CME Clearing: Principles for Financial Market Infrastructures Disclosure

The information provided in this disclosure is accurate as of December 31, 2015. This disclosure can also be found at www.cmegroup.com/pfmidisclosure. For further information, please contact CMEPFMIResponse@cmegroup.com.
Responding institution: CME Group, Inc.  
Jurisdiction: U.S. Commodity Futures Trading Commission  
The information provided in this disclosure is accurate as of December 31, 2015.  
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 Technical Committee of the International Organization of Securities Commissions ("IOSCO") to encourage the clear and comprehensive disclosures set forth in the Disclosure framework ("the Disclosure Framework") for financial market infrastructures ("FMI").

CME Inc. operates CME Clearing (or “the Clearing House”), which provides clearing and settlement services for a broad range of exchange-traded futures contracts and for swaps and other derivatives (referred to herein as Over-The-Counter ("OTC") derivatives). CME Inc. is registered with the U.S. Commodity Futures Trading Commission ("CFTC") as a Derivatives Clearing Organization ("DCO") and as a Designated Contract Market ("DCM").

In July 2012, CME Inc. was designated as a systemically important Financial Market Utility ("FMU") under Title VIII of Dodd-Frank by the Financial Stability Oversight Council ("FSOC").

II. General description of the FMI: (a) organization; (b) market(s) served; and (c) key metrics

A. General Description

CME Group is the holding company for four DCMs, 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"), collectively known as the “the Exchanges.” 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, Rulebooks for CME Inc., CBOT and NYMEX/COMEX have been harmonized, making the Rules parallel in structure, numbering, and language as much as possible. All Clearing Members, regardless of which DCM’s products they clear, will be considered “Clearing Members” for the purposes of this document. A list of CME Clearing’s Clearing Members, including OTC IRS, OTC CDS, and OTC FX can be found on the CME Group website.¹

CME Clearing provides clearing and settlement services for exchange-traded contracts, as well as for cleared OTC derivatives transactions. CME Group understands its importance to the global financial markets infrastructure, its role in assuring the safety and soundness of the markets it provides clearing services to, and the importance of ensuring that its Clearing Members and their clients are able to assess the risk profile of their activity through appropriately articulated, transparent risk

¹ http://www.cmegroup.com/tools-information/clearing-firms.html
management standards supported by public documents available on the website (e.g., Exchange Rulebooks) and individual risk management support. As financial markets and the economy have evolved, CME Clearing has worked to adapt clearing services to meet the needs of market participants. CME Clearing applies robust risk management standards and enforces and facilitates compliance with applicable CFTC customer protection standards for exchange-traded products and cleared OTC derivatives.

Additionally, as a systemically important financial market utility designee by FSOC, CME Clearing appropriately conforms with all applicable regulations as they are currently structured. CME Clearing’s clearing service offerings are structured to meet its regulatory obligations to these and other regulatory oversight bodies.

As of December 31, 2015, CME Clearing has a diverse set of entities approved as Clearing Members, which include some of the largest bank-related and broker/dealer firms in the world. Where relevant, Clearing Members are monitored and examined for risk management capabilities, capital adequacy, and compliance with customer protection Rules and regulations. CME Clearing utilizes a combination of risk management tools to assess Clearing Member’s aggregate and individual account exposure levels for all major asset classes, 24 hours a day, six days a week.

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 – and limiting credit risk through the utilization of risk-mitigating practices such as novation, netting, initial margin, and settlement variation). Moreover, CME Clearing’s clearing model is based on an “agency” relationship between its Clearing Members (also referenced as Futures Commission Merchants (“FCM”) Clearing Members) and their underlying clients. Use of an agency clearing model enhances portability and minimizes uncertainty in Clearing Member default scenarios. CME Clearing is responsible for settling trading accounts, clearing trades, collecting and maintaining performance bond funds, overseeing final settlement, and reporting trading data. 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 settlement variation by requiring payment from Clearing Members whose positions have lost value and makes payments to Clearing Members whose positions have gained value. CME Clearing also has the capacity to mark-to-market open positions as frequently as necessary if warranted by market conditions. Additionally, CME Clearing offers access to its clearing services through CME ClearPort, a comprehensive set of flexible clearing services for the global OTC market backed by CME Clearing.

CME Clearing provides clearing services for three major asset classes – IRS, CDS, and Base – for which CME Clearing maintains three independent financial safeguards waterfalls. CME Clearing maintains two waterfalls for OTC products, these waterfalls contain only OTC Interest Rate Swaps (“IRS” or “OTC IRS”) and OTC Credit Default Swaps (“CDS” or “OTC CDS”) products, respectively. The third waterfall, frequently referred to as the “Base” waterfall, contains all other products cleared by CME Clearing. This may include some OTC products, such as OTC Foreign Exchange, but is largely made up of futures and options on futures, exchange-traded products.
B. Markets Served

The Exchanges offer a wide range of benchmark products across all major asset classes, including derivatives based on interest rates, equity indexes, foreign exchange, energy, metals, agricultural commodities, alternative investment products, OTC IRS, OTC CDS, and OTC FX, along with OTC agriculture and metal products. CME Clearing also has arrangements to provide clearing services for other markets: the Dubai Mercantile Exchange and Eris Exchange. The CME Group Exchanges serve the hedging, risk management, and trading needs of its global customer base by facilitating transactions through the CME Globex (“Globex”) electronic trading platform, open outcry trading facilities in New York and Chicago, and through privately negotiated transactions, subject to Exchange Rules. The Exchanges 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”) and swap execution facilities (“SEFs”).

CME Group also offers a wide range of market data services including live quotes, delayed quotes, market reports and a comprehensive historical data service and has expanded into the index services business through CME Group Index Services.
C. Key Metrics

CME Clearing has published 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 provides a comprehensive view into key quantitative metrics that are pertinent to understanding CME Clearing’s clearing services. CME Clearing’s quantitative disclosure document will be updated on a quarterly basis.

D. System Design and Operations

CME Group offers a number of exchange-traded products for trading and clearing. CME Group offers a number of 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 of the trading day 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 that are designed to ensure that clients of Clearing Members are in compliance with the limits imposed by their Clearing Member, with each limit subject to review by CME Clearing. Similar limits are utilized for OTC IRS and OTC CDS.

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 will be 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 will be able to access the information.

Once submitted to CME Clearing OTC CDS and OTC IRS trades are validated for: product type, to confirm the product is eligible for clearing; account, to confirm both accounts are valid; and limits, to ensure both parties are within Clearing Member specified credit limits. After all of the checks are passed, CME Clearing returns a clearing trade confirmation message to both parties verifying that the trade will be cleared.

Risk management systems pull in necessary transaction data for calculation of settlement variation and initial margin requirements. This includes calculations for all major asset classes, using SPAN for exchange-traded products, HVaR for OTC IRS, and a multi-factor model for CDS. Trades will also be included in daily valuations, or mark-to-market calculations. IRS products and CDS products are marked to market at the end of each trading day.

CME Clearing initiates its intraday settlement cycle at which point intraday risk calculations and mark-to-market requirements for most products are calculated. Trades in Base products received prior to that time will be included in Clearing Member portfolios for the intraday settlement cycle; trades received after the intraday cut off will be included in the end of day settlement cycle, which is completed for all products and Clearing Members.

---

Member portfolios. Trading hours for the Exchanges are defined on a per product basis available on the CME Group website.³

Daily settlement pricing is performed for exchange-traded and OTC products based on the 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 will submit these settlement instructions to the settlement banks.

CME Clearing has an established timeline for depositing funds for Clearing Members to receive credit for intraday and end of day performance bond (or “margin”) requirements, as summarized below. The full timeline is also available on the website.⁴

- 7:30AM CT – Deadline for settlement banks to irrecoverably commit to pay end of day requirements
- 8:30AM CT – Clearing Member deadline to notify the collateral bank of treasury security delivery for same date Performance Bond credit
- 9:30AM CT – Clearing Members deadline to submit security transactions to CME Clearing systems
- 10:30AM CT – Deadline for stock deposits and withdraws for intraday cycle
- 11:00AM CT – Clearing Member deadline to submit purchase/withdrawal instructions for special collateral programs (IEF2, IEF4, and IEF5)
- 12:30PM CT – Intraday settlement instructions distributed
- 1:30PM CT – Clearing Member deadline to deposit stock and/or notify bank of intention to deliver securities for afternoon Performance Bond credit
- 1:30PM CT – Settlement bank confirmation; payment of obligations due and owed to the Clearing House from the intraday settlement cycle
- 2:00PM CT – Clearing Member deadline to submit Treasury security withdrawal and deposit transactions to CME Clearing systems
- 2:00PM CT – Settlement banks irrevocably commit to pay intraday requirements

³ [http://www.cmegroup.com/trading_hours/]
III. Summary of major changes since last update

The version published on December 31, 2015 was published in adherence with CPMI-IOSCO’s recommendations for FMI’s to update their public disclosure documents at least every other year and to be reflective of materials changes CME Clearing’s has made regards to some of its risk management practices. These practices include, enhancements implemented for the CDS multi-factor margin model, formalization of the internal Model Risk Committee and the Risk Committee of the Board of Directors, change in membership requirements for IRS Clearing Members, and the creation of the Chief Information Security Officer and President of Global Operations, Technology & Risk positions. Further, CME Clearing’s rules utilized to manage liquidity risk that were discussed in CME Clearing’s previous publication were finalized. CME Clearing additionally, made some changes to the Disclosure document to be representative of information with regard to CME Clearing as of December 31, 2015.
## IV. Definition of key terms and abbreviations

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bankruptcy Code</td>
<td>The United States Bankruptcy Code</td>
</tr>
<tr>
<td>BCM</td>
<td>Business Continuity Management</td>
</tr>
<tr>
<td>BCP</td>
<td>Business Continuity Plan</td>
</tr>
<tr>
<td>CBOT</td>
<td>The Board of Trade of the City of Chicago Inc.</td>
</tr>
<tr>
<td>CDS</td>
<td>Credit Default Swaps</td>
</tr>
<tr>
<td>CDSRC</td>
<td>Risk Committee for the CDS major asset class</td>
</tr>
<tr>
<td>CEA</td>
<td>The Commodity Exchange Act</td>
</tr>
<tr>
<td>CFTC</td>
<td>U.S. Commodity Futures Trading Commission</td>
</tr>
<tr>
<td>CHRC</td>
<td>Clearing House Risk Committee; responsible for general Clearing House risk issues as well as the Base major asset class</td>
</tr>
<tr>
<td>CLS</td>
<td>Continuous Linked Settlement</td>
</tr>
<tr>
<td>CME Clearing or “the Clearing House”</td>
<td>The Clearing Division of CME Inc.</td>
</tr>
<tr>
<td>CME Group</td>
<td>CME Group, Inc.</td>
</tr>
<tr>
<td>CME Inc.</td>
<td>Chicago Mercantile Exchange Inc.</td>
</tr>
<tr>
<td>COMEX</td>
<td>The Commodity Exchange, Inc.</td>
</tr>
<tr>
<td>DCM</td>
<td>Designated Contract Market</td>
</tr>
<tr>
<td>DCO</td>
<td>Derivatives Clearing Organization</td>
</tr>
<tr>
<td>DSRO</td>
<td>Designated Self-Regulatory Organization</td>
</tr>
<tr>
<td>ERM</td>
<td>Enterprise Risk Management</td>
</tr>
<tr>
<td>The Exchanges</td>
<td>CME Inc., NYMEX, COMEX, and CBOT</td>
</tr>
<tr>
<td>FCM</td>
<td>Futures Commission Merchant</td>
</tr>
<tr>
<td>FIA</td>
<td>Futures Industry Association</td>
</tr>
<tr>
<td>FICC</td>
<td>Fixed Income Clearing Corporation</td>
</tr>
<tr>
<td>FMI</td>
<td>Financial Market Infrastructures</td>
</tr>
<tr>
<td>FMU</td>
<td>Financial Market Utilities</td>
</tr>
<tr>
<td>FRS</td>
<td>Financial and Regulatory Surveillance Department, a department of CME Inc.</td>
</tr>
<tr>
<td>FX</td>
<td>Foreign Exchange</td>
</tr>
<tr>
<td>GIB</td>
<td>Guaranteed Introducing Broker</td>
</tr>
<tr>
<td>IA</td>
<td>Internal Audit</td>
</tr>
</tbody>
</table>
| IEF | Interest Earning Facility; refers to CME Clearing’s IEF collateral programs
  - IEF2 is CME Clearing’s platform for money market mutual funds
  - IEF4 is CME Clearing’s corporate bond program
  - IEF5 is CME Clearing’s specialized cash program |
| IM | Initial Margin |
| IRS | Interest Rate Swaps |
| IRSRC | Risk Committee for the IRS major asset class |
| Major asset class | The class of products covered by a particular “waterfall” e.g. OTC IRS, |

---

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC CDS, or Base</td>
<td>OTC CDS, or Base</td>
</tr>
<tr>
<td>MOS</td>
<td>Mutual Offset System</td>
</tr>
<tr>
<td>MROC</td>
<td>Market Regulation Oversight Committee</td>
</tr>
<tr>
<td>MSD</td>
<td>Major Swap Dealer</td>
</tr>
<tr>
<td>NYMEX</td>
<td>The New York Mercantile Exchange, Inc.</td>
</tr>
<tr>
<td>OCC</td>
<td>Options Clearing Corporation</td>
</tr>
<tr>
<td>OTC</td>
<td>Over the counter</td>
</tr>
<tr>
<td>RMF</td>
<td>Risk Management Framework</td>
</tr>
<tr>
<td>SD</td>
<td>Swap Dealer</td>
</tr>
<tr>
<td>SGX</td>
<td>Singapore Exchange</td>
</tr>
<tr>
<td>SLA</td>
<td>Service Level Agreement</td>
</tr>
<tr>
<td>SV</td>
<td>Settlement Variation</td>
</tr>
</tbody>
</table>
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 margin 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, or 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 in a crisis situation. Credit, liquidity, and custody risks relate to the jurisdictions that govern the activities of CME Clearing’s Clearing Members, settlement banks and custodial institutions, and the financial institutions that supply 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 all material clearing and settlement activities on an ongoing basis and in resolving a Clearing Member default. The U.S. legal framework consists of the Commodity Exchange Act (“CEA”), the associated CFTC regulations, the CME Rules and related policies and procedures, and the U.S. Bankruptcy Code.

In the U.S., 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 a systemically important FMU, and as such is also overseen by the Federal Reserve Board under delegation from the U.S. Financial Stability Oversight Council.

---

6 Section 3(b) sets out the regulatory purposes of the CEA.
As further described under CME Clearing disclosure for Key Consideration 2 of this Principle, the CME Rules set forth the legal basis of CME Clearing’s clearing and settlement activities and the terms and conditions under which CME Clearing, Clearing Members, and market participants operate. Separate chapters in the Exchange Rulebooks set forth the contract specifications of all contracts cleared by CME Clearing.

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. Those core principles have been supplemented by regulations and other guidance adopted by the CFTC to more granularly define the obligations of a DCO. Each DCO is required to adopt rules that comport with the core principles and CFTC controlling regulations and is required to enforce those rules. In general, it is well-established that state laws

---

7 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 Rulebook of the other Clearing House, swap execution facility or trading platform.

8 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.”).

that impair the operation of a DCO are preempted by the CEA.

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. 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. In addition, collateral is held in a manner that perfects the security interest of the Clearing House. CFTC Regulation Part 190 provides a well-tested road map for the liquidation of a commodity broker that is insolvent.

In addition to the CME Rules, which are treated as a contract between CME Clearing and its members, CME Clearing relies upon legal agreements executed with financial institutions that serve as CME Clearing settlement banks and custodians of CME Clearing and Clearing Member collateral. CME Clearing’s cash settlement agreements, FX settlement agreements and custody agreements are governed by U.S. and United Kingdom laws. Moreover, as further described under CME Clearing disclosure 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 conducts a thorough evaluation of the legal risks

---

9 To date no DCO has ever been put into insolvency proceedings.

associated with doing so, and secures legal opinions evaluating the enforceability of CME Clearing’s legal and contractual rights and obligations vis-à-vis that counterparty.

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 have 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, interests 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.

**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 Rules, 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. Part 39 of the CFTC Regulations outlines the “Core Principles” that a DCO must initially satisfy and continue to satisfy on an ongoing basis. CME Clearing has adopted Rules and multiple policies and procedures in accordance with Part 39 and other CFTC Regulations and to clarify the manner in which CME Clearing complies with, and requires Clearing Members to comply with, those legal requirements. The Rules are publicly available on the CME Group website. Changes to CME Rules are also filed with the CFTC and Federal Reserve Board, as applicable, and such filings are publicly available through the CFTC’s website and the CME Group website. Additionally, CME Clearing publishes new policies and procedures and material changes to existing policies and procedures applicable to CME Clearing through Clearing Advisories and FRS Advisories, which are also available on the CME Group website. Interested parties may also subscribe to receive such Clearing Advisories and FRS Advisories by email.

CME Rules and Policies are clearly organized and internally coherent, 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 Rules.

Pursuant to CME Rules 804, 8F005, 8H05, and 8G05, for exchange-traded products, cleared OTC derivatives, 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 that CME Clearing accepts for clearing upon acceptance. CME Rules 801 through 856, and related Rules in Chapters 8H for CDS and 8G for IRS 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

---

11 CEA Section 5b(c)(2)(R).
12 CFTC Regulation 39.27(b).
13 CFTC Regulation 39.27(a).
(margin) requirements, netting and offset, Guaranty Fund (i.e., Clearing Member contributions to the financial safeguards package), 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 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 becomes legally obligated to guarantee performance.  

CME 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 Rule 819 grants CME Clearing a first priority unencumbered lien against performance bond collateral and Guaranty Fund contributions. CME Rules 802, 8H802, and 8G802, describe in detail the actions that CME Clearing will take, upon the default of a Clearing Member in the Base, CDS, and IRS Guaranty Funds, respectively.

CME Rules 900 through 983 set forth highly detailed requirements that apply to Clearing Members, particularly with respect to clearing membership requirements, performance bond requirements, and customer protection. CME 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 Rules. CME 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 Rules are required to be consistent with the CEA’s Core Principles for clearing organizations and applicable CFTC Regulations. New CME rules or changes to existing rules must go through a process whereby they are reviewed by the CFTC and other regulators with jurisdiction over CME Clearing’s operations, including the Federal Reserve Bank of Chicago, 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 and other relevant 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.

As noted above, CEA Core Principle R and CFTC regulations require that a DCO’s legal framework provide for netting arrangements, interests in collateral, steps to address a default of a Clearing Member, the settlement of funds transfers, operational requirements, and risk management procedures. CME Clearing has adopted CME Rules addressing each of the foregoing areas requiring legal certainty. The CME Rules form the legal basis for all of CME Clearing’s core activities.

CME Clearing routinely describes the legal basis for its activities to relevant authorities, participants, and even the general public. As noted above, the CME Rules, Clearing

---

14 CME 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 Rules.
Advisories, and many other Policies are publicly available on the CME Group website. CME 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 their 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 that discuss regulatory regimes in various jurisdictions, including the United States, which are also made available to the public. Many of these reports and surveys contain explanations of the regulatory regime established by the CEA and CFTC regulations with respect to a particular topic or issue.

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 Rules, including closing out or liquidating open positions, liquidating collateral and/or liquidating or transferring customer positions and collateral, CME Clearing’s operations are also governed by the U.S. Bankruptcy Code and CFTC Part 190 Regulations.

As described under CME Clearing’s disclosure 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 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 CCP’s rules are enforceable against its clearing members and participants, and no court of law with jurisdiction over the business of CME Clearing has ever held that that the CME 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 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

15 http://www.cmegroup.com/clearing
19 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).
limit systemic risk in the clearing context, including specific provisions directed at FCM insolvencies that extend certain authority to the CFTC and protection 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.

20 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).
22 See e.g., In re Weisberg, 136 F.3d 655, 659 (9th Cir 1998).

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.

CFTC Part 190 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 Clearing Member. Furthermore, the CFTC Part 190 Regulations prevent an insolvent Clearing Member from exercising any right to rehypothecate customer margin or offset the Clearing Member’s obligations. The CFTC Part 190 Regulations also provide a system for the transfer of customer accounts in the event of an FCM bankruptcy.

CME Clearing also evaluates any potential legal risk associated with accepting Clearing Members that are domiciled in foreign jurisdictions. Most Clearing Members are domiciled in the United States, thereby establishing a basis for U.S. jurisdiction over their clearing activities. In line with Chapter 9 of the CME Clearing Rulebook and pursuant to CFTC regulations, in order for a Clearing Member to act as an FCM, a prospective Clearing Member must meet minimum capital requirements equaling or exceeding the higher of the adjusted net capital requirements equaling or exceeding the higher of the adjusted net capital.

24 See 11 U.S.C. § 546(e), (g), and (j).
25 See 11 U.S.C. § 101(6) defining “commodity broker” to include a clearing organization.
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 SEC. In addition, Clearing Members must demonstrate moral and operational fitness, disclose information regarding the organization of its business to the CFTC, 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. Prior to accepting these foreign-domiciled firms as Clearing Members, CME Clearing obtained comprehensive legal memoranda to evaluate any risks concerning the enforceability of CME Rules against the Clearing Members. This analysis ensures that CME Clearing has similar rights and protections in foreign jurisdictions, as afforded under CFTC Regulations and Part 190 Bankruptcy Code.

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. As of the date of this document, CME Clearing has 13 settlement banks for futures and options on futures products, and nine settlement banks for cleared OTC products. Of this group, two institutions are foreign-domiciled, in the United Kingdom and Canada. Prior to accepting these institutions as CME Clearing settlement banks, CME Clearing evaluated the applicable United Kingdom and Canadian legal and regulatory regimes, and determined that there was a high degree of certainty that the terms and conditions of CME Clearing’s settlement [and custody] agreements with these U.K. and Canadian financial institutions would be enforceable and not subject to a material risk of actions being stayed or the agreements being voided.

CME Clearing provides a summary of its legal risk analysis, prior to accepting new Clearing Members or settlement banks to the, Clearing House Risk Committee (“CHRC”). Such determination, as appropriate may also be reviewed by the CFTC, as part of its regulatory oversight responsibilities.

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 Rules under the CEA is established and accepted under U.S. law. Additionally, as noted above under CME Clearing’s disclosure 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 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 or a new 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 Clearing will not accept for 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 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 disclosure, such evaluation will also be reviewed by the appropriate CME Clearing Risk Committee (CHRC, IRSRC, or CDSRC) prior to accepting the Clearing Member, 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 custodial accounts in the name of CME Inc. directly, subject to certain account name 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 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 Rule 819, CME Clearing has a first priority unencumbered lien against performance bond collateral and contributions to the Guaranty Fund. All Clearing Members grant CME Clearing a first priority and unencumbered lien against all posted collateral and CME Rule 819 provides that they shall 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 Rule 819 supports CME Clearing’s unimpeded ability to liquidate collateral of all types.

CME 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 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. 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. 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, through protection of the CME Group’s clients and business practices, helps maximize share value, which ensures proper support of these 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 market infrastructure plays an important role. Further, as a SIDCO, CME Clearing is required to have governance arrangements in place that explicitly support the stability of the broader stability of the financial system and relevant market stakeholders. CME Clearing operates on a basis consistent with best practices and, to its knowledge, consistent with the practices of other clearing houses.

CME Inc. operates CME Clearing, the Clearing Division of CME Inc., as a central counterparty for clearing derivatives and other products. The Clearing Division performs its risk management function completely 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. This is particularly 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 systemically important FMU and as such, is also overseen by the Board of Governors of the Federal Reserve System under delegation from the U.S. Financial Stability Oversight Council.

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 fully conform with the CPMI-IOSCO Principles for Financial Market Infrastructures 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 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 comprehensively described on the website29. As described in its risk management and financial safeguards brochure30, CME Clearing’s integrated clearing function is designed to ensure the safety and soundness of CME Group 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 website31 and CME Group Exchanges’ 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 and a means of preventing damage to the marketplace. Further, the Risk Management team of CME Clearing 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 things, participating in industry and customer forums, and soliciting feedback. CME Clearing is also 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.

29 http://www.cmegroup.com/clearing
31 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 Board’s 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 of Directors and is implemented on a day-to-day basis by the Senior Leadership Team. The biographies of the members of the Board and Senior Leadership Team are available on the CME Group website.32

CME Group has adopted Corporate Governance Principles,33 governing the operation 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 management levels.

In accordance with the Corporate Governance Principles, the Board represents the shareholders’ interests, consistent with legal requirements and ethical standards, in perpetuating a successful business and optimizing long-term financial returns through secure and prudent business practices. The Board is responsible for the general oversight of CME Group, including identifying and taking reasonable actions, so that CME Group is managed in a way designed to achieve this goal. The Board’s principal oversight functions are to:

- Review, approve, and monitor CME Group’s major strategic, financial, and business activities and opportunities, including declarations of dividends and major transactions;
- Review, approve, and monitor CME Group’s annual budget;
- Review, monitor, and take reasonable actions with respect to CME Group’s financial performance;
- Review, assess, and provide oversight of 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 operational, strategic, financial, regulatory, and compliance risks;
- Select, evaluate, and compensate the Executive Chairman & President and, if necessary, appoint a replacement;
- Select, evaluate, and compensate the Chief Executive Officer (“CEO”) and, if necessary, appoint a replacement;
- Review and monitor plans for the succession of the Executive Chairman.

32 [http://investor.cmegroup.com/investor-relations/leadership.cfm](http://investor.cmegroup.com/investor-relations/leadership.cfm)
33 [http://investor.cmegroup.com/investor-relations/principles.cfm](http://investor.cmegroup.com/investor-relations/principles.cfm)
& President, the CEO, and other members of senior management; and

- Identify, evaluate, and nominate candidates for Equity Director.

The Board has nine Committees: Audit Committee, Compensation Committee, Executive Committee, Finance Committee, Governance Committee, Market Regulation Oversight Committee (“MROC”), Nominating Committee, Risk Committee (“Board Risk Committee”), and Strategic Steering Committee. Each of 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, Nominating Committee, and Board Risk Committee consist entirely of independent directors. MROC consists entirely of public directors as defined by the CFTC. To oversee its risks in relation to each of its clearing services, the Board has established three committees chaired by members of the Board and comprised of other Board members as well as market participants: the Clearing House Risk (“CHRC”), the IRS Risk Committee (“IRSRC”) and the CDS Risk Committee (“CDSRC”), which are collectively referred to as the “CME Clearing Risk Committees”.

The Board of Directors of CME Group meets at least six times a year. Both the Executive Chairman & President and CEO provide regular reports to the Board, which are included in the agenda for each Board meeting. These reports are designed to provide the Board with updates on the 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 committees. Additionally, 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.

**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 Company’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 Company’s internal controls. The 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 Committee has ultimate authority and responsibility to appoint, retain, compensate, evaluate, and where appropriate, replace the external auditors.

**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 Company’s employees.

**Executive Committee**

---

34 [http://investor.cmegroup.com/investor-relations/committees.cfm](http://investor.cmegroup.com/investor-relations/committees.cfm)
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 management regarding material policies, plans, or proposals prior to submission of such items to the Board. The Executive Committee is also responsible for conducting the annual performance evaluation of the CEO and then presenting its conclusions to the Board during an executive session.

**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 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 the compensation of the Chief Regulatory Officer, the Head of the Financial and Regulatory Surveillance Department, the Compliance Officer for the Clearing House, and the Compliance Officer Swap Data Repository. The Chief Regulatory Officer, the Head of the Financial and Regulatory Surveillance, and the Compliance Officers for the Clearing House as well as the Swap Data Repository have direct dotted line reporting relationships to the MROC. They meet with MROC in an executive session on a regular basis and are provided an opportunity to present any issues or concerns. Additionally, the MROC Chairman meets with them periodically outside of the context of regularly scheduled meetings. 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 and Regulatory Surveillance Department on recent activities relating to the monitoring of CME Clearing Clearing Members for compliance with financial requirements
- Executive sessions/private meetings with key leaders in the Market Regulation and Financial and Regulatory Surveillance Departments to ensure effective communication of any Exchange related issue
- Executive sessions/private meetings with the chairmen of the Exchanges’ disciplinary committees

- Reports on the results of the CFTC’s rule enforcement reviews of the Exchanges as well as the outcome of any CFTC’s reviews of non-CME Group exchanges

- Reports on industry issues that may have an impact on the roles performed by the Market Regulation and Financial and 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 Board Risk Committee has primary remit to review, assess, and provide of oversight of CME Group’s Enterprise Risk Management (“ERM”) Program. The Board Risk Committee:

- Reviews, assesses, and provides oversight of CME Group’s risk management practices and the integrity and adequacy of its ERM Program and the Compliance & Ethics (“C&E”) Program.

- Assists the Board in its oversight of the effectiveness of CME Group policies and processes to identify, manage, and plan for its operational, strategic, financial, and regulatory and compliance risks under its ERM Program and C&E Program.

Included within the oversight responsibilities of the Board Risk Committee are critical functions of CME Clearing, including information security, business continuity, and operational risk. Additionally, the Board Risk Committee is responsible for periodically performing a gap analysis of the division of risk-related responsibilities among the aforementioned 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 Company’s long-range direction, corporate strategy, and competitive position.

In addition to these Board committees, CME Clearing also supports a CME Clearing Risk Committee for each major OTC major asset class, the CDSRC and IRSRC, as well as the CHRC that covers risks related to all products outside of CDS or IRS clearing. These are not Board level committees, though they are each chaired by a member of the Board to guarantee consistent communication between the Board and CME Clearing Risk Committees, as well as to ensure alignment between the Board’s risk management focus and CME Clearing Risk Committees’ activities.

CME Clearing Risk Committees

The CME Clearing Risk Committees are responsible for the oversight of risk management policy issues and the financial safeguards systems relevant to the asset class in which they have primary oversight of, Base, IRS, and CDS. Additionally, the CHRC is charged in its Charter with guiding the Board in maintaining and enhancing CME Clearing’s role as the industry leader in risk management, and oversight of the Financial
and Regulatory Surveillance Department ("FRS").

Under CME Rule 403, the role and purpose of CHRC is established. Its primary functions, as detailed below are in relation to providing oversight on major risk management policy issues and financial safeguards as set forth in Chapters 8 and 9 of the CME Rulebook. Further, the role and purpose of the IRSRC and CDSRC is established under CME Rules 8G27 and 8H27, respectively. The IRSRC and CDSRC have primary oversight of risk management policy issues and financial safeguards as set forth in Chapters 8G and 8H of the CME Rulebook, respectively.

The CME Clearing Risk Committees consists of a balanced group of market stakeholders who in the context of their role on the appropriate CME Clearing Risk Committee have a duty of loyalty to the Clearing House. The CME Clearing Risk Committees are chaired by at least one member of the Board. The CME Clearing Risk Committees’ primary functions, in relation to each major asset class in which they have oversight of are to:

- Provide oversight on major risk management policy issues and oversee administration of the financial safeguards for the respective waterfalls;

- Provide guidance for the development of the default management guidelines and the unwinding of the portfolios of a Clearing Member;

- Advise the Clearing House on risk implications of proposed programs that may might be implemented;

- Adopt standards regarding qualification for admission to membership in the Clearing House; and

- Provide an open avenue of communication between the Board, Management, the Clearing House, and the Clearing Members.

The CHRC also has primary responsibility for reviewing and approving amendments to CME Rules impacting CME Clearing and for making recommendations regarding CME Rule amendments to the Executive Chairman & President and the CEO, who have delegated authority to approve such amendments on behalf of the Board. IRSRC and CDSRC also have the primary responsibilities for reviewing and approving CME Rules directly impacting IRS and CDS clearing services, respectively.

The CHRC meets and reviews relevant matters as the CHRC deems appropriate or as the Board may from time to time prescribe.

Per CME Rules, the CHRC and its Co-Chairmen are appointed by the Chairman of the Board. The Co-Chairman of the CHRC are members of the Board. The Chairmen of the Board appoint at least seven (7) additional members from both Clearing Members and non-members. One of the Co-Chairs of the CHRC is a member of the Board Risk Committee which ensures effective information sharing between the two committees.

The IRSRC’s primary function is to provide guidance and oversight to the Clearing House on issues relevant to IRS products as defined in Chapter 8G of the CME Inc. Rulebook. The IRSRC further reviews such other matters relating to IRS products as it deems appropriate or as the Board may from time to time prescribe.

The IRSRC meets as frequently as the Chairman of the committee deems necessary.
to carry out its responsibilities, but typically at least quarterly.

Per the CME Rules, the IRSRC is appointed by the Chairman of the Board during the first quarter of each calendar year. The IRSRC consists of a minimum of eight (8) and a maximum of 16 individuals. All members of the IRSRC are appointed for one-year terms. A member of the Board will serve as the Chairman of the IRSRC. The IRSRC consists of up to nine (9) representatives of IRS Clearing Members, up to four (4) representatives of CME Clearing and two (2) independent members (i.e. not affiliated with either CME Group or an IRS Clearing Member).

The CDSRC’s primary function is to provide guidance and oversight to the Clearing House on issues relevant to the CDS Products as defined in Chapter 8H of the CME Inc. Rulebook. The CDSRC further reviews such other matters relating to CDS Products as it deems appropriate or as the Board may from time to time prescribe.

The CDSRC meets as frequently as the Chairman of the Committee deems necessary to carry out its responsibilities, but typically at least quarterly.

Per CME Rules, the CDSRC is appointed by the Chairman of the Board during the first quarter of each calendar year and must be comprised of a minimum of eleven (11) and a maximum of sixteen (16) individuals. All members of the CDSRC are appointed for one-year terms. A member of the Board will serve as the Chairman of the CDSRC. The CDSRC consists of up to nine (9) representatives of CDS Clearing Members, up to four (4) representatives of CME Clearing and two (2) independent members (i.e., not affiliated with either CME Group or a CDS Clearing Member).

Members of the CHRC, CDSRC, and IRSRC (excluding any members of the CDSRC and IRSRC that are CME Clearing employees) may be paid an honorarium for their participation.

For the IRSRC and CDSRC, CME Clearing has separate and distinct Default Management Committees: the IRS Default Management Committee (“IRS DMC”) and the CDS Default Management Committee (“CDS DMC”), established under CME Rules 8G26 and 8H26 with defined roles and responsibilities, respectively. The primary function of both the IRS DMC and the CDS DMC is to provide guidance to the Clearing House and related CME Clearing Risk Committees on issues relating to a potential or actual default of an IRS Clearing Member or CDS Clearing Member, respectively.

The IRS DMC and CDS DMC are comprised of the President of the Clearing House, the Chairman of the related CME Clearing Risk Committee, and a primary and alternate from the appropriate Clearing Member, either IRS or CDS, appointed by the Chairman of the Board.

The IRS Active Default Committee (“IRS ADC”) or the CDS Active Default Committee (“CDS ADC”) will convene upon an actual (or threatened) default of an IRS Clearing Member or CDS Clearing Member, respectively. The IRS ADC and CDS ADC is comprised of seconded traders who are charged with advising CME Clearing in the hedging and/or liquidation process of a defaulted Clearing Member’s portfolio in order to facilitate an orderly auction.

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.

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 will govern 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 by the Institute of Internal Auditors every five years.

To provide for the independence of the Global Assurance Department, its personnel report to the Managing Director, Global Assurance, who reports functionally to the Audit Committee and administratively to the Senior Managing Director, General Counsel & Corporate Secretary.

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 Managing Director 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 Managing Director of Global Assurance and staff of the Global Assurance Department are not authorized to perform any operational duties for CME Group and its subsidiaries.

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:

- Shall review the annual performance evaluation and compensation determinations and any termination decisions made by the senior management of CME Group with respect to the Managing Director, Global Assurance, with the goal that such determinations or decisions are not designed to influence improperly the independent exercise of his duties;
• The Managing Director of Global Assurance shall report to the Audit Committee and for administrative purposes, shall report to the head of the legal department;

• Shall review and approve Global Assurance’s plans, Charter, activities, staffing, effectiveness, and organizational structure; and

• Shall provide ongoing assurance that there are no unjustified restrictions or limitations to its functioning.

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, as well as Managing Director of Global Assurance’s executive level position in CME Group enhances Global Assurance’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 of CME Group, including identifying and taking reasonable actions so that CME Group is managed in a way designed to achieve the goal of perpetuating a successful business and optimizing long-term financial returns while ensuring the safety and soundness of the firm, its clients, and the markets it serves. The Board’s principal oversight functions are to:

• Review, approve, and monitor CME Group’s major strategic, financial, and business activities, including declarations of dividends and major transactions;

• Review, approve, and monitor CME Group’s annual budget;
• Review, monitor, and take reasonable actions with respect to CME Group’s financial performance;

• Assess major risks and opportunities facing CME Group and review options for addressing them;

• Select, evaluate, and compensate senior management and ensure that CME Group has in place an effective succession planning process;

• Oversee the processes for maintaining the ethical conduct of CME Group, including the integrity of its financial statements and its compliance with applicable laws and regulations.

To fulfill these responsibilities the Board and its Board Committees interact regularly with management to oversee, among other things, the strategic direction of the company, its financial performance, its progress on its key initiatives, its Enterprise Risk Management Program, and its Global Corporate Compliance & Ethics Program.

In addition to the policies and procedures discussed in connection with CME Clearing’s disclosure for Key Consideration 2 of this Principle, CME Inc. has adopted policies and procedures to address potential conflicts of interest. In order to ensure that its Board effectively avoids or minimizes conflicts of interests and quickly resolves any that arise, the Board has adopted a code of ethics, a conflict of interest policy, and a related party approval policy. 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 Rule 234, if the Board member knowingly has a direct and substantial financial interest in the result of the vote based upon either Exchange or non-Exchange positions that could

http://investor.cmegroup.com/investor-relations/leadership.cfm
http://investor.cmegroup.com/investor-relations/BODCodeOfEthics.cfm
http://investor.cmegroup.com/investor-relations/conflict_of_interest.cfm
http://files.shareholder.com/downloads/CME/1668493258x0x206511/cfe83e50-87a7-4f01-a46e-06d87769a940/RelatedParty.pdf
reasonably be expected to be affected by the action or is otherwise conflicted based on existing Exchange policy.

CME Group has also adopted a Code of Conduct that applies to all employees, including the executive officers of the Exchanges. 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, the Audit, Compensation, Finance, Governance, MROC, and Nominating Committees each conduct an annual self-assessment. To enhance its performance, the self-evaluation process includes an assessment of the performance of the individual directors.

CME Clearing requires members of the 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, the CDSRC Charter, and the 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.

The CME Clearing Risk Committees are also charged with annually evaluating the adequacy of their charters and submitting any recommended changes to the Board for approval.

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).

CME Group seeks candidates with a variety of talents and expertise to ensure that the Board as a whole is operating effectively and is focused on creating long-term value for shareholders, while ensuring the integrity and safety of the markets. CME Group believes that the Board should be composed of individuals from diverse professional backgrounds, who combine a broad spectrum of experience and expertise with a reputation for integrity and who exercise their good judgment to provide practical insights and different perspectives. In selecting candidates, the Board endeavors to find individuals who have a solid record of accomplishment in their chosen fields and who display the independence of mind and strength of character to effectively represent the best interests of the shareholders and the
marketplace while supporting prudent risk management practices.

CME Group’s independent Nominating Committee recommends candidates for election to the Board who are submitted to the Class A and Class B shareholders for approval. In considering candidates for the Board, the nominating committee considers the entirety of each candidate’s credentials, including their representation of diverse viewpoints. With respect to the nomination of current directors for re-election, the individual’s contributions to the Board are also considered. In assessing new candidates for the Board, CME Group has not adopted a set of firm criteria that an individual must meet to be considered. The Nominating Committee reviews the qualifications and backgrounds of potential directors in light of the needs of the Board and CME Group at the time and selects a slate of Equity director nominees to be nominated for election at the annual meeting of shareholders. In evaluating potential director nominees, the Nominating Committee will take into consideration, among other factors, whether the nominee:

- Has the highest professional and personal ethics and values;
- Is independent of management under the Categorical Independence Standards, available on the CME Group website; 41
- Has the relevant expertise and experience required to offer advice and guidance to CME Group’s Executive Chairman & President and CEO;
- Helps the Board reflect the applicable board composition requirements of the CFTC;
- Has the ability to make independent analytical inquiries;
- Can dedicate sufficient time, energy, and attention to the diligent performance of his or her duties;
- Has the ability to represent the interests of the shareholders of CME Group and to create long-term value;
- Has any special business experience and expertise in a relevant area;
- Would be considered an Audit Committee financial expert or financially literate, as such terms are defined in applicable CME Rules, regulations, and listing standards; and
- Has an understanding of CME Group’s subsidiaries’ business, products, market dynamics, and customer base.

The experience and diversity of the Board has been, and continues to be, critical to CME Group’s success. 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

41 http://investor.cmegroup.com/investor-relations/independence.cfm
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 all of 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 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 its Exchanges, which provides them with access to the open outcry trading floors, lower trading fees, the ability to vote on certain matters relating to the operation of the trading floors, and for members of CME Inc., the ability to elect six directors. Directors who are members of the Exchanges may make payments directly to CME Group or indirectly through the Clearing Members in connection with their trading activity on an 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 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 an 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 Exchanges. Significant representation of individuals who do not have relationships with the Exchanges, referred to as “public directors” in the 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 Exchanges and the industry per the 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 50\textsuperscript{th} percentile of the competitive market for compensation of the Board, while also reviewing the range of values around the median, including the 25\textsuperscript{th} and 75\textsuperscript{th} percentiles. The primary components of the Board compensation package consist of an annual equity stipend of the parent company’s stock, an annual cash stipend, committee and Board meeting fees, and chairperson retainers for certain members of 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 Senior Leadership Team is responsible for the day-to-day management of CME Group. Each member of the Senior Leadership Team is responsible for the performance of their applicable business area and is ultimately accountable to the Board, the Executive Chairman & President, and the CEO. The organization takes seriously the performance of its management and their goal setting. Key strategic goals are tracked at the Senior Leadership Team level and reported to the Board as necessary and appropriate. The Board conducts an annual assessment of the Executive Chairman & President against his established goals and the Executive Committee of the Board performs a similar assessment of the CEO and then reports its findings to the full Board. Among the Board’s key oversight responsibilities is the hiring and if necessary termination of the Executive Chairman & President and the CEO. Other members of the Senior Leadership Team have their performance assessed against their established goals on an annual basis by their direct manager, which are subject to the oversight of the CEO. To the extent a member of the Senior Leadership Team fails to live up to expectations it is within the purview of the direct manager to recommend his termination to the Executive Chairman & President or CEO, as applicable. CME Group’s annual proxy statement contains additional information on the compensation program for senior management.

CME Group operations are divided into 11 divisions, overseen by the Executive Chairman & President, the CEO, and the other members of the Senior Leadership Team:

- **Executive Division:** Responsible for managing the company to perpetuate a successful business and optimize long-term financial returns. To achieve this goal, the Executive Division oversees the company's business activities in accordance with the Board approved annual strategic plan and provides direction to division leaders in specific areas including strategic initiatives, technology, clearing, operations, finance, sales, legal and regulatory, human resources, research and development, and marketing.

- **Clearing Division:** CME Clearing is overseen by the President of CME Clearing, with risks and compliance supervised by the Chief Risk Officer
and Chief Compliance Officer, respectively. The Clearing Division clears and guarantees all matched transactions occurring through its facilities. The Clearing 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 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 the Clearing Members for financial performance of all open positions. The Clearing Division provides clearing services to all of CME Group’s DCM subsidiaries, CME Inc., CBOT, NYMEX, and COMEX.

- **Global Operations Division:** The Global Operations Division operates CME Group’s electronic and physical marketplaces. The Global Operations Division ensures the operations and procedural integrity of CME Group’s markets, through advanced monitoring and proactive management on all venues – Trading Floors, Globex, and ClearPort. Through the Globex Command Center, Global Market Solutions and Services, and product support groups, the division interacts and supports customers and markets globally 24/7. The Global Operations division is also responsible for CME Group’s Business Continuity Programs, Physical Security, Data Centers, and Co-Location Support Services.

- **Technology Division:** The Technology Division provides systems to support electronic trade matching, inbound and outbound order routing, clearing, market data, trading floor technology, and other corporate processes. Critical areas of focus are systems security, speed, reliability, functionality, and system capacity. CME Group supports global hubs in the Americas, Europe, and Asia that offer high-speed and direct point-to-point network access to the CME Group Globex trading platform.

- **Strategy & Execution Division:** The Strategy & Execution Division is responsible for improving positioning and competitive advantage across businesses and capabilities, proactively developing new growth in existing businesses and commercial opportunities with sustainable value, and providing clear direction and improved alignment, accountability and execution throughout the organization.

- **Finance Division:** The Finance Division takes an active role in increasing shareholder value through financial reporting, revenue and expense analysis, tax planning, capital structure management, mergers and acquisitions, and detailed examination of other investment opportunities, amongst many other functions.

- **Global Client Services & Development:** The Global Client Services and Development Division’s
primary responsibility is to act as the driver of inorganic and organic revenue growth with a specific focus to comprehensively serve and support our global client base by ensuring the timely development, delivery, and maintenance of industry leading products, platforms, and services.

- **Products and Services Division:** The Products & Services Division is responsible for delivering CME Group’s business line revenue target by leading the management and long-term strategic vision for each asset class, with a focus on enabling core growth, enhancing our value proposition, innovating new products and services, and enhancing profitability. The CME Group Business Line Management teams are responsible for the long-term strategy and management of all products within their respective business lines.

- **Human Resources Division:** The Human Resources Division acquires, retains, and develops top talent, builds and strengthens senior leadership capabilities, strengthens organizational and financial effectiveness, enhances CME Group’s culture, and delivers world-class human resource capabilities. CME Group does this by leveraging CME Group’s expertise in the areas of benefits, compensation, employee relations, compliance, professional development, organizational effectiveness, and recruiting.

- **Legal and Market Regulation Division:** The Legal and Market Regulation Division is responsible for ensuring legal and regulatory compliance, overseeing internal controls, implementing risk management capabilities, and providing member and shareholder services.

The Divisions are overseen by members of the Senior Leadership Team, recruited for their particular position based upon their skills and expertise and are appointed by the Board. Their individual goals and performance are annually assessed by their direct manager as part of the performance management process.

CME Clearing is headed by a President, who is appointed by the CEO of CME Group, with the approval of the Board, as set forth in CME Rule 801. The President of CME Clearing further delegates authority for certain aspects of the daily operation of CME Clearing to the senior management team, including a Chief Risk Officer of CME Clearing and a Chief Compliance Officer of CME Clearing, as further described below. Further, the Head of Global Operations, Technology & Risk acts as a liaison to ensure the smooth cross functioning of the Global Operations, Technology, and Clearing Divisions of CME Group.

**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, CME Clearing’s Chief Risk Officer (“CRO”) is

---

42 CFTC Regulation 39.13(c).
responsible for implementing the Risk Management Framework ("RMF") of CME Clearing, which is reviewed and approved by the Board of Directors at least annually. The RMF, 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 Principle 3 disclosure.

In addition to his role in implementing the RMF, the CRO makes recommendations concerning procedures, policies, and controls, directly to the applicable CME Clearing Risk Committees. 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 credit and market risk management. The CRO also has a direct reporting line to a non-executive director on the Board who is also the chairman of the 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 the Head of the Financial and Regulatory Surveillance and CME Clearing’s Chief Compliance Officer ("CCO"), which CME Clearing has named, consistent with CFTC regulations. CME Clearing’s CCO is responsible for developing and enforcing appropriate compliance policies and procedures for CME Clearing, reviewing CME Clearing’s compliance with CFTC Core Principles for DCOs and all other applicable legal and regulatory requirements, resolving conflicts of interest issues, and any non-compliance issues that may arise. The CCO has an additional 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 Rules, in accordance with CME’s responsibilities as a Designated Self-Regulatory Organization ("DSRO"). The Head of the Financial and Regulatory Surveillance has an additional reporting relationship directly to MROC, a committee of the Board, as described in detail under CME Clearing’s disclosure for Key Consideration 2 of this Principle.

CME Clearing also maintains risk committees to provide appropriate oversight on relevant risk management issues, as described in CME Clearing’s disclosure for Key Consideration 2 of this Principle: CHRC, CDSRC, and IRSRC. Each of these Risk Committees is charged with providing oversight and advice to CME Clearing with regard to risk issues relating to products; risk management procedures and performance bond requirements; Clearing Member qualifications; the adequacy and sources of CME Clearing’s financial safeguards packages; CME Rules relating to clearing; compliance by Clearing Members with applicable requirements and CME Rules; the financial condition of Clearing Members; and the administration of the unwinding of any Clearing Member in a default situation. Each CME Clearing Risk Committee is further responsible for regularly reviewing their applicable financial safeguards system, Clearing Member requirements and compliance by the Clearing Membership, and CME Clearing’s risk management policies and practices. Each Committee is responsible for reporting to the Board concerning such matters.

The Board has an active role as a whole and at the committee level, in overseeing management of the Company’s risks. In

---

43 CFTC Regulation 39.10(c).
addition to its work with the CME Clearing Risk Committees, the Board Risk Committee is responsible for oversight of the Enterprise Risk Management ("ERM") program, which is designed to promote and facilitate the process of evolving, aligning, and sustaining sound risk management practices at CME Group. The ultimate objective of the ERM program is to help ensure the safety and soundness of CME Group’s business practices and security of its clients. Additionally, ERM is charged with preserving and protecting enterprise value and helping to increase the likelihood of achieving financial, operational, and strategic objectives.

The ERM program is led by a Senior Director, Enterprise Risk Management who reports to the Managing Director, Global Chief Compliance Officer, who reports directly to the Board Risk Committee. The Board Risk Committee serves as the primary committee with the responsibility for overseeing the ERM program, with the other Board level and functional committees overseeing specific risks that relate to their core responsibilities. Specific risks are also discussed at the Board and Board level and functional committees, as appropriate.

The Enterprise Risk Framework, Processes and Overall Program are reviewed with the Board Risk Committee. The ERM Charter is reviewed and approved on an annual basis by the Board Risk Committee. All material changes to the program are reviewed by the cross-functional Risk Management Team ("RMT"), reported to the Management Team ("MT"), and presented to the Board Risk Committee for information and approval.

Enterprise risks are identified, assessed, measured, prioritized, and updated regularly by management through the RMT. The Board Risk Committee and the Board receive detailed Enterprise Risk Profile Reports updating the Company’s top tier (key) enterprise risks each quarter. Additional review or reporting on the enterprise risks is conducted as needed or as requested by the Board or one of its committees.

The Enterprise Risk Management Framework ("ERMF") utilizes the “Three Lines of Defense” architecture. These are:

(1) Lines of business: Senior management from the operating divisions is responsible for managing the day-to-day operations of the business and the treatment of risks. The lines of business ensure that they are operating within the risk tolerances of the organization.

(2) Risk and Compliance functions: Includes Enterprise Risk Management (supported by the RMT), Global Corporate Compliance, Business Continuity and Crisis Management ("BCM"), and provide oversight of the “First Line of Defense”. ERM reviews, monitors, and reports top tier risk at the company level and changes in its risk profile are reported to the Management Team, Board Risk Committee, and Board of Directors. The Board Risk Committee provides oversight of the ERM program and process.

(3) 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 Rules. Under CME 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 likely to be disrupted, the financial integrity of CME Inc. is threatened, or the normal functioning of the
Exchange has been or is likely to be disrupted. Each of CME Clearing Risk Committees has further authority to act under CME Rules in the event of emergencies. Under Rule 403.C, the CHRC may declare an emergency and take any appropriate action to respond to the emergency. CME Rule 403.C requires that both the Board and the CFTC be notified of any such emergency action. CME Rule 975 further sets forth procedures for empaneling the Emergency Financial Committee of the Exchange, if the President of the Exchange, the President of Global Operations, Technology & Risk, 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 Exchange or potential negative impact to the financial markets. CME Rules 8H824 and 8H975 grant similar authority with respect to the actions that may be taken by the CDSRC, as to CDS products and CDS Clearing Members and the empaneling of a CDS Emergency Financial Committee. CME Rules 8G824 and 8G975 similarly grant authority with respect to IRS products and IRS Clearing Members.

**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.

As noted above under Key Consideration 2, the CHRC, CDSRC, and IRSRC are each comprised of a member base of industry experts sourced from Clearing Members, with a specified distribution of clearing activity designed to ensure diverse Clearing Member representation on the Committees.

CME Clearing has risk management, business, legal, trading, and overall expertise on its CHRC, CDSRC, and IRSRC through participation from individuals from Clearing Members, settlement banks, and independent members that assist in framing overall risk management policies at CME Clearing. Additionally, CME Clearing has Default Management Committees that help form overall potential actions and requisite drills in the mechanics of Clearing Member default activities.

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 form 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:

- **Corporate Website:**[^44] utilized for communication to stakeholders, including market participants and Clearing Members
- **Press Releases:**[^45] utilized for distributing significant updates regarding the operation of CME Group’s business

[^44]: http://www.cmegroup.com/
[^45]: http://cmegroup.mediaroom.com/
• Online Rulebooks: set forth the particular CME Rule requirements for the applicable Exchange, including contract specifications and Clearing Member requirements

• Special Executive Reports: utilized to provide additional information regarding changes to Exchange procedures, such as changes to existing products and new product listings

• Clearing Advisories: utilized by CME Clearing to provide information targeted to Clearing Members, such as changes in performance bond requirements, option expiration procedures, and system updates

• Market Regulation Advisory Notices: utilized by the Market Regulation Department to provide guidance on the interpretation of Exchange Rule

---

46 http://www.cmegroup.com/market-regulation/rulebook/
47 http://www.cmegroup.com/tools-information/advisorySearch.html
48 http://www.cmegroup.com/tools-information/advisorySearch.html
49 http://www.cmegroup.com/rulebook/rulebook-harmonization.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 maintains a Risk Management Framework ("RMF"), which encompasses the risk management policies and methodologies 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 RMF 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, if necessary. Each policy and procedure will have a defined review schedule, during which risk management staff will be responsible for updating and maintaining the policy or procedure. The RMF is reviewed by the Board of Directors at least annually and is subject to the approval of the Board of Directors.

The RMF 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
- Default Risk and Default Management
- Market Risk
- Model Risk
- Operational Risk

CME Clearing maintains policies to supplement and support the RMF, which more granularly address the ways in which CME Clearing manages certain risks to which it is exposed that similar to the RMF are subject to at least an annual review and approval process. Credit and counterparty risks management, addressed in CME Clearing’s Principle 4 disclosure and liquidity risk, addressed in CME Clearing’s Principle 7 disclosure, are managed through a series of policies that are designed to ensure the integrity of the Clearing House, Clearing Members, and other CME Clearing counterparties. These policies, which include the Credit Policy and Collateral Policy encompass credit evaluations, financial and regulatory surveillance, and collateral adequacy. Liquidity risk management is covered in the Collateral Policy and the Liquidity Risk Management Framework and
within this document CME Clearing’s Principle 7 disclosure, both maintained by CME Clearing to ensure that the Clearing House maintains the highest standards of acceptable collateral and necessary tools to manage liquidity risk. The Clearing House also retains liquidity agreements with a consortium of liquidity providers to guarantee liquidity needs are met quickly and efficiently.

Concentration and market risks are considered in the margin calculations of each asset class that are elaborated on in the RMF, with measurement and coverage calculations designed to capture the unique risks attributed to each particular asset class. Both Risks are discussed within this document in CME Clearing’s disclosure for Principle 6. The models for these calculations are regularly backtested, which is addition to CME Clearing’s regularly conducted sensitivity analysis to protect the Clearing House against a variety of identified risks, which include model risk. CME Clearing’s policy to manage margin model risk is explained in CME Clearing’s disclosure for Principle 6. CME Clearing mitigates default risk and default management through the financial safeguards waterfalls and default management procedures laid out under CME Clearing’s RMF and publicly available Rulebook. These procedures, described further in CME Clearing’s disclosure 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, necessary systems are able to aggregate exposure by account across major asset class to ensure the Clearing House can manage the total risk posed by a participant. Further, risk systems are able to aggregate risk exposures across customers at various Clearing Member, allowing risk management 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 disclosure 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 – ensuring proper functionality and assisting Clearing Members with any operational issues. CME Clearing manages operational risk on a daily basis, multiple shifts are staffed to ensure consistent coverage of system performance, including monitoring the necessary systems.

The systems utilized by CME Clearing have proven capacity to handle up to two times the observed peak volume in the Clearing House. Historically, the largest volume observed in a single day has not exceeded twice the average volume, which is more than sufficiently covered by the systems’ capacity.

In addition to the risks discussed, the RMF also covers the risk management procedures followed by CME Clearing. These procedures include real-time monitoring of trading activity and price movements 24 hours a day, 6 days a week. Further, 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 Risk Management to monitor these Clearing Members more rigorously. 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 set credit limits on their customers. These limits are in compliance with regulatory requirements as well as CME Rules 824 and 930.L. CME Clearing has a real-time view into these limits and their utilization for every major asset class.

The standards described in the RMF and other risk management policies are tested for effectiveness on a regular basis as defined in each policy, at least annually, or more frequently if necessary. Changing risk profiles and market environment shifts are monitored by Risk Management team and senior management at periodic meetings, such as the weekly Risk Management team meeting and the Collateral Committee, discussed in CME Clearing’s Principle 5 disclosure and the monthly stress testing meeting among senior management. Identified risks may result in further action, such as escalation to more senior clearing staff or execution of policy enhancements, if deemed necessary by the senior team in attendance. In addition to internal reviews, CME Clearing’s supervising regulatory authorities’ complete 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 internal and/or external committee(s), as appropriate. CME Clearing’s primary regulator conducts regular examinations of CME Clearing, where risk management practices and standards are subject to review in line with applicable regulatory requirements.

**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.**

CME Clearing maintains certain chapters of the CME Rulebook, which establish the standards to which it and its Clearing Members will be held, covering the full range of CME Clearing operations. Included in these is CME Rule 982, which prescribes the risk management standards to which CME Clearing will hold its Clearing Members. OTC Clearing Members are further required to adhere to the obligations described in Rule 8F010. These CME 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
- Defining sources of liquidity for increased settlement obligations

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 banking and custodial relationships with CME Clearing. In addition, CME Clearing applies exposure limits based on its credit evaluation of these counterparties. CME Clearing’s regular reviews of all entities that pose a material risk are conducted onsite at least biennially, but can be held 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:

- 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 pays/collects;
- Collateral policy;
- Settlement bank relationships; and
- Liquidity/capital plans in case of assessment to CME Clearing.

Clearing Members found to have inadequate risk management based on their business profile 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 Rule 824 or more frequent risk reviews as deemed necessary by the Risk Management team. All risk review results will be presented at the weekly Risk Management team meeting, which is comprised of a CME Clearing risk managers with a diverse set of expertise and includes members of the senior Risk Management team. Additionally, any materials issues identified through risk reviews will be presented to the appropriate CME Clearing Risk Committee. CME Clearing may recommend to the relevant CME Clearing Risk Committee that a Clearing Member be subject to additional capital requirements, restricted in their clearing ability, suspended from the Clearing House, or other actions as appropriate. The appropriate CME Clearing Risk Committee may also independently decide to impose such restrictions on the Clearing Member as they deem necessary, as described in CME Rule 403 and the respective CME Clearing Risk Committee charters.

The Risk Management team will also discuss each Clearing Member’s recent activity and volume during the review to address any trends or unusual trades, as well as any specific 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.

Each review results in a summary report and suggestions for presentation to senior risk management and Clearing management.
Reports are also made available to regulatory bodies as necessary or requested.

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 Guaranty Fund. In addition, CME Clearing provides a variety of tools to help market stakeholders, both Clearing Members and their customers, estimate their margin results. This includes a web-based solution for OTC products, 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, for example.

CME Clearing maintains a variety of alternatives to manage risk profiles of Clearing Members and/or their clients, as appropriate. This includes the right to call for additional requirements, as deemed necessary as described in CME Rule 824. Clearing Members are required to submit to CME Clearing and/or the CFTC any information or documentation regarding these policies as necessary. CME Clearing monitors these policies as part of regular risk reviews performed by Risk Management.

Additionally, CME Clearing provides Clearing Members with Globex Credit Control functionality, allowing Clearing Members to protect against potential risks posed by customer electronic trading. Through CME Rule 949, CME Clearing has mandated that all Clearing Members implement Credit Controls for their customers. 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.

In addition to CME Clearing’s risk management policies, Clearing Members that are FCMs are required to maintain compliance with CFTC Regulation 1.73, Clearing Futures Commission Merchant Risk Management; SDs or MSDs (Major Swap Dealers) are required to comply with CFTC Regulation 23.609, Clearing Member Risk Management. These regulations require FCM, SD, and MSP 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 the ability to monitor individual trades and full portfolios for adherence to these limits. The Clearing Members are further required to complete regular stress tests and credit line tests as well as confirm their capacity to fulfill margin requirements and complete an orderly liquidation of accounts. Written procedures and records indicating compliance with this regulation 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 exposure 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, relying on service provision 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 is reliant upon other central counterparty “partners” in the performance of obligations under a variety of cross-margin programs as well as other partner exchanges in the performance of obligations under trade transaction programs, as described in CME Clearing’s Principle 20 disclosure. Broadly speaking, CME Clearing refers to these parties as “counterparties.”

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 Principle 10 disclosure.

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. The policy ensures that these firms are held to rigorous standards of 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. CME Clearing Risk Management determines the specific weighting for each entity type, in conjunction with the Credit Committee, an internal committee of the Credit Risk team and CME Clearing senior management, described further in CME Clearing’s Principle 7 disclosure. Changes to the weighting system can be proposed by the Risk Management team to the Credit Committee, whose approval will be required to execute changes.

The four entity types 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.

Risk Management has established a series of internal risk tolerances for Clearing Members based on the ratings assigned in this process; 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 risk
staff 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.

Credit Ratings are reviewed at least annually and updated as necessary to reflect the current market information. Additionally, counterparties are monitored daily to help identify issues that may require a change in rating or more rigorous reviews. Thresholds are set to alert management of notable movement in credit default swap price, stock price, or rating agency ratings. Further, Risk Management will send 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 deteriorates enough to require additional monitoring and reporting to senior management teams. These firms meet CME Clearing standards required to continue the business relationship, but have been identified by Risk Management as requiring additional surveillance on their activity.

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

- Material decline in earnings, which could impact the firm’s ability to meet its financial obligations
- Systemic risk conditions
- Public regulatory actions
- Documented risk management deficiencies
- Credit rating downgrades

Watch List and Weak List counterparties are under greater scrutiny from CME Clearing. This may lead to more frequent reporting during daily market risk observations and margin change/call reviews at the end of each clearing cycle; Clearing Members may also be subject to more detailed daily position monitoring. Counterparties on the Watch 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 margin or infusing additional capital, among others.

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

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. In order to assure that open interest balances in MOS-eligible products at each exchange, the MOS agreement calls for each Clearing House to establish “holding accounts” on the books of the contra Clearing House.

CME Clearing also maintains cross-margining relationships with OCC and FICC. Both cross-margining programs are subject to existing
risk management procedures, including daily market risk management monitoring. The mutual risks, to which the cross-margining Clearing Houses are exposed, including potential credit and default risks, are managed through contractual agreement terms. Each agreement details the treatment of initial margin and settlement variation, which are used to cover risks across both Clearing Houses.

CME Clearing’s cross-margining agreement with OCC operates in a single account structure, where initial margin is centrally held and the Clearing Houses jointly hold a first lien on the positions and collateral in the cross-margin account. CME Clearing and FICC support a dual account structure, whereby initial margin deposits are held separately at the individual Clearing Houses, with each Clearing House guaranteeing payment to the 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 Rulebook, and cross-margining relationships, described in CME Rule 830.

Every cross-margining account, regardless of the second Clearing House involved, is subject to the same prudent risk management standards, defined in CME Clearing policies and procedures. These accounts are monitored by the same risk management systems and governed by the same approvals and committee structures. These tools are assessed at least annually by a qualified and independent party.

CME Clearing exposes its Clearing Members to the risk of its own default as a central counterparty. The CME Rulebook addresses 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. Specific actions taken depend on product classes and waterfall criteria. A failure of CME Clearing to perform on its obligations for the IRS or the CDS product classes could cause CME Clearing to be subject to the limited recourse provisions under CME Rule 8G802.B.2 or CME Rule 8H802.B.2 for IRS and CDS, respectively. Alternatively, should CME Clearing fail to perform on its obligations for the Base product class, CME Clearing may have to conform to CME Rule 818, Close-Out Netting. In a closeout netting scenario, Clearing Members will 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 will 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 the CME Rulebook, as described in Chapter 1, Membership.

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

CME Clearing has established separate waterfall arrangements for its major asset class pools, each holding major asset class specific default resources and comprising of a CME Contribution, Clearing Member sourced Guaranty Funds, and contractual obligations of Clearing Members to supply additional resources if necessary. These default resource pools are established for three major asset classes, CDS, IRS, and the Base product classes (exchange traded futures, options on futures, and certain OTC derivatives, such as OTC FX and some agricultural swaps). Under current CME Rules, IRS and CDS Clearing Member defaults are subject to limited recourse against the Clearing House. 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 the following order: defaulted Clearing Member margin and Guaranty Fund contributions, the CME Contribution, mutualized Guaranty Fund, and assessments all of which are specific to the waterfall in which there was a default. 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.

In the event of a Clearing Member default, in either the IRS or CDS major asset classes, the waterfall structure is designed with limited recourse to the Clearing House, as described in CME Rule 8G802 for IRS and CME Rule 8H802 for CDS. CME Inc., of which CME Clearing is an operating division, is protected from potential bankruptcy by this limited recourse, which would prevent the uncured losses of the default from impacting clearing operations in other default waterfalls. The default of a large Clearing Member in the Base product class could provoke bankruptcy of CME Inc., if the losses consumed all available funds in the Base product class waterfall; although, the funded financial safeguards waterfall is designed to cover at least the losses associated with the default of the two largest Clearing Member, and additionally CME Clearing is able to assess each Clearing Member for 275% of their Guaranty Fund contributions.

CME Rule 818 details the circumstances under which CME Clearing would be required to close-out its current positions and the process followed to fulfill its existing obligations, in accordance with the current U.S. Bankruptcy Code and CFTC Part 190 Bankruptcy regulations.

In addition to the protections provided by the financial safeguards system, CME Clearing maintains a 364 day, fully secured, committed line of credit with a consortium of U.S. and international banks to help ensure the continuation of the Clearing House’s ability to maintain critical operations. As of December 31, 2015, the committed line of credit is sized at $7 billion. Under the terms of the credit 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 the collateral). The credit line 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 Clearing Members. This line of credit 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.
In compliance with current regulations, CME Clearing maintains a robust Business Continuity Plan ("BCP") that considers a variety of scenarios that could result in CME Clearing’s inability to continue critical operations and services and develops solutions to quickly restore operations. CME Clearing’s Principle 17 disclosure provides further detail on the current BCP and the scenarios defined.

As part of CME Clearing’s development of its Recovery and Wind-down Plans ("RWP") it has worked with market participants to implement a limited recourse structure for the Base waterfall and provide additional tools to address a recovery scenario for all major asset classes. CME Clearing’s RWP includes analysis of stressed market scenarios which are designed to threaten CME Inc. from a “going concern” perspective, while taking into account independent and related risks, as well as any input from regulatory bodies.

The contingencies that have been evaluated include plans to handle a recovery or wind-down as appropriate to ensure that CME Clearing will be able to provide critical operations and services. The team associated with this effort includes a cross section of senior managers from a variety of functional groups within CME Group and CME Clearing, including but not limited to Finance, Clearing, and Legal. CME Clearing’s RWP was submitted to the Board for approval in December 2014 and is subject to annual reviews by CME Inc. and the Board of Directors.
**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 RMF, discussed in CME Clearing’s Principle 3 disclosure. The RMF is reviewed and approved by the Board at least annually or more often to reflect significant changes in policy.

Procedures pertaining to the above policies are produced within CME Clearing and updated at least annually or when there are significant changes to the overall risk management practices. These procedures outline the specific execution of risk management tasks and the frequency that they occur.

In addition to the risks addressed in the RMF, 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 custodial and settlement banks. The Credit Policy also elaborates on the Clearing House’s strategy for managing the potential credit risk of collateral deposits, in addition to addresses the indirect counterparty credit risk exposure from settlement banks and custodian banks. The Credit Policy is approved by the Credit Committee, described further in CME Clearing’s Principle 7 disclosure.

**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 markets. CME Clearing faces these risks against its Clearing Members through the risk of non-performance of the Clearing Members in satisfying their obligations to the Clearing House. CME Clearing also faces credit risk from settlement and custodian banks through potential non-performance of their
agreements to provide deposit arrangements for CME Clearing and its Clearing Members.

CME Clearing assesses each entity for credit risk during its rating process, described in CME Clearing’s Principle 3 disclosure. Additionally, CME Clearing has developed tools to monitor and measure credit exposures across different major asset classes based on current portfolios and risk factors from 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 major asset class, as well as vertically within each Clearing Member. Using these tools, CME Clearing can also assess potential concentrations in either Clearing Member client or proprietary portfolios.

CME Clearing is also authorized to use a number of powers specified in the CME Rulebook. In particular, under CME 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 Rule 403, the Clearing House has the power to increase the margin requirements, Guaranty Fund contribution, capital requirements, or impose position limits for a Clearing Member, who in the opinion of the CME Clearing Risk Management team and the CHRC pose additional risk to the Clearing House. Emergency Powers also give CME Clearing the right to require liquidation of Clearing Member positions for portfolios that present significant risks to the Clearing House. Additionally, the Clearing House and the CHRC maintain the power under Rule 824, to call for extra margin deposits from a Clearing Member if circumstances warrant. The CHRC and President of the Clearing House maintain the right to determine that additional Performance Bonds are necessary to ensure the security of the Clearing House and its Clearing Members.

In addition to at least daily margin calculations, twice daily for most products, risk monitoring at CME Clearing is managed continually on a 24 hour basis, 6 days a week using real-time market data to assess risk exposures across Clearing Members and customer accounts. Escalation policies ensure that atypical exposures are noted and approved by appropriate staff, with additional follow-up as necessary with Clearing Members, settlement banks, or other entities as appropriate.

In addition to these tools, CME Clearing has pre-trade credit control systems in place to manage credit risk to CME Clearing by providing Clearing Members access to CME Clearing risk controls. These tools, available for Globex and cleared OTC products, allow FCMs to limit their total exposure to electronic trading accounts through credit limits and kill switch capabilities. The systems allow risk managers at both CME Clearing and Clearing Members to gain insight into credit exposures at the execution account level. All of the risk controls support 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.

**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 mark to market of all products, which is completed at least daily, with most products subject to twice daily mark to market. These mark to market cycles drive settlement variation payments as well as the calculation of portfolio margins, which ensures the risk of current clearing participant exposures is measured and funds are moved between clearing participants accordingly. CME Clearing reserves the right to make ad hoc 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 Principle 5 disclosure, 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. To ensure the coverage of potential future exposures, CME Clearing has set margin levels for products or portfolios to at least a 99% coverage standard within the defined margin period of risk for the product. CME Clearing employs customer gross margining for customer accounts, which ensures each customer account is fully margining rather than being offset against other customers at the same Clearing
Member, providing additional margin coverage. CME Clearing’s gross margin collection 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 other concentrations and other risk factors and may require additional margin if risk profiles warrant.

In addition to the coverage of day-to-day risks, CME Clearing has established major asset class specific financial safeguards, which include major asset class specific Guaranty Funds. Guaranty Funds 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.

Financial safeguards waterfalls, which encompass CME Clearing’s Guaranty Funds for each major asset class are designed to cover losses caused by the default of the two largest Clearing Members that exceed the margin funds available to CME Clearing from the defaulted Clearing Members. If the Clearing Member’s funds, including their margin and Guaranty Fund contributions, are not sufficient to cure the losses, the first layer of the financial safeguards, the CME Contribution, will be assessed. This contribution is held at CME, Inc., described in CME 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, the mutualized Guaranty Fund. Guaranty Fund sizing policy is developed by CME Clearing, consistent with regulatory regimes and subject to review and approval by the appropriate Risk Committee. Consistent with CFTC Regulation 39.33(a), the Guaranty Funds, as described in CME Clearing disclosure for Key Consideration 6 of this Principle for each waterfall are sized to cover the potential loss caused by the simultaneous default of the two largest Clearing Members and their affiliates within the individual major asset class.

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 funding. These powers are sized using the same stress tests as the Guaranty Fund to cover additional potential losses.

The appropriate CME Clearing Risk Committee governs all financial safeguard policies under their jurisdiction, including methodology as well as coverage, which are reviewed by the CME Clearing Risk Committee members regularly.

Policy supporting the Guaranty Fund sizing methodologies is maintained in the RMF, which is reviewed and approved by the Board. Specifics dictating the sizing methodologies are reviewed by the appropriate CME Clearing Risk Committee and the RMF is updated as needed.

**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 in extreme but plausible market conditions. Results of each of the financial safeguard stress tests are analyzed daily by the CME Clearing Risk Management team and reported to senior risk management 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 IRS and CDS Guaranty Funds are re-sized and on at least a quarterly basis the Base Guaranty Fund is 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, all stress tests are reviewed by CME Clearing, including senior management through analysis of stress test and Guaranty Fund results. This includes a review of processes, models, underlying parameters, and stress tests to determine if adjustments are necessary to ensure sufficient financial safeguards coverage. The results of these reviews are either confirmation of the adequacy, or changes to the current approach are signed off by the CRO, after review by senior risk management. Significant changes to stress testing policies are brought to the appropriate CME Clearing Risk Committee for approval. The stress testing assumptions and Guaranty Fund sizing analysis 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 Risk has defined a number of stress testing scenarios through the variety of extreme but plausible scenario drills that CME Clearing conducts on a daily basis. Scenarios are used to estimate worst case losses, sizing the Guaranty Fund, largest aggregate credit exposure calculations, and 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 movement to identify the impact of significant price volatility. In addition, Risk Management 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 future markets.

CME Clearing analyzes each of these stress test results for Clearing Member portfolios across different major asset classes in an uncorrelated fashion. Where applicable, customer and house positions are stressed separately along with affiliate Clearing Members and worst case losses are determined for each individually. This also shows the greatest potential loss if a Clearing Member were to suffer both a customer and a house default simultaneously.

Further on at least a monthly basis, the internal CME Clearing 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. CME Clearing’s stress testing framework is also evaluated through the annual validation process.

CME Clearing also routinely conducts reverse stress testing on the overall size of the Guaranty Fund, designed to identify conditions that may exceed CME Clearing’s financial safeguards package. 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 the 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. CME Clearing Risk designs stress tests for new products considering volatility, liquidity, curve shifts, and effects of shifts in related products, among other metrics. Changes to stress testing procedures or parameters are completed within guidelines
approved by the senior risk management; changes to stress testing policy are approved by the CRO and/or applicable CME Clearing Risk Committee as appropriate.

**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 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 Rule 802, for products in Base major asset class, CME Rule 8G802 for IRS major asset class, and CME Rule 8H802 for CDS major asset class. These CME Rules take into account legal and regulatory mandates, prior experiences, and prudent risk management practices to maintain the solvency of the clearing structure. CME Rules detail the use of a defaulted Clearing Member’s collateral and the financial safeguards for each major asset class to cover the losses associated with the default.

If the defaulted Clearing Member’s resources are exhausted before the losses have been cured, CME Clearing will apply CME Contributed funds. If there are remaining losses after the application of those funds, CME Clearing will access the Guaranty Funds of non-defaulting Clearing Members, limited to the financial safeguards package of the major asset class(es) associated with the default. For the Base financial safeguards package, assessment powers cannot exceed 2.75 times the aggregate Base Guaranty Fund requirement across all Clearing Members for a single default. For multiple defaults in a five-day period, Assessment Powers are capped at 5.5 times the aggregate Base Guaranty Fund. OTC financial safeguards packages Assessment Powers are sized to cover the 3rd and 4th largest potential defaulters.

In the event that the Guaranty Fund is drawn on to pay towards losses caused by a Clearing Member default, each non-defaulted Clearing Member will be required to replenish their Guaranty Fund contributions by close of business the business day following the payment, as described in CME Rule 802.F.

Within the rules and procedures there are provisions for uncovered credit losses. CME Clearing prescribes two separate courses of action based on which major asset class houses the default and uncovered credit loss. For OTC IRS and CDS, if a default leads to a loss larger than the applicable financial resources described in CME Rules 8G802 and 8H802, respectively. These Rules incorporate limited recourse standards, and state that CME Clearing will fulfill variation payments to the extent resources attributable to the major asset class are available, but settlement variation will be haircut for Clearing Members with variation gains to offset the losses.

For the Base major asset class, uncovered credit losses will be subject to close-out netting, as described in CME Rule 818. This CME Rule specifies that CME Clearing is legally treated as a commodities broker within the Bankruptcy Code and CFTC Part 190 regulations. In the case of a credit loss that exceeds the financial safeguards, CME Clearing would follow close-out netting procedures, outlined in CME Rule 818.
**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.**

CME Clearing employs a policy for establishing and reviewing its criteria for acceptable collateral deposited with the Clearing House to meet margin (“performance bond”) and Guaranty Fund requirements. The policy is managed by the Collateral Committee, which is comprised of internal CME Clearing staff resources with the overall policy framework governed by the CHRC. The collateral policy is consistent with CFTC Regulation 39.13(g)(10)-(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, 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 clearing level collateral are mitigated through ongoing review, daily valuation, prudent haircuts, and limits. The collateral accepted by CME Clearing from its Clearing Membership is used to satisfy margin requirements (which is further distinguished by margin requirement type; customer segregated, cleared swaps customer, or clearing firm “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 to serve as backstop for CME Clearing’s liquidity needs. CME Clearing does not accept collateral whose issuer is associated with a Clearing Member or collateral that is highly correlated with a default of a 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 on a daily basis and reviews findings during weekly Collateral Committee meetings. CME Clearing has staff that are dedicated to the management of credit risk, which encompasses the evaluation of CME Clearing counterparties and monitoring of acceptable collateral types, among other activities. The Credit Risk team utilizes internally developed systems and experienced personnel to ensure that collateral program diversification limits, asset type limits, and other limits are observed or revised, as appropriate. Daily reviews are performed on Clearing Member collateral holdings to assure adherence to
CME Rules and CME Clearing guidelines, while the Credit Risk team also assesses issues associated with market events, as well as general market developments.

The ongoing responsibility for managing the Collateral Policy is overseen by the Collateral Committee, which consists of senior management from the Risk Management team, among others. The Collateral Committee periodically reviews current policy and has the authority to make changes if necessary along with approval from the CHRC as appropriate. Recommendations for acceptance of new forms of collateral or changes to current collateral guidelines must be presented to the Collateral Committee for its approval using detailed analysis of collateral related data, including market conditions, limits, and haircuts. CME Clearing maintains a policy of accepting a broad base of diverse collateral from its Clearing Membership that meets the standards of minimal credit, issuer, and liquidity risks. While the criteria employed by CME Clearing and its Collateral Committee in the development and maintenance of the Collateral Policy are consistently applied to all forms of collateral, the terms under which CME Clearing will accept various forms of collateral vary per collateral asset class, and acceptance terms 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 the 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 4 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. Consideration is also given to haircuts associated with CME Clearing’s secured credit facility, which may be used in the event of a Clearing Member default for less liquid forms of collateral.

**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 credit risk framework, described CME Clearing’s disclosure for Key
Consideration 2 of this Principle, 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.\footnote{http://www.cmegroup.com/clearing/financial-and-collateral-management/}

**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 CME Clearing Collateral Policy articulates collateral diversification criteria. Generally, while 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 limitations are employed in line with CME Clearing Collateral Policy. As a general rule, CME Clearing seeks to accept 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 internally and externally with contracted liquidation agents at least on an annual basis. CME Clearing monitors concentrations periodically and reviews any concerns with the Collateral Committee. At least quarterly, CME Clearing completes a liquidity analysis using a detailed scenario examination, which takes into account haircut coverage, market dynamics, concentrations, market volume, and other liquidity factors.

**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 follows CFTC Regulation 1.49 in the guidelines for customer funds and approved depositories in its consideration 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 all cross-border collateral 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 the custodian bank’s operational capability to move the collateral. In addition, CME Clearing confirms the ability to pledge cross-border collateral to its committed secured credit facility, or other facilities as warranted, if market transactions typically occur outside of the time zone of major operations.

Credit and market risks are evaluated for cross-border collateral and monitored for developments that could require changes to eligibility for acceptance. CME Clearing separately limits the acceptance of cross-border collateral through the utilization of individual collateral type limits to account for cross-border risk as well as FX risk. This is in addition to established diversification requirements to further mitigate concentration 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 firm collateral deposits and withdrawal transactions, calculation of margin value of assets, and reporting. The timeline is established for the benefit of all participants that facilitate the collateral and margin 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 the internal systems against its holdings at custodial 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 Rules 819 and 8F008, for exchange-traded and OTC 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 custodian 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 initial margin and settlement variation to mitigate the risk of default by a Clearing Member. Settlement variation and initial margin 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 bonds as necessary. CME Clearing employs the following portfolio risk assessment models:

- SPAN: exchange traded derivatives and a small number of OTC instruments
- HVaR: OTC Interest Rate Swaps and OTC Foreign Exchange
- Multi-Factor Algorithm: OTC Credit Default Swaps

Initial margin policy is established to ensure appropriate coverage for all products and portfolios, while allowing flexibility to CME Clearing to adjust settings or model parameters as market conditions change. 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 and with these considerations 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.

Margin methodologies utilized to calculate portfolio risk are defined to account for product specific risk profiles, including the potential for jump 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 major change CME Clearing seeks to make to an existing portfolio risk assessment methodology, the appropriate CME Clearing Risk Committee will be consulted and their approval sought.

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 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 MPOR 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 using a robust time series. Backtesting and stress testing are 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 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. 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 any subsequent changes to the methodology are disseminated to each Clearing Member through normal communication channels.

Further, CME Clearing’s systems for generating initial margin requirements, including its theoretical models, are reviewed and validated by a qualified and independent party, on a regular basis.

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 time certain 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 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 Principle 13 disclosure.

**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 Group’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 Group augments price data received from direct sources with information derived from other sources and solicits additional market data to gather relevant price information. In certain markets, participants are required to submit pricing information in order to ensure a robust settlement methodology. Additionally, for certain less liquid instruments, CME Clearing establishes relationships with more liquid and correlated instruments to better calibrate pricing and settlement information. Further information on the settlement price approach can be found in the CME Rulebook under CME Rule 813.

CME Clearing maintains processes to ensure robust settlement prices, which serve as primary information for margin calculations. CME Clearing has a process where daily settlements are reviewed for internal...
consistency. Settlement processes are validated by qualified resources external to the Clearing House. CME Rule 813 allows for the flexibility to modify prices, so that they best reflect the true market valuation at the time of the close.

**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. This confidence interval or MPOR can be increased for certain products based on liquidity, concentration, or other prudent risk management factors. 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 looking back, up to five years
- **Intraday Volatility:** price changes within a market session
- **Implied Volatility:** forward looking measure of potential volatility, derived from analysis in the options market
- **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 position maintained by market participants in a particular product
- **Market Concentration:** the size of Clearing Members’ positions relative to the market as a whole
- **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 margin levels. Margin coverage levels are defined for individual products or on a portfolio basis and are tested daily through rigorous backtesting. CME Clearing ensures margin coverage by monitoring price volatility for all products on a daily basis as compared to current margin levels. Margin model parameters for IRS and CDS products are calibrated each day and
results are reviewed by the Risk Management team. Margins for products margined utilizing SPAN are reviewed by CME Clearing at least weekly or more frequently if market conditions warrant, with any exceptions to margin coverage reviewed on a daily basis. 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 period of risk per CFTC Regulation 39.13, CME Clearing sets it margin period of risk for products considering the liquidity characteristics and market structures related to the product cleared. Further, CME Clearing may require additional margin for portfolio 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 the appropriate CME Clearing Risk Committee. 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 CME Clearing Risk Management to cover a myriad of potential market moves.

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 margin requirement (sometimes referred to as total “scan risk”) for that applicable portfolio.

The margin model for IRS and OTC FX products is based on a Historical Value at Risk (“HVaR”) methodology with Exponentially Weighted Moving Average (“EWMA”) volatility forecasting. For these particular products, covers at least 99% of potential losses over any 5-day period. In the HVaR framework, past events are used for generating possible future scenarios, with more recent events weighted more heavily. This approach implicitly assumes that historical data series provide a rich enough sample set of the possible probability distribution of the relevant financial variables as well as the stationarity of volatility-scaled returns’ distribution, which is very well supported by statistical analysis. 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.

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 factors model potential losses caused by Idiosyncratic and Liquidity/Concentration Risks, specific to CDS contracts and the CDS market. Added together, these individual risk factors define the total margin requirement for a single portfolio. By adding these factors together, CME Clearing’s system provides overly sufficient margin in the event that each underlying risk event occurs simultaneously.

These factors are designed to ensure portfolio exposures are covered at 99% of potential portfolio losses over a 5-day period inclusive of unwind costs. The model also accounts for risk factors affecting all CDS products currently scheduled 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 before implementation, as well as prior to any material changes to the model. This will also include any review of outside model validation, backtesting, and other related margin model documentation.

In conjunction with the margin calculations, 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 futures and IRS products and is incorporated directly into the CDS margin model.

CME Clearing 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 margin methodologies look to balance its prudent margin coverage standards with the impact of procyclicality to the market place. CME Clearing utilizes both short-term and longer-term volatility movements to appropriately calibrate margin coverage, while fostering overall stability to margin rates. The margin model for exchange traded products has been designed to include appropriate triggers to address market cyclical as it arises. These are frequently
assessed to ensure a balance between volatility coverage and 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 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 initial margin 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 variation and initial margin settlement cycles more frequently as warranted by market conditions in accordance with CME Rule 814. Also, under Rule 824, CME Clearing has the ability to call additional margin based on firm specific risks.

Settlement variation is calculated at least daily using current market prices based on updated positions. Intraday variation calculation will use a combination of current market prices and theoretical prices. End of day mark to market is calculated using settlement prices established by CME Clearing through a robust settlement process described in CME Clearing’s Principle 8 disclosure. In the rare instance that CME Clearing determines that the 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 positions information to evaluate account level and clearing firm 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 margin 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 that 99% coverage standards are met for all product combinations. The liquidation time horizon for the margin offset will utilize 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 will work with the contra-CCP to efficiently liquidate the cross-margin product pair.

These cross-product risk offsets are subject to review at least on a monthly basis, along with a review of “outright margin” for all products to ensure adequate margin coverage. 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 cross-margining agreements with participating CCPS, as described in CME Rule 830. All products that are eligible for cross-margining must conform to the same policies that CME Clearing uses for internal margin reductions and are reviewed with the same frequency. These processes are agreed upon during approval of the cross-margin agreement with other CCPS.

CME Clearing maintains rigorous standards for cross-product risk offsets, including its cross-margining portfolios. This consists of independent evaluation of margin models and daily monitoring of the risk of the individual portfolios. Additionally, CME Clearing monitors overall creditworthiness and financial safeguards of the cross-margining CCP to ensure that all parties in the agreement are 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 RMF. 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 an external 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 for approval. Upon receiving approval from the appropriate CME Clearing Risk Committee, the model is thoroughly tested through an implementation process including, quality assurance testing and production simulation, and then the model is promoted to 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 products and portfolios, along with a monthly review of backtesting results on all products, spreads, accounts, and portfolios. 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 and 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 are 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 will be specific to 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 market place.

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 senior risk management, who will determine necessary steps to address the failure. If necessary, the issue will be raised with senior CME Clearing management or the appropriate CME Clearing Risk Committee.

Monthly sensitivity testing is performed on the margin models to allow CME Clearing to assess the impact of each factor on the overall margin on products and portfolios that the margin models cover. This practice is designed to ensure that the appropriate factors are stressed at levels that protect the Clearing House through adequate margin coverage. The results of CME Clearing’s sensitivity analysis are reviewed by the Model Risk Committee on a monthly basis, which is comprised of members of the Risk Management team, including the CRO that 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.
CME Clearing performs margin model validation 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. This includes, but is not limited to, 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. These validation results are reviewed by CME Clearing and any proposed model adjustments based on validation recommendations are investigated for appropriateness. 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 compliance with its Liquidity Risk Management Framework and the requirements for the liquidity of its financial resources pursuant to CFTC Regulation 39.33 and 39.35. The Liquidity Risk Management Framework is governed by the Credit Committee, which is also responsible for reviewing liquidity risk and resources. The Credit Committee consists of members of senior management of Financial and Regulatory Surveillance and the Risk Management team, which encompasses expertise in the management of credit risk, market risk, and liquidity risk, among others. Further, 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 will convert a defaulted Clearing Member’s collateral into cash to meet variation payments, according to customer protection rules, and to facilitate the liquidation of the portfolio. Because Clearing Member default scenarios determine the largest liquidity need, liquidity resource sizing is primarily determined by considering actual and hypothetical Clearing Member collateral profiles. Liquidity risks are measured and monitored through liquidity stress testing. This is performed daily, with set parameters for monitoring, and monthly, for a more detailed analysis. Additional detail around the methodology and governance can be found in CME Clearing’s disclosures to 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 firm), CME Clearing evaluates each counterparties’ exposures to CME Clearing. This includes the overall counterparty credit risk and the liquidity risk of aggregate counterparty relationships, which includes affiliates.

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, rating changes, earnings, and news sentiment. The goal of CME Clearing’s liquidity risk assessment approach is to assure that overall liquidity exposures do not exceed available liquidity resources which is detailed below. CME Clearing aims to mitigate potential liquidity risk from the deterioration of a counterparty’s credit health. Credit Risk may recommend changes to the risk profile to reduce potential liquidity risk. Liquidity risk is mitigated through the exposure and resource profile, which is as discussed in CME Clearing’s Principles 4 and 5 disclosures.

**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 defines settlement in funding flows as the movement of funds associated with the CCP guarantee through settlement variation and initial margin. Generally, this does not include underlying delivery of the relevant product on its contracts, which remains the responsibility of the Clearing Members on each side of the contract. CME Clearing’s role in physically delivery contracts is discussed further in CME Clearing’s Principle 10 disclosure.

CME Clearing employs internally developed and regulatory reviewed systems to identify, measure, and monitor settlement flows. CME Clearing settlement banks confirm funding of these settlement variation flows once communicated to participants. CME Clearing systems allow the Risk Management team to monitor positions and variation margin 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 participants. These systems additionally provide the ability to flexibly analyze Clearing Member variation margin exposures by Clearing Member, Clearing Member account, account class, or product.

CME Clearing communicates expected variation margin 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 norms based on historically observed activity in normal and stressful times, exception reporting is triggered, alerting the Clearing House of the unusual activity. CME Clearing will notify the Clearing Member of the estimated variation margin 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 Principle 4 disclosure, that allow the Clearing House to continually monitor the risks posed by Clearing Members’ credit profiles. The settlement system, discussed in CME Clearing’s Principle 9 disclosure, 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 for its Clearing Members. 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 securities settlement or other payment obligations related to the final exchange of these securities.

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 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. CME Clearing analyzes all Clearing Members in liquidity stress testing and identifies the top two Clearing Members to report to the Credit Committee. Clearing Members’ potential losses are aggregated by related entities (including affiliates) and across Guaranty Funds to determine the top two 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. Credit Risk or the Credit Committee can recommend greater frequency 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 circumstance. These discussions and decisions are recorded in the Committee minutes.
CME Clearing maintains qualified liquidity resources to meet obligations forecasted due from the largest aggregate intraday payment obligations in aggregate and by currency. These amounts are defined as the minimum liquidity resource requirement. The adequacy and resources available are submitted for review and approval by the CME Clearing Credit Committee on a quarterly basis. Additional details 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 to Key Consideration 4 of this Principle. The expected outflows as a result of forecasted variation payments owed are required to be covered by qualified liquidity resources which have been detailed in 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; or (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 qualified resources are described below. Resources can be determined to be qualified 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 “highly reliable and prearranged funding under extreme but plausible conditions” criteria. The majority of CME Clearing’s performance bond and Guaranty Fund collateral are highly liquid assets and can be deemed qualified resources due to the liquid nature of the assets and funding arrangement which provides the mechanism for it to be qualified for non-cash collateral. For example, select shares of the S&P 500 can be a qualified 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 qualified resource below.
## CME Clearing Qualified Resources

<table>
<thead>
<tr>
<th>Collateral Type</th>
<th>Qualifying 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 qualified liquidity resources where supported by prearranged and highly reliable funding arrangements, as well as CME Rule 822 to support additional prearranged funding arrangements</td>
</tr>
<tr>
<td>U.S. Government Agency Securities</td>
<td>Counts as qualified liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>U.S. Government Agency MBS</td>
<td>Counts as qualified 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 qualified liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>U.S. Treasury STRIPS</td>
<td>Counts as qualified 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 qualified 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 qualified liquidity resources where supported by prearranged and highly reliable funding arrangements</td>
</tr>
<tr>
<td>Physical Gold</td>
<td>Supported by committed lines of credit</td>
</tr>
<tr>
<td>U.S. Equities and Exchange Traded Funds</td>
<td>Supported by committed lines of credit</td>
</tr>
<tr>
<td>U.S. Corporate Bonds</td>
<td>Supported by committed lines of credit</td>
</tr>
</tbody>
</table>

Further description of the qualified resources is provided below, not necessarily in the order in which CME Clearing expects to utilize them. CME 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.

Uncommitted Repo Lines

CME Clearing currently maintains multiple master repo agreements that will facilitate access to cash secured by U.S. Treasuries. CME Rule 901.Q augments CME Rule 822 as a means of expanding the list of repo counterparties, which will help support diversification among the Clearing House's available liquidity sources.

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

Pursuant to CME Rule 822.A.2, in the event a liquidity shortfall remains after the substitution 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 will be subject to a limit equal to the receiving Clearing Member's Guaranty Fund requirement at such time. Any firm receiving U.S. Treasuries under Rule 822.A.2 may notify CME Clearing that it desires to return such U.S. Treasuries in exchange for the original cash payment on the next business day.

Letter of Credit Commitment from Bank

CME Clearing can draw on letters of credit that are used for Base waterfall 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. These resources include FX Cash (USD, CAD, EUR, GBP, CHF, SEK, DKK, NOK, AUD, HKD, JPY, CZK, MXN, NZD, PLN, SGD), U.S. Treasury Securities, U.S. Government Agency Securities, Investment Grade Corporate Debt, Municipal Bonds, Canadian Provincial Bonds, Foreign Sovereign Debt (Australia, Belgium, Canada, Germany, France, Japan, Mexico, Sweden, Singapore, UK), Equities (listed on S&P 500 or FTSE 100), ETFs, Exchange Traded Money Market Funds, Commercial Paper, Money Market Fund Shares, Gold Bullion, and Supranational Debt (issued by World Bank or European Investment Bank). The facility is drawable up to $7 billion and can be drawn in USD $7 billion, $4 billion in EUR, $3 billion in GBP, $2 billion in CAD/JPY, $1.5 billion in AUD, $1 billion in CHF/SEK, $250 million in DKK/NOK/HKD/MXN, and $50 million in CZK/NZD/PLN/SGD. The facility also includes an expansion feature that could allow for an increase up to a total of $10 billion. As described above all performance bond deposits can be pledged to the facility except for certain non G7 currencies of which CME Clearing holds de minimis amounts and has de minimis settlement variation flows. For non-eligible performance bond deposits, the amount is limited to a minimal amount that would not create any potential liquidity shortfalls. 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 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.

**Rule 822 Guarantee Fund Substitution**

CME Rule 822 in effect establishes an intermediate repo facility. The Rule 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. In such an Event, generally, after using certain uncommitted and committed arrangements CME Clearing can substitute a defaulted clearing firm’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 securities in the Guaranty Fund with cash. A “Liquidity Event” is also broadly defined by CME 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 Rule 822 establishes a highly reliable and prearranged funding arrangement even in extreme conditions.

**CME Rule 901 Clearing Member Master Repurchase Agreement**

CME Rule 901.Q 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. Executed Master Repurchase Agreements, with rule based requirements, are evidence of the U.S. Treasury market and U.S. Treasury repo market in times of stress meet the funding arrangement requirements.

**Liquidation Agent Agreement**

CME Clearing has executed legal agreements and established accounts with a liquidation agent that has market expertise in liquidation assessments. Although, U.S. Treasury securities meet the High Quality Liquid Asset standards as detailed by BIS and confirmed by the Fed’s interpretation of these permitted assets, CME Clearing performs additional due diligence to determine the amount of securities that are readily available and can be converted to cash in 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 resources.

CME Clearing would rely on the liquidation agent to execute liquidation transactions to the best of its ability as part of the contract, which can include a short settlement. 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.

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

CME Clearing utilizes 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, to determine qualified liquidity resource size.

**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%[^1] is available for pledge to the central bank. CME Clearing maintains qualified resources to support 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 liquidity relationships, provides robust details of liquidity needs, and analyzes its liquidity requirements regularly. Liquidity procedures, operational requirements, and liquidity relationships are regularly reviewed and documented. CME Clearing maintains default management procedures to facilitate the process to meet liquidity needs. The CME Clearing Credit Committee reviews and approves the Liquidity Risk Management Framework at least annually.

CME Clearing performs credit due diligence on liquidity providers to determine if the provider meets CME Clearing’s minimum credit criteria. The 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, custodian banks, and other financial counterparties as part of the regular credit review. Additionally, the liquidity component of a financial institution’s internal rating is a key component in the overall score and is reviewed thoroughly by the CME Clearing Credit team. The internal ratings and funding requirement for liquidity providers are presented to the CME Clearing Credit Committee on a quarterly basis as part of counterparty reporting. CME Clearing requires that liquidity resource providers maintain a minimum internal credit rating based on CME Clearing’s internal credit rating model; the relationships are reviewed at least annually. CME Clearing analyzes liquidity providers on a standalone basis and does not consider access

[^1]: 99% of the collateral subject to liquidation, excluding foreign currency cash, can be pledged to the central bank. Including foreign currency cash, this figure is about 95%.
to the central bank as a criteria 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 annual liquidity drills with liquidation agents and test draws with committed facility providers. The results of these drills are reported to the Credit Committee for their review to evidence reliability. CME Clearing, in its established due diligence process used to analyze participants, considers access to central bank funding and gives consideration to the role that U.S. Government Securities Broker Dealers play as outlined in CME 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 Rules, legal agreements, or provider diligence. Further, the obligations of Clearing Member’s under CME Rule 822.A are capped. The obligations under CME 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. CME Clearing’s Rulebook is 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.

On July 18, 2012, the Financial Stability Oversight Council designated eight financial market utilities ("FMU") as systemically important under Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act, including CME Inc. Title VIII provides four specific factors that were considered in the determination of systemically important FMUs: the aggregate monetary value of transactions processed by the FMU; the aggregate exposure of the FMU to its counterparties; the relationship, interdependencies, or other interactions of the FMU with other FMUs or payment, clearing, or settlement activities; and the effect that the failure or a disruption to the FMU would have on critical markets, financial institutions, or the broader financial system.

As part of its systemically important designation, CME Inc. may receive discount and borrowing privileges from a Federal Reserve Bank under unusual or exigent circumstances. CME Clearing does not currently have access to the Fed Discount Window, nor does CME Clearing consider the Fed Discount Window in constructing its liquidity risk management program. CME Clearing operates under the assumption that access to the Fed Discount Window will not be needed and does not consider access to the Fed discount window as a liquidity enhancement to determine liquidity needs or adequacy. Additionally, pursuant to Section 806 of the Dodd-Frank Act, CME Inc. is eligible for accounts and services, including interest on balances, from a Federal Reserve Bank subject to the terms prescribed by the Federal Reserve Board.

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 Framework. The Liquidity Risk Framework describes the liquidity stress test methodology as well as the model employed by CME Clearing and provides the foundation for the liquidity assessment. The assumptions and parameters of the liquidity risk model and methodology are reviewed and analyzed on a quarterly basis by the CME Clearing Stress Testing Committee. The liquidity resource adequacy is approved by the CME Clearing Credit Committee on a quarterly basis. The approvals are documented in the minutes as part of the regular Committee process. The liquidity risk management model and framework are validated by a party independent of the framework 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, price determinants, 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, change in market liquidity, and model risk, including imprecise assumptions of parameters. CME Clearing liquidity needs in all currencies are determined by the stress testing methodology determined at the CME Clearing Stress Testing Committee. The size for each currency as well in total is aggregated across Guaranty Funds and related Clearing Members (including affiliates). Once the size is determined for each currency, the timing for intraday and multiple day liquidity needs is projected based on timing of stress events that may lead to potential variation payment requirements. The top two exposures in aggregate and by currency are presented to the Credit Committee to evaluate the minimum liquidity risk resource requirement. As a policy CME Clearing considers in aggregate and by currency the top two largest liquidity needs.

Liquidity stress tests are designed to review cash flow scenarios associated with these stressed market events. Liquidity stress tests are designed to estimate the size and nature of the liquidity needs, as well as potential sources of the 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 variation payment requirements by currency and available resources by currency. Stress testing analyzes the liquidation of a collateral profile and the conversion of the collateral to cash based on market liquidity capacity and considering funding arrangements to meet liquidity needs. Collateral price shocks and forecasted liquidation costs are also accounted for in the tests where deemed appropriate by the Credit or Stress Testing Committees. The potential multiple roles of key entities (such as affiliated Clearing Members or liquidity provider relationship), and the associated effects on liquidation resources is accounted for in the tests as well. The scenarios take into account the settlement structure and timing required for liquidity needed from settlement cycles. The evaluation concludes with comparison of minimum liquidity resource requirements and qualified liquidity resources utilized as well as available. The liquidity risks are highlighted to the CME Credit Committee along with the overall stress tests. Ad hoc Credit Committee meetings could be held to review possible parameter changes if risks were identified during the daily monitoring discussed earlier in this Key Consideration.

CME Clearing assesses exposure and risks to financial entities which include settlement banks and custodian banks on a monthly basis. 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 reporting risk assessments.

**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 payment obligations as the movement of funds related to Clearing House obligations, 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 Rule 814 provides that CME Clearing may call for additional settlements if market conditions or price fluctuations require. Additionally, CME Rule 824 allows CME Clearing to call for additional performance bonds from any Clearing Member when deemed necessary in response to unstable conditions. CME Clearing maintains the ability to utilize defaulted Clearing Members’ resources to fulfill settlement obligations owed through default rules.
CME Clearing employs a waterfall structure that provides for resource sizing and is designed to cover a specified number of theoretical Clearing Member collateral shortfalls, based on periodic stress testing. CME Clearing’s waterfall structure provides for utilization of performance bond deposits of a defaulting Clearing Member as the situation warrants. Additionally, the defaulting Clearing Member’s Guaranty Fund, membership requirement, and other resources are available to meet any loss due to CME Clearing. CME 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 funds and non-defaulting Clearing Member resources. CME Clearing’s right to collateral is clearly defined in the Rulebook which provides for a first lien priority as described in CME Clearing’s Principle 5 disclosure.

Losses caused by a Clearing Member default that exceed the initial margin 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 the Assessment Powers. In the event that the Guaranty Fund is drawn upon to pay towards losses caused by a Clearing Member default, each non-defaulted Clearing Member will be required to replenish their Guaranty Fund contributions by close of business the business day following the payment, as described in CME Rule 802.F, 8G802.F, and 8H802.F, Guaranty Fund Contributions to be restored for Base, IRS, and CDS products, respectively.

CME Clearing has the ability to replenish committed qualified liquidity resources through the liquidation of collateral utilized to secure the draw. Once the collateral is liquidated it can be employed to pay back the amount drawn on the facility, which will make available the additional capacity. CME Clearing’s committed secured Credit Facility can also be expanded by an additional $3 billion, which would provide additional liquidity resources once executed.

Further upon the declaration of the liquidity event, CME Clearing has the ability to employ CME Rule 822. Under CME Rule 822, CME Clearing has the ability to may offset its U.S. Dollar settlement variation obligations to any Clearing Member that is a U.S. Government Securities Broker-Dealer or has a U.S. Government Securities Broker-Dealer affiliate, up to the amount of that Clearing Member’s Guaranty Fund contribution(s), by selling U.S. Treasuries valued based on the prior day’s closing prices with prevailing CME Clearing haircuts applied in exchange for U.S. Dollar cash from the Clearing Member.
**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.

**Summary Narrative**

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

CME Clearing conducts at least one settlement variation (“SV”) and initial margin (“IM”) settlement cycle for all products and two SV and IM settlement cycles for most products each business day as explained in CME Rule 814, Settlement Variation and Option Value. Consistent with CFTC Regulation 39.14, CME Clearing settlement process utilizes settlement banks that are contractually committed to communicate acceptance of CME Clearing SV and IM settlement instructions within defined times. SV and IM 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 Principle 1 disclosure. Link relationships, defined in CME Clearing’s Principle 20 disclosure are incorporated into the normal course of business and abide by established SV and IM 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 SV and IM 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 Rule 814, Settlement Variation and Option Value.

CME Clearing has never experienced a delay in final settlement due to events not contemplated and planned for in its internal procedures. Scheduling of final SV and IM settlement will take into account relevant holidays as described in CME Clearing’s procedures and communicated to Clearing Members through established channels in preparation for such an event. SV and IM settlement occurs on the books of the settlement bank.

CME Clearing Clearing Members have access to CME Clearing’s system for SV and IM settlement reports detailing variation and performance bond calls and releases. Availability of SV and IM settlement information at intraday normally occurs between 11:30am-1:00pm Chicago time. Availability of SV and IM settlement information at end of day normally occurs between 10:00pm-12:00 midnight Chicago time. All margin calls, when a Clearing Member does not have enough margin collateral on deposit with CME Clearing, are made in 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.
CME Clearing SV and IM settlements are final, irrevocable, and unconditional upon communication from the settlement bank to CME Clearing that an SV and/or IM settlement instruction is accepted. Settlement banks are contractually bound to approve end-of-day SV and/or IM settlements by 7:30 a.m. CST, and any intra-day SV and/or IM settlements within time frames defined by the Settlement Bank Agreement, typically by 2:00 p.m. CST. However, the Settlement Bank Agreement provides specific instances where an SV and/or IM settlement instruction can be amended or revoked and includes prescribed conditions such as the correction of errors. For example, CME Clearing senior management will determine if it is necessary to revoke an instruction due to an operational issue. The settlement instruction in question is revoked via SWIFT, with verbal and written communications involving the settlement bank and Clearing Member firm.
**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.

The members of CME Clearing are predominantly non-bank entities, making it less practical for the Clearing House to use central banks to conduct its money 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 CCP 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 Principle 4 disclosure. Settlement banks must have and maintain a minimum internal credit rating and meet requirements assessed in annual due diligence visits by CME Clearing Risk Management. Further, additional detail is provided in CME Clearing’s disclosure to Key Consideration 3 of this Principle.

Additionally, CME Clearing employs a number of alternative programs to maximize book entry settlement and reduce the need for the Clearing House to access liquidity. These include Legal Segregation with Operational Commingling (“LSOC”) with excess and excess Settlement Variation for “interest earning facilities” (“SVIF”). LSOC with excess allows Clearing Members to deposit excess funds with the Clearing House on behalf of their customers, providing a buffer for each customer account. SVIF allows Clearing Members to pay settlement variation payments in IEF funds, providing more flexibility for Clearing Members who wish to use alternative collateral to meet settlement variation requirements.

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

CME Inc. was designated systemically important by the FSOC under Title VIII of Dodd-Frank. As such, the Clearing House may be provided access to the Federal Reserve Discount Window under unusual or exigent circumstances. CME Clearing does not anticipate using the Window nor does it include access to the Window in its liquidity plans.

**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 Principle 4 and Principle 7 disclosures. 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 Principle 5 disclosure. The credit risk assessments result in a credit score 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 and significant items are reported by the CME Clearing Risk Management team to CME Clearing senior management.

CME Clearing also performs a settlement bank review process. New applicant settlement banks are subject to a preliminary in-person risk management due diligence visits and reviewed by the CHRC, while current settlement banks are subject to regular due diligence visits as part of the CME Clearing review, completed at least annually. 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 determine the current performance and assess potential future 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 regards 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 a failure at 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. CME Clearing Risk Management reviews settlement concentration metrics and Clearing Member firm distribution among settlement banks. Settlement bank default impact assessments are reviewed by the CME Clearing Credit Committee with respect to concentration metrics and Clearing Member firm 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. A form of internal settlement, called “combined cash flow,” is performed by CME Clearing in connection with certain futures products, with settlement

---

variation denominated in foreign currency. In this approach, CME Clearing does not automatically pay out to a clearing firm’s bank account settlement variation “collects” denominated in the foreign currency for eligible futures products; instead, CME Clearing credits the settlement variation to the combined cash flow account the clearing firm maintains with CME Clearing. CME Clearing goes to the settlement bank to debit a foreign exchange denominated settlement variation amount owed to CME Clearing by a clearing firm when the clearing firm in question does not have a sufficient amount of the foreign currency on deposit in its combined cash flow account and if the debit to the combined cash flow account would not cause the Clearing Member to be under-margined. CME Clearing utilizes this conservative credit and liquidity approach to foreign currency balances to prudently manage foreign currency denominated products and to ensure that the credit profile of the settlement banks that maintain CME Clearing foreign exchange deposits is the focus of CME Clearing’s credit risk evaluation.

For operational simplicity and to allow Clearing Members to take advantage of potential netting benefits, Clearing Member payment obligations related to certain physically delivered contracts (e.g. certain grain contracts) are included as money settlements on CME Clearing’s books, despite the fact that such deliveries are not obligations of CME Clearing.

**Key consideration 5:** An FMI’s legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

As discussed in CME Clearing’s Principle 8 disclosure, 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 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 Rule 702 specifies that in the event a Clearing Member fails to perform 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. The obligations of Clearing Members and CME Clearing in regard to physical delivery are outlined throughout the Rulebook of each of CME Clearing’s DCMs, in particular the product rules for the related product. Clearing Member obligations for deliveries are further described in Chapter 7 of the CME Rulebook.53

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

- Agriculture
- CDS
- Energy
- FX
- Interest Rates
- Metals
- Environmental

Each DCM lists 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 Key consideration 2 below, 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 product’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:

1. 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 firm 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 the 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 Clearing Members utilize 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, 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 utilize the performance bond of the Clearing Member that failed to perform its delivery obligation. 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 or commodities in satisfaction of 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.\(^{54}\)

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 Clearing Members on the CME Group website\(^ {55}\) 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 Exchange processes new regularity applications, renewals, and handles the maintenance of current regularity applications, as described in CME 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 frequently reviews facilities to ensure current proof of insurance and 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 maintains the right to take action if the financials are noncompliant.

Under CME Rule 701, Declarations of Force Majeure, the CEO, COO, President of Global Operations, Technology & Risk, or President of the Clearing House or their delegate 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


\(^{55}\) http://www.cmegroup.com/clearing/deliveries/
the 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 as provided for in Exchange Rules.” Any declaration of a Force Majeure will be considered binding upon all parties within the contract and will be 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 action 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 Pesos futures contracts and suspend trading in the Mexican Peso and liquidate all option 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 clients.

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 of 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 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 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 Principle 10 disclosure and money settlements are discussed in CME Clearing’s Principle 9 disclosure.
**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 default. CME Clearing has effective and clearly defined rules and procedures to manage a default. CME 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 default, CME would notify relevant regulatory agencies and Clearing Members.

CME Clearing maintains default procedures which allow it to effectively manage defaults 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 respective CME Clearing Risk Committee.

Further, CME Rules 975, 8G975, and 8H975, allows the President of Global Operations, Technology & Risk 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 (a) an immediate position limitation, (b) an immediate suspension of the clearing member, (c) that all open trades of said Clearing Member be for liquidation only, (d) the liquidation or transfer of all or a portion of the open positions of the Clearing Member, (e) additional performance bond to be deposited with the Clearing House and/or (f) any other action necessary to protect the financial integrity of the Clearing House. These CME Rules allow CME Clearing to protect non-defaulting Clearing Members and protect the integrity of markets for which it clears.

**Use and sequencing of financial resources**

Following a default, CME Clearing will conduct normal settlement cycles (other than a cycle in connection with a limited recourse event as discussed in CME Clearing’s disclosures for Principles 3 and 4). Pursuant to the CME Default Rules, in the event of a Clearing Member being declared in default, CME Clearing is authorized to apply the defaulting

---

56 See CME Rule 802.A for Base products, CME Rule 8G802.A for IRS, and CME Rule 8H802.A for CDS (the “CME Default Rules”)
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. CME Clearing will initially use performance bond and Guaranty Fund of the defaulted Clearing Member with respect to particulars of one of the Guaranty Funds first to satisfy any losses associated with such products. After satisfying all losses associated with products for a particular Guaranty Fund, CME Clearing may use any excess assets of the defaulted Clearing Member for 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 to losses of such Clearing Member losses associated with IRS Products.

At no time are customer performance bonds used to satisfy losses associated with a Clearing Member’s proprietary (house) account. In the event the defaulted Clearing Member’s performance bond, Guaranty Fund, or other available assets for products in a Guaranty Fund are insufficient to satisfy losses associated with such Guaranty Fund, CME Clearing will utilize the assets in the respective financial safeguards package (each a “Waterfall”) in the following order: First the CME Contribution to the financial safeguards,^57 Second, the Guaranty Fund

---

^57 As of December 31, 2015, the CME Contribution to the Base financial safeguards was $100mm, to the IRS financial safeguards waterfall was $150mm and to the CDS financial safeguards waterfall was deposits of non-defaulting Clearing Members for the particular Waterfall and Finally, CME Clearing will use its assessment authority over each non-defaulting Clearing Member up to the limits prescribed for the relevant Waterfall.

As described in CME Rule 817, subject to certain limitations, assets deposited by a 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 line of credit with a consortium of domestic and international banks that may be used in certain situations. Under the terms of the credit 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 Rule 822, described in CME Clearing’s Principle 7 disclosure, describes the order in which the Clearing House will obtain liquidity under normal and extreme circumstances, including the use of Guaranty Fund substitution and Payment in Kind for settlement variation.

**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 waterfalls, respectively, Clearing Members are required to restore their

---

$50mm.
contributions to the relevant Guaranty Funds deposits prior to the close of business on the business day following the day the Guaranty Fund deposits are used; provided that any such replenishment shall be subject to the maximum assessments during the applicable cooling off periods (5 business days for base products and 25 business days for IRS and CDS products) as further described in in CME Rules 802.H, 8G802.H, and 8H802.H that provide for maximum assessments for a cooling off period to help restore stability for Clearing Members in the event of multiple defaults 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 Rulebook is 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 reviewed at least annually by the respective CME Clearing Risk Committee. CME Clearing conducts default drills on a regular basis across all product classes to test procedures and pursue continuous improvement through application of lessons learned and best practices. The results of each drill are reviewed with the relevant CME Clearing Risk Committee and changes to default processes are implemented when warranted. CME Rules and default procedures provide reasonable discretion to the Clearing House in managing a default by design in order to provide CME Clearing with flexibility to manage each unique default scenario.

In addition to established rules and procedures described within the Rulebook and in accordance with CFTC Regulation 39.16, CME Clearing maintains and regularly updates operational and financial procedures to manage a Clearing Member default. The procedures describe the designated role and responsibility for each of CME Clearing’s departments. Along with the parties designated within CME 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 Rulebook and publicly available on the CME Group website. CME 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 will be made by the President of the Clearing House, the Chief Risk Officer or any of their delegates and such declaration will be communicated to other Clearing Members.

Upon the default of a Clearing Member, the Clearing House will liquidate all house/proprietary positions of such Clearing Member and its affiliates clearing through the proprietary account, as quickly as practicable and seek 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 will be used to cure the resultant losses. Additionally, in order to increase the likelihood of successful customer porting and in accordance with CME Rules 802.G, 8G802.G and 8H802.G, the Clearing House ceases variation netting for the cleared swaps customers of the defaulted Clearing Member. Though this is not required by the regulations, CME Clearings opts to cease variation netting to provide enhanced customer protections in managing the default of a Clearing Member.

Following a Clearing Member default, cleared swaps customers will 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 will 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 Default Management Committee) will also determine if it should enter into any hedging transactions for the defaulting Clearing Member’s proprietary and/or customer positions. CME Clearing will then conduct an auction of such positions among Clearing Members and market participants pursuant to CME Rules.

CME 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 a product class associated with a financial safeguard package will be used to discharge the obligation of the defaulted Clearing Member with respect to any products associated with such financial safeguards (i.e. IRS performance bond and Guaranty Fund contributions will be used to satisfy losses of the Clearing Member in IRS Products prior to being used to satisfy any other obligations of the Clearing Member). After satisfaction of all losses associated with a product class, any excess performance bond and/or Guaranty Fund and other assets of the house account may be used by the Clearing House to satisfy losses attributed to other financial safeguard packages. Additionally, as discussed further herein, the Clearing House maintains a liquidity facility in the event certain assets of the defaulted Clearing Member need to be converted to cash on short order.

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, CME 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 drills afford CME’s Clearing Members and non-clearing member participants the opportunity to become familiar with the default procedures and provide a forum for Clearing Members to test their ability to evaluate sizable portfolios in extreme but plausible default scenarios. Additionally, CME Clearing maintains Default Management Committees for IRS and CDS that assist in default and drill scenarios and provide
feedback on best market practices for default and testing practices and procedures.

CME Clearing conducts default drills for varying portfolios across each product class. The drills are structured consistent with existing Clearing Member exposures and contain large and complex portfolios representative of the risks held by existing Clearing Members. Each drill consists of a hedging phase where appropriate and an auction and/or liquidation of the defaulting Clearing Member’s positions. Additionally, CME Clearing periodically tests its access to the liquidity facility to ensure prompt receipt of cash against performance bond and Guaranty Fund deposits.

CME Clearing also conducts annual testing of its liquidation agent, as described in CME Clearing’s Principle 5.
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 Commodity Exchange Act 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. Further, for cleared swaps, CME Clearing complies with CFTC Part 22 Regulations, requiring the implementation of the legally segregated operationally commingled (“LSOC”) account structure, which provides that a cleared swaps customer’s performance bond will not be used to satisfy the loss attributed to another cleared swaps 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 Principle 13 disclosure, upon the default of a Clearing Member, the Clearing House will cease netting settlement variation for the cleared swaps customers of such Clearing Member and will cause all such cleared swaps customers to settle directly with the Clearing House. This will ensure that customers remain in compliance with all margin requirements in order to increase the likelihood of porting success.

To further improve the probability of successful porting of customer positions, CME Clearing will examine the customer portfolios of a firm that appears to be under distress. The Clearing House will work to identify stable Clearing Members with similar or complementary customer profiles who may be well placed to absorb solvent customers in the event of the distressed Clearing Member’s default, minimizing the amount of time necessary to port customers once a default is declared.

CME Rules provide CME Clearing with the immediate right to transfer customer positions and associated performance bond value, when the default did not occur in such customer account, to another Clearing Member.58

In the ordinary course of business, a customer will initiate an instruction to transfer its account to another Clearing Member. Under NFA Rule 2-27, FCMs are required to process such transfers within 2 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 exchange, can initiate a porting of customer accounts. In the event of an FCM insolvency, the U.S. Bankruptcy Code and CFTC Part 190 provisions 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.

Please refer to CME Clearing’s Principle 1 disclosure for discussion on foreign laws applicable to segregation and portability.

**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 application of the margining, segregation, and reporting requirements of CFTC Regulations regarding segregation and the use of customer collateral by a DCO to cure losses created by an FCM default. Customer positions and collateral are segregated by the FCM, CME Clearing, and relevant settlement banks and custodians from the positions and collateral of the FCM, and futures customer positions and collateral are segregated from swaps customer positions and collateral. Fellow customer risk is the risk that one or more customers of an FCM will default on their obligations to the FCM and that such loss will be so great that the FCM, in turn, will default on its obligations to CME Clearing (also known as a “double default”). CFTC regulations and CME 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 futures customer collateral to satisfy swaps customer obligations and vice-versa. Fellow customer risk is mitigated by gross customer margining by CME Clearing for customer positions plus the requirement under CME Rules that the FCM maintain a targeted amount of additional funds belonging to it in its customer accounts, in excess of the aggregate collateral contributed by customers. Additionally, for swaps customers the CFTC’s Part 22 regulations and CME Rules ensure that CME Clearing will know the positions and collateral value contributed at the individual customer level, and prohibit CME Clearing from using value contributed by one customer to satisfy losses created by another customer, further limiting any fellow customer risk. However, in a double default situation, CME Clearing may use customer collateral in non-LSOC accounts to cure losses of other customers.

CME Clearing employs an account structure that distinguishes customer positions and performance bond from that of the Clearing Member as required by the CEA and CFTC Regulations. The Clearing Member account structure utilizes a customer omnibus account for customer positions. Performance bond for customers is collected on a gross basis consistent with CFTC Regulation 39.13(g)(8)(ii). Customer performance bond is held to protect CME Clearing from the failure by a Clearing Member to make payments associated with a settlement cycle. A settlement cycle is the processing of all payments for clearing, including performance bond, settlement variation, periodic payments and other payments associated with positions cleared at CME Clearing.

For cleared swaps, customer positions are maintained at the customer account level consistent with CFTC Part 22 Regulations. Amounts held in customer accounts by CME reflect the value of performance bond of such customer and any additions thereto resulting from any settlement variation gains. 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. In accordance with CFTC Regulation 22.13, CME Clearing requires any FCM posting excess cleared swap customer performance bond to identify at least once per business day the amount and identity of the cleared swap customer on whose behalf such excess was transferred. Each account containing customer margins is identified as belonging to customers. CME Clearing also 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 requirements for acknowledgement letters.  

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-defaulted customers of a defaulted Clearing Member during default situations. In the event of an under-segregation or customer default situation, CME Clearing works with the trustee of 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. 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 with any Clearing Member that does not promptly execute the transfer of a customer’s positions and performance bond to another Clearing Member, and CME Clearing can facilitate the customer’s request being honored.  

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 Rules. 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 marging, which, along with CME Clearing’s policy of ceasing netting for LSOC customers in the event their Clearing Member defaults, ensures that customer accounts are fully margined, thus increasing the flexibility of the CCP to port customers to multiple FCMs in the event of a default and improving the likelihood of successful porting. CME Clearing systems and operations are designed to handle the prompt transfer of positions at either the customers’ direction, or

59 See CFTC Regulations 1.20 and 22.5 requiring acknowledgement letters

60 See CME Rule 853

in the absence of a customer request, CME Clearing can direct a bulk transfer where it believes it is in the best interest of customers based on the condition of the defaulting Clearing Member. Positions are generally transferred at prior day 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 transfer to the receiving Clearing Member. CME Clearing will then arrange the bulk transfer of clients from the defaulting Clearing Member to the non-defaulting Clearing Member. Customers who have been transferred to the non-defaulting 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 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, for example due to a Clearing Member’s operational failures, CME Clearing is capable of quickly 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 CME Clearing controlled bank or custodial accounts and to the extent practical and legally permissible. CME Clearing will endeavor to transfer specific performance bond on deposit where 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 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 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\(^6\). 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, Clearing Member requirements, and disaster recover/business continuity program.

**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, maintains the Clearing House, CME Clearing, and is a division of CME Group (“the firm”) and is not a standalone entity. CME Group maintains management and financial controls that track key financial performance measures allowing the 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 are:

- Annual strategic and planning process
- Annual budget process
- Monthly financial forecast
- Five year financial plan

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. The firm 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, the firm utilizes sensitivity analysis methodologies to gauge the firm’s ability to cover costs and capital commitments during periods of reduced growth and market contraction. This also enables the firm 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 the firm proved sufficient to continue to support both capital commitments and dividends.

To ensure that senior management is properly able to manage the firm’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.

CME Clearing complies with CFTC Regulation 39.11, which requires the Clearing House to maintain adequate financial, operational, and managerial resources to meet its financial obligations and fund projected operating costs for a rolling 12 month period. The projected operational costs are calculated monthly. CFTC Regulation 39.11 requires that CME Clearing maintain sufficient liquid resources to cover potential business losses, including one year of operating costs with six months’ of projected operating costs in highly liquid securities and/or a committed line of credit.

On a quarterly basis, CME Clearing submits a Financial Resources Report to the CFTC, which sets forth the financial and operational resources of CME Clearing to discharge its responsibilities as a DCO.

CME Clearing maintains a formal credit line with its parent company, CME Group, which in turn maintains sufficient reserves of cash, cash equivalents, and marketable securities that could be used to support CME Clearing’s continuing operations. The total amount is reported in the firm’s annual 10-K securities filing, posted to its website.63 Additionally, CME Group maintains a committed revolving credit agreement with a syndicate of banks that is also available for general corporate purposes, including “backstopping” the firm’s issuance of commercial paper. No amount is currently borrowed under this agreement, nor is any commercial paper issued and outstanding. CME Group utilizes multiple relationships with dealer underwriters should it choose to issue commercial paper.

CME Group is rated AA- / Aa3 by S&P and Moody’s, respectively, for long-term unsecured debt, and rated A1+ / P1 for commercial paper, which is the highest rating available. At the height of the financial crisis of 2008, CME Group was able to issue commercial paper for its funding, with no noticeable difficulty acquiring the necessary liquidity, even under stressed conditions.

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.

The ongoing viability of CME Clearing is critical to CME Group. In the highly unlikely event that the viability of CME Clearing is threatened, CME Clearing has credit agreements in place with its parent company and further, CME Group as a publicly traded company has the ability to access additional liquidity through the issuance of equity. A registered DCO with the CFTC, CME Inc. is subject to the legal requirements for a

63 The most recent 10-K is available on the CME Group website at: http://investor.cmegroup.com/investor-relations/secfiling.cfm?filingID=1156375-14-12&CIK=1156375
commodity broker pursuant to U.S. Bankruptcy Code Chapter 7 Subchapter IV, which defines treatment of a bankruptcy of a commodity broker. Chapter 7 includes Sections 763 and 766, which define treatment of accounts and customer property held by a commodity broker during its liquidation. Further, the Clearing House maintains compliance with CFTC Part 190 Bankruptcy regulations.

In accordance with these regulations, CME Clearing has defined rules within its Rulebook to dictate the circumstances under which the Clearing House would be forced to wind-down its clearing business. Individual rules have been established for each major asset class, including the process CME Clearing will follow in the event that a default event propagates losses through the waterfall for its respective major asset class. Losses that exceed the financial safeguards of the OTC major asset classes will result in the wind-down of the individual business at CME Clearing, as described in the CME Rules 8G802 and 8H802 for IRS and CDS, respectively. Losses that exceed the Base major asset class financial safeguards will be subject to CME Rule 818, Close-Out Netting, which results in the Clearing Members closing out current positions. The Rule also specifies the process followed to fulfill CME Clearing’s existing obligations, in accordance with the current U.S. Bankruptcy Code and CFTC Part 190 Bankruptcy regulations.

As discussed in CME Clearing’s Principle 3 disclosure, CME Clearing and CME Inc. have established a Recovery and Wind-down Plan, which was submitted to the Board of Directors for approval and will be reported to the necessary regulatory bodies.

Resources designed to cover the risk of participant defaults and other Clearing Member risks are covered through the financial safeguards program, including margin, Guaranty Fund, and CME Contributions. Deposits for margin and Guaranty Fund funds are held in accounts at CME Clearing approved custodian or settlement banks, as chosen by the Clearing Member. The infrastructure and accounts for these deposits are separate and distinct from funds held to cover business risk, which are maintained by non-Clearing House employees within a separate department within CME Group. The accounting, reconciliation, and financial services for both pools are completed by different divisions, ensuring that there is no risk of the crossover of funds.

**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 maintains six months of projected operating costs in sufficiently liquid assets. CME Clearing manages its general business risk and holds sufficient liquid resources to cover potential business losses, including one year of operating costs with six months of the projected operating costs in sufficiently liquid assets. 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.

Further, CME Inc. has developed a plan for the recovery or orderly wind-down of the
business as part of the firm’s Recovery and Wind-down Plan, which was finalized and approved by its Board in December 2014.

**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.’s liquid net assets funded by equity consist of cash or highly liquid securities. Highly liquid securities are carried at fair value.

As a publicly traded holding company and a well-known seasoned issuer (“WKSI”), CME Group maintains a universal shelf registration statement with the SEC. This document allows CME Group to access the public debt or public equity markets in very short order, and likely without the extensive IPO-type review that a non-WKSI participant would be subject to in connection with a Form S-1 registration statement to issue equity securities. The Board of Directors of CME Group, who would issue any such securities, has approved the filing and maintenance of the universal shelf registration statement. CME Group has been rated for several years by Standard and Poor’s and Moody’s Investor Services, and its long-term unsecured debt securities are currently rated AA- / Aa3, respectively.

CME Group does not maintain a long-term plan with regards to equity funding; security issuances are utilized on an as needed basis, as determined by the CME Group Board of Directors. The Board of Directors for both CME Group and its subsidiary are responsible for determining if additional funding through securities issuance is appropriate and subsequently executing the issuance. As the Board of Directors is the same entity for CME Inc. and CME Group, this Board would independently execute the issuance. At the time of writing, the Board had no plans to issue additional equity securities, other than pursuant to CME Group’s long-term employee incentive program.

In addition to access to the public debt and public equity markets, CME Group maintains a multi-year, multi-currency revolving Credit Facility with a consortium of banks. This Credit Facility provides committed availability that may be used by CME Group for general corporate purposes, which includes providing financial support to its subsidiaries, including CME Clearing. This facility may also be used to provide a “backstop” for commercial paper that may be issued by CME Group, whose commercial paper is currently rated A1+ / P1 by S&P and Moody’s, respectively, which are the highest ratings issued for this type of instrument. CME Group has commercial paper dealer arrangements in place with Bank of America Merrill Lynch, Barclays Bank, and Goldman Sachs. While no amounts are currently borrowed under the revolving credit facility, nor is any commercial paper issued and outstanding, CME Group was able to issue all of the commercial paper put to market to provide funding to the Holding Company through the financial crisis in 2008 and 2009.
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 custodian bank entities in the United States and the United Kingdom in line with the requirements for eligible depository institutions laid out under CFTC Regulation 1.49, which are regulated as banking institutions within their respective jurisdictions and utilize acceptable international accounting standards and GAAP for U.S. firms. Custody and settlement banks act as intermediaries between CME Clearing and the Clearing Members. Clearing Members maintain accounts at these banks, deposit collateral to use for CME Clearing obligations, 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 and custodian holding customer moneys that acknowledges that such funds are customer funds and complies with other CFTC requirements for acknowledgement letters. The assets of customers of Clearing Members are held only at entities that comply with applicable CFTC Regulations 39.15 and 39.27.

In compliance with Regulation 39.15, Treatment of Funds, CME Clearing is required to:

- Comply with applicable segregation requirements under the Commodity Exchange Act
- 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
- The DCO will invest funds and assets in instruments with minimal credit, market, and liquidity risks and in compliance with Regulation 1.25

CME is required to comply with Regulation 39.27 due to its services offered outside of the US:

- The DCO shall identify and address any material conflict of law issues and the DCO’s contractual agreements shall specify a choice of law
- The DCO shall be able to demonstrate the enforceability of its choice of law in relevant jurisdictions and that its rules, procedures, and contracts are enforceable in all relevant jurisdictions

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, where applicable. As a part of this process, CME Clearing has conducted an analysis of the risk associated with varying types of bank accounts it utilizes. CME Clearing also conducts regular reviews of settlement and custodial banks’ financial statements and regulatory compliance, which would include accounting practices, safekeeping procedures, and internal controls. CME Clearing settlement banks based in money center countries are supervised or regulated to ensure robust accounting practices.

CME Clearing has custody agreements in place with each of its custodians. 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.

CME Clearing complies with applicable CFTC regulations through its requirement that custody and settlement banks provide segregation letters verifying that they adhere to segregation regulations with regards to customer funds held by FCMs 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 to CME Clearing’s Custodial Agreements with approved custodians. The terms of these agreements and the attendant account structures formalize CME Clearing’s first priority security interest in the collateral, ensuring that CME Clearing has prompt access to collateral assets held at the Custodial Banks. CME Clearing submits instructions directly to custodians to transfer, deposit, distribute, or otherwise dispose of the assets. As described in CME Rule 821, all assets must be and remain unencumbered. CME Clearing maintains the operational and legal ability to pledge assets to a Credit Facility to provide for timely liquidity in the event of a participant default as well as any other event defined in the Credit Facility agreement.

**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.**

CME Clearing Risk Management evaluates counterparty risk independently according to its credit review process, described in CME Clearing’s Principle 5 disclosure, and according to the policy governed by the Credit Committee. CME Clearing Risk Management evaluates exposures across CME Clearing, including its custodian banks. CME Clearing performs reviews at least annually or as deemed appropriate to determine 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 the CME Investment Policy, which is designed to ensure that principal is preserved and, as fully as possible, protected from losses through investment activity. Investments are made to minimize liquidity risk, so that CME...
Clearing can meet 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 at least annually by CME Clearing Credit Committee and the CHRC; any material changes to the Policy require CHRC approval. CME Clearing bares the losses and gains resulting from such investments. CME Clearing’s Investment Policy is disclosed to its prudential regulator and the appropriate CME Clearing Risk Committee.

Consistent with CFTC regulations, CME Inc. only invests customer collateral in high-quality, low-risk instruments that are permitted under CFTC Regulation 1.25. 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. Under its Investment Policy, CME Clearing also adheres to the Regulation 1.25 permitted investment categories with respect to investment of non-customer collateral and Guaranty Fund deposits, which is not required. CME Inc. invests in only high quality, low risk investments which allow for quick liquidation with little adverse price effect.
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 this Operational Risk Management Framework (“ORMF”), which is developed and maintained by CME Clearing and Global Operations, in conjunction with Enterprise Risk Management and more specifically, the CME Clearing Risk Management team, and is approved by the Board Risk Committee.

The ORMF describes CME Clearing’s processes used in risk identification, measurement and mitigation. The ORMF establishes decision controls as well as monitoring and reporting policies to ensure proper operational risk management and describes the communications standards of the clearinghouse.

CME Clearing supports multiple operating units in charge of monitoring various operational components of the clearinghouse’s functions to mitigate operational risk faced by the Clearing House. CME Clearing operates 24 hours a day, six days a week and requires continuous monitoring to prevent operational interruptions.

Operational risk is managed through a number of independent processes, including system and process surveillance to reduce processing slowdowns, meet client service level agreements (“SLA”), and to mitigate any operational risk that could possibly introduce financial risk to the Clearing House or its clients. Alerts are used to monitor processing jobs’ maximum run times, to ensure the monitoring team is aware of potential process failure.

CME Clearing monitors, in real time, a messaging queue dashboard for inbound and out-bound message traffic, such as trade transactions, busts, corrections, option exercise and assignment, transfers, and give-ups, observing inbound and outbound message transmission rates, as well as queue depths to identify potential issues. CME Clearing also monitors certain types of message traffic, such as large bulk transfer activity and pending give up activity between Clearing Members, with special attention as these activities can impact the risk profile of Clearing Members. On high volume days or during high price volatility, CME Clearing maintains an open communication channel with CME Group’s Globex Control Center (“GCC”) to discuss trade activity.

Both CME Clearing’s ORMF and business continuity policies adhere to the two hour requirement, though different sets of events may trigger responses from each framework. The ORMF 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 (“BCP”).

Key Clearing Processes
The Clearing House is staffed from Sunday at 5PM CST through Saturday at 7AM CST 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 key operational clearing processes:

- Core Clearing Process;
- Ability to View and Manage Risk; and
- Settlement and Collateral Management.

CME Clearing has developed and defined impact ratings to assist in identifying and prioritizing operational events that may prevent it from performing its key processes, in conformance with enterprise-level risk management guidelines. To measure the impact of a disruption, the Clearing House determined its appetite and tolerance for risk related to each of its three key processes:

I. **Core Clearing Process**
Post-trade processing and position management are the principal components of the core clearing process. Regulatory guidance indicates that OTC trades should be accepted for clearing as soon as technologically practicable, typically in less than sixty seconds, with the exception of those included in manual allocation or executed in open outcry. Futures trades are typically accepted upon execution on a Central Limit Order Book, negating the need for a correspondent requirement.

II. **Ability to View and Manage Risk**
Real-time risk monitoring of clearing volumes, sufficiency of collateral coverage, and firm-specific activity and risks, as well as management of such risks, is critical to ensuring the integrity of CME Clearing and its Clearing Members and market participants. Various reports are generated, distributed and where appropriate escalated, based on the Clearing House’s assessment of Clearing Member and customer exposures resulting from the potential losses stemming from market movements relative to their positions. These operations allow CME Clearing to verify that Clearing Members are maintaining activity within their predetermined tolerances, as defined and routinely reviewed by the Risk Management team, and that they pose no disproportionate risk to the Clearing House or other Clearing Members.

III. **Settlement & Collateral Management**
The execution of a settlement cycle is an essential component of CME Clearing’s business. It is imperative that at least one settlement cycle occur over the course of each business day to remove the market risk exposure for both the clearinghouse and its Clearing Members.

CME Group’s Human Resources Division undertakes a number of initiatives to recruit, hire, and train qualified employees. CME Group has a dedicated group of recruiters to support firm hiring. All new employees participate in a New Hire Orientation meeting designed to give an overview of CME Group’s business and employee benefits and compensation programs. CME Group’s Human Resources Division also oversees the company’s knowledge network site, which is designed to distribute information regarding CME Group’s overall business and will partner with the company’s business leaders to develop tailored training as necessary. CME Group offers tuition reimbursement for qualified employees to attend designated college/university programs.
CME Group also 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 of Directors on an annual basis. The Board of Directors and its Governance Committee are responsible for the succession planning process for the Executive Chairman & President and the CEO with the Strategic Steering Committee overseeing the process for other members of senior management and key roles within the organization. Human Resources is also responsible for recommending the overall design of the Company’s compensation program, which is designed to drive performance without incentivizing significant risk taking and retain key talent. CME Group’s compensation program includes base pay, annual bonus, and equity programs. Total compensation offerings are geographically benchmarked to local markets to ensure they are competitive.

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 of Directors. The primary compliance policy is the Code of Conduct (the “Code”) which is published on the Company website. The Code of Conduct sets forth the organization’s business principle of leading with conviction and integrity and its expectations that employees comply with all applicable laws. In accordance with the Code 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 good governance of the organization and ensuring that there is proper oversight over senior management. In addition to at least annual reviews of the ORMF, the Board sets the organization’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 firm’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 the firm
  - Ensuring that staff throughout the organization are clear as to their own roles and responsibilities
  - Providing senior management with clear principles underlying the framework
The Board Risk Committee has oversight responsibility for the ERM program on behalf of the Board of Directors. The Board Risk Committee’s oversight activities include reviewing and discussing CME Group’s ERM Framework and Process, summary level reporting of ERM activities, and 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 management’s assertions about the effectiveness of risk management processes and the internal control environment. These evaluations are provided to the Board and senior management. Both internal and external auditors are used to provide these services.

Internal audit functions are controlled by a group known as Global Assurance 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 organization’s network of risk management and control processes, as designed and represented by 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 in the organization’s control processes
- Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately
- Develop, implement, and communicate to the Audit Committee and management an annual audit plan using an appropriate risk-based methodology. The plan will give 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 required on an ongoing basis.
- Issue periodic reports to the Audit Committee 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 provide information concerning such issues through 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 (“FIA”). These drills include customers, partner exchanges, and other CCPs. Results are reviewed by senior risk management.

**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 ORMF. To achieve these objectives CME Clearing has invested in systems, infrastructure, business processes, and monitoring tools to track progress against these objectives. All functional components of the clearing service are required to have a backup with the ability to switch from primary to back up without affecting the SLAs. Support teams monitor the systems infrastructure 24 x 6 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.

The CME Clearing production support team follows up on any missed SLAs to determine the cause and recommends changes to prevent recurrence of identified causes and issues. Weekly status on SLA performance is provided to Post Trade Technology and CME Clearing.

- CME Clearing has a set of defined SLAs for clearing processes for all customer facing processes. This includes both real-time applications and batch processing.
- CME Clearing monitors real-time metrics (i.e., message latency, application uptime)
- CME Clearing monitors batch metrics (i.e., Processing/settlement cycles, margining)
- Reports are generated on a daily basis reflecting performance against SLAs
- Production support team follows up on any missed SLAs to determine the cause and recommends changes to prevent recurrence
- Production support team meets on a weekly basis with Clearing House operations management to review SLA performance and identify any changes or new SLAs that need to be part of the SLA monitoring process
- Weekly status on SLA performance is provided to Post Trade Technology and Clearing House Management
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.

The purpose of the capacity planning process is to encompass all aspects of capacity management for critical systems. The mission of the capacity planning organization is to use an appropriate combination of modeling and monitoring to prevent any capacity issues from impacting systems. It is CME Clearing’s policy to have a minimum of two times the last known peak load for any given application system. On a quarterly basis the long-term capacity model for CME Inc. systems is monitored, adjusted, reviewed, and published by senior management. The long-term capacity process is used to develop resource allocation and architecture decisions.

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. CME Group security personnel is comprised of CME Group employees and contracted armed and unarmed security officers, including off-duty police officers, who provide 24/7 monitoring of internal premises and perimeter. They also engage in frequent drills of emergency evacuation procedures in conjunction with local fire department officials that ensure best practice preparedness.

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 space. Visitors to CME Group space are registered and entered into a database and must be escorted by CME Group staff or membership. All visitors’ bags, briefcases, purses, etc. are scanned and inspected and 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 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, FBI, Secret Service, Department of Homeland Security, and Scotland Yard. Through these associations and relationships, CME Group receives timely intelligence briefings and threat assessments. CME Group also has representation at both the Chicago and New York Joint Operations Centers.

Several teams of CME Group employees are dedicated to assessing, identifying, and remediating potential application security issues. These teams rely on the following processes, with the goal to ensure that vulnerabilities are not introduced that may jeopardize the confidentiality, integrity, or availability of systems:

- **Strategy:** CME Group promotes an enterprise application security strategy that defines secure software development techniques, access management paradigms, and enterprise security awareness.
- **Standards:** All systems are written using approved and tested frameworks, patterns, and coding standards to avoid known application security exploitation techniques.
- **Permissions:** A strict internal approval process governs System entitlement.
- **Secure Sockets Layer ("SSL"):** Provides an encrypted channel of communication between applications and users to ensure the confidentiality of data.
- **Password Policies:** Applications enforce password policies, including password complexity and limiting the number of failed login attempts.
- **System Logs:** Maintains logs of user access attempts and actions, which the Global Information Security Department may use for security monitoring and auditing.

CME Group maintains a rigorous program for maintaining the security of and access to the network, supported by the following systems and protocols:

- **Intrusion Detection Systems ("IDS"):** Deployed IDS systems including network sensors and profilers for critical applications. These systems and firewalls are monitored 24 hours a day.
- **Connectivity:** Customers are connected to CME Group’s network via private telecommunications connectivity options. In addition, all routers used to connect customers to the CME Group network are configured with Access Control Lists ("ACL"), which limits the number of systems and areas of the network in which the customers can connect.
- **Multi-tiered Environments:** Multi-tiered network controls are in place to layer security controls to prevent a single network security failure from jeopardizing the entire system.
- **Firewalls:** Firewalls are utilized to connect all third-party service providers or partners. Changes to firewalls require the review and approval of the Global Information Security group prior to implementation. The Operations and
Global Information Security teams monitor firewalls.

- Connectivity Requests: Network Services and Global Information Security teams review approval of any requests that fall outside standard connectivity options. Adding additional connectivity options requires the approval of the Global Information Security team.
- Network Access Control ("NAC"): Office area and conference room enforcement policies allow only authorized CME Group devices to connect to the network.

To ensure that CME Group security practices and protocols are in line with industry standards, its network infrastructure and security protocols are subjected to periodic independent third party vulnerability assessment.

**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.

The Business Continuity Management ("BCM") program is designed to ensure CME Group can respond to an incident while ensuring the safety of the employees of CME Group’s subsidiaries, guarantee the survivability of core trading and clearing functions, and meeting CME Group’s fiduciary responsibility to its stakeholders. The mission of CME Group’s BCM team is to manage risk and mitigate potential impacts to our markets, customers, assets, and employees. The BCM program is designed to ensure CME Group can respond to an incident while safeguarding the interests of our stakeholders, ensuring the safety of employees, and protecting our reputation and brand. CME Clearing conducts disaster recovery drills at least twice annually and participates in the annual FIA sponsored industry wide drills, while also performing other annual exercises to test its business continuity plan, which allows CME Clearing to continually improve and test its disaster recovery and business continuity plans.

BCM ensures CME Group’s resiliency through:

- A proven framework that aligns with US and international standards;
- Solid recovery strategies that are both flexible and agile;
- Representation on CME Group’s Risk Management team and close partnership with all risk-mitigation groups throughout the company;
- Tested exercise models that evolve with CME Group’s environment and architecture;
- Identified mitigation plans for single points of failure; and
- Established relationships with external entities, partnerships, and agencies.

If CME Group experiences an event that impacts operations, it will meet its service level agreements and customer agreements by taking mitigating steps to resolve the issues. CME Group utilizes a tiered recovery approach where it would recover critical operations first and continue to ramp up the rest of its operations until normal business operations were resumed.
The business continuity management teams are responsible for responding once the Crisis Management Team ("CMT") makes a declaration of a crisis event. The CMT is comprised of senior managers across CME Group business lines and is supported by the logistics team, which is made up of representatives from numerous departments across CME Group that would support the recovery during any activation or declaration by acting as the coordination, status, and communication hub. The recovery teams are responsible for ensuring CME Group’s priorities are met during the recovery.

At each of CME Group’s subsidiaries’ office locations there is a Regional Incident Response team. This Team is the local governance for an event that is occurring at that particular office. Their recommended action plan will be submitted to the Chief Operating Officer, who is the CMT Commander, for approval prior to any actions taken.

In response to a CMT declaration, the CMT and logistics teams have identified primary and secondary meeting locations that they would use as their Command Center. Once the CMT is activated the teams will relocate to their assigned area. Initial and ongoing damage assessment will be completed to identify the impact of the event and to ensure the true impact of the event has been determined.

Currently, CME Clearing operates under a two hour recovery time objective ("RTO"), pursuant to CFTC Regulation 39.34. This RTO is the timeframe utilized during testing cycles, both internal and external (client facing). During the testing windows CME Clearing identifies and tests the critical systems required to complete end of day processing and settlement cycles. These systems and applications are tested at both the region recovery site, as well as the out of region recovery site.

CME Clearing transaction data is replicated in real-time to both primary and secondary recovery sites. In the event the Clearing House experiences a disruption, CME Clearing would utilize transaction sequence numbers to reconcile any messages that may have been in flight at the time of the disruption. Confirmation with Clearing Members utilizing these sequence numbers to compare last received to last sent enables CME Clearing to confirm all transactions are accounted for and completed.

In the event that the CME Clearing should experience a regional outage in its primary location, the Clearing House supports an out of region recovery site and solution. Systems and data are replicated to this secondary recovery site in real-time, in the same manner they are replicated to the primary recovery site. CME Clearing staff located at the secondary recovery site are crossed trained to cover and manage all critical processes, to assure the Clearing House can complete processing and settlements. The secondary recovery site (out of region) is located approximately 800 miles from the primary recovery site.

**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 employs several monitoring and controls over other FMIs including:

- Systematic monitoring of networking communications and data transfers which generate alerts during failures
- Apply risk 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
• Run market observations around the clock to determine positions are within established clearing thresholds
• Partner exchange account managers hold regular meetings with FMIs to address issues and plan future projects
• Established clear lines of communications and escalation procedures to address production issues
• Run regular disaster recovery tests that include FMIs

Clearing exposure to other FMIs:

• Provide partner exchange account managers to coordinate and communicate ongoing systems enhancements changes and upgrades which could impact FMIs
• Apply risk change control procedures to plan, analyze, test, and implement internal system changes or upgrades to ensure no impact on FMIs
• Document escalation process and communication protocols on system issues to facilitate prompt resolution
• Participate in FMIs’ disaster recovery tests as appropriate
• Participate in annual disaster drills hosted by FIA which include partner exchanges and other CCPs

The CME Group has a service agreement with the Society for Worldwide Interbank Financial Telecommunications (“SWIFT”) for all daily payable/receivable settlements. The SWIFT system is monitored by the Banking/Settlement department for 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 the CME Clearing settlement banks. Settlement banks submit copies of their respective contingency plans to CME Clearing on an annual basis adhering to the following principles:

• Enterprise wide business continuity governance residing with senior executives
• Planning and testing procedures across all company 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
• Backup systems that meet or exceed processing and regulatory requirements

All CME Group office and site locations have multiple electrical feeds backed up by
generators with local water and sewer supplies. All backup systems and generators are tested across locations and sites on a quarterly basis.
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 participant requirements, and through this 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 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, so as to prevent open access to the Clearing House.

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.

- 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, margin, and Guaranty Fund requirements.

- Clearing Members that will clear exchange traded futures/options and/or OTC derivatives for customers must be registered with the CFTC as an FCM.

### Additional General Requirements for OTC

- The Clearing Member shall agree to guarantee and assume responsibility for all OTC derivatives trading activity executed via outside means and submitted for clearing to the Clearing Division by any customer authorized by the Clearing Member.

- A Clearing Member that will clear IRS and CDS must have appropriate risk management capabilities, operational infrastructure, and experience to support their CDS 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: CME – 7; CBOT – 2; NYMEX – 2; COMEX – 2.

- To become an OTC Derivatives Clearing Member, the firm must deposit a $5 million membership deposit with the Clearing Division if it is not a CME, CBOT, NYMEX, or COMEX Clearing Member.

### Guaranty Fund Requirements

All Clearing Members must deposit with the Clearing Division a Guaranty Fund deposit for their
The minimum Guaranty Fund deposit for a Clearing Member that will clear:

- Exchange traded futures and options is the greater of $500,000 or its proportionate share of the Aggregate Guaranty Fund Deposit;
- Exchange traded futures and options and OTC products (excluding CDS and IRS) is the greater of $2.5 million or its proportionate share of the Aggregate Guaranty Fund Deposit;
- CDS is the greater of $50 million or the Clearing Member’s proportionate share of the two largest CDS Clearing Member’s losses; and
- IRS is the greater of $15 million or the Clearing Member’s proportionate share of the two largest IRS Clearing Member’s losses.

**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.
- CME Inc. Clearing Member: The greater of 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) $50 million if it will clear any OTC product; or iii) 20% of aggregate performance bond requirement for all customer and house accounts containing CME cleared CDS and IRS positions. For a bank Clearing Member: i) $5 billion if it will clear exchange traded futures/options; ii) $50 million if it will clear only OTC derivative products; or iii) 20% of aggregate performance bond requirements for all proprietary and affiliate accounts containing CME Clearing cleared CDS and IRS positions.
- CBOT or COMEX Clearing Member: The greater of 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; or ii) $50 million if it will clear any OTC product. For a bank Clearing Member: $5 billion if it will clear exchange traded futures/options; ii) $50 million if it will clear only OTC derivative products.
- NYMEX Clearing Member: The greater of 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 million if it clears exchange traded futures/options and it will guarantee NYMEX floor members; iii) $50 million if it will clear any OTC derivative products. For a bank Clearing Member: $5 billion if it will clear exchange traded futures/options; ii) $50 million if it will clear only OTC derivative products.

---

65 A minimum of $50 million in capital is defined by CFTC regulation 39.12
Financial Reporting Requirements

- Non-bank Clearing Members are subject to monthly financial statement reporting requirements. This requires submitting monthly CFTC Form 1-FR or SEC FOCUS reports (if a U.S. registered broker-dealer.)

- Clearing Members must submit an annual certified financial statement.

- 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 Division.

- Clearing Members which are Banks are required to file any and 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 which are banks must submit an annual certified financial statement, due five days after such statements are filed with its primary banking regulator.

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

Notification Requirements

A Clearing Member must provide written notice to the Financial and Regulatory Surveillance Department whenever the Clearing Member:

- Fails to maintain minimum capital;
- Fails to maintain early warning capital;
- Fails to maintain sufficient funds in segregated, secured or 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 Exchange or CME Clearing;
- Changes its fiscal year; or
- Changes its public accountant.

Additional notification is required for:
• Significant business transactions, or change in operations;
• Changes to and review of up-to-date personnel contact information; and
• Any ownership changes.

Chief Executive Officer or Chief Financial Officer approval of a 25% or greater disbursement of firm funds from segregated, secured or cleared swaps customer accounts if the Clearing Member is an FCM.

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 conducting non-customer and/or proprietary activity, with capital less than $300 million, must obtain parent guarantees from each person owning 5% or more of the equity securities of the Clearing Member.

• Each Clearing Member will be subject to onsite examinations and ongoing oversight by the appropriate CME Clearing Risk Committee. Required documents must be submitted in a timely manner and in the requested format.

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 their products 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 Futures and Options Clearing Members assist in futures 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 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 will be 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 infrastructure on at least a biennial basis, in addition to regular monitoring described in CME Clearing’s Principle 3 disclosure.

**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 Clearing Member requirements establish appropriate capital, operational, and risk requirements that are vetted by the appropriate CME Clearing Risk Committees, 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 exposure 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 exposure may enjoy the benefits of membership in the Clearing House, to the extent it is necessary, without being subject to requirements in excess of the risk brought to CME Clearing.

CME Group’s terms of participation ensure that clearing accessibility is open by the public financial requirements and through ongoing review of the financial integrity of CME Clearing Clearing Members. These reviews include direct surveillance, as further described below, and information sharing with the Joint Audit Committee and Intermarket Financial Surveillance Group members.

CME Clearing provides fair and open access in accordance with CFTC Regulation 39.12, Participation and Product Eligibility, 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 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 as a condition of Clearing Membership. 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 based on position and regional concentrations for equities, interest rates, commodities, and foreign exchange products
- Use historical data to model future behavior of risk factors including correlation, volatility, and optionality
- Monitor product trading and P/L swings
- Access to markets in order to liquidate positions which it clears
• Force liquidation of all or parts of clearing level portfolios, on immediate notice
• Construct a bid for a default management auction
• Assist with hedging the portfolio of a defaulted Clearing Member and demonstrate ability to execute with multiple participants within its major asset class
• Take in a broad portfolio and price it in conjunction with the defaulting Clearing Member position auction process for its major asset class
• Maintain sufficient excess capital to support the Clearing Member’s participation in CME Clearing financial safeguards
• Ability to commit qualified resources for simulated default management exercises that will be run periodically at CME Clearing as well as in the event of a Clearing Member default

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 CFTC and CME Clearing financial regulatory requirements and maintenance of Clearing Membership requirements on an ongoing basis. The Financial and Regulatory Surveillance Department of CME Clearing has established and clearly defined procedures and standards to check for compliance with the Rulebook and for the financial safety of CME Clearing. CME Rules 970 and 971, provide that Clearing Members must report monthly financial statements, daily segregated, secured and cleared swap customer statements, and bi-monthly Segregated Investment Detail Reports while banks must submit financial statements quarterly as is submitted to the banking regulator. All non-bank non-FCMs report full monthly financial statements.

Additionally, the CME Clearing 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 firm’s internal controls is conducted during regulatory examinations.

Financial testing is performed by reviewing each firm’s procedures for reconciling its account balances, presenting financial information, computing net capital, and reporting segregation, secured, 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 Trade
• Open Trade Equities in Customers’, Non-customers’, and General Partners’ Commodity Accounts
• Liabilities Subordinated to Claims of General Creditors
Subsequent Review

Statement of the Computation of the Minimum Capital Requirements

Compliance testing is performed to ensure FCMs, their branch offices, and their GIBs 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’s branch offices and GIBs at the start of each examination. The surveillance programs look at the following factors in determining the compliance requirements:

- Books and Records: To confirm firm’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 firms and customers.
- Discretionary Accounts: To ensure that adequate protection exists for the firm, customers, and exchanges against unauthorized discretionary trading.
- Margins: To ensure the firm’s margin procedures are adequate and in compliance with exchange and industry rules.
- Anti-Money Laundering: Verify the firm’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 SRO rules.
- Disaster Recovery: Ensure that the firm’s written business continuity and disaster recovery plan is adequate and in compliance with applicable SRO 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 SRO Rules.
- Privacy Rules: Check that appropriate procedures for notifying retail customers of the firm’s privacy policies are in place.

In the event that a Clearing Member no longer fulfills the participant 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 the requirements, the appropriate CME Clearing Risk Committee may determine to suspend a Clearing Member as defined in CME 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 Clearing Member positions as well as Large Trader position reporting and individual client account reporting, which is also used to manage the risk of indirect participants. 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 Rule 418, which stipulates that any person executing a transactions directly or through an intermediary on CME markets and any person for whose benefit the transaction has been executed on CME markets consents to the jurisdiction of CME and to be bound by and comply with the rules of CME.

The Clearing House has the ability to gather information from tiered participation agreements from Clearing Members for all major asset classes according to CME Rule 561.A, in addition to CME Rule 560, which states “Clearing members, omnibus accounts and foreign brokers shall submit to the Exchange a daily 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 all basic information from tiered participation agreements. 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 ("CGM"), CME Clearing has access to daily customer positions. CGM ensures transparency into individual clients’ exposures across major asset classes, with the exception of foreign broker omnibus accounts, which are excluded from CGM. Additionally, under CFTC Part 22, or LSOC, described in CME Clearing’s Principle 14 disclosure, CME Clearing will gather necessary information on customer accounts to ensure compliance with the regulations and allow for proper risk management.

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. This is included in regular risk management processes and is monitored on a daily basis. CME Clearing has the right to adjust margin requirements in response to
Large Trader reports to mitigate risks posed by the 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. One such dependency is a viable Clearing Member business model so that the Clearing Member maintains the financial and operational wherewithal to act as guarantor to CME Clearing for the transactions of indirect participants. Additional risks include the transaction processing and financial payment infrastructure supporting the transaction and payment activity of indirect participants. These risks may be exaggerated if significant concentration of services amongst a large number of indirect participants is present.

Though CME Clearing monitors customer clearing activity through credit controls submitted by Clearing Members for their customers’ clearing accounts, FCMs remain the primary risk managers for their clients and CME Clearing is reliant on these Clearing Members to manage client account 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, customer accounts, who bring significant volume trading exposures to the Clearing Member. CME Clearing Risk Management is able to monitor indirect participants with high levels of exposure at one direct participant or across all direct participants and conducts daily 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 standard.

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 firm’s risk profile or market conditions warrant, in addition to regular 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
- Liquidity management

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

The CME Clearing Risk Management team utilizes internal systems to continually assess the risk profile of indirect participant portfolios. The Clearing House Risk team also reviews accounts that have significant risks.
arising from concentration of positions, breadth of positions, and concentrations of deliverable supply, among others. Further, CME Clearing maintains the right to instruct an indirect participant to make appropriate changes to its portfolio in order to reduce its risk profile, including moving an account from one Clearing Member to another, reduce positions, or deposit additional margin, 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 RMF, which is reviewed and updated at least on an annual basis and approved by the Board. These include escalation criteria from the monitoring of the different risk exposures.

Additionally, relevant internal policies of FCMs are covered in the risk reviews conducted by CME Clearing and FCMs are required to provide documentation to CME Clearing as requested. This includes credit policies that manage the FCM’s counterparty risk, as described in CME Rule 982. CME Clearing’s FCM Clearing Members must develop policies addressing anti-money laundering compliance to demonstrate observance of related domestic and international laws as described in CME Rule 981.

CME Clearing manages and limits the risks from tiered participation arrangements through application of relevant CME Rules. Specifically, CME Rules 824 and 930.L state 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 FCMs implement limits for their Globex 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 firm, for which there is a thorough and audited process to ensure compliance with Clearing Member directions.

Similar credit controls are set by OTC Clearing Members for their clients, enabling the Clearing Member to limit their clients’ exposures. CME Clearing monitors these limits for appropriateness and utilization through real-time prices. In addition, CME Clearing monitors exposures of each customer across all Clearing Members.

OTC transactions are checked against limits and current usage prior to acceptance, and CME Clearing adheres to the CFTC requirement that OTC transactions be accepted or rejected within 10 seconds.
Principle 20: FMI Links

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

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 a number of clearing houses. These are:

- 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. The program now offers five contracts: Eurodollars, Euroyen TIBOR, Yen- and Dollar-Denominated Nikkei 225 futures, and E-micro S&P CNX Nifty (Nifty 50) futures.

- The Options Clearing Corporation (“OCC”): Since 1989, CME Clearing has had a cross-margining arrangement with OCC that allows positions cleared at the participant CCP’s to be combined into a single portfolio for margin and settlement purposes. Clearing level margins are computed based on the combined positions maintained in the cross-margin accounts using the sophisticated risk based margining systems of both clearing organizations. This results in one margin requirement for the cross-margin firm entity covering both markets.

- Fixed Income Clearing Corporation (“FICC”): Since 2000, CME Clearing has had a cross-margining arrangement with FICC or its predecessors 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, the risk of the program is thoroughly investigated and analyzed from credit, market, and operational risk perspectives to ensure the exposures can be managed within the CME Clearing systems without undue additional risks to the 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.

All predefined exposures from links are brought into the same risk management systems where CME Clearing can view and eliminate current risks both intraday and end of day, along with performing its additional risk management activities, such as backtesting and stress testing. All links adhere to the margin and risk management policies of CME Clearing and are thoroughly reviewed prior to receiving approval for launch. This review includes an inspection and analysis of potential risks of the program from the perspective of credit, market, and operational
risks to ensure the exposures can be managed within the CME Clearing systems without undue additional risks to the financial safeguards.

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. CME Clearing conducts all 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 link arrangements are presented to the appropriate CME Clearing Risk Committee and regulatory authorities.

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 appropriate credit risk review of any prospective counterparty risk taken on by CME Clearing through a linked CCP arrangement, including a credit assessment, a review of the CCP’s financials, and a review of the CCP’s capital, in addition, to a review of the CCP’s overall business model, risk management standards, and creditworthiness. By undertaking such assessments, 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 are conducted by the Risk Management team and taken to the
appropriate governing body, i.e., CME Clearing senior management, the CHRC, or other applicable governing bodies, such as the Board, who then undertakes the final review and assessment of whether to give their approval to establishing a link.

CME Clearing carefully evaluates the potential operational and credit risk impacts of a link due to the risk of cascading problems as a result of distress at one 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 continually and assesses the risk exposures in 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 a link is established, CME Clearing implements a number of controls, such as daily monitoring of current risk exposures and also daily stress testing of potential future exposures. CME Clearing also reviews financial resources of clearing participants in link relationships to assess whether they can cover exposures if there is a default event. CME Clearing also reviews financial safeguards regularly to evaluate their effectiveness in protecting CME Clearing against potential link exposures.

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; additionally, daily stress testing routines also take into account OCC, FICC, and SGX exposures.

All rules governing link arrangements are available either through the CME Rulebook 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 risk 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.

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, as a non-Clearing Member utility structure provides a choice of clearing venues to the market place and a focus on innovation by CME Clearing provides overall enhanced efficiencies to the participants. Further, as a SIDCO, CME Clearing has 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 services to the marketplace, as the DCMs 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 DCMs 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 demand and has proven responsive to client needs, while maintaining a high standard of prudent risk management and performance during the many years of CME Clearing operation.

CME Clearing is a member of various trade associations in relevant jurisdictions and participates in industry events and conferences, which allows it to actively engage and respond to industry developments and demands. Whenever an enhancement to services presents itself, CME Clearing will review and undertake a cost-benefit analysis to determine feasibility.

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 procures 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. appropriate CME Clearing Risk Committee and/or the Default Management Committee) to ensure that CME Clearing systems continue to meet the needs of its participants and adhere to best practices.

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.

CME Clearing sets business goals and objectives through the authority granted to it
by the Board of Directors, which oversees CME Clearing and reviews its business decisions. Corporate governance arrangements, as set out under CME Clearing’s Principle 2 disclosure, are designed to ensure that these goals are pursued and are measurable and achievable.

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 the necessary measures of market performance as:

- 24 hours a day/six days a week coverage of all necessary operational functionality, including customer assistance staffing
- Trade processing, settlement, and other critical clearing functions monitored continuously and adhere to operational standards where metrics are reviewed by senior management to ensure compliance
- 24 hours a day/seven days a week risk management monitoring and report generation capabilities
- 24 hours a day/seven days a week communications with market participants and Clearing Members
- 24 hours a day/five days a week settlement and banking with Clearing Members

CME Clearing as an FMI has a rigorous strategic and financial planning process that establishes 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. The strategic plan incorporates several key aspects of CME Group’s priorities in establishing corporate targets and goals, including overall financial performance and shareholder return objectives that drive the allocation or investment of resources required to operate the business, risk management priorities, and standards. Growth objectives identify areas of expansion or core growth that will help drive the value of CME Group. Additionally, CME Clearing recognizes infrastructure readiness as a core component of the 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 customers, and alliance partners.

These plans and targets are reviewed and approved at the Senior Leadership Team and CME Group Board level of the company with regular updates and modifications incorporated as needed.

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 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.

In addition to managing these potential issues, CME Clearing provides everyday support to its Clearing Members and clients through four main mechanisms:
1. Back office confirmation messaging: real-time trade and allocation messages provided for exchange traded and OTC products to Clearing Member back office systems to ensure smooth processing for all parties.

2. Intraday margin/settlement data: delivered by a scheduled time every day to give Clearing Members sufficient time to make money management decisions and execute strategies.

3. Margin files: 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 OTC products delivered for Clearing Member bookkeeping after close of business each day.

5. Collateral Valuation report: a daily review of the total collateral on deposit for the Clearing Member and the collateral’s current value.

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.

While each business owner is responsible for monitoring and escalating their unique risks as necessary, CME Clearing is subject to regular checks by internal risk management oversight through Enterprise Risk Management (“ERM”). ERM reviews internal procedures and can escalate potential issues if they arise. Additionally, Global Assurance performs regular, independent, risk based audits to provide reasonable assurance as to the pertinence and correct operation of the system. Global Assurance reports its findings to the Board as necessary.

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

CME Clearing and CME Group 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 growth of the Company.
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 OTC IRS
- Firm FIXML Trade Register, which provides firms with a list of trades cleared on a daily basis
- 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
- 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.

CME Clearing is in compliance with DCO Core Principal M, Information Sharing and Regulation 39.22 through the following events and activities:

- CME Clearing is a member and active participant of the Joint Audit Committee (“JAC”)
- CME Clearing is a member and active participant in the Shared Market Information System (“SHAMIS”)
- CME Clearing is a party to The International Information Sharing Memorandum of Understanding and Agreement
- CME Clearing has been an active participant during 2012 on the Payments Risk Committee, CCP – Joint Study Group
- CME Clearing 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.

The CME Group makes available to the public complete and comprehensive information on rules and procedures via a variety of resources. Each of these sources of information are reviewed and approved by senior management of the appropriate division or governing body before distribution.

As discussed in CME Clearing’s Principle 2 disclosure, 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, the CME Inc., CBOT and NYMEX 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 Rulebooks, CME Clearing worked with Clearing Members and market participants to establish prudent risk management Rules in line with best practices across the industry, including CME Clearing’s procedures during plausible but unlikely events as necessary. 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 will be vetted by CME Clearing staff before finalizing. Depending on the nature of the change, senior CME Clearing staff may be authorized to approve the revisions; significant Rule changes may require approval by the appropriate CME Clearing Risk Committee.

**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 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 delivers capacity equal to two times the system peak and has redundant data center facilities to enable disaster recovery. The 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:

66 http://www.cmegroup.com/rulebook/CME/
67 http://www.cmegroup.com/rulebook/CBOT/
68 http://www.cmegroup.com/rulebook/NYMEX/
A description of participants’ rights and obligations under a Clearing Membership is available on the CME Clearing website.  

**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.**

TrainingClearing 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 meet the different learning needs and time constraints of customers.

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 group for follow-up and ad hoc training requests and support.

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.

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

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

- [CME OTC Derivatives Clearing Membership Handbook](#)
- [CME Financial Safeguard System](#)
- [CME Group Clearing Membership Handbook](#)
- [CME Group’s Fee Policy Bulletin for Member Firm Accounts](#)
- [CME Fee Schedule for CME Clearing Members](#)
- [CME Membership Prices](#)
- [Summary of CME Group Clearing Membership Requirements](#)

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 Exchange, to maintain appropriate business conduct and to provide protection to the public in its dealings with the CME Group exchanges and members. The Board has created committees to which it has delegated responsibility for the investigation, hearing, and imposition of penalties for violations of Exchange Rules. The Board has also delegated responsibility for the investigation and imposition of penalties for violations of Exchange Rules to 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 CME 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 and market conditions. The Chief Regulatory Officer shall have the authority to inspect the books and records of all Members and the authority to require any Member to appear before him and produce his or its books and records and answer questions regarding alleged violations of CME Rules, at the time, place, and in the manner he designates. The Chief Regulatory Officer shall have the authority to investigate and pursue disciplinary action against any non-member pursuant to CME Rule 402.D. 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.

CME Group fee guides are accessible via the various links below and are transparent to the public via the CME Group website.
Fees for clearing and trading CME Group products vary according to whether the market participant has a legacy CME Clearing or legacy CBOT Clearing Membership and/or exchange membership. Fees also vary by product and volume traded, and whether the product is traded on the trading floor or electronically on the CME Globex platform. Comprehensive lists of CME Clearing or CBOT clearing and trading fees are available via the Product Code Guides. The guides are displayed below – CME Clearing and Trading Fees for CME Clearing; CBOT Clearing and Trading Fees; NYMEX Clearing and Trading Fees; OTC IRS Fees; and OTC CDS Fees – which detail a list of products and the Exchange rules they follow.

CME Clearing utilizes either Clearing Member advisories or Send Word Now (“SWN”) messages to communicate any changes, updates, or additions to its services and/or fees structures. Additionally, clearing and trading fees has its own page on the CME Group website: http://www.cmegroup.com/company/clearing-fees.html.

Details about connectivity, including the logistical arrangements, and costs are also included on the website: http://www.cmegroup.com/globex/introduction/process.html.

**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.

CME Group’s responses to the CPMI-IOSCO Disclosure framework can be found at: http://www.cmegroup.com/pfmiresponse. The Disclosure document is updated following material changes to the risk management infrastructure or at a minimum every two years. Additional information about CME Group is available on the website, as cited throughout the Disclosure.

The following reports are produced by CME Clearing on a daily basis and published to its public website: