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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-88382; File No. SR-FICC-2020-801]

Self-Regulatory Organizations; Fixed Income Clearing Corporation; Notice of No Objection to Advance Notice to Amend the Mortgage-Backed Securities Division Stress Testing Methodology

March 13, 2020

On January 21, 2020, Fixed Income Clearing Corporation (“FICC”) filed with the Securities and Exchange Commission (“Commission”) the advance notice SR-FICC-2020-801 (“Advance Notice”) pursuant to Section 806(e)(1) of Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act entitled the Payment, Clearing, and Settlement Supervision Act of 2010 (“Clearing Supervision Act”)¹ and Rule 19b-4(n)(1)(i) under the Securities Exchange Act of 1934 (“Act”).² The Advance Notice describes modifications to the Mortgage-Backed Securities Division’s (“MBSD”) stress testing methodology, which is described in the Methodology Document - MBSD Market and Credit Risk Stress Test Models (“Stress Testing Methodology Document”).³ The Advance Notice was published for public comment in the Federal Register on February 27, 2020,⁴ and the Commission has received no comments regarding the changes

¹ 12 U.S.C. 5465(e)(1).

² 17 CFR 240.19b-4(n)(1)(i).

³ As part of the Advance Notice, FICC filed Exhibit 3a – Methodology Document – MBSD Market and Credit Risk Stress Models. Pursuant to 17 CFR 240.24b-2, FICC requested confidential treatment of Exhibit 3a.

⁴ Securities Exchange Act Release No. 34-88266 (February 24, 2020), 85 FR 11413 (February 27, 2020) (SR-FICC-2020-801) (“Notice of Filing”).

proposed in the Advance Notice. This publication serves as notice of no objection to the Advance Notice.

I. THE ADVANCE NOTICE

A. Background

MBSD provides trade comparison, netting, risk management, settlement, and central counterparty services for U.S. mortgage-backed securities market. FICC manages its credit exposures to its members by collecting an appropriate amount of margin from each member.⁵ The aggregate of all MBSD members' margin amounts (together with certain other deposits required under the MBSD Rules) constitutes MBSD's Clearing Fund, which FICC would access should a member default with insufficient margin to satisfy any FICC losses caused by the liquidation of the defaulting member's portfolio.⁶

FICC uses stress testing to test the sufficiency of its prefunded financial resources.⁷ In contrast to FICC's margin methodologies, which are designed to limit FICC's credit exposures under normal market conditions,⁸ FICC's stress testing

⁵ See Rule 4 (Clearing Fund and Loss Allocation) of the FICC MBSD Clearing Rules ("MBSD Rules"), available at www.dtcc.com/legal/rules-and-procedures.aspx.

⁶ See id.

⁷ On December 19, 2017, the Commission approved FICC's adoption of the Clearing Agency Stress Testing Framework (Market Risk) ("Stress Testing Framework"), which among other things, sets forth the purpose of FICC's stress testing and describes certain methodologies FICC uses in its stress testing. Securities Exchange Act Release No. 82368 (December 19, 2017), 82 FR 61082 (December 26, 2017) (SR-DTC-2017-005; SR-FICC-2017-009; SR-NSCC-2017-006) ("Stress Testing Framework Order").

⁸ See e.g., Securities Exchange Act Release No. 80253 (March 15, 2017), 82 FR 14581, 14582 (March 21, 2017) (SR-FICC-2017-004).

methodologies are designed to quantify FICC’s potential losses under extreme but plausible market conditions.⁹ Therefore, stress testing is designed to help FICC identify credit risks beyond those contemplated by FICC’s margin methodologies, including credit exposures that might result from the realization of potential stress scenarios, such as extreme price changes, multiple defaults, or changes in other valuation inputs and assumptions.¹⁰ As a result, stress testing helps FICC identify the amount of financial resources necessary to cover its credit exposure under stress scenarios in extreme but plausible market conditions.¹¹

FICC’s stress testing methodologies have three key components.¹² First, FICC analyzes the securities and risk exposures in its members’ portfolios to identify the principal market risk drivers and capture the risk sensitivity of the portfolios under stressed market conditions.¹³

Second, FICC develops a comprehensive set of scenarios designed to test whether FICC’s prefunded financial resources are sufficient to cover losses sustained by member portfolios in such scenarios.¹⁴ Specifically, FICC assesses the impact on member

⁹ See Stress Testing Framework Order, supra note 7, 82 FR at 61083; Notice of Filing, supra note 4 at 11413.

¹⁰ See id.; 17 CFR 240.17Ad-22(a)(17).

¹¹ See Stress Testing Framework Order, supra note 7, 82 FR at 61083; Notice of Filing, supra note 4 at 11413.

¹² See id.

¹³ See id.

¹⁴ See id.

portfolios under both historical scenarios and hypothetical scenarios.¹⁵ Historical scenarios are based on stressed market conditions as they have occurred on specific dates in the past.¹⁶ In order to select historical stress scenarios, MBSD's stress testing model selects dates from the past that represent stressed market conditions based on the largest historical changes of the selected risk factors. Hypothetical scenarios represent theoretical market conditions that may not actually have occurred, but could conceivably occur.¹⁷ In order to select hypothetical stress scenarios, MBSD considers potential future events and their perceived impact to portfolio market risk factors.

In developing historical scenarios for MBSD stress testing purposes, FICC currently examines historical data to identify the largest historical changes of two risk factors that influence the pricing of mortgage-backed securities ("MBS"). Specifically, FICC examines historical data to determine the sensitivity of MBS prices to changes in interest rates and mortgage option adjusted spreads ("OAS").¹⁸ FICC currently uses its own internally-developed risk factor historical data. FICC examines the historical data during a rolling 10-year look-back period, with dates falling outside the 10-year period eliminated quarterly.¹⁹

¹⁵ See id.

¹⁶ See id.

¹⁷ See id.

¹⁸ OAS is the yield spread added to a yield curve necessary to match the discounted present value of an MBS's cash flows to its market price. The OAS reflects a credit premium and the option-like characteristic of an MBS in that it incorporates prepayment. See Notice of Filing, supra note 4 at 11413-14.

¹⁹ FICC retains and applies certain historical scenarios beyond the 10-year data range because such events have had a significant impact on the financial markets,

Third, to measure and aggregate the applicable risks, FICC applies the historical and hypothetical scenarios described above to MBSD member portfolios (1) to analyze the potential losses on each portfolio in relation to margin amounts collected, and (2) to analyze the effects that potential losses on member portfolios during stress scenarios might have on FICC's prefunded financial resources. Specifically, FICC calculates the stress profits-and-losses under each stress scenario and determines the loss amount exceeding a member's margin for each scenario ("Member Deficiency"). FICC further combines the Member Deficiencies of the member and the member's affiliated family (that are also MBSD members) ("Affiliated Family Deficiency"). FICC calculates the ratio of an Affiliated Family Deficiency over the total value of the MBSD Clearing Fund excluding the sum value of the applicable affiliated family's margin.²⁰

Currently, in determining the potential losses to a member's portfolio under a stress scenario, FICC applies a profit-and-loss calculation that multiplies a set of risk factor stress movements by the sensitivity (i.e., the percentage value change in response to the stress movements) of the securities in the portfolio. FICC estimates MBS risk

including, for example, May 29, 1994 (when the Federal Reserve significantly raised rates), October 5, 1998 (when the Long-Term Capital Management crisis occurred), and September 11, 2001. See Notice of Filing, supra note 4 at 11415.

²⁰ 17 CFR 240.17Ad-22(e)(4) requires a covered clearing agency, such as FICC, to establish, implement, maintain and enforce written policies and procedures reasonably designed to monitor and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes, including by maintaining sufficient prefunded financial resources at a minimum to enable the clearing agency to cover the default of the member (including relevant affiliates) that would potentially cause the largest aggregate credit exposure for the clearing agency in extreme but plausible conditions ("Cover 1 Requirement").

sensitivities based on two interest rate risk factors and an OAS risk factor by using a regression model with a two-month look-back period.²¹

B. Proposed Changes to MBSD’s Stress Testing Methodology

1. Changes to the Scenario Selection Process

As proposed in the Advance Notice, FICC would continue to examine historical risk factor data on interest rates and OAS. However, FICC proposes to add two new risk factors – interest rate volatility²² and mortgage basis²³ – and to obtain all of the historical risk factor data from a vendor.²⁴ FICC states that the vendor-sourced data would be more

²¹ Regression is a statistical approach that FICC uses to determine the coefficient range used in the stress profit-and-loss calculation. See Notice of Filing, supra note 4 at 11415.

²² Interest rate volatility reflects the market view of fluctuations in interest rates. A high degree of interest rate volatility will affect the price sensitivity of a security. Identifying historical dates with high degrees of interest rate volatility provides additional historical stress shocks.

²³ Mortgage basis captures the difference between the prevailing mortgage rate and a blended U.S. Treasury rate, which impacts borrowers’ refinance incentives and the model prepayment assumptions. The smaller the mortgage basis, the greater the incentive for mortgage borrowers to refinance their loans and prepay their existing mortgage, thus increasing prepayment speeds. Changes in prepayment speeds affect the value of MBS securities. Identifying historical dates of changes in the mortgage basis provides additional historical stress shocks.

²⁴ FICC currently receives the historical risk-factor data from the vendor for use in MBSD’s value-at-risk (“VaR”) model, which calculates the VaR Charge component of each member’s margin. See MBSD Rule 1, Definitions – VaR Charge, supra note 5. See also Securities Exchange Act Release No. 79843 (January 19, 2017), 82 FR 8555, 8556 (January 26, 2017) (SR-FICC-2016-801); Securities Exchange Act Release No. 79868 (January 24, 2017), 82 FR 8780, 8781 (January 30, 2017) (SR-FICC-2016-007). As proposed in the Advance Notice, FICC would use the same data set for MBSD stress testing purposes.

comprehensive than FICC's currently internally-sourced data.²⁵ As such, FICC states that the proposed change would enable FICC to better understand market price changes of MBS cleared by FICC and would enhance FICC's ability to identify risk exposures under broader and more varied market conditions.²⁶ FICC also states that using the vendor-sourced data could prove beneficial for its members.²⁷ Specifically, FICC states that its use of the vendor-sourced data would enable its members to align their stress testing analyses with FICC's analyses, because its members use similar data and analysis for their own internal stress testing methodologies.²⁸

In addition, as proposed in the Advance Notice, FICC would change the look-back period for identifying historical stress scenarios by anchoring the starting date of the look-back period to May 29, 2002²⁹ and not eliminating any time period after that date.³⁰ FICC states that expanding the look-back period beyond the 10-year rolling window

²⁵ For example, FICC's current methodology uses four tenors for the interest rate factor and two individual factors for the OAS factor. The vendor-supplied data would include 11 tenors for the interest rate factor and approximately 32 individual factors for the OAS factor, which would enable FICC's analysis to differentiate between various agency mortgage programs, underlying collateral maturities, and other MBS features. See Notice of Filing, supra note 4 at 11414-16.

²⁶ See Notice of Filing, supra note 4 at 11416.

²⁷ See Notice of Filing, supra note 4 at 11414-15.

²⁸ See id.

²⁹ FICC states that it chose May 29, 2002 as the fixed starting point of the look-back period based on FICC's assessment of the accuracy and consistency of the vendor's historical data. See Notice of Filing, supra note 4 at 11415.

³⁰ FICC would continue to include events prior to the May 29, 2002 date range that FICC identifies as important periods of historical stress. See id.

would enable FICC to include a broader range of extreme but plausible market conditions in the stress testing methodology.

2. Changes to the Risk Measurement and Aggregation Process

As proposed in the Advance Notice, FICC would replace the regression-based profit-and-loss calculation with a financial profit-and-loss calculation using vendor-sourced data. The vendor-sourced data would expand the set of risk factors available to FICC for calculating the potential losses generated by the liquidation of a member's portfolio during stress scenarios. FICC believes that the vendor-sourced data would improve the accuracy of FICC's stress testing methodology by generating profit-and-loss calculations that are closer to the actual MBS price changes during the large market moves that are typical in stress testing scenarios.³¹

3. Back-Up Calculation

Finally, FICC proposes to implement a back-up calculation that it would use in the event the vendor fails to provide FICC with the vendor-sourced data described above. Specifically, if the vendor fails to provide any data or a significant portion of the data in accordance with the timeframes to which FICC and the vendor agreed, FICC would use the most recently available data on the first day that such disruption occurs. If FICC and the vendor expect that the vendor would resume providing data within five business days, FICC would determine whether to calculate the daily stress testing calculation using the most recently available data or a back-up calculation, described below. If FICC and the vendor expect that the data disruption would extend beyond five days, FICC would utilize the back-up calculation.

³¹ See Notice of Filing, supra note 4 at 11416-17.

The proposed back-up calculation would be as follows: FICC would (1) calculate each member's portfolio net exposures in four securitization programs,³² (2) calculate the stress return for each securitization program as the three-day price return for each securitization program for each scenario date, and (3) calculate each member's stress profit-and-loss as the sum of the products of the net exposure of each category and the stress return value for each category. The proposed back-up calculation would use publicly available indices as the data source for the stress return calculations.

II. DISCUSSION

Although the Clearing Supervision Act does not specify a standard of review for an advance notice, the stated purpose of the Clearing Supervision Act is instructive: to mitigate systemic risk in the financial system and promote financial stability by, among other things, promoting uniform risk management standards for SIFMUs and strengthening the liquidity of SIFMUs.³³

Section 805(a)(2) of the Clearing Supervision Act authorizes the Commission to prescribe regulations containing risk management standards for the payment, clearing, and settlement activities of designated clearing entities engaged in designated activities for which the Commission is the supervisory agency.³⁴ Section 805(b) of the Clearing

³² The securitization programs are as follows: (1) FNMA and Freddie Mac ("FHLMC") conventional 30-year mortgage-backed securities, (2) GNMA 30-year mortgage-backed securities, (3) FNMA and FHLMC conventional 15-year mortgage-backed securities, and (4) GNMA 15-year mortgage-backed securities.

³³ See 12 U.S.C. 5461(b).

³⁴ 12 U.S.C. 5464(a)(2).

Supervision Act provides the following objectives and principles for the Commission’s risk-management standards prescribed under Section 805(a):³⁵

- to promote robust risk management;
- to promote safety and soundness;
- to reduce systemic risks; and
- to support the stability of the broader financial system.

Section 805(c) provides, in addition, that the Commission’s risk management standards may address such areas as risk management and default policies and procedures, among others areas.³⁶

The Commission has adopted risk management standards under Section 805(a)(2) of the Clearing Supervision Act and Section 17A of the Exchange Act (the “Clearing Agency Rules”).³⁷ The Clearing Agency Rules require, among other things, each covered clearing agency to establish, implement, maintain, and enforce written policies and procedures that are reasonably designed to meet certain minimum requirements for its operations and risk management practices on an ongoing basis.³⁸ As such, it is appropriate for the Commission to review advance notices against the Clearing Agency Rules and the objectives and principles of these risk management standards as described

³⁵ 12 U.S.C. 5464(b).

³⁶ 12 U.S.C. 5464(c).

³⁷ 17 CFR 240.17Ad-22. See Securities Exchange Act Release No. 68080 (October 22, 2012), 77 FR 66220 (November 2, 2012) (S7-08-11). See also Securities Exchange Act Release No. 78961 (September 28, 2016), 81 FR 70786 (October 13, 2016) (S7-03-14) (“Covered Clearing Agency Standards”). FICC is a “covered clearing agency” as defined in Rule 17Ad-22(a)(5).

³⁸ 17 CFR 240.17Ad-22.

in Section 805(b) of the Clearing Supervision Act. As discussed below, the Commission believes the proposal in the Advance Notice is consistent with the objectives and principles described in Section 805(b) of the Clearing Supervision Act,³⁹ and in the Clearing Agency Rules, in particular Rules 17Ad-22(e)(4).⁴⁰

A. Consistency with Section 805(b) of the Clearing Supervision Act

For the reasons discussed below, the Commission believes that the Advance Notice is consistent with the stated objectives and principles of Section 805(b) of the Clearing Supervision Act.⁴¹

1. Changes to the Scenario Selection Process

As described above in Section I.A., in developing historical scenarios for MBSD stress testing purposes, FICC currently (1) examines historical data to identify the largest historical changes of two risk factors that influence MBS pricing (i.e., interest rates and OAS), (2) relies on its own internally-developed risk factor historical data, and (3) considers the historical data during a rolling 10-year look-back period, with dates falling outside the 10-year period eliminated quarterly. As proposed in the Advance Notice, FICC would replace the internally-generated historical data with more comprehensive vendor-sourced data designed to enhance FICC's ability to identify risk exposures under broader and more varied market conditions. Additionally, FICC proposes to expand the look-back period for identifying historical stress scenarios from a rolling 10-year period to one that starts on May 29, 2002 and continues forward without eliminating time

³⁹ 12 U.S.C. 5464(b).

⁴⁰ 17 CFR 240.17Ad-22(e)(4).

⁴¹ 12 U.S.C. 5464(b).

periods. Expanding the look-back period beyond the 10-year rolling window would include a broader range of extreme but plausible market conditions in FICC's stress testing methodology.

Taken together, these changes should allow FICC to identify and analyze risk exposures under a broader and more varied range of stressed market conditions covering a longer time period, which should, in turn, help FICC identify the amount of financial resources necessary to cover its credit exposure under stress scenarios in extreme but plausible market conditions. The Commission, therefore, believes that the proposed methodology would be consistent with the promotion of robust risk management as well as safety and soundness at FICC.

Further, the proposed methodology would provide FICC with more information to address potential deficiencies in its prefunded financial resources than the current methodology because more comprehensive data and the expanded look-back period would allow FICC to identify and analyze additional risk exposures under a broader range of stressed market conditions than under the current methodology. Addressing potential deficiencies should help FICC ensure that it is collecting adequate prefunded financial resources to cover its potential losses resulting from the default of a clearing member and its affiliated family under multiple extreme but plausible market conditions, thereby improving FICC's ability to meet its Cover 1 Requirement and to limit its exposures in the event of such a default. Accordingly, the Commission believes the proposed methodology would be consistent with reducing systemic risks and supporting the stability of the broader financial system.

2. Changes in Risk Measurement and Aggregation Process

As described above in Section I.A., FICC's stress testing methodology uses a regression model with a two-month look-back period to determine the potential losses to a member's portfolio under a stress scenario, estimating each members' MBS sensitivity to two interest rate risk factors and an OAS risk factor. As proposed in the Advance Notice, FICC would replace the regression-based calculation with a financial profit-and-loss calculation using more comprehensive vendor-sourced data. The vendor-sourced data would expand the set of risk factors available to FICC for calculating the potential losses generated by the liquidation of a member's portfolio during stress scenarios.

The proposed methodology's profit-and-loss calculation using more comprehensive vendor-sourced data should enable FICC to perform a more robust assessment of Member Deficiencies and Affiliated Member Deficiencies and to identify potential additional risk exposures that it may not have captured before. Accordingly, the Commission believes that the proposed methodology would be consistent with promoting robust risk management and safety and soundness. Moreover, because using the profit-and-loss calculation based on more comprehensive vendor-sourced data should better enable FICC to identify and address potential risks with respect to specific members and their affiliates, it should help FICC ensure that it is collecting adequate prefunded financial resources to cover its potential losses resulting from the default of clearing members and their affiliates under multiple extreme but plausible market conditions, thereby improving FICC's ability to meet its Cover 1 Requirement and to limit its exposures in the event of such a default. Accordingly, the Commission believes the proposed methodology would be consistent with reducing systemic risks and supporting the stability of the broader financial system.

3. Back-Up Calculation

As described above in Section I.B., FICC proposes to implement a back-up calculation that it would utilize in the event of an interruption in the vendor-sourced data feed. The back-up calculation should provide FICC with a reasonable alternative method for calculating stress profits-and-losses in the event of an interruption in the vendor-sourced data feed. Accordingly, the Commission believes the proposed back-up calculation would be consistent with promoting robust risk management because it would help ensure that FICC has the ability to execute its stress tests with a reasonable alternative in the event of a vendor data disruption.

Further, by providing FICC with a reasonable alternative method for conducting stress testing, the proposed back-up calculation would help FICC avoid gaps in assessing the sufficiency of its prefunded financial resources with respect to meeting FICC's Cover 1 Requirement during a vendor data disruption. Accordingly, the Commission believes the proposed back-up calculation would be consistent with promoting safety and soundness at FICC, which in turn is consistent with reducing systemic risks and supporting the stability of the broader financial system.

B. Consistency with Rule 17Ad-22(e)(4)(iii) and (vi)

Rule 17Ad-22(e)(4)(iii) requires, in part, each covered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to effectively identify, measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes, by maintaining additional financial resources at the minimum to enable it to cover a wide range of foreseeable stress scenarios that include, but are not limited to, the default of the

participant family that would potentially cause the largest aggregate credit exposure for the covered clearing agency in extreme but plausible market conditions.⁴² Rule 17Ad-22(e)(4)(vi) requires, in part, each covered clearing agency to effectively identify, measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes, by testing the sufficiency of its total financial resources available by conducting stress testing of its total financial resources once each day using standard predetermined parameters and assumptions.⁴³

As described above in Section I.B., FICC proposes to change its stress testing methodology to: (1) enhance the scenario selection process by replacing its internally-generated historical data with more comprehensive vendor-sourced data and expanding the look-back period for identifying historical stress scenarios from a rolling 10-year period to one that starts on May 29, 2002 and continues forward without eliminating time periods; (2) replace the regression-based calculation with a financial profit-and-loss calculation using more comprehensive vendor-sourced data; and (3) implement a back-up calculation that it would utilize in the event of an interruption in the vendor-sourced data feed. Taken together, these changes should allow FICC to identify and analyze risk exposures under a broader range of stressed market conditions covering a longer time period, which should, in turn, help FICC identify the amount of financial resources necessary to cover its credit exposure under stress scenarios in extreme but plausible market conditions.

⁴² 17 CFR 240.17Ad-22(e)(4)(iii).

⁴³ 17 CFR 240.17Ad-22(e)(4)(vi).

Accordingly, the Commission believes that FICC's proposed stress testing methodology is consistent with Rule 17Ad-22(e)(4)(iii) because it should better enable FICC to assess its ability to maintain sufficient financial resources to cover a wide range of foreseeable stress scenarios that include the default of the member (including relevant affiliates) that would potentially cause FICC's largest aggregate credit exposure in extreme but plausible conditions.⁴⁴ Additionally, the Commission believes FICC's proposed stress testing methodology is consistent with Rule 17Ad-22(e)(4)(vi) because it should enable FICC to test the sufficiency of its minimum financial resources by conducting stress testing using standard predetermined parameters and assumptions.⁴⁵

III. CONCLUSION

IT IS THEREFORE NOTICED, pursuant to Section 806(e)(1)(I) of the Clearing Supervision Act, that the Commission DOES NOT OBJECT to this advance notice proposal (SR-FICC-2020-801) and that FICC is AUTHORIZED to implement the proposal as of the date of this notice.

By the Commission.

J. Matthew DeLesDernier
Assistant Secretary

⁴⁴ See 17 CFR 240.17Ad-22(e)(4)(iii).

⁴⁵ See 17 CFR 240.17Ad-22(e)(4)(vi).

