

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-79868; File No. SR-FICC-2016-007)

January 24, 2017

Self-Regulatory Organizations; Fixed Income Clearing Corporation; Order Approving a Proposed Rule Change to Implement a Change to the Methodology Used in the MBSD VaR Model

On November 23, 2016, the Fixed Income Clearing Corporation filed with the Securities and Exchange Commission (“Commission”) the proposed rule change SR-FICC-2016-007 pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹ and Rule 19b-4 thereunder.² The proposed rule change was published for comment in the Federal Register on December 13, 2016.³ The Commission did not receive any comments on the proposed rule change. This order approves the proposed rule change.

I. Description

As described by FICC in the proposed rule change, FICC proposes to change the methodology that it currently uses in the Mortgage-Backed Securities Division’s (“MBSD”) value-at-risk (“VaR”) model from one that employs a full revaluation

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4. FICC also filed this proposal as an advance notice pursuant to Section 802(e)(1) of the Payment, Clearing, and Settlement Supervision Act of 2010 and Rule 19b-4(n)(1) under the Act. 15 U.S.C. 5465(e)(1) and 17 CFR 240.19b-4(n)(1). The advance notice was published for comment in the Federal Register on December 28, 2016. See Securities Exchange Act Release No. 79643 (December 21, 2016), 81 FR 95669 (December 28, 2016) (SR-FICC-2016-801). The Commission did not receive any comments on the advance notice.

³ Securities Exchange Act Release No. 79491 (December 7, 2016), 81 FR 90001 (December 13, 2016) (SR-FICC-2016-007) (“Notice”).

approach to one that would employ a sensitivity approach.⁴ In connection with this change, FICC also proposes to amend the MBSD Clearing Rules (“MBSD Rules”) to: (i) amend the definition of VaR Charge⁵ to reference an alternative volatility calculation (“Margin Proxy”) that FICC would use in the event that data used for the sensitivity approach is unavailable for an extended period of time;⁶ (ii) revise the definition of VaR Charge to include a VaR floor that FICC would use as an alternative to the amount calculated by the proposed VaR model for portfolios where the VaR floor would be greater than the model-based charge amount (“VaR Floor”); (iii) eliminate two components from the Required Fund Deposit⁷ calculation that would no longer be necessary following implementation of the proposed VaR Charge; and (iv) change the margining approach that FICC may use for certain securities with inadequate historical pricing data from one that calculates charges using a historic index volatility model to one that would use a haircut method.

⁴ The proposed sensitivity approach methodology would be reflected in the Methodology and Model Operations Document - MBSD Quantitative Risk Model (“QRM Methodology”). FICC requested confidential treatment of the QRM Methodology and filed it separately with the Secretary of the Commission, pursuant to Rule 24b-2 under the Act. See 17 CFR 240.24b-2.

⁵ The term “VaR Charge” means, with respect to each margin portfolio, a calculation of the volatility of specified net unsettled positions of an MBSD clearing member, as of the time of such calculation. See MBSD Rule 1.

⁶ Details of the Margin Proxy methodology would be reflected in the QRM Methodology.

⁷ The term “Required Fund Deposit” means the amount an MBSD clearing member is required to deposit to the Clearing Fund pursuant to MBSD Rule 4. See MBSD Rule 1 and MBSD Rule 4 Section 2.

A. Overview of the Required Fund Deposit and Clearing Fund Calculation

A key tool that FICC uses to manage market risk is the daily calculation and collection of Required Fund Deposits from MBSD clearing members (“Clearing Members”).⁸ The Required Fund Deposit serves as each Clearing Member’s margin. The aggregate of all Clearing Members’ Required Fund Deposits constitutes the Clearing Fund⁹ of MBSD, which FICC would access should a defaulting Clearing Member’s own Required Fund Deposit be insufficient to satisfy losses to FICC caused by the liquidation of that Clearing Member’s portfolio.

According to FICC, the objective of a Clearing Member’s Required Fund Deposit is to mitigate potential losses to FICC associated with liquidation of such Clearing Member’s portfolio in the event that FICC ceases to act for such Clearing Member (i.e., a “default”).¹⁰ Pursuant to MBSD Rules, each Clearing Member’s Required Fund Deposit amount consists of multiple components. Of all of the components, the VaR Charge comprises the largest portion of a Clearing Member’s Required Fund Deposit amount.

Generally, the VaR Charge is calculated using a risk-based margin methodology that is intended to capture the market price risk associated with the securities in a Clearing Member’s portfolio. More specifically, FICC calculates the VaR Charge using a methodology referred to as the full revaluation approach. The full revaluation approach

⁸ The term “Clearing Member” means any entity admitted into membership pursuant to MBSD Rule 2A. See MBSD Rule 1.

⁹ The term “Clearing Fund” means the Clearing Fund established by FICC pursuant to MBSD Rules, which shall be comprised of the aggregate of all Required Fund Deposits and all other deposits, including cross-guaranty repayment deposits. See MBSD Rule 1.

¹⁰ See Notice, 81 FR at 90002.

uses a historical simulation method to fully re-price each security in a Clearing Member's portfolio. According to FICC, the methodology is designed to project the potential gains or losses that could occur in connection with the liquidation of a defaulting Clearing Member's portfolio, assuming that a portfolio would take three days to hedge or liquidate in normal market conditions.¹¹ The projected liquidation gains or losses are used to determine the amount of the VaR Charge, which is calculated to cover projected liquidation losses at a 99 percent confidence level.¹²

If FICC determines that a security's price history is incomplete and the market price risk cannot be calculated by the VaR model, then FICC applies the Margin Proxy until such security's trading history and pricing reflects market risk factors that can be appropriately calibrated from the security's historical data.¹³

B. Proposed Changes to the VaR Charge Calculation

According to FICC, during the volatile market period that occurred during the second and third quarters of 2013, FICC's full revaluation approach did not respond effectively to the levels of market volatility at that time, and the model did not achieve a 99 percent confidence level.¹⁴ This prompted FICC to employ the Margin Proxy – a

¹¹ Id.

¹² The 99 percent confidence level does not apply to unregistered investment pool clearing members, which are subject to a VaR Charge with a higher minimum targeted confidence level assumption of 99.5 percent.

¹³ See MBSD Rule 4 Section 2(c).

¹⁴ See Notice, 81 FR at 90002-03.

supplemental risk charge to ensure that each Clearing Member's VaR Charge would achieve a minimum 99 percent confidence level.¹⁵

FICC reviewed the existing model's deficiencies, examined the root causes of the deficiencies, and considered options that would remediate the model weaknesses. As a result of this review, FICC now proposes to change MBSB's methodology for calculating the VaR Charge by: (i) replacing the full revaluation approach with the sensitivity approach; (ii) using the Margin Proxy as an alternative volatility calculation in the event that the data used for the sensitivity approach is unavailable for an extended period of time; and (iii) establishing a VaR Floor to address a circumstance where the proposed VaR model yields a VaR Charge amount that is lower than 5 basis points of the market value of a Clearing Member's gross unsettled positions.¹⁶

(i) Proposed Sensitivity Approach

FICC's current full revaluation method uses valuation algorithms to fully re-price each security in a Clearing Member's portfolio over a range of historically simulated scenarios. While there are benefits to this method, according to FICC, its deficiencies are that it requires significant historical market data inputs, calibration of various model parameters, and extensive quantitative support for price simulations.¹⁷ FICC believes

¹⁵ The Margin Proxy is currently used to provide supplemental coverage to the VaR Charge; however, under this proposed change, the Margin Proxy would only be used as an alternative volatility calculation in the event that the requisite data used for the sensitivity approach is unavailable for an extended period of time.

¹⁶ Assuming the market value of gross unsettled positions of \$500,000,000, the VaR Floor calculation would be .0005 multiplied by \$500,000,000 = \$250,000. If the VaR model charge is less than \$250,000, then the VaR Floor calculation of \$250,000 would be set as the VaR Charge.

¹⁷ See Notice, 81 FR at 90003.

that the proposed sensitivity approach would address these deficiencies because it would leverage external vendor expertise in supplying the market risk attributes,¹⁸ which would then be incorporated by FICC into its model to calculate the VaR Charge.¹⁹

Because data quality is an important component of calculating the VaR Charge, FICC would conduct independent data checks to verify the accuracy and consistency of the data feed received from the vendor. According to FICC, it has reviewed a description of the vendor's calculation methodology and the manner in which the market data is used to calibrate the vendor's models, and it states that it understands and is comfortable with the vendor's controls, governance process, and data quality standards.²⁰ Additionally, FICC would conduct an independent review of the vendor's release of a new version of the model. To the extent that the vendor changes its model and methodologies that produce the risk factors and risk sensitivities, FICC would review the effects (if any) of these changes on FICC's proposed sensitivity approach. Moreover, according to FICC, it does not believe that engaging the vendor would present a conflict of interest to FICC because the vendor is not an existing Clearing Member nor are any of the vendor's affiliates existing Clearing Members.²¹ To the extent that the vendor or any of its

¹⁸ The risk factors that would be incorporated into MBSB's proposed VaR methodology are key rate, convexity, spread, volatility, mortgage basis and time, as more fully described in the Notice. See Notice, 81 FR at 90003.

¹⁹ FICC states that by leveraging external vendor expertise, FICC would not need to develop such expertise in-house to supply the market risk attributes that would then be incorporated by FICC into its model to calculate the VaR Charge. See Notice, 81 FR at 90004.

²⁰ See Notice, 81 FR at 90003.

²¹ See Notice, 81 FR at 90004.

affiliates submit an application to become a Clearing Member, FICC states that it will negotiate an appropriate information barrier with the applicant in an effort to prevent a conflict of interest from arising.²²

According to FICC, the sensitivity approach would provide three key benefits.²³ First, the sensitivity approach would incorporate both historical data and current risk factor sensitivities while the full revaluation approach is calibrated with only historical data. According to FICC, the integration of both observed risk factor changes and current market conditions would enable the model to more effectively respond to current market price moves that may not be reflected in the historical price moves.²⁴ FICC performed backtesting to validate the performance of the proposed model and determine the impact on the VaR Charge. According to FICC, the backtesting results and impact study show that the sensitivity approach provides better coverage on volatile days and a material improvement in margin coverage, while not significantly increasing the overall Clearing Fund.²⁵ FICC believes that the proposed sensitivity approach would be more responsive to changing market dynamics and would not negatively impact FICC or its Clearing Members.²⁶

Second, FICC states that the proposed sensitivity approach would provide more transparency to Clearing Members. Since Clearing Members typically use risk factor

²² The Commission understands that FICC will address any potential conflicts of interest.

²³ See Notice, 81 FR at 90004.

²⁴ Id.

²⁵ Id.

²⁶ Id.

analysis for their own risk and financial reporting, these Clearing Members would have comparable data and analysis to assess the variation in their VaR Charges based on changes in the market value of their portfolios. Therefore, Clearing Members would be able to simulate the VaR Charge to a closer degree than under the existing VaR model.

Third, FICC states that the proposed sensitivity approach would better provide FICC with the ability to increase the look-back period used to generate the risk scenarios from one year to 10 years plus an additional stressed period, as determined necessary by FICC.²⁷ The extended look-back period would be used to ensure that the historical simulation is inclusive of stressed market periods. While FICC could extend the one-year look-back period in the existing full revaluation approach to a 10-year look-back period, performance of the existing model could deteriorate if current market conditions are materially different than indicated in the historical data. Additionally, since the full revaluation method requires FICC to maintain in-house complex pricing models and mortgage prepayment models, enhancing these models to extend the look-back period to include 10-years of historical data would involve significant model development.

²⁷ Under the proposed model, the 10-year look-back period would include the 2008/2009 financial crisis scenario. To the extent that an equally or more stressed market period does not occur when the 2008/2009 financial crisis period is phased out from the 10-year look-back period (e.g., from September 2018 onward), FICC would continue to include the 2008/2009 financial crisis scenario in its historical scenarios. However, if an equally or more stressed market period emerges in the future, FICC may choose not to augment its 10-year historical scenarios with those from the 2008/2009 financial crisis. On an annual basis, FICC would assess whether an additional stressed period should be included. This assessment would include a review of: (i) the largest moves in the dominating market risk factor of the proposed VaR model; (ii) the impact analyses resulting from the removal and/or addition of a stressed period; and (iii) the backtesting results of the proposed look-back period.

(ii) *Proposed Margin Proxy*

In connection with FICC’s proposal to source data for the proposed sensitivity approach from an external vendor, FICC is also proposing procedures that would govern in the event that the vendor fails to provide sensitivity data and risk factor data. If the vendor fails to provide any data or a significant portion of the data timely, FICC would use the most recently available data on the first day that such data disruption occurs.²⁸ If it is determined that the vendor will resume providing data within five business days, management would determine whether the VaR Charge should continue to be calculated by using the most recently available data along with an extended look-back period or whether the Margin Proxy should be invoked, as described below. If it is determined that the data disruption will extend beyond five business days, the Margin Proxy would be applied.

FICC would calculate the Margin Proxy on a daily basis, and the Margin Proxy method would be subject to monthly performance review. FICC would monitor the performance of the calculation on a monthly basis to ensure that it could be used in the circumstance described above. Specifically, FICC would monitor each Clearing Member’s Required Fund Deposit and the aggregate Clearing Fund requirements versus the requirements calculated by Margin Proxy. FICC would also backtest the Margin

²⁸ FICC states it has existing policies and procedures in accordance with Regulation Systems Compliance and Integrity (“SCI”), 17 CFR 242.1001(c)(1) (“Regulation SCI”), to determine whether a disruption to, or significant downgrade of, the normal operation of FICC’s risk management system has occurred as defined under Regulation SCI. In the event that the vendor fails to provide the requisite sensitivity data and risk factor data, the responsible SCI personnel at FICC would determine whether an SCI event has occurred, and FICC would fulfill its obligations with respect to the SCI event.

Proxy results versus the three-day profit and loss based on actual market price moves. If FICC observes material differences between the Margin Proxy calculations and the aggregate Clearing Fund requirement calculated using the proposed VaR model, or if the Margin Proxy's backtesting results do not meet FICC's 99 percent confidence level, management may recommend remedial actions, such as increasing the look-back period and/or applying an appropriate historical stressed period to the Margin Proxy calibration.

(iii) Proposed Change to Establish a VaR Floor

FICC proposes to amend the definition of VaR Charge to include a VaR Floor. The VaR Floor would be used as an alternative to the amount calculated by the proposed model for portfolios where the VaR Floor would be greater than the model-based charge amount. FICC's proposal to establish a VaR Floor seeks to address the risk that the proposed VaR model may calculate too low a VaR Charge for certain portfolios where the VaR model applies substantial risk offsets among long and short positions in different classes of mortgage-backed securities that have a high degree of historical price correlation. According to FICC, because this high degree of historical price correlation may not apply in future changing market conditions,²⁹ it is prudent to apply a VaR Floor that is based upon the market value of the gross unsettled positions in the Clearing Member's portfolio to protect FICC against such risk in the event that FICC is required to liquidate a large mortgage-backed securities portfolio in stressed market conditions.

²⁹ According to FICC, for example, and without limitation, certain classes of mortgage-backed securities may have highly correlated historical price returns despite having different coupons. However, if future mortgage market conditions were to generate substantially greater prepayment activity for some but not all such classes, these historical correlations could break down, leading to model-generated offsets that would not adequately capture a portfolio's risk.

C. Proposed Change to Eliminate the Coverage Charge and the Margin Requirement Differential

FICC proposes to eliminate two components of the Required Fund Deposit – the Coverage Charge³⁰ and the Margin Requirement Differential (“MRD”)³¹ – that FICC believes would become unnecessary with the proposed changes to the VaR Charge. Both components are based on historical portfolio activity, which may not be indicative of a Clearing Member’s current risk profile, but were determined by FICC to be appropriate to address potential shortfalls in margin charges under the existing VaR model.

According to FICC, as part of the development and assessment of the sensitivity approach for the proposed VaR model, FICC obtained an independent validation of the proposed model by an external party, backtested the model’s performance and analyzed the impact of the margin changes. Results of the analysis indicated that the proposed sensitivity approach would be more responsive to changing market dynamics and a Clearing Member’s portfolio composition coverage than the existing model. The model validation and backtesting analysis also demonstrated that the proposed sensitivity model would provide sufficient margin coverage on a standalone basis. Because testing and validation of MBSD’s proposed VaR model show a material improvement in margin

³⁰ The Coverage Charge is an additional charge to help bring a Clearing Member’s margin coverage to a targeted confidence level by preemptively increasing the Required Fund Deposit by an amount calculated to forecast potential deficiencies in the margin coverage. See MBSD Rule 1.

³¹ The MRD is designed to help mitigate the risks posed to FICC by day-over-day fluctuations in a Clearing Member’s portfolio. It does this by forecasting future changes in a Clearing Member’s portfolio based on a historical look-back of each portfolio over a given time period. See MBSD Rule 4 Section 2.

coverage, FICC believes that the Coverage Charge and MRD components are no longer necessary.

D. Proposed Change to Replace the Historic Index Volatility Model with a Haircut Method

According to FICC, occasionally, portfolios contain classes of securities that reflect market price changes not consistently related to historical risk factors. The value of these securities is often uncertain because the securities' market volume varies widely, which limits their price histories. Since the volume and price information for such securities is not robust, a historical simulation approach would not generate VaR Charge amounts that adequately reflect the risk profile of such securities. Currently, MBSD Rule 4 provides that FICC may use a historic index volatility model to calculate the VaR component of the Required Fund Deposit for these classes of securities.³² FICC is proposing to amend MBSD Rule 4 to replace the historic index volatility model with a haircut method. FICC believes that the haircut method would better capture the risk profile of these securities because the lack of adequate historical data makes it difficult to map such securities to a historic index volatility model.

FICC proposes to calculate the component of the Required Fund Deposit applicable to these securities by applying a fixed haircut level to the gross market value of the positions. FICC has selected an initial haircut of one percent based on its analysis of a five-year historical study of three-day returns during a period that such securities were traded. This percentage would be reviewed annually or more frequently if market conditions warrant and updated, if necessary, to ensure sufficient coverage.

³² See MBSD Rule 4 Section 2(c).

II. Discussion and Commission Findings

Section 19(b)(2)(C) of the Act³³ directs the Commission to approve a proposed rule change of a self-regulatory organization if it finds that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to such organization.

The Commission finds that the proposed rule change described above is consistent with the Act, in particular Section 17A(b)(3)(F) of the Act,³⁴ and Rules 17Ad-22(b)(1)³⁵ and (b)(2) under the Act.³⁶

Section 17A(b)(3)(F) of the Act³⁷ requires that the rules of a registered clearing agency must be designed to, among other things, assure the safeguarding of securities and funds which are in the custody or control of the clearing agency or for which it is responsible. As discussed above, FICC is proposing a number of changes to the way it calculates its Required Fund Deposits – a key tool that FICC uses to mitigate potential losses to FICC associated with liquidating a Clearing Member’s portfolio in the event of Clearing Member default. The Commission believes that the proposed changes are designed to assure the safeguarding of securities and funds which are in the custody or control of FICC or for which it is responsible because they are designed to enable FICC to better limit its exposure to Clearing Members in the event of Clearing Member default.

³³ 15 U.S.C. 78s(b)(2)(C).

³⁴ 15 U.S.C. 78q-1(b)(3)(F).

³⁵ 17 CFR 240.17Ad-22(b)(1).

³⁶ 17 CFR 240.17Ad-22(b)(2).

³⁷ 15 U.S.C. 78q-1(b)(3)(F).

First, FICC proposes to implement the sensitivity approach to its VaR Charge calculation. The change would enable FICC to better limit its exposure to Clearing Members by correcting deficiencies in MBSD's existing VaR methodology by leveraging an external vendor's expertise in supplying market risk attributes used to calculate the VaR Charge in the proposed sensitivity approach. In turn, the sensitivity approach would enable FICC to view and respond more effectively to market volatility by allowing FICC to attribute market price moves to various risk factors such as key rates. Second, the proposal to implement the Margin Proxy as a back-up methodology to the sensitivity approach would enable FICC to better limit its exposure to Clearing Members by helping ensure that FICC could continue to calculate each Clearing Member's VaR Charge in the event that FICC experiences a data disruption with the vendor that supplies the sensitivity data. Third, FICC's proposal to implement the VaR Floor is designed to enable FICC to better limit its exposure to Clearing Members in the event that the proposed sensitivity VaR model calculates too low of a VaR Charge for portfolios where the model applies substantial offsets from certain offsetting long and short positions. Fourth, the proposed change to implement a haircut method for securities with inadequate historical pricing data would enable FICC to better limit its exposure to Clearing Members by better capturing the risk profile of the securities. Finally, FICC's proposal to remove the Coverage Charge and MRD components would enable FICC to remove unnecessary components from the Clearing Fund calculation that may not be indicative of a Clearing Member's current risk profile.

By better limiting exposure to Clearing Members, the proposed changes are designed to ensure that, in the event of Clearing Member default, MBSD's operations

would not be disrupted and non-defaulting Clearing Members would not be exposed to losses that they cannot anticipate or control. In this way, the proposed rules are designed to assure the safeguarding of securities and funds which are in the custody or control of FICC or for which it is responsible and are therefore consistent with Section 17A(b)(3)(F) of the Act.³⁸

Rule 17Ad-22(b)(1) under the Act³⁹ requires a registered clearing agency that performs central counterparty services to establish, implement, maintain and enforce written policies and procedures reasonably designed to, among other things, limit its exposures to potential losses from defaults by its participants under normal market conditions so that the operations of the clearing agency would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control. FICC's proposal would enable FICC to better limit its exposure to potential losses from defaults by its Clearing Members under normal market conditions. As discussed above, the sensitivity approach would enable FICC to view and respond more effectively to market volatility. The Margin Proxy would help manage data disruption. The VaR Floor would ensure FICC collects at least a minimum VaR Charge. The haircut method would better capture the risk profile of securities with inadequate historical pricing data. Finally, removing the Coverage Charge and MRD would help ensure the Clearing Fund calculation would not include unnecessary components that may not be indicative of a Clearing Member's current risk profile. By better limiting its exposures to potential losses from defaults by its participants under normal market conditions, the

³⁸ Id.

³⁹ 17 CFR 240.17Ad-22(b)(1).

proposed changes are designed to ensure that the operations of the clearing agency would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control. Therefore, the Commission believes this proposal is consistent with Rule 17Ad-22(b)(1) under the Act.⁴⁰

Rule 17Ad-22(b)(2) under the Act⁴¹ requires a registered clearing agency that performs central counterparty services to establish, implement, maintain and enforce written policies and procedures reasonably designed to, among other things, use margin requirements to limit its credit exposures to participants under normal market conditions and use risk-based models and parameters to set margin requirements. The Required Fund Deposits are the margin requirements that FICC collects to limit its credit exposures to participants under normal market conditions. Additionally, FICC's proposed changes use a risk-based model (i.e., the sensitivity approach) and parameters (e.g., the VaR Floor and Margin Proxy) to set margin requirements. The proposed changes are designed to improve FICC's margin requirements to better limit FICC's credit exposures to Clearing Members, in the event of default, under normal market conditions. Therefore, the Commission believes this proposal is consistent with Rule 17Ad-22(b)(2) under the Act.⁴²

⁴⁰ Id.

⁴¹ 17 CFR 240.17Ad-22(b)(2).

⁴² Id.

III. Conclusion

On the basis of the foregoing, the Commission finds that the proposal is consistent with the requirements of the Act and in particular with the requirements of Section 17A of the Act and the rules and regulations thereunder.

IT IS THEREFORE ORDERED, pursuant to Section 19(b)(2) of the Act,⁴³ that the proposed rule change (SR-FICC-2016-007) be, and it hereby is, approved as of the date of this order or the date of a notice by the Commission authorizing FICC to implement FICC's advance notice proposal (SR-FICC-2016-801) that is consistent with this proposed rule change, whichever is later.⁴⁴

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.⁴⁵

Eduardo A. Aleman
Assistant Secretary

⁴³ 15 U.S.C. 78s(b)(2).

⁴⁴ In approving this proposed rule change, the Commission has considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

⁴⁵ 17 CFR 200.30-3(a)(12).