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Registered Entity Identifier Code (optional): 14-291R

Organization: Chicago Mercantile Exchange Inc. ("CME")

Filing as a: ☐ **DCM** ☐ **SEF** ☒ **DCO** ☐ **SDR**

Please note - only ONE choice allowed.

Filing Date (mm/dd/yy): September 17, 2014 Filing Description: Changes to the CDS Risk Model

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Organization Rules and Rule Amendments

☐	Certification	§ 40.6(a)
☐	Approval	§ 40.5(a)
☐	Notification	§ 40.6(d)
☒	Advance Notice of SIDCO Rule Change	§ 40.10(a)
☐	SIDCO Emergency Rule Change	§ 40.10(h)

Rule Numbers:

New Product **Please note only ONE product per Submission.**

☐	Certification	§ 40.2(a)
☐	Certification Security Futures	§ 41.23(a)
☐	Certification Swap Class	§ 40.2(d)
☐	Approval	§ 40.3(a)
☐	Approval Security Futures	§ 41.23(b)
☐	Novel Derivative Product Notification	§ 40.12(a)
☐	Swap Submission	§ 39.5

Official Product Name:

Product Terms and Conditions (product related Rules and Rule Amendments)

☐	Certification	§ 40.6(a)
☐	Certification Made Available to Trade Determination	§ 40.6(a)
☐	Certification Security Futures	§ 41.24(a)
☐	Delisting (No Open Interest)	§ 40.6(a)
☐	Approval	§ 40.5(a)
☐	Approval Made Available to Trade Determination	§ 40.5(a)
☐	Approval Security Futures	§ 41.24(c)
☐	Approval Amendments to enumerated agricultural products	§ 40.4(a), § 40.5(a)
☐	"Non-Material Agricultural Rule Change"	§ 40.4(b)(5)
☐	Notification	§ 40.6(d)

Official Name(s) of Product(s) Affected:

Rule Numbers:

Jason Silverstein
Executive Director and Associate General Counsel
Legal Department

September 17, 2014

VIA ELECTRONIC PORTAL

Christopher J. Kirkpatrick
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20581

RE: CFTC Regulation 40.10(a) Advance Notice: Changes to CDS Risk Model. CME Submission No. 14-291R

Dear Mr. Kirkpatrick:

Chicago Mercantile Exchange Inc. ("**CME**"), pursuant to Commodity Futures Trading Commission ("Commission" or "CFTC") Regulation 40.10(a), submits this advance notice of proposed rules relating to enhancements to its risk model for credit default swaps ("**CDS**") (the "**CDS Risk Model**"). The proposed changes will be effective on the earliest possible date after the CFTC authorizes implementation of these changes and CME receives all required regulatory approvals or such later date as CME may determine.

The proposed changes to the CDS Risk Model are summarized as follows:

Changes to the CDS Margin Model (such new model, the "Proposed CDS Margin Model")

CME is proposing to change its current CDS Margin Model as follows:

- Replacing the current multiple market risk factors with a single market risk component calculated by reference to scenarios obtained within a statistical framework that addresses relevant market risk factors affecting a given CDS portfolio;
- Enhancing the Idiosyncratic Risk Component with a more systematic approach that avoids double counting of risk with other elements of the Proposed CDS Margin Model;
- Enhancing the Liquidity/Concentration Risk Component to incorporate reference entity or index series and maturity-specific liquidity features and to address liquidation risk for highly concentrated positions with a progressively increasing margin requirement;
- Adding a risk component for interest rate/discount curve risk; and
- Addressing foreign exchange ("**F/X**") related risk that may result from CDS portfolios that include CDS positions denominated in multiple currencies.

Changes to the Stress Test Methodology (such new methodology, the "CDS Stress Test Methodology")

Consistent with CFTC Regulations 39.13(h)(3) and 39.36(a), CME proposes to amend its CDS Stress Test Methodology to align with the Proposed CDS Margin Model framework. Consistent with CFTC Regulations 39.11(a) and 39.33(a), the CDS Guaranty Fund will continue to be sized so that CME's financial resources are sufficient to meet its financial obligations to its CDS Clearing Members notwithstanding a default by the two CDS Clearing Members creating the largest loss in extreme but plausible market conditions based upon the results of the new CDS Stress Test Methodology.

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1. Description of the Current CDS Margin Model

Currently the CDS Margin Model consists of 6 separate factors, each of which generates an isolated margin charge. Such charges are aggregated to arrive at the margin requirement for each CDS portfolio:[1]

- Market Risk Factor (MR), comprised of:
    - Systematic Risk Factor (M_s);
    - Curve Risk Factor (M_c);
    - Convergence/Divergence Risk Factor (M_x);
    - Sector Risk Factor (M_s);
- Idiosyncratic Risk Factor (M_i); and
- Liquidity/Concentration Risk Factor (M_l).

The current margin requirement (M*) is calculated as follows:

$$M^* = MR + M_i + M_l$$

where the Market Risk Factor is calculated as follows:

$$MR = M_s + M_c + M_x + M_s$$

Each factor is further explained below.

1.1 Systematic Risk Factor

The Systemic Risk Factor addresses risk arising from changes in CDS spread levels calculated by applying parallel shocks to par spreads of reference entities and/or index constituents across standard maturities.

1.2 Curve Risk Factor

The Curve Risk Factor is a gross notional-based risk charge, proportionally applied to aggregate CDS positions in each product family (CDX IG, CDX HY, and single-name CDS) to address the risks associated with imperfect spread correlations between different CDS products (series or reference entity and maturity) within the same product family.

1.3 Convergence/Divergence Risk Factor

The Convergence/Divergence Risk Factor addresses the risk arising from the imperfect correlations among high and low spread reference entities.

1.4 Sector Risk Factor

The Sector Risk Factor addresses sector-specific risks by applying parallel shocks to par spreads of reference entities and/or index constituents across standard maturities.

[1] A CDS portfolio refers to each house or cleared swaps customer portfolio of cleared CDS positions.

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1.5 Idiosyncratic Risk Factor

This Idiosyncratic Risk Factor addresses risks associated with potential "jump-to-default" ("**JTD**") risk due to default of a reference entity as well as "jump to health" ("**JTH**") risk where a reference entity benefits from an extreme drop in credit spreads (due to an improvement in credit quality).

1.6 Liquidity/Concentration Risk Factor

The Liquidity/Concentration Risk Factor addresses close-out costs. It is designed to reflect the costs of unwinding a CDS portfolio by taking into account its risk characteristics, hedged versus outright, and its size.

2. Description of the Proposed Changes to the CDS Margin Model

As part of the ongoing process of maintaining a conceptually sound and mathematically well-defined risk management framework, CME has invested in the development of a new margin risk framework. CME is therefore proposing to make changes to the current Market Risk Factor, the Idiosyncratic Risk Factor and the Liquidity/Concentration Risk Factor as well as adding a new Interest Rate Sensitivity Component, and a methodology for addressing new F/X related risks for CDS portfolios denominated in multiple currencies. The Proposed CDS Margin Model aims to holistically model the risk of a CDS portfolio comprised of a variety of index and single-name CDS products using statistically derived scenarios.

2.1 Proposed Changes for Market Risk Component

To reflect the variations in market value of a CDS portfolio, which may be comprised of positions in different index and single-name CDS products with different maturities, CME is proposing to use a scenario-based approach which relies on a statistical model, for the Market Risk Component. The statistical model is designed to generate scenarios that aim to reproduce the salient characteristics of marginal and joint movement of credit spreads across different index series or reference entity and maturity combinations.

The scenarios used for the modeling of the Market Risk Component are based on the log changes in:

- Par-spreads for "run-rank" (on-the-run ("**OTR**"), OTR-1, OTR-2,…) index CDS at standard maturities (1, 3, 5, 7 and 10 years); and
- Par-spreads for single-name CDS at standard maturities (1, 3, 5, 7 and 10 years).

A joint probability distribution for the 5-day log changes in par spreads is estimated using historical data on daily log changes in par spreads, which are the driving risk factors of the Proposed CDS Margin Model. The distributional characteristics of these risk factors are represented through time-varying autocorrelations, volatilities and tail risk parameters.

The volatility of each risk factor is an exponentially weighted moving average floored at an equal-weighted long-run average. The dependence across risk factors is modeled by historical and stressed correlation matrices combined with a copula function to model tail-risk dependence. The new statistical model allows CME to generate extreme but plausible spread scenarios across different index series and/or reference entities and maturities. Both the volatility floor and stressed correlation matrices add counter-cyclical features to the Market Risk Component.

CME will employ a Monte Carlo simulation approach to generate spread scenarios for computing the Market Risk Component as further described below. The proposed Market Risk Component ("**MR**") is represented by the following formula:

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$$MR = BMR + DR$$

where

- the Base Market Risk Component (BMR) is determined as the Value-at-Risk ("VaR") at a 99% confidence level for the CDS portfolio's theoretical changes in value over 5 days. This corresponds to the 1% greatest negative change in the CDS portfolio value based on spread scenarios generated by Monte Carlo simulation by reference to historical correlation matrix estimate; and

- the Dependence Risk Component (DR) is determined by computing the VaR at a 99% confidence level under stressed correlation scenarios for the CDS portfolio's theoretical changes in value over 5 days. A low and high correlation VaR is estimated through the 1% greatest negative change in the CDS portfolio value based on spread scenarios generated by Monte Carlo simulation by reference to stressed low and high correlation matrices, respectively. DR is computed as the excess of the greater of the low and high correlation VaR over BMR, multiplied by a risk-aversion coefficient.[2]

The proposed Market Risk Component aims to more accurately capture different sources of market risk through a holistic and theoretically coherent scenario-based approach that is driven by conservative statistical assumptions. CME notes that the current CDS Margin Model relies on separate add-on factors which are modeled and calibrated in isolation and gives rise to the potential for double counting. Varying degrees of volatility and tail risks across par spreads of different index series or reference entities at different maturities are not represented in the current CDS Margin Model. Historical correlations, tail dependence and correlation risk are not explicitly and consistently accounted for within the current CDS Margin Model. In contrast, spread volatility and tail risks are modeled precisely and consistently in the Proposed CDS Margin Model. The effects of historical correlations, tail dependence and correlation risk on the co-movement of spreads of CDS products are explicitly addressed in the Proposed CDS Margin Model.

The risk factors of the current CDS Margin Model such as curve, sector and convergence/divergence are replaced by a scenario-based approach which incorporates historical correlation matrices into the market risk computation. The Market Risk Component also aims to capture correlation risk that might arise from relying exclusively on historically-estimated correlations which can change under extreme market conditions. The correlation risk is addressed by employing two extreme correlation scenarios (high correlations and low correlations) to compute DR which addresses the risk of long-short or diversified portfolios driven by correlation uncertainty.

Additionally, the proposed Market Risk Component incorporates counter-cyclical features for calibration and modeling of volatilities, autocorrelations and correlations.

In comparison to the existing model the proposed changes to the manner in which the market risk is assessed may, in isolation, result in a reduction in the margin requirement for market risk. CME believes that this margin reduction does not come at the expense of adding more risk to the CME Clearing House since the statistical model and its different components were shown to appropriately cover the risk of a wide range of theoretical and production portfolios under extreme but plausible market conditions and in historical back testing, going back to 2008.

[2] The risk-aversion coefficient was determined by back testing a collection of theoretical and production portfolios.

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2.2 Proposed Idiosyncratic Risk Component

The Idiosyncratic Risk Component is intended to address CME's potential exposure to possible JTD and/or to JTH (in each case, beyond what is covered by the Market Risk Component) of reference entities. JTD risk of a reference entity is driven by the exposure to a scenario which reduces the price of the reference entity to a stressed recovery rate. JTH risk of a reference entity is driven by the exposure to a scenario which is a drastic improvement in credit quality of the entity. In addition to the price differential under current market and idiosyncratic scenarios, both JTD and JTH margin requirements take into account the risk concentration to a reference entity through dependence on position size. Within the Proposed CDS Margin Model, only the marginal risk contribution of idiosyncratic events will be reflected in the risk component. This is accomplished by coherent modeling of the associated market and idiosyncratic risks. Both JTD and JTH margin requirements are estimated by the difference between the pure market risk of the portfolio and the sum of the idiosyncratic risk and the market risk of the portfolio, excluding positions in the reference entity which drives the Idiosyncratic Risk Component.

2.3 New Interest Rate Sensitivity Component

CME is proposing to introduce a new Interest Rate Sensitivity Component to capture the effect of changes in interest rates (relevant to the underlying discount curve) on the market value of CDS portfolios. The calculation of the Interest Rate Sensitivity Component relies on applying parallel up and down shocks to the discount curve relevant to the index series or reference entity.

2.4 Proposed Change to the Liquidity/Concentration Risk Component

The Liquidity/Concentration Risk Component is designed to reflect CME's costs during the liquidation of a CDS portfolio following a CDS Clearing Member default, resulting from widening bid/ask spreads and/or increasing liquidation times due to the size of the CDS portfolio and/or event-driven liquidity squeezes. The proposed changes to the Liquidity/Concentration Risk Component are intended to add granularity to the modeling of liquidity/concentration risk by taking into account varying liquidity profiles across index series or reference entities and relevant maturities. The different liquidity characteristics of various index families/series and reference entities are modeled using trading volume data on the specific index series or reference entities. The dependence on trading volume data enables the model to more sensitively react to changes in trading activity. The modeling of relative liquidity of instruments at different maturities relies on an analysis of bid/ask spreads across maturities for both index and single-name CDS products. Concentration risk is addressed by a progressively increasing super-linear dependence on position size relative to the trading volume of the underlying reference entity or index series and relevant maturity.

The enhancements in the proposed Liquidity/Concentration Risk Component result in higher liquidity risk margin requirements for off-the-run indices, which are generally in line with the change in observed trading activity when a series becomes off-the-run. For single-name CDS, the proposed Liquidity/Concentration Risk Component results in higher liquidity risk margin requirements for reference entities with relatively low trading volume. Furthermore, the proposed Liquidity/Concentration Risk Component generally yields higher liquidity risk margin requirements for short and long dated contracts.

An analysis of proposed Liquidity/Concentration Risk Component on an indicative set of CDS portfolios reveals that the proposed Liquidity/Concentration Risk Component responds as expected to concentration, diversification and hedging. The overall effect of the enhancements made to the Liquidity/Concentration Risk Component is to reduce risk to the CME Clearing House by conservatively increasing margin requirements for positions which are expected to be more difficult to close out.

2.5 New F/X Related Risk Component

CME is proposing to address F/X related risks associated with the inclusion of non-USD denominated CDS positions in CDS portfolios (each a "**Non-USD CDS Position**"). As proposed above, CME will allow

for correlation based risk offsets with respect to both Market Risk Components and Idiosyncratic Risk Components of the Proposed CDS Margin Model. The calculation of such risk offsets will require that the Market Risk Components and Idiosyncratic Risk Components be calculated in USD (or other such common/base currency as may be chosen from time to time). In order to calculate the USD requirements, profit and loss due to market and idiosyncratic factors ("**P&L**") will be converted into their USD equivalents based on conservative F/X rates. The USD equivalent requirements for the Market Risk Component and the Idiosyncratic Risk Component will then be apportioned into each currency specific sub-portfolio based on its Market Risk Component and Idiosyncratic Risk Component requirements.

With respect to the Interest Rate Sensitivity Component and the Liquidity Risk/Concentration Component of the Proposed CDS Margin Model, where CME does not propose to offer risk or diversification offsets, only currency specific margin requirements are computed.

The overall risk requirement for each specific currency is then calculated as the sum of (a) the currency specific Liquidity/Concentration Risk Component requirement, (b) the currency specific Interest Rate Sensitivity Component requirement, (c) the sum of the Market Risk Component and the Idiosyncratic Risk Component requirement (apportioned to each specific currency). Under the Proposed CDS Margin Model, CME will inform clearing members of their margin requirements with respect to their multi-currency CDS positions in amounts that are required to be posted for each denominated currency in their portfolios.

3. Description of the Proposed Changes to CDS Stress Test Methodology for Sizing and Allocation of CDS Financial Resources

CME currently utilizes a stressed extension of its margin model to size the CDS Guaranty Fund and CDS Assessments (as defined in the CME Rules). The "potential residual loss" used to size and allocate the CDS Guaranty Fund and CDS Assessments is determined as the excess of the stressed exposure for CDS products over the margin deposited for CDS products. CME is proposing changes to the CDS Stress Test Methodology in order to align it with the Proposed CDS Margin Model. The proposed CDS Stress Test Methodology will rely on more extreme and counter-cyclical scenarios for the calculation of the different risk components compared to the scenarios used in the Proposed CDS Margin Model.

4. Portfolio Margining Implications

The Proposed CDS Margin Model relies on a statistical model to support a scenario-based approach in line with the joint probability distribution characteristics of par spreads of index series or reference entities across standard maturities. The Market Risk Component of the Proposed CDS Margin Model provides risk offsets between single-name CDS positions and index CDS positions. Such risk offsets are driven by the dependence structure across spread scenarios imposed by historical and counter-cyclical stressed correlations.

The Interest Rate Sensitivity Component for a portfolio containing index and single-name CDS products is designed as an aggregate risk component across index and single-name CDS positions.

Under the Proposed CDS Margin Model, the JTD component of the margin is computed by aggregating the exposure to the default of a reference entity in both single-name CDS positions and index CDS positions. CME relies on a decomposition model to compute the JTD component of the margin requirement for a CDS portfolio containing index and single-name CDS products.

The Liquidity/Concentration Risk Component of the Proposed CDS Margin Model is driven by an expected liquidation process in which the market risk exposure of the portfolio is first hedged with the most liquid CDS instrument and then the resulting basis (hedged) portfolio is liquidated. The margin requirements of the Liquidity/Concentration Risk Component that are driven by market risk hedging costs are calculated by aggregating the market risk exposure of the index and single-name CDS positions. Index and single-name CDS positions are handled separately for the calculation of the basis risk margin

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requirement (due to unwinding of hedged positions) of the Liquidity/Concentration Risk Component and also for the modeling of the concentration margin requirement as a function of position size.

CME reviewed the derivatives clearing organization core principles ("Core Principles") as set forth in the Commodity Exchange Act ("CEA" or "Act"). During the review, CME identified the following Core Principles as potentially being impacted:

- Core Principle B - Financial Resources: The proposed changes are consistent with maintaining financial resources sufficient to cover its financial obligations and cover its costs as required by the CFTC Regulations 39.11(a) and 39.33(a) as well as performing stress testing that allows CME to make a reasonable calculation of such financial resources as specified in the CFTC Regulations 39.11(c) and 39.33(a). In particular, CME continues to aim to size and maintain the amount of financial resources sufficient to meet its financial obligations to its CDS Clearing Members notwithstanding a default by the two clearing members creating the largest combined loss to CME in extreme but plausible market conditions as specified in CFTC Regulation 39.33(a).

- Core Principle D – Risk Management: Consistent with the requirements under CFTC Regulation 39.13(g), the Proposed CDS Margin Model establishes margin requirements that are commensurate with the risks of each CDS product and CDS portfolio, including unusual characteristics or risks associated with particular portfolios (such as JTD risk and JTH risk and F/X risk). The Proposed CDS Margin Model utilizes a minimum 5-day liquidation time pursuant to CFTC Regulation 39.13(g)(2)(ii) and meets an established confidence level of at least 99% based on data from appropriate historic time periods as specified under CFTC Regulation 39.13(g)(2)(iii). By proposing changes to the CDS Stress Test Methodology which are in line with the Proposed CDS Margin Model, CME will continue to be in compliance with the stress test requirements in CFTC Regulations 39.13(h)(3) and 39.36(a).

- Core Principle L - Public Information: As required by CFTC Regulation 39.21(c)(3), CME will disclose publicly the information concerning the proposed changes to the CDS Risk Model by posting this submission on the CME Group website.

A further description of the proposed CDS Risk Model has been provided in CME filing 14-291S for which a request for confidential treatment has been submitted to the Commission.

Notice of this submission has been concurrently posted on CME Group's website at http://www.cmegroup.com/market-regulation/rule-filings.html.

CME certifies these changes comply with the Act and regulations thereunder. There were no substantive opposing views to this action.

If you require any additional information regarding this submission, please contact Sasha Rozenberg at 212-299-2106 or via e-mail at Sasha.Rozenberg@cmegroup.com, or contact me at 212-299-2228 or via e-mail at Jason.Silverstein@cmegroup.com. Please reference our CME Submission No. 14-291R in any related correspondence.

Sincerely,

/s/ Jason Silverstein
Executive Director & Associate General Counsel

cc: Board of Governors of the Federal Reserve System