clearing as requested. This includes credit policies that manage the FCM Clearing Member’s counterparty risk, as described in CME Group Exchange Rule 982. CME Clearing’s FCM Clearing Members must also maintain policies addressing anti-money laundering compliance to demonstrate observance of related domestic and international laws as described in CME Group Exchange Rule 981.

CME Clearing manages and limits the risks from tiered participation arrangements through application of relevant CME Group Exchange Rules. Specifically, CME Group Exchange Rule 930.L states that CME Clearing, at its sole discretion, has the authority to require Clearing Members to collect additional performance bond deposits from specific account holders in circumstances deemed necessary by CME Clearing.

Additionally, CME Clearing requires that all FCM Clearing Members implement limits on their customers, frequently referred to as credit controls. These limits are determined and set by the Clearing Member and monitored by CME Clearing, who maintains the right to advise a Clearing Member if any limits are inappropriate. CME Clearing does not have the authority to change the limits without explicit instruction from the Clearing Member, for which there is a thorough and audited process to ensure compliance with Clearing Member directions. Credit controls imposed on customers are in addition to a number of pre-execution risk controls that CME Clearing offers its Clearing Members, which they can utilize to limit their exposure and the activity of any one customer.
**Principle 20: FMI Links**

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

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**Summary Narrative**

**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.

CME Clearing has established relationships with the following FMIs:

- **Singapore Exchange (“SGX”):** Since 1984, CME Clearing has had a mutual offset arrangement with SGX (or its predecessor) that enables market participants to open a futures position on one exchange and liquidate it on the other. This program is supported for interest rate and equity index futures contracts.

- **The Options Clearing Corporation:** Since 1989, CME Clearing has had a cross-margining arrangement with OCC that allows certain positions of participating Clearing Members cleared at CME Clearing and OCC to be combined into a single portfolio for margining and settlement purposes. Performance bond requirements are computed based on the combined positions maintained in the cross-margin accounts of the participating Clearing Members using the sophisticated risk based margining methodologies of both CME Clearing and OCC. This results in one performance bond requirement for the participating Clearing Member covering relevant exposures at CME Clearing and OCC.

- **Fixed Income Clearing Corporation:** Since 2000, CME Clearing has had a cross-margining arrangement with FICC (or its predecessor) in order to cross-margin interest rate products whose price volatility is sufficiently closely correlated that long and short positions in such products offset one another to some degree for purposes of determining margin requirements.

Before any link is established with an FMI, the risk of the link is thoroughly investigated and analyzed from credit, market, and operational risk perspectives to ensure the exposures can be managed within CME Clearing’s systems without undue additional risks to CME Clearing and its financial safeguards. The necessary approvals are obtained from regulators and internal governance arrangements before implementing such links. Cross-margining relationships specifically must be approved by the appropriate CME Clearing Risk Committee and CHOC.

All predefined exposures from links are monitored within CME Clearing’s risk management systems to allow the Risk Management team to view and manage current risks exposures both intraday and end-of-day. All links are subject to the margin and risk management policies of CME Clearing and are thoroughly reviewed prior to receiving approval for launch.

**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 explained in CME Clearing’s disclosure for Key Consideration 1 of this Principle, CME Clearing has established a number of arrangements with other FMIs. In establishing new link relationships CME Clearing would conduct the necessary legal analysis and due diligence, operational review, and regulatory review. This includes legal opinions on all relevant jurisdictions, as well as regular monitoring of pertinent legal issues and changes in applicable local laws. Details and analysis of all new link arrangements would be presented to the appropriate CME Clearing Risk Committee and CHOC and regulatory authorities.

Exposures as a result of link arrangements are collateralized and positions are held in a comparable manner as for traditional Clearing Member portfolios. Collateral utilized to support link arrangements are held within the United States and, therefore, within the jurisdiction of the United States and are subject to the laws and regulations therein.

**Key consideration 3**: 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.

N/A

**Key consideration 4**: 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.

N/A

**Key consideration 5**: 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.

N/A

**Key consideration 6**: 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.

N/A

**Key consideration 7**: 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.

CME Clearing evaluates the credit profile of any prospective counterparty risk taken on by CME Clearing through a linked CCP arrangement. CME Clearing conducts a credit assessment and a review of the CCP’s financials, capital, overall business model, and risk management standards. By undertaking such assessment, CME Clearing is able to determine if it is comfortable taking on the risk of the CCP counterparty, and whether it is appropriate to institute any limits or other risk mitigation factors that might accompany the link arrangement.

These reviews of potential new CCP relationships would be conducted by the Risk Management team and taken to the appropriate governing body (i.e., CME Clearing senior management, CHRC, CHOC, or
other applicable governing bodies, such as the Board), who would undertake the final review and assessment of whether to give its approval to establishing such link.

In establishing a CCP link, CME Clearing would carefully evaluate the potential operational and credit risk impacts of the link due to the risk of cascading problems as a result of distress at such CCP. CME Clearing integrates linked risk exposures into its risk management programs in order to review the impacts of changing prices, volatilities, and positions throughout the day and night. CME Clearing monitors such risk exposures continually and assesses the risk exposures in the context of its overall financial safeguard protections. The default of a linked CCP would follow the existing default management protocol defined by CME Clearing.

**Key consideration 8:** 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 fulfill its obligations to its own participants at any time.

Once an FMI link is established, CME Clearing implements a number of controls, such as daily monitoring of current risk exposures. CME Clearing also reviews the sufficiency of the financial resources of participating Clearing Members in link relationships. CME Clearing also reviews financial safeguards regularly to evaluate their effectiveness in protecting CME Clearing against potential exposures related to participation in CCP link related programs.

CME Clearing does not make any contribution to the Guaranty Fund of any of the entities with which it shares a link relationship, and likewise, they do not contribute to CME Clearing’s Guaranty Funds. However, CME Clearing does take their positions into consideration when performing routine Guaranty Fund calculations.

All rules governing CCP link arrangements are available either through the CME Group Exchange Rulebooks or through the agreements that each Clearing Member enters into when becoming a link participant.

Each link arrangement contains its own risk mitigation benefits and employs unique risk management approaches. While recognizing that risk management of these relationships is as important as all other clearing arrangements, CME Clearing believes that cross-margining helps reduce overall systemic risk by providing meaningful offsets of risks across regions and Clearing Houses, as well as improving liquidity and capital efficiencies for participating Clearing Members and markets.

**Key consideration 9:** A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.

N/A
**Principle 21: Efficiency and Effectiveness**

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

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**Summary Narrative**

**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.

CME Clearing provides a choice of clearing venues to the marketplace and a focus on innovation by CME Clearing provides overall enhanced efficiencies to market participants. Further, as a SIDCO, CME Clearing is required under CFTC Regulation 39.38(a) to efficiently and effectively design its operating structure to meet the needs of its Clearing Members and the markets it serves. CME Group’s structure is designed to ensure that there is little likelihood in breaks in clearing services to the marketplace, as the CME Group Exchanges and CME Clearing are under one parent company that functions together. Further, the vertical structure under which CME Clearing operates under allows for end-to-end risk management from the CME Group Exchanges and CME Clearing to Clearing Members and their customers.

Additionally, CME Clearing consults with market participants on a regular basis to ensure it is responsive to market needs. These include advisory groups, which may relate to specific products or projects. CME Clearing is committed to providing a quick response to client needs, while maintaining a high standard of prudent risk management and performance.

CME Clearing is a member of various trade associations across the globe and participates in industry events and conferences, which allows it to actively engage and respond to industry developments and demands. Whenever a potential enhancement to services presents itself, CME Clearing reviews and undertakes a cost-benefit analysis to determine feasibility of offering such services.

In continually assessing the terms under which clearing services are provided to new or existing markets, CME Clearing balances the goal of establishing neutral and objective policies, rules and procedures with the need to consult with key market constituencies to ensure that approaches to service standards, particularly those that relate to risk management, operational constructs, and governance arrangements, are suitably vetted.

CME Clearing actively engages Clearing Members, representing the industry, and other market users through committees (i.e. CME Clearing Risk Committees) to ensure that CME Clearing systems continue to meet the needs of its participants and adhere to best practices. Further, under CME Group’s Corporate Governance Principles and the governing documents of key committees established by the Board that have oversight of the Clearing House, the Board and such committees are charged with considering the legitimate interests of key market stakeholders and industry best practices in fulfilling their responsibilities.

**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.
The Board sets CME Clearing’s key goals and objectives, which include upholding a high standard of risk management. Corporate governance arrangements, as set out under CME Clearing’s disclosures for Principle 2, are designed to ensure that these goals are pursued and are measurable and achievable.

The Board recognizes CME Clearing’s role in the industry and the criticality of it meeting defined levels of risk management. As such, CME Clearing has set performance goals designed to ensure stability for Clearing Members and market participants while also protecting CME Clearing from stress events. CME Clearing has defined these performance goals as follows, to:

- Maintain 24 hours a day, 6 days a week coverage of all necessary operational functionality, including customer assistance staffing;
- Continuously monitor clearing functions, such as trade processing, settlement, and other critical clearing functions and adhere to operational standards with indicative metrics reviewed by senior management to ensure compliance;
- Allow for 24 hours a day, 7 days a week risk management monitoring and report generation capabilities;
- Support 24 hours a day, 7 days a week communications with market participants and Clearing Members; and
- Provide 24 hours a day, 5 days a week settlement and banking with Clearing Members.

Additionally, in meeting some of the above performance goals and providing efficient solutions to its market participants, CME Clearing provides support to its Clearing Members and clients through five main mechanisms:

1. Back office confirmation messaging: CME Clearing supports real-time trade and allocation messages provided for exchange-traded and cleared swaps products to Clearing Members’ back office systems to ensure smooth processing for all parties;
2. Intraday performance bond and settlement data: Such data is delivered by a scheduled time every day to give Clearing Members sufficient time to make money management decisions and execute strategies;
3. Margin files: Such files are delivered daily for Clearing Member bookkeeping purposes, with a separate suite of risk assessment algorithms available for Clearing Member and buy-side market participant access via the CME CORE application;
4. Trade Register: An end-of-day summary of activity for exchange-traded and cleared swaps products delivered for Clearing Members’ bookkeeping after close of business each day; and
5. Collateral valuation report: Such report provides a daily review of the total collateral on deposit for the Clearing Member, including the collateral’s current value.

In line with its performance goals, through these processes, CME Clearing guarantees a base level of service for Clearing Members to provide them with consistent, reliable data and connectivity. Clearing Members are similarly held to certain standards related to trade entry, corrections, and allocations. This ensures that CME Clearing has all the necessary information in a timely manner to fulfill its subsequent requirements.
Further, CME Clearing has established a rigorous strategic and financial planning process that provides an operational and financial view over a three-year period. The process incorporates external market conditions, future regulatory requirements, product and customer growth, and overall financial objectives. These plans are considerate of Board’s Corporate Governance Principles and additionally, the duties of the Board, which include prioritizing the risk management of CME Clearing and these plans, inform the allocation of resources in order to achieve corporate goals as approved by the Board. Additionally, CME Clearing recognizes infrastructure readiness as a core component of its strategic plan, which incorporates a current and long-range view of the capital and operational environment to ensure the projected growth, regulatory changes, and the service levels for CME Group are properly funded to meet the needs of the market, CME Group’s customers, and alliance partners. These plans and targets are reviewed and approved at the Management Team and CME Group Board level of the company with regular updates and modifications incorporated as needed.

Additionally, CME Clearing is committed to providing reliable and efficient service to its Clearing Members and their customers. CME Clearing maintains agreements with Clearing Members specifying minimum service levels, to which both Clearing Members and CME Clearing are held accountable. First and foremost, among these responsibilities is the obligation to keep CME Clearing’s systems up and operational at all times. CME Clearing preserves its system functionality through dedicated, round-the-clock staffing who are on call to resolve any potential issues that may arise with the systems.

**Key consideration 3:** An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

The Board has governance and oversight responsibility of the safety and efficiency of CME Clearing with their primary oversight concerned with ensuring the governance arrangements of the Clearing House promote its safety and efficiency and generally support the stability of the broader financial system, while considering the legitimate interests of CME Clearing’s market stakeholders. As such, the Risk Appetite Statement adopted by the Board places a high priority on the safety and efficiency of the Clearing House.

CME Group has established targeted mechanisms for the regular review of its efficiency and effectiveness. As such, the Global Assurance department performs regular, independent, risk-based audits to provide reasonable assurance as to the pertinence and correct operation of certain activities undertaken by the Clearing House. Global Assurance reports its findings to the Audit Committee, the Risk Committee and MROC, as appropriate.

CME Clearing and CME Group also maintain key operational and service metrics, as discussed in Key Consideration 2, that are reviewed at each level of clearing activity and origination to gauge that operational commitments are being met against stated standards. As part of CME Group’s commitment to customer service, the operating and infrastructure environment are frequently reviewed by qualified and independent resources to ensure the processes are operating in an effective and efficient manner, while allocating resources and investment to ensure the future state will meet the intended growth of CME Group.
**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.

**Summary Narrative**

**Key consideration 1:** An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

CME Clearing uses a number of internationally accepted communication procedures and standards, including the following for clearing and recording:

- FIXML and FPML, for trade capture, trade capture acknowledgement of cleared trades, and for Firm Account Validation for CDS and IRS;
- Firm FIXML Trade Register, which provides firms with a list of trades cleared on a daily basis; and
- CME Clearing Product Reference File.

CME Clearing also makes use of standard systems that allow for efficient payment and settlement processing such as:

- SWIFT instructions or pay to banks and Clearing Members;
- Daily settlement price file; and
- Daily margin file.

CME Clearing works with appropriate industry groups (e.g., the Futures Industry Association) to set standards for a variety of business process solutions for Clearing Members and market participants (e.g. SPAN files). Risk management standards reflect the current and most updated market practice as benchmarked against the industry leaders.

Consistent with the objectives of Core Principal M for DCOs and CFTC Regulation 39.22, CME Clearing participates in the following:

- CME Clearing is a member and active participant in the Shared Market Information System (“SHAMIS”); and
- CME Clearing is a party to the International Information Sharing Memorandum of Understanding and Agreement.

CME Clearing also reviews shared information each day as part of its member and market risk analysis activities.
**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.

**Summary Narrative**

**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.

CME Group makes available to the public complete and comprehensive information on rules and procedures via a variety of resources.

As discussed in CME Clearing’s disclosures for Principle 2, CME Group is the parent company of four DCMs – CME Inc., CBOT, NYMEX, and COMEX. Although all four DCMs are subsidiaries of CME Group, each DCM remains a separate self-regulatory organization. In order to provide a common regulatory framework for market users, CME Inc., CBOT and NYMEX/COMEX Rulebooks have been harmonized, making the rules parallel in structure, numbering, and language where possible. Complete rulebooks for CME Inc., CBOT, and NYMEX/COMEX are available on the CME Group website.

In developing the CME Group Exchange Rulebooks, CME Clearing worked with Clearing Members and market participants to establish prudent risk management rules in line with best practices across the industry. Changes to the rules may be instigated from a number of sources including, but not limited to, Clearing Member feedback, enhanced CME Clearing processes, or evolving regulatory requirements. All rule changes are vetted by CME Clearing staff before finalizing. Depending on the nature of the change, CME Clearing may be authorized to approve the revisions; whereas, substantive rule changes relevant to CME Clearing require the review and approval of the appropriate CME Clearing Risk Committee and CHOC and if significant to the risk profile of CME Clearing, the Board.

**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.

The Technology Division, in conjunction with the Clearing House, provides systems to support electronic trade matching, inbound and outbound order routing, and clearing. Critical areas of focus are systems security, speed, reliability, functionality, and system capacity. CME Clearing has redundant data center facilities to enable disaster recovery. CME Clearing also supports a wide variety of technologies to meet customer needs including servers, mainframes, networking gear, and optical fiber based networks for fast connectivity worldwide.

Information on certain clearing systems is available on CMEGroup.com:

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• **Clearing System Manuals**; and
• **Record Layouts**.

Below is a general diagram of the manner in which the clearing function works:

![Clearing Business Process Diagram](image)

A description of Clearing Members rights and obligations are available on the CME Clearing website.\(^{73}\)

**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.*

Training Clearing Members on the appropriate use of CME Clearing systems is accomplished using flexible training schedules across three different educational forums. The training approach utilizes hands on training sessions, access to user manuals, and provides webinar training sessions to accommodate different learning needs and time constraints.

Hands on training sessions are available in-person at CME Group building locations. These sessions are also utilized by remote clients via virtual meeting spaces. Newly registered Clearing Members go through hands on training from the Global Operations division. Clearing Members can also contact the Global Operations Education team for follow-up and ad hoc training requests and support. The Global

Operations Education team also supplies User Manuals as functional guides to perform actions within each application across the CME Group.

CME Clearing conducts classes and training around specific clearing applications, procedures, and processes. These include Delivery Systems, Front End Clearing Systems, Position Systems, and reporting.

In addition to the CME Group Exchange Rulebooks noted in CME Clearing’s disclosure for Key Consideration 1 of this Principle, CME Group makes available a series of membership handbooks covering schedules and policies:

- Risk Management and Financial Safeguards;
- Financial Safeguards System;
- Application and Agreement for Clearing Membership;
- Clearing Membership Handbook;
- Summary of Requirements for Clearing Membership;
- Exchange Fees for Clearing & Trading;
- Membership Prices;
- CME Clearing’s Principles for Financial Market Infrastructures Disclosure document; and

The Board has adopted rules, and from time to time adopts amendments and supplements to such rules, to promote a free and open market at each CME Group Exchange, to maintain appropriate business conduct and to provide protection to the public in its dealings with the CME Group Exchanges and its members. The Board has created committees to which it has delegated responsibility for the investigation, hearing, and imposition of penalties for violations of CME Group Exchange Rules. The Board has also delegated responsibility for the investigation and imposition of penalties for violations of CME Group Exchange Rules to certain CME Group staff as set forth in the Rules. The delegation of such responsibility and authority shall in no way limit the authority of the Board with respect to all rule violations.

It shall be the duty of the Chief Regulatory Officer to enforce the CME Group Exchange Rules, and he shall have available to him at all times the resources of the Market Regulation department and such other CME Group resources as may be necessary to conduct investigations of potential or alleged rule violations. The Chief Regulatory Officer shall have the authority to inspect the books and records of all parties subject to the jurisdiction of the CME Group Exchanges and the authority to require such parties to appear before him and produce books and records and answer questions regarding alleged violations of the CME Group Exchange Rules, at the time, place, and in the manner he designates. The Chief Regulatory Officer may also delegate his authority to staff of the Market Regulation department.

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.

Fee guides are accessible via the various links below and are transparent to the public via the CME Group website:
• **CME, CBOT, and NYMEX/COMEX Fee Schedules;**
  - Cleared IRS Fee Schedule;
  - Cleared CDS Fee Schedule; and
  - Clearing Fees described in Section 10 of the **Clearing Membership Handbook.**

Fees are assessed per side for all futures and options on futures contracts. Fees vary by product and volume traded, and whether the product is traded on the trading floor or electronically on the Globex platform.

Comprehensive lists of clearing and trading fees are available via the Product Code Guides. The guides – CME Inc. Clearing and Trading Fees; CBOT Clearing and Trading Fees; NYMEX Clearing and Trading Fees; OTC IRS Fees; and OTC CDS Fees – detail a list of products and the relevant CME Group Exchange Rules.

CME Clearing notifies participants and the public, on a timely basis, of changes to services and fees by either publishing clearing advisories or utilizing other standard mechanisms. These are posted to the CME Group website.

CME Clearing provides a description of its priced services on the CME Group website, which allow for market participants to compare CME Clearing’s pricing against other FMIs:

- Membership and Lease Prices;
- Incentive Programs; and
- Clearing and Trading Fees.

Further, CME Clearing also provides information on its technology services and connectivity options on the CME Group website:

- Technology Services

CME Clearing seeks to be very transparent in disclosing the cost of its services to its market participants and more generally the public.

**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.

The **CME Clearing PFMI Disclosure document** can be found on the CME Group website. CME Clearing reviews and updates the CME Clearing PFMI Disclosure document every two years or following material changes to its risk management practices or changes to the environment in which operates that could significantly change the accuracy or usefulness of the existing document.

CME Clearing also publishes various forms of quantitative information through the CME Group website, including its **Quantitative PFMI Disclosure document**, which is updated on a quarterly basis. Additionally, the following reports, generally on a daily basis are published to the CME Group website.

- Volume/Open Interest Reports;
- Settlements;
- Registrar Reports;
- Daily Bulletin;
• Free Real-Time Quotes; and
• Delayed Quotes.

CME Clearing discloses a variety of other information on the CME Group website, as discussed throughout its disclosures to this principle. All information disclosed to the public is published through the CME Group website. The CME Group website can be seen in the following languages: Chinese, Traditional Chinese, Japanese, Korean, Spanish, Portuguese, French, Italian, German, and English.