Page 1 of * 137

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
Form 19b-4

File No.* SR - 2020 - * 801

Amendment No. (req. for Amendments *)

Filing by   Fixed Income Clearing Corporation

Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934

Initial * ☑	Amendment * ☐	Withdrawal ☐	Section 19(b)(2) * ☐	Section 19(b)(3)(A) * ☐	Section 19(b)(3)(B) * ☐

Rule

Pilot ☐	Extension of Time Period for Commission Action * ▣	Date Expires *

19b-4(f)(1) ▣	19b-4(f)(4) ▣
19b-4(f)(2) ▣	19b-4(f)(5) ▣
19b-4(f)(3) ▣	19b-4(f)(6) ▣

Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010

Section 806(e)(1) * ☑	Section 806(e)(2) * ☐

Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934

Section 3C(b)(2) * ☐

Exhibit 2 Sent As Paper Document ▣	Exhibit 3 Sent As Paper Document ▣

Description

Provide a brief description of the action (limit 250 characters, required when Initial is checked *).

Amend the Mortgage-Backed Securities Division Stress Testing Methodology

Contact Information

Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.

First Name * Donaldine   Last Name * Temple

Title * Executive Director and Associate General Counsel

E-mail * dtemple@dtcc.com

Telephone * (212) 855-3277   Fax

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934,

has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.

(Title *)

Date 01/21/2020

By Nikki Poulos

Managing Director and Deputy General Counsel

(Name *)

NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.

npoulos@dtcc.com

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFS website.

Form 19b-4 Information *

Add   Remove   View

The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

Exhibit 1 - Notice of Proposed Rule Change *

Add   Remove   View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies *

Add   Remove   View

The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications

Add   Remove   View

Exhibit Sent As Paper Document
☐

Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit 3 - Form, Report, or Questionnaire

Add   Remove   View

Exhibit Sent As Paper Document
☐

Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit 4 - Marked Copies

Add   Remove   View

The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

Exhibit 5 - Proposed Rule Text

Add   Remove   View

The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.

Partial Amendment

Add   Remove   View

If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

1. **Text of the Advance Notice**

(a)   This advance notice of Fixed Income Clearing Corporation ("FICC") consists of modifications to the Mortgage-Backed Securities Division's ("MBSD") stress testing methodology.[1] FICC is proposing to (1) use vendor-supplied historical risk factor[2] time series data ("Historical Data") in MBSD's stress testing methodology's historical stress scenario selection ("Scenario Selection") process, (2) change the look-back period for identifying historical stress scenarios for the Scenario Selection process, (3) use vendor-supplied security-level risk sensitivity data[3] ("Security-Level Data") and Historical Data in the stress testing methodology's calculation of stress profits and losses ("P&L") for Clearing Members' portfolios,[4] and (4) use a back-up calculation in the event the vendor fails to provide the Security-Level Data and Historical Data (such failure, a "Vendor Data Disruption").[5] The

---

[1]   Capitalized terms used herein and not otherwise defined shall have the meaning assigned to such terms in the FICC MBSD Clearing Rules (the "MBSD Rules"), available at www.dtcc.com/legal/rules-and-procedures.aspx.

[2]   Generally, the term "risk factor" (or "risk driver") means an attribute, characteristic, variable or other concrete determinant that influences the risk profile of a system, entity, or financial asset. Risk factors may be causes of risk or merely correlated with risk.

[3]   The term "sensitivity" means the percentage value change of a security given each risk factor change.

[4]   The proposed change to use Security-Level Data would be applicable to MBSD's stress testing methodology for historical and hypothetical scenarios. The proposed change to use Historical Data would be applicable only for historical scenarios. FICC currently receives the Security-Level Data and Historical Data from a vendor. FICC currently utilizes this Security-Level Data and Historical Data in MBSD's value-at-risk ("VaR") model, which calculates the VaR Charge component in each Clearing Member's margin (referred to in the MBSD Rules as Required Fund Deposit). See MBSD Rule 1, Definitions – VaR Charge, supra note 1. FICC is proposing to use this same data set in MBSD's Scenario Selection process, and stress P&L calculation of each Clearing Member's portfolio.

[5]   FICC would receive the following data from the vendor:

- interest rate (including 11 tenors) measures the sensitivity of a price change to changes in interest rates;

- convexity measures the degree of curvature in the price/yield relationship of key interest rates (convexity would not be utilized in the scenarios selection process; it would only be utilized in the stress P&L calculation);

- mortgage option adjusted spread is the yield spread that is added to a benchmark yield curve to discount a TBA's cash flows to match its market price, which takes into

proposed changes would not require modifications to the MBSD Rules. The proposed changes are described in Item 10 below.

(b)   Not applicable.

(c)   Not applicable.

2.   Procedures of the Self-Regulatory Organization

The filing of this advance notice with the Securities and Exchange Commission (the "Commission") was approved by the Risk Committee of FICC's Board of Directors (the "Board Risk Committee") on February 13, 2018.

3.   Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

Not applicable.

---

account a credit premium and the option-like feature of mortgage-backed-securities due to prepayment;

- interest rate volatility reflects the implied volatility observed from the swaption market to estimate fluctuations in interest rates; and

- mortgage basis captures the basis risk between the prevailing mortgage rate and a blended U.S. Treasury rate, which impacts borrowers' refinance incentives and the model prepayment assumptions.

The Historical Data would include (1) interest rate, (2) mortgage option adjusted spread, (3) interest rate volatility, and (4) mortgage basis.

The Security Level Data would include (1) sensitivity to interest rates, (2) convexity, (3) sensitivity to mortgage option adjusted spread, (4) sensitivity to interest rate volatility, and (5) sensitivity to mortgage basis.

FICC does not believe that its current engagement of the vendor would present a conflict of interest because the vendor is not an existing Clearing Member nor are any of the vendor's affiliates existing Clearing Members. To the extent that the vendor or any of its affiliates applies to become a Clearing Member, FICC will negotiate an appropriate information barrier with the applicant in an effort to prevent a conflict of interest from arising. An affiliate of the vendor currently provides an existing service to FICC; however, this arrangement does not present a conflict of interest because the existing agreement between FICC and the vendor, and the existing agreement between FICC and the vendor's affiliate, each contains provisions that limit the sharing of confidential information.

4.   Self-Regulatory Organization's Statement on Burden on Competition

Not applicable.

5.   Self-Regulatory Organization's Statement on Comments on the Advance Notice Received from Members, Participants, or Others

FICC has not received or solicited any written comments relating to this proposal. FICC will notify the Commission of any written comments received by FICC.

6.   Extension of Time Period for Commission Action

Not applicable.

7.   Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2) or Section 19(b)(7)(D)

Not applicable.

8.   Proposed Rule Change Based on Rules of Another Self-Regulatory Organization or of the Commission

Not applicable.

9.   Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

10.   Advance Notice Filed Pursuant to Section 806(e) of the Payment, Clearing, and Settlement Supervision Act

I.   _Nature of the Proposed Change_

A.   **Background**

Stress testing is an essential component of FICC's risk management. FICC uses stress testing to help ensure that it is collecting adequate prefunded financial resources[6] to cover MBSD's potential losses resulting from the default of a Clearing Member and such Clearing Member's affiliated family (that are also Clearing Members) ("Affiliated Family") under multiple extreme but plausible market stress conditions (sometimes referred to as "stress

---

[6]   MBSD's prefunded financial resources consist of Required Fund Deposits collected from Clearing Members in the form of cash and/or Eligible Clearing Fund Securities, with any such Eligible Clearing Fund Securities being subject to a haircut. See MBSD Rules 1 and 4, supra note 1.

scenarios").[7] As set forth in the Framework, the development of FICC's stress testing methodology is comprised of three key components.[8]

The first component is the risk identification process. FICC identifies the principal credit/market risk drivers that are representative and specific to each Clearing Member's portfolio to determine potential risk exposure. FICC accomplishes this by analyzing the securities in each Clearing Member's portfolio to identify the principal market price risk factor drivers and capture the risk sensitivity of such portfolios under stressed market conditions.

The second component is the scenario development process, which is designed to construct comprehensive and relevant sets of extreme but plausible historical and hypothetical stress scenarios. 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. In order to select hypothetical stress scenarios, MBSD considers potential future events and their perceived impact to portfolio market risk factors.

The third component is the risk measurement and aggregation process. This process involves calculating risk metrics for each Clearing Member's portfolio. The stress testing methodology calculates stress P&L under each stress scenario and determines the loss amount exceeding a Clearing Member's Required Fund Deposit for each scenario. This calculation is referred to as the "Clearing Member Level Stress Deficiencies." In addition, the stress testing methodology calculates the ratio of an Affiliated Family's deficiency[9] over the total value of the MBSD Clearing Fund excluding the sum value of the applicable Affiliated Family's Required Fund Deposits. This calculation is referred to as the "Cover 1 Ratio."[10]

B.   Proposed change to MBSD's stress testing methodology

As further described below, FICC is proposing to use Security-Level Data and Historical Data in MBSD's stress testing methodology. Specifically, FICC is proposing to (1) use

---

[7] Consistent with the Clearing Agency Stress Testing Framework (Market Risk) ("Framework"), FICC aggregates each Clearing Member's stress deficiency within such Clearing Member's applicable Affiliated Family because FICC assumes that all Affiliated Families will simultaneously default, and the gains and losses of different legal entities within an Affiliated Family would not offset each other. The Framework is described in rule filing SR-FICC-2017-009. See Securities Exchange Act Release No. 82368 (December 19, 2017), 82 FR 61082 (December 26, 2017) ("Framework Approval Order").

[8] Id. at 61083.

[9] An "Affiliated Family deficiency" is the aggregate of all Clearing Members' stress deficiencies within the applicable Affiliated Family.

[10] See Framework Approval Order, 82 FR at 61083.

Historical Data in the Scenario Selection process, (2) change the look-back period used for identifying historical stress scenarios for the Scenario Selection process, (3) use Security-Level Data and Historical Data in the methodology's calculation of stress P&L for Clearing Members' portfolios,[11] and (4) use a back-up calculation in the event of a Vendor Data Disruption.

> *(1)   Proposed change to use Historical Data in the Scenario Selection process*

FICC uses two risk factors as inputs to the MBSD stress testing model for the historical Scenario Selection process. The risk factors are (1) interest rate and (2) mortgage option adjusted spread. The interest rate risk factor consists of swap rates[12] with tenors[13] of 2 years, 5 years, 10 years, and 30 years. The mortgage option adjusted spread risk factor is constructed as the difference between the agency mortgage-backed TBA securities' current coupon rate and the average swap rate, in each case, for Fannie Mae ("FNMA") 30-year mortgages and Ginnie Mae ("GNMA") 30-year mortgages. MBSD's scenario selection algorithm uses a technique referred to as principal component analysis[14] to convert correlated risk factors into uncorrelated risk drivers that account for the joint co-movements[15] of the multiple risk factors during the 10-year look-back period.

FICC is proposing to continue to utilize the interest rate risk factor and the mortgage option adjusted spread risk factor as inputs to MBSD's stress testing model, however, both risk factors would be sourced from a vendor. FICC is also proposing to include two new risk factors in the methodology – interest rate volatility and mortgage basis. The proposed change would result in an expansion of the number of tenors for the existing interest rate risk factor and an

---

[11]   In connection with this proposal, FICC is not proposing any changes to the hypothetical Scenario Selection process other than to use the vendor's data. The hypothetical scenarios are currently represented by five interest rate tenors (i.e., 1-year, 2-year, 5-year, 10-year, and 30-year tenors), one mortgage option adjusted spread, and one interest rate volatility point. The hypothetical scenarios are reflected as shocks to the referenced risk factors. This process would not change, however, in order to calculate the stress P&L in the proposed model, FICC would map the referenced risk factors to the set of risk factors in the proposed model.

[12]   Generally, the term "swap rate" means the fixed interest rate that the receiver demands in exchange for the uncertainty of having to pay the short-term floating rate over time.

[13]   Generally, the term "tenor" means the amount of time left for the repayment of a loan or until a financial contract expires.

[14]   Principal component analysis is a standard statistical technique that is applied to a set of observations of potentially correlated variables. It is used to identify a set of linearly uncorrelated variables, which are referred to as principal components.

[15]   Generally, the term "joint co-movement" means the movement of two variables at the same time.

expansion of the number of individual factors to the existing mortgage option adjusted spread risk factor. As a result of this change, the proposed interest rate risk factor would include 11 tenors and the proposed mortgage option adjusted spread risk factor would include up to approximately 32 individual factors,[16] which would differentiate between various agency mortgage programs, underlying collateral maturities, and the level of moneyness.[17]

FICC is proposing to use the Historical Data (as described above) because this data is more comprehensive, granular,[18] and transparent. The Historical Data is more comprehensive and granular because (1) it would reflect a total of four risk factors (i.e., interest rate, interest rate volatility, mortgage option adjusted spread and mortgage basis), (2) the proposed interest rate risk factor would include 11 tenors and (3) the proposed mortgage option adjusted spread risk factor would include up to approximately 32 individual factors. As a result of this change, FICC believes that the proposed Historical Data would better explain the market price changes of TBA transactions cleared by MBSD[19] and FICC would be able to identify stress risk exposures under broader and more varied market conditions. The Historical Data would also provide MBSD with an enhanced capability to design more transparent scenarios. Because Clearing Members typically use risk factor analysis for their own risk and financial reporting, such Members would have comparable data and analysis to stress test their portfolios. Thus, Clearing Members would be able to simulate their stressed portfolios to a closer degree than under the existing stress testing methodology.

---

[16] As described in the paragraph above, the current stress testing methodology uses four tenors for the interest rate risk factor and two individual factors for the mortgage option adjusted spread risk factor.

[17] The changes of spread are parameterized according to the difference between the underlying weighted average coupon ("WAC") and the current prevailing mortgage rate. This difference is also referred to as the "moneyness." A TBA security with a WAC that is 10 basis points higher than the prevailing mortgage rate is said to be 10 basis points in the money. Fifteen moneyness points are used to parameterize the FNMA 30-year mortgage.

[18] The term "granular" in the risk context means detailed and diversified.

[19] Specified Pool Trades and Stipulated Trades are mapped to the corresponding TBAs. FICC's guarantee of Option Contracts on TBAs is limited to the intrinsic value of the option positions meaning that, when the underlying price of the TBA position is above the call price, the Option Contract is considered in-the-money and FICC's guarantee reflects this portion of the Option Contract's positive value at the time of a Clearing Member's insolvency. The value change of an Option Contract's position is simulated as the change in its intrinsic value. No changes are being proposed to MBSD's treatment of Specified Pool Trades, Stipulated Trades and Option Contracts pursuant to this proposal.

       (2)   Proposed change to the look-back period used for the identification of historical stress scenarios in the Scenario Selection process

MBSD's current set of historical stress scenarios is comprised of scenarios that reflect the most severe market price movements which have been observed during past periods of extreme market conditions. To identify specific dates for these market movements, MBSD's stress testing model analyzes the historical risk factor time series data over a 10-year look-back period. Specifically, MBSD's stress testing model currently selects 50 historical scenarios based on actual historical time periods observed over a 10-year look-back period.[20] On a quarterly basis, MBSD eliminates all historical data that fall outside the scope of the 10-year look-back period.

FICC is proposing to change the current 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward – meaning that no portion of the timeframe within the proposed look-back period would be eliminated from the stress testing model; instead the entire timeframe within the look-back period would continue to expand forward.[21]

FICC selected May 29, 2002 as the fixed starting point based on its assessment of the accuracy and consistency of the Historical Data provided by the vendor. FICC is proposing this change because it believes that the expanded look-back period would better capture the potential market price changes of TBA securities, preserve historical dates that would otherwise be eliminated under the current 10-year look-back period, and provide the stress testing model with a larger set of scenarios for the historical Scenario Selection process.[22]

       (3)   Proposed change to use Security-Level Data and Historical Data in the stress testing model's stress P&L calculation

Currently, in order to determine the potential loss to a Clearing Member's portfolio under a given stress scenario, MBSD's stress testing methodology applies a profit-and-loss calculation that multiplies a set of risk factors' stress movements by its corresponding risk sensitivities. Currently this methodology utilizes two interest rate risk factors (i.e., 2-year swap rates and 10-year swap rates) and the FNMA 30-year current coupon mortgage option adjusted spread. The

---

[20]   In addition to these 50 historical scenarios, FICC supplements the historical scenario set by including additional events that have occurred outside of the 10-year look-back period and have been identified as important periods of historical stress because such events have had a significant impact on the financial market. These dates include 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 (when the terrorist attacks occurred).

[21]   FICC would continue to include events that have occurred prior to the proposed fixed date of May 29, 2002. These events include the events referred to in footnote 20 above.

[22]   Pursuant to the proposed change, the look-back period would include at least 16 years of historical data.

risk sensitivities are estimated using an empirical regression with a two-month look-back period.[23] FICC believes that the current methodology's use of a smaller set of risk factors and the relatively short two-month look-back period is a limitation that contributes to an inability to explain the results of the sensitivities estimation.

FICC is proposing to leverage the Security-Level Data and Historical Data in the methodology's calculation of stress P&L. Specifically, FICC is proposing to replace the current empirical regression-based profit-and-loss calculation with a financial profit-and-loss calculation. The proposed financial profit-and-loss calculation would use the Security-Level Data and Historical Data. The Security-Level Data is generated using the vendor's suite of security valuation models that includes an agency mortgage prepayment model and interest rate term structure model.[24] FICC believes that the vendor's approach generates more stable and robust Security-Level Data and addresses the limitations of the current empirical regression algorithm.[25] Because the proposed change would include Security-Level Data, FICC believes the proposed Security-Level Data would improve the stress testing model's stress P&L calculation, and the calculated results would be closer to actual price changes for TBA securities during larger market moves which are typical of stress testing scenarios.

> (4) *Proposed change to use a back-up calculation in the event of a Vendor Data Disruption*

As described above, FICC would utilize the vendor's data for MBSD's stress testing methodology. Prior to MBSD's use of this data in its VaR model, FICC 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. At that time, The Depository Trust & Clearing Corporation's ("DTCC") Quantitative Risk Management, Vendor Risk Management, and Information Technology teams conducted due diligence of the vendor in order to evaluate its control framework for managing key risks.[26] FICC's due diligence included an assessment of the vendor's technology risk, business continuity, regulatory compliance, and privacy controls. Because of FICC's due diligence and its use of the vendor data in connection with the calculation of MBSD's margin model, FICC understands and remains comfortable with the vendor's

---

[23] Empirical regression is a statistical measure that determines the coefficient range used in the stress P&L calculation.

[24] A prepayment model captures cash flow uncertainty as a result of unscheduled payments of principal (prepayments). An interest rate term structure model describes the relationship between interest rates of different maturities.

[25] As described above, these limitations include the limited number of risk factors and the two-month look-back period.

[26] DTCC is FICC's parent company. DTCC operates on a shared services model with respect to FICC. Most corporate functions are established and managed on an enterprise-wide basis pursuant to intercompany agreements under which DTCC generally provides a relevant service to FICC.

controls. In addition, DTCC's Data Integrity department manages the data that FICC receives including, but not limited to, market data and analytical data provided by vendors.[27] As a result, FICC feels comfortable with leveraging the Security-Level Data and Historical Data for purposes of MBSD's stress testing methodology.

In connection with FICC's proposal to use the Security-Level Data and Historical Data in its stress testing methodology for the historical and hypothetical scenarios, FICC is also proposing a back-up calculation (as described in the paragraph below) that it would utilize in the event the vendor fails to provide the data. If the vendor fails to provide any data or a significant portion of the data in accordance with the timeframes agreed to by FICC and the vendor, FICC would use the most recently available data on the first day that such disruption occurs. Subject to discussions with the vendor, if a Managing Director, who oversees Market Risk Management, determines that the vendor would resume providing data within five (5) business days, such Managing Director would determine whether the daily stress testing calculation should continue to be calculated by using the most recently available data or whether the back-up calculation (as described below) should be invoked, subject to the approval of DTCC's Group Chief Risk Officer or his/her designee.[28] Subject to discussions with the vendor, if a Managing Director, who oversees Market Risk Management, determines that the data disruption would extend beyond five (5) business days, the back-up calculation would be applied, subsequent to the approval of DTCC's Management Risk Committee, followed by notification to the Board Risk Committee.

The proposed back-up calculation would be as follows: MBSD would (1) calculate each Clearing Member's portfolio net exposures in four securitization programs,[29] (2) calculate the

---

[27] DTCC's Data Integrity department oversees data integrity on behalf of DTCC's Counterparty Credit, Market, and Liquidity Risk Management groups as well as Securities Valuation, Model Validation and Control, and Quantitative Risk Management (collectively, Financial Risk Management ("FRM")), and the Systemic Risk Office. The Data Integrity department's mission is to align with FRM and ensure that the highest data quality is managed for the purpose of lowering risk and improving efficiency within FRM. The Data Integrity department's prime directive consists of the following: (1) ensuring a data governance framework is established and adhered to within FRM; (2) ensuring sufficient integrity of key data sources through active rules-based data monitoring; (3) ensuring sufficient alerting is in place to inform necessary parties when data anomalies occur; (4) liaising with subject matter experts to resolve data anomalies in an efficient and effective manner; and (5) ensuring that critical FRM data is catalogued and defined in the enterprise data dictionary.

[28] For the avoidance of doubt, after taking into consideration the vendor's condition and, to the extent applicable, market conditions, FICC may treat the interruption as an extended data interruption sooner.

[29] The securitization programs are as follows: (1) FNMA and Freddie Mac ("FHLMC") conventional 30-year mortgage-backed securities, (2) GNMA 30-year mortgage-backed

stress return for each securitization program as the three-day price return for each securitization program index for each scenario date, and (3) calculate each Clearing Member's stress P&L as the sum of the products of the net exposure of each securitization program and the stress return value for each securitization program. FICC would use publicly available indices (e.g., the Bloomberg FNMA 30-year index, Bloomberg GNMA 30-year index, Bloomberg FNMA 15-year index and Bloomberg GNMA 15-year index) as the data source for the stress return calculations.[30]

C. Delayed implementation of the proposal

This proposal would become operative within 45 business days after the date of the Commission's notice of no objection to this advance notice filing. FICC would announce the operative date in an important notice issued to Clearing Members.[31]

II. *Anticipated Effect on and Management of Risks*

FICC believes that the proposed change to MBSD's stress testing methodology, which consists of proposals to (1) use Historical Data in the Scenario Selection process, (2) change the 10-year look-back period used for the identification of historical stress scenarios in the Scenario Selection process, (3) use Security-Level Data and Historical Data in the stress testing methodology's calculation of stress P&L for Clearing Members' portfolios, and (4) use a back-up calculation in the event of a Vendor Data Disruption, would affect MBSD's management of risk because the changes would help to ensure that MBSD's stress testing methodology more effectively measures whether 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 stress conditions.

A. Proposed change to use Historical Data in the Scenarios Selection process

FICC's proposal to utilize Historical Data in MBSD's historical stress scenario selection process would affect FICC's management of risk because the change would incorporate a broader range of risk factors to better understand a Clearing Member's exposure to these risk factors. As described above, the proposed change would enable MBSD to leverage vendor expertise in supplying the risk data attributes that would then be incorporated into MBSD's stress testing model. The data would expand the number of tenors for the existing interest rate risk

---

securities, (3) FNMA and FHLMC conventional 15-year mortgage-backed securities, and (4) GNMA 15-year mortgage-backed securities.

[30]   The proposed calculation is similar to MBSD's calculation of the Margin Proxy, which is the back-up calculation that MBSD will use to calculate the VaR Charge in the event of a vendor data disruption. See MBSD Rule 1, Definitions – Margin Proxy, supra note 1.

[31]   MBSD's important notices are available at http://www.dtcc.com/legal/important-notices?subsidiary=FICC+-+MBS&pgs=1.

factor and expand the number of individual factors to the existing mortgage option adjusted spread risk factor. The proposed interest rate risk factor would include 11 tenors and the proposed mortgage option adjusted spread risk factor would include up to approximately 32 individual factors.[32] In addition, FICC would include two new risk factors in the methodology – interest rate volatility and mortgage basis. FICC believes that the proposed change would provide more comprehensive, granular and transparent risk representations that enable sensitivity analysis on key model parameters and assumptions.

B. **Proposed change to the 10-year look-back period used for the identification of historical stress scenarios in the Scenario Selection process**

FICC's proposal to change the current 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward would affect FICC's management of risk because the change (which includes at least 16 years of historical data) would give MBSD the ability to assess a broader spectrum of historical stressed market events that would be used in the stress testing methodology to design a comprehensive set of historical stress scenarios.

C. **Proposed change to use Security-Level Data and Historical Data in the stress testing model's stress P&L calculation**

FICC's proposal to use Security-Level Data and Historical Data in the stress testing methodology's calculation of stress P&L would affect FICC's management of risk because leveraging the vendor-supplied data would improve the estimation of the stress P&L calculation by giving FICC the ability to attribute the stress loss under a given stress scenario to specific risk factor changes. As described above, FICC would replace the current empirical regression based profit-and-loss calculation with a financial profit-and-loss calculation that uses Security-Level Data and Historical Data, which are not included in the current algorithm.[33] Thus, FICC believes the proposed change would improve the stress testing model's stress P&L calculation because the calculated results would be closer to actual price changes for TBA securities during larger market moves which are typical of stress testing scenarios.

In an effort to assess the impact of the proposed change, FICC compared the results of the current stress testing methodology with the proposed stress testing methodology for the period of February 1, 2018 through January 1, 2019 with respect to the historical stress scenarios. The average of the maximum daily historical Cover 1 Ratio for this period is 20.3% for the proposed stress testing methodology compared to 19.2% for the current stress testing methodology

---

[32] The proposed interest rate risk factor would include 11 tenors between 3 months and 30 years, and the proposed mortgage option adjusted spread risk factor would include factors related to relative value, spread between 15-year and 30-year products, and spread between GNMA and FNMA.

[33] As described above, the empirical regression algorithm incorporates fewer risk factors and a shorter look-back period.

(meaning that the proposed methodology would be approximately 1.1% higher (on average) than the current methodology).

D. Proposed change to use a back-up calculation in the event of a Vendor Data Disruption

FICC's proposal to use a back-up calculation would affect FICC's management of risk because it would help to ensure that FICC continues to test the adequacy of MBSD's prefunded financial resources in the event of a Vendor Data Disruption. As described above, FICC would manage the risks associated with a potential data disruption by using the most recently available data (before the disruption) on the first day that a data disruption occurs. If the vendor fails to provide any data or a significant portion of the data in accordance with the timeframes agreed to by FICC and the vendor, FICC would use the most recently available data on the first day that such disruption occurs. Subject to discussions with the vendor, if a Managing Director, who oversees Market Risk Management, determines that the vendor would resume providing data within five (5) business days, such Managing Director would determine whether the daily stress testing calculation should continue to be calculated by using the most recently available data or whether the back-up calculation should be invoked, subject to the approval of DTCC's Group Chief Risk Officer or his/her designee. Subject to discussions with the vendor, if a Managing Director, who oversees Market Risk Management, determines that the data disruption would extend beyond five (5) business days, the back-up calculation would be applied, subject to the approval of DTCC's Management Risk Committee, followed by notification to the Board Risk Committee.

III. _Consistency with the Clearing Supervision Act and the Covered Clearing Agency Standards_

Although the Payment, Clearing, and Settlement Supervision Act of 2010 ("Clearing Supervision Act") does not specify a standard of review for an advance notice, its stated purpose is instructive: to mitigate systemic risk in the financial system and promote financial stability by, among other things, promoting uniform risk management standards for systemically important financial market utilities and strengthening the liquidity of systemically important financial market utilities.[34]

Section 805(a)(2) of the Clearing Supervision Act[35] authorizes the Commission to prescribe risk management standards for the payment, clearing and settlement activities of designated clearing entities, like FICC, and financial institutions engaged in designated activities for which the Commission is the supervisory agency or the appropriate financial regulator. Section 805(b) of the Clearing Supervision Act[36] states that the objectives and principles for the risk management standards prescribed under Section 805(a) shall be to, among other things,

---

[34]   See 12 U.S.C. 5461(b).

[35]   See 12 U.S.C. 5464(a)(2).

[36]   See 12 U.S.C. 5464(b).

promote robust risk management, promote safety and soundness, reduce systemic risks, and support the stability of the broader financial system. The Commission has adopted risk management standards under Section 805(a)(2) of the Clearing Supervision Act[37] and Section 17A of the Securities Exchange Act of 1934 (the "Act")[38] (the risk management standards are referred to as the "Covered Clearing Agency Standards").[39] The Covered Clearing Agency Standards require registered clearing agencies to establish, implement, maintain, and enforce written policies and procedures that are reasonably designed to be consistent with the minimum requirements for their operations and risk management practices on an ongoing basis.[40]

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

FICC believes that the proposed changes in this advance notice are consistent with the objectives and principles of the risk management standards as described in Section 805(b) of the Clearing Supervision Act and in the Covered Clearing Agency Standards. As discussed above, FICC is proposing several changes to MBSD's stress testing methodology. FICC believes the proposed changes are consistent with promoting robust risk management because the changes are designed to enhance MBSD's stress testing methodology, which is used to help ensure that MBSD collects 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 stress conditions.

First, FICC is proposing to leverage Historical Data in the Scenario Selection process. FICC believes the proposed change would promote robust risk management because the Historical Data would incorporate a broader range of risk factors that would be used in MBSD's stress testing model to better understand a Clearing Member's exposure to these risk factors.

Second, FICC is proposing to change the 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward. FICC believes the proposed change would promote robust risk management because the change, which includes at least 16 years of historical data, would capture the potential market price changes of TBA securities over a longer time period, preserve historical dates that would otherwise be eliminated under the current 10-year look-back period and provide the stress testing model with a larger set of scenarios for the historical Scenario Selection process.

Third, FICC is proposing to leverage Security-Level Data and Historical Data in the methodology's calculation of stress P&L. FICC believes the proposed change would promote robust risk management because it would replace the current empirical regression-based profit-and-loss calculation with a financial profit-and-loss calculation that utilizes the Security-Level Data and Historical Data. The change would cause the stress testing model's stress P&L

---

[37]   See 12 U.S.C. 5464(a)(2)

[38]   See 15 U.S.C. 78q-1.

[39]   See 17 CFR 240.17Ad-22.

[40]   Id.

calculation to calculate amounts that are closer to actual price changes for TBA securities during larger market moves in an effort to test the adequacy of MBSD's prefunded resources.

Fourth, FICC is proposing to use a back-up calculation in the event of a Vendor Data Disruption. FICC believes the proposed change would promote robust risk management because the change would help to ensure that FICC has a stress testing methodology in place that allows it to continue to test the adequacy of MBSD's prefunded financial resources in the event of a Vendor Data Disruption.

For these reasons, FICC believes the proposed changes would help to promote MBSD's robust risk management, which, in turn, is consistent with reducing systemic risks and supporting the stability of the broader financial system, consistent with Section 805(b) of the Clearing Supervision Act.[41] FICC also believes the changes proposed in this advance notice are consistent with promoting safety and soundness, which, in turn, is consistent with reducing systemic risks and supporting the stability of the broader financial system, consistent with Section 805(b) of the Clearing Supervision Act.[42] As described above, the proposed changes are designed to help ensure that FICC's stress testing methodology measures whether MBSD 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 stress conditions. Because the proposed changes would better position FICC to limit its exposures to Clearing Members in the event of a Clearing Member's default, FICC believes the proposed changes are consistent with promoting safety and soundness, 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) under the Act

This proposal is also designed to be consistent with Rule 17Ad-22(e)(4) under the Act, which requires, in part, that each covered clearing agency 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.[43]

Rule 17Ad-22(e)(4)(i) under the Act requires that a covered clearing agency maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.[44] The proposed changes are consistent with Rule 17Ad-22(e)(4)(i) because they describe how FICC has developed and carries out a credit risk management strategy to maintain sufficient prefunded financial resources to cover fully its credit exposures to each Clearing Member with a high degree of confidence.

---

[41]   See 12 U.S.C. 5464(b).

[42]   Id.

[43]   17 CFR 240.17Ad-22(e)(4).

[44]   17 CFR 240.17Ad-22(e)(4)(i).

FICC believes (1) the proposal to use Historical Data in the historical Scenario Selection process and incorporate a broader range of risk factors that would be used in MBSD's stress testing model would enable FICC to better understand a Clearing Member's exposure to these risk factors, (2) the proposal to change the 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward would better capture the potential market price changes of TBA securities, preserve historical dates that would otherwise be eliminated under the current 10-year look-back period and provide the stress testing model with a larger set of scenarios for the historical selection process, (3) the proposal to leverage Security-Level Data and Historical Data in the stress testing methodology's calculation of stress P&L for Clearing Members' portfolios would provide for calculated amounts that are closer to actual price changes for TBA securities during larger market moves in an effort to test the adequacy of MBSD's prefunded resources, and (4) the proposal to use a back-up calculation would help to ensure that FICC has a methodology in place that allows it to continue to measure the adequacy of MBSD's prefunded financial resources in the event of a Vendor Data Disruption. FICC believes that the proposed changes would improve MBSD's stress testing methodology, which is used to test the sufficiency of MBSD's prefunded resources daily to support compliance with Rule 17Ad-22(e)(4)(i). As such, FICC believes that, taken together, the proposed changes are designed to be consistent with the requirements of Rule 17Ad-22(e)(4)(i) under the Act.[45]

Rule 17Ad-22(e)(4)(vi)(A) under the Act requires that a covered clearing agency conduct stress testing of its total financial resources once each day using standard predetermined parameters and assumptions.[46] FICC believes the proposal to (1) use Historical Data in the historical Scenario Selection process, (2) change the 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward, (3) leverage Security-Level Data and Historical Data in the stress testing methodology's calculation of stress P&L for Clearing Members' portfolios, and (4) use a back-up calculation in the event of a Vendor Data Disruption would reflect standard predetermined parameters and assumptions that FICC would use in MBSD's stress testing methodology to conduct daily stress testing.

FICC believes that the proposed changes would reflect its use of standard predetermined parameters and assumptions in FICC's daily stress testing of its financial resources in order to support compliance with Rule 17Ad-22(e)(4)(vi)(A) under the Act.[47] As such, FICC believes that, taken together, the proposed changes are designed to be consistent with the requirements of Rule 17Ad-22(e)(4)(vi)(A) under the Act.[48]

---

[45]   17 CFR 240.17Ad-22(e)(4)(i).

[46]   17 CFR 240.17Ad-22(e)(4)(vi)(A). The Framework identifies the sources of MBSD's prefunded resources for purposes of meeting FICC's requirements under Rule 17Ad-22(e)(4)(iii).

[47]   Id.

[48]   17 CFR 240.17Ad-22(e)(4)(vi)(A).

11.   **Exhibits**

Exhibit 1 – Not applicable.

Exhibit 1A – Notice of advance notice for publication in the <u>Federal Register</u>.

Exhibit 2 – Not applicable.

Exhibit 3a – Methodology Document - MBSD Market and Credit Risk Stress Test Models. **Omitted and filed separately with the Commission. Confidential treatment of this Exhibit 3a being requested pursuant to 17 CFR 240.24b-2.**

Exhibit 3b – Impact Analysis, February 2018 – January 2019. **Omitted and filed separately with the Commission. Confidential treatment of this Exhibit 3b being requested pursuant to 17 CFR 240.24b-2.**

Exhibit 4 – Not applicable.

Exhibit 5 – Not applicable.

EXHIBIT 1A

SECURITIES AND EXCHANGE COMMISSION
(Release No. 34-[_____]; File No. SR-FICC-2020-801)

[DATE]

Self-Regulatory Organizations; Fixed Income Clearing Corporation; Notice of Filing of Advance Notice to Amend the Mortgage-Backed Securities Division Stress Testing Methodology

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] notice is hereby given that on January __, 2020, Fixed Income Clearing Corporation ("FICC") filed with the Securities and Exchange Commission ("Commission") the advance notice SR-FICC-2020-801 ("Advance Notice") as described in Items I, II and III below, which Items have been prepared by the clearing agency. The Commission is publishing this notice to solicit comments on the Advance Notice from interested persons.

I.   Clearing Agency's Statement of the Terms of Substance of the Advance Notice

This Advance Notice consists of modifications to the Mortgage-Backed Securities Division's ("MBSD") stress testing methodology.[3] FICC is proposing to (1) use vendor-supplied historical risk factor[4] time series data ("Historical Data") in MBSD's stress

---

[1]   12 U.S.C. 5465(e)(1).

[2]   17 CFR 240.19b-4(n)(1)(i).

[3]   Capitalized terms used herein and not otherwise defined shall have the meaning assigned to such terms in the FICC MBSD Clearing Rules (the "MBSD Rules"), available at www.dtcc.com/legal/rules-and-procedures.aspx.

[4]   Generally, the term "risk factor" (or "risk driver") means an attribute, characteristic, variable or other concrete determinant that influences the risk

testing methodology's historical stress scenario selection ("Scenario Selection") process,

(2) change the look-back period for identifying historical stress scenarios for the Scenario

Selection process, (3) use vendor-supplied security-level risk sensitivity data[5] ("Security-

Level Data") and Historical Data in the stress testing methodology's calculation of stress

profits and losses ("P&L") for Clearing Members' portfolios,[6] and (4) use a back-up

calculation in the event the vendor fails to provide the Security-Level Data and Historical

Data (such failure, a "Vendor Data Disruption"), as described in greater detail below.[7]

The proposed changes would not require modifications to the MBSD Rules

---

profile of a system, entity, or financial asset. Risk factors may be causes of risk or merely correlated with risk.

[5]   The term "sensitivity" means the percentage value change of a security given each risk factor change.

[6]   The proposed change to use Security-Level Data would be applicable to MBSD's stress testing methodology for historical and hypothetical scenarios. The proposed change to use Historical Data would be applicable only for historical scenarios. FICC currently receives the Security-Level Data and Historical Data from a vendor. FICC currently utilizes this Security-Level Data and Historical Data in MBSD's value-at-risk ("VaR") model, which calculates the VaR Charge component in each Clearing Member's margin (referred to in the MBSD Rules as Required Fund Deposit). See MBSD Rule 1, Definitions – VaR Charge, supra note 3. FICC is proposing to use this same data set in MBSD's Scenario Selection process, and stress P&L calculation of each Clearing Member's portfolio.

[7]   FICC would receive the following data from the vendor:

- interest rate (including 11 tenors) measures the sensitivity of a price change to changes in interest rates;

- convexity measures the degree of curvature in the price/yield relationship of key interest rates (convexity would not be utilized in the scenarios selection process; it would only be utilized in the stress P&L calculation);

- mortgage option adjusted spread is the yield spread that is added to a benchmark yield curve to discount a TBA's cash flows to match its market

II.   Clearing Agency's Statement of the Purpose of, and Statutory Basis for, the Advance Notice

In its filing with the Commission, the clearing agency included statements concerning the purpose of and basis for the Advance Notice and discussed any comments it received on the Advance Notice. The text of these statements may be examined at the places specified in Item IV below. The clearing agency has prepared summaries, set forth in sections A and B below, of the most significant aspects of such statements.

---

price, which takes into account a credit premium and the option-like feature of mortgage-backed-securities due to prepayment;

- interest rate volatility reflects the implied volatility observed from the swaption market to estimate fluctuations in interest rates; and

- mortgage basis captures the basis risk between the prevailing mortgage rate and a blended U.S. Treasury rate, which impacts borrowers' refinance incentives and the model prepayment assumptions.

The Historical Data would include (1) interest rate, (2) mortgage option adjusted spread, (3) interest rate volatility, and (4) mortgage basis.

The Security Level Data would include (1) sensitivity to interest rates, (2) convexity, (3) sensitivity to mortgage option adjusted spread, (4) sensitivity to interest rate volatility, and (5) sensitivity to mortgage basis.

FICC does not believe that its current engagement of the vendor would present a conflict of interest because the vendor is not an existing Clearing Member nor are any of the vendor's affiliates existing Clearing Members. To the extent that the vendor or any of its affiliates applies to become a Clearing Member, FICC will negotiate an appropriate information barrier with the applicant in an effort to prevent a conflict of interest from arising. An affiliate of the vendor currently provides an existing service to FICC; however, this arrangement does not present a conflict of interest because the existing agreement between FICC and the vendor, and the existing agreement between FICC and the vendor's affiliate, each contains provisions that limit the sharing of confidential information.

(A)   Clearing Agency's Statement on Comments on the Advance Notice
       Received from Members, Participants, or Others

FICC has not received or solicited any written comments relating to this proposal.

FICC will notify the Commission of any written comments received by FICC.

(B)   Advance Notice Filed Pursuant to Section 806(e) of the Clearing
       Supervision Act

    I.   *Nature of the Proposed Change*

    A.   Background

Stress testing is an essential component of FICC's risk management. FICC uses

stress testing to help ensure that it is collecting adequate prefunded financial resources[8] to

cover MBSD's potential losses resulting from the default of a Clearing Member and such

Clearing Member's affiliated family (that are also Clearing Members) ("Affiliated

Family") under multiple extreme but plausible market stress conditions (sometimes

referred to as "stress scenarios").[9] As set forth in the Framework, the development of

FICC's stress testing methodology is comprised of three key components.[10]

---

[8]   MBSD's prefunded financial resources consist of Required Fund Deposits
       collected from Clearing Members in the form of cash and/or Eligible Clearing
       Fund Securities, with any such Eligible Clearing Fund Securities being subject to
       a haircut. See MBSD Rules 1 and 4, supra note 3.

[9]   Consistent with the Clearing Agency Stress Testing Framework (Market Risk)
       ("Framework"), FICC aggregates each Clearing Member's stress deficiency
       within such Clearing Member's applicable Affiliated Family because FICC
       assumes that all Affiliated Families will simultaneously default, and the gains and
       losses of different legal entities within an Affiliated Family would not offset each
       other. The Framework is described in rule filing SR-FICC-2017-009. See
       Securities Exchange Act Release No. 82368 (December 19, 2017), 82 FR 61082
       (December 26, 2017) ("Framework Approval Order").

[10]   Id. at 61083.

The first component is the risk identification process. FICC identifies the principal credit/market risk drivers that are representative and specific to each Clearing Member's portfolio to determine potential risk exposure. FICC accomplishes this by analyzing the securities in each Clearing Member's portfolio to identify the principal market price risk factor drivers and capture the risk sensitivity of such portfolios under stressed market conditions.

The second component is the scenario development process, which is designed to construct comprehensive and relevant sets of extreme but plausible historical and hypothetical stress scenarios. 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. In order to select hypothetical stress scenarios, MBSD considers potential future events and their perceived impact to portfolio market risk factors.

The third component is the risk measurement and aggregation process. This process involves calculating risk metrics for each Clearing Member's portfolio. The stress testing methodology calculates stress P&L under each stress scenario and determines the loss amount exceeding a Clearing Member's Required Fund Deposit for each scenario. This calculation is referred to as the "Clearing Member Level Stress Deficiencies." In addition, the stress testing methodology calculates the ratio of an Affiliated Family's deficiency[11] over the total value of the MBSD Clearing Fund

---

[11]   An "Affiliated Family deficiency" is the aggregate of all Clearing Members' stress deficiencies within the applicable Affiliated Family.

excluding the sum value of the applicable Affiliated Family's Required Fund Deposits. This calculation is referred to as the "Cover 1 Ratio."[12]

B.   Proposed change to MBSD's stress testing methodology

As further described below, FICC is proposing to use Security-Level Data and Historical Data in MBSD's stress testing methodology. Specifically, FICC is proposing to (1) use Historical Data in the Scenario Selection process, (2) change the look-back period used for identifying historical stress scenarios for the Scenario Selection process, (3) use Security-Level Data and Historical Data in the methodology's calculation of stress P&L for Clearing Members' portfolios,[13] and (4) use a back-up calculation in the event of a Vendor Data Disruption.

(1)   Proposed change to use Historical Data in the Scenario Selection process

FICC uses two risk factors as inputs to the MBSD stress testing model for the historical Scenario Selection process. The risk factors are (1) interest rate and (2) mortgage option adjusted spread. The interest rate risk factor consists of swap rates[14]

---

[12]   See Framework Approval Order, 82 FR at 61083.

[13]   In connection with this proposal, FICC is not proposing any changes to the hypothetical Scenario Selection process other than to use the vendor's data. The hypothetical scenarios are currently represented by five interest rate tenors (i.e., 1-year, 2-year, 5-year, 10-year, and 30-year tenors), one mortgage option adjusted spread, and one interest rate volatility point. The hypothetical scenarios are reflected as shocks to the referenced risk factors. This process would not change, however, in order to calculate the stress P&L in the proposed model, FICC would map the referenced risk factors to the set of risk factors in the proposed model.

[14]   Generally, the term "swap rate" means the fixed interest rate that the receiver demands in exchange for the uncertainty of having to pay the short-term floating rate over time.

with tenors[15] of 2 years, 5 years, 10 years, and 30 years. The mortgage option adjusted

spread risk factor is constructed as the difference between the agency mortgage-backed

TBA securities' current coupon rate and the average swap rate, in each case, for Fannie

Mae ("FNMA") 30-year mortgages and Ginnie Mae ("GNMA") 30-year mortgages.

MBSD's scenario selection algorithm uses a technique referred to as principal component

analysis[16] to convert correlated risk factors into uncorrelated risk drivers that account for

the joint co-movements[17] of the multiple risk factors during the 10-year look-back period.

FICC is proposing to continue to utilize the interest rate risk factor and the

mortgage option adjusted spread risk factor as inputs to MBSD's stress testing model,

however, both risk factors would be sourced from a vendor. FICC is also proposing to

include two new risk factors in the methodology – interest rate volatility and mortgage

basis. The proposed change would result in an expansion of the number of tenors for the

existing interest rate risk factor and an expansion of the number of individual factors to

the existing mortgage option adjusted spread risk factor. As a result of this change, the

proposed interest rate risk factor would include 11 tenors and the proposed mortgage

option adjusted spread risk factor would include up to approximately 32 individual

---

[15]   Generally, the term "tenor" means the amount of time left for the repayment of a
        loan or until a financial contract expires.

[16]   Principal component analysis is a standard statistical technique that is applied to a
        set of observations of potentially correlated variables. It is used to identify a set
        of linearly uncorrelated variables, which are referred to as principal components.

[17]   Generally, the term "joint co-movement" means the movement of two variables at
        the same time.

factors,[18] which would differentiate between various agency mortgage programs,

underlying collateral maturities, and the level of moneyness.[19]

FICC is proposing to use the Historical Data (as described above) because this

data is more comprehensive, granular,[20] and transparent. The Historical Data is more

comprehensive and granular because (1) it would reflect a total of four risk factors (i.e.,

interest rate, interest rate volatility, mortgage option adjusted spread and mortgage basis),

(2) the proposed interest rate risk factor would include 11 tenors and (3) the proposed

mortgage option adjusted spread risk factor would include up to approximately 32

individual factors. As a result of this change, FICC believes that the proposed Historical

Data would better explain the market price changes of TBA transactions cleared by

MBSD[21] and FICC would be able to identify stress risk exposures under broader and

---

[18]   As described in the paragraph above, the current stress testing methodology uses four tenors for the interest rate risk factor and two individual factors for the mortgage option adjusted spread risk factor.

[19]   The changes of spread are parameterized according to the difference between the underlying weighted average coupon ("WAC") and the current prevailing mortgage rate. This difference is also referred to as the "moneyness." A TBA security with a WAC that is 10 basis points higher than the prevailing mortgage rate is said to be 10 basis points in the money. Fifteen moneyness points are used to parameterize the FNMA 30-year mortgage.

[20]   The term "granular" in the risk context means detailed and diversified.

[21]   Specified Pool Trades and Stipulated Trades are mapped to the corresponding TBAs. FICC's guarantee of Option Contracts on TBAs is limited to the intrinsic value of the option positions meaning that, when the underlying price of the TBA position is above the call price, the Option Contract is considered in-the-money and FICC's guarantee reflects this portion of the Option Contract's positive value at the time of a Clearing Member's insolvency. The value change of an Option Contract's position is simulated as the change in its intrinsic value. No changes are being proposed to MBSD's treatment of Specified Pool Trades, Stipulated Trades and Option Contracts pursuant to this proposal.

more varied market conditions. The Historical Data would also provide MBSD with an

enhanced capability to design more transparent scenarios. Because Clearing Members

typically use risk factor analysis for their own risk and financial reporting, such Members

would have comparable data and analysis to stress test their portfolios. Thus, Clearing

Members would be able to simulate their stressed portfolios to a closer degree than under

the existing stress testing methodology.

> (2)   *Proposed change to the look-back period used for the*
> *identification of historical stress scenarios in the Scenario*
> *Selection process*

MBSD's current set of historical stress scenarios is comprised of scenarios that

reflect the most severe market price movements which have been observed during past

periods of extreme market conditions. To identify specific dates for these market

movements, MBSD's stress testing model analyzes the historical risk factor time series

data over a 10-year look-back period. Specifically, MBSD's stress testing model

currently selects 50 historical scenarios based on actual historical time periods observed

over a 10-year look-back period.[22] On a quarterly basis, MBSD eliminates all historical

data that fall outside the scope of the 10-year look-back period.

FICC is proposing to change the current 10-year look-back period to a look-back

period that starts on a fixed date of May 29, 2002 and continues to expand forward –

meaning that no portion of the timeframe within the proposed look-back period would be

---

[22]   In addition to these 50 historical scenarios, FICC supplements the historical
scenario set by including additional events that have occurred outside of the 10-
year look-back period and have been identified as important periods of historical
stress because such events have had a significant impact on the financial market.
These dates include 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 (when the terrorist attacks occurred).

eliminated from the stress testing model; instead the entire timeframe within the look-back period would continue to expand forward.[23]

FICC selected May 29, 2002 as the fixed starting point based on its assessment of the accuracy and consistency of the Historical Data provided by the vendor. FICC is proposing this change because it believes that the expanded look-back period would better capture the potential market price changes of TBA securities, preserve historical dates that would otherwise be eliminated under the current 10-year look-back period, and provide the stress testing model with a larger set of scenarios for the historical Scenario Selection process.[24]

> (3) *Proposed change to use Security-Level Data and Historical Data in the stress testing model's stress P&L calculation*

Currently, in order to determine the potential loss to a Clearing Member's portfolio under a given stress scenario, MBSD's stress testing methodology applies a profit-and-loss calculation that multiplies a set of risk factors' stress movements by its corresponding risk sensitivities. Currently this methodology utilizes two interest rate risk factors (i.e., 2-year swap rates and 10-year swap rates) and the FNMA 30-year current coupon mortgage option adjusted spread. The risk sensitivities are estimated using an empirical regression with a two-month look-back period.[25] FICC believes that the current

---

[23]   FICC would continue to include events that have occurred prior to the proposed fixed date of May 29, 2002. These events include the events referred to in footnote 22 above.

[24]   Pursuant to the proposed change, the look-back period would include at least 16 years of historical data.

[25]   Empirical regression is a statistical measure that determines the coefficient range used in the stress P&L calculation.

methodology's use of a smaller set of risk factors and the relatively short two-month look-back period is a limitation that contributes to an inability to explain the results of the sensitivities estimation.

FICC is proposing to leverage the Security-Level Data and Historical Data in the methodology's calculation of stress P&L. Specifically, FICC is proposing to replace the current empirical regression-based profit-and-loss calculation with a financial profit-and-loss calculation. The proposed financial profit-and-loss calculation would use the Security-Level Data and Historical Data. The Security-Level Data is generated using the vendor's suite of security valuation models that includes an agency mortgage prepayment model and interest rate term structure model.[26] FICC believes that the vendor's approach generates more stable and robust Security-Level Data and addresses the limitations of the current empirical regression algorithm.[27] Because the proposed change would include Security-Level Data, FICC believes the proposed Security-Level Data would improve the stress testing model's stress P&L calculation, and the calculated results would be closer to actual price changes for TBA securities during larger market moves which are typical of stress testing scenarios.

> (4)   *Proposed change to use a back-up calculation in the event of a Vendor Data Disruption*

As described above, FICC would utilize the vendor's data for MBSD's stress testing methodology. Prior to MBSD's use of this data in its VaR model, FICC reviewed

---

[26]   A prepayment model captures cash flow uncertainty as a result of unscheduled payments of principal (prepayments). An interest rate term structure model describes the relationship between interest rates of different maturities.

[27]   As described above, these limitations include the limited number of risk factors and the two-month look-back period.

a description of the vendor's calculation methodology and the manner in which the market data is used to calibrate the vendor's models. At that time, The Depository Trust & Clearing Corporation's ("DTCC") Quantitative Risk Management, Vendor Risk Management, and Information Technology teams conducted due diligence of the vendor in order to evaluate its control framework for managing key risks.[28] FICC's due diligence included an assessment of the vendor's technology risk, business continuity, regulatory compliance, and privacy controls. Because of FICC's due diligence and its use of the vendor data in connection with the calculation of MBSD's margin model, FICC understands and remains comfortable with the vendor's controls. In addition, DTCC's Data Integrity department manages the data that FICC receives including, but not limited to, market data and analytical data provided by vendors.[29] As a result, FICC feels comfortable with leveraging the Security-Level Data and Historical Data for purposes of MBSD's stress testing methodology.

---

[28]   DTCC is FICC's parent company. DTCC operates on a shared services model with respect to FICC. Most corporate functions are established and managed on an enterprise-wide basis pursuant to intercompany agreements under which DTCC generally provides a relevant service to FICC.

[29]   DTCC's Data Integrity department oversees data integrity on behalf of DTCC's Counterparty Credit, Market, and Liquidity Risk Management groups as well as Securities Valuation, Model Validation and Control, and Quantitative Risk Management (collectively, Financial Risk Management ("FRM")), and the Systemic Risk Office. The Data Integrity department's mission is to align with FRM and ensure that the highest data quality is managed for the purpose of lowering risk and improving efficiency within FRM. The Data Integrity department's prime directive consists of the following: (1) ensuring a data governance framework is established and adhered to within FRM; (2) ensuring sufficient integrity of key data sources through active rules-based data monitoring; (3) ensuring sufficient alerting is in place to inform necessary parties when data anomalies occur; (4) liaising with subject matter experts to resolve data anomalies in an efficient and effective manner; and (5) ensuring that critical FRM data is catalogued and defined in the enterprise data dictionary.

In connection with FICC's proposal to use the Security-Level Data and Historical

Data in its stress testing methodology for the historical and hypothetical scenarios, FICC

is also proposing a back-up calculation (as described in the paragraph below) that it

would utilize in the event the vendor fails to provide the data. If the vendor fails to

provide any data or a significant portion of the data in accordance with the timeframes

agreed to by FICC and the vendor, FICC would use the most recently available data on

the first day that such disruption occurs. Subject to discussions with the vendor, if a

Managing Director, who oversees Market Risk Management, determines that the vendor

would resume providing data within five (5) business days, such Managing Director

would determine whether the daily stress testing calculation should continue to be

calculated by using the most recently available data or whether the back-up calculation

(as described below) should be invoked, subject to the approval of DTCC's Group Chief

Risk Officer or his/her designee.[30] Subject to discussions with the vendor, if a Managing

Director, who oversees Market Risk Management, determines that the data disruption

would extend beyond five (5) business days, the back-up calculation would be applied,

subsequent to the approval of DTCC's Management Risk Committee, followed by

notification to the Board Risk Committee.

The proposed back-up calculation would be as follows: MBSD would

(1) calculate each Clearing Member's portfolio net exposures in four securitization

programs,[31] (2) calculate the stress return for each securitization program as the three-day

---

[30]   For the avoidance of doubt, after taking into consideration the vendor's condition
         and, to the extent applicable, market conditions, FICC may treat the interruption
         as an extended data interruption sooner.

[31]   The securitization programs are as follows: (1) FNMA and Freddie Mac
         ("FHLMC") conventional 30-year mortgage-backed securities, (2) GNMA 30-

price return for each securitization program index for each scenario date, and (3) calculate each Clearing Member's stress P&L as the sum of the products of the net exposure of each securitization program and the stress return value for each securitization program. FICC would use publicly available indices (e.g., the Bloomberg FNMA 30-year index, Bloomberg GNMA 30-year index, Bloomberg FNMA 15-year index and Bloomberg GNMA 15-year index) as the data source for the stress return calculations.[32]

C. Delayed implementation of the proposal

This proposal would become operative within 45 business days after the date of the Commission's notice of no objection to this advance notice filing. FICC would announce the operative date in an important notice issued to Clearing Members.[33]

II. *Anticipated Effect on and Management of Risks*

FICC believes that the proposed change to MBSD's stress testing methodology, which consists of proposals to (1) use Historical Data in the Scenario Selection process, (2) change the 10-year look-back period used for the identification of historical stress scenarios in the Scenario Selection process, (3) use Security-Level Data and Historical Data in the stress testing methodology's calculation of stress P&L for Clearing Members' portfolios, and (4) use a back-up calculation in the event of a Vendor Data Disruption,

---

year mortgage-backed securities, (3) FNMA and FHLMC conventional 15-year mortgage-backed securities, and (4) GNMA 15-year mortgage-backed securities.

[32] The proposed calculation is similar to MBSD's calculation of the Margin Proxy, which is the back-up calculation that MBSD will use to calculate the VaR Charge in the event of a vendor data disruption. See MBSD Rule 1, Definitions – Margin Proxy, supra note 3.

[33] MBSD's important notices are available at http://www.dtcc.com/legal/important-notices?subsidiary=FICC+-+MBS&pgs=1.

would affect MBSD's management of risk because the changes would help to ensure that MBSD's stress testing methodology more effectively measures whether 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 stress conditions.

A.   Proposed change to use Historical Data in the Scenarios Selection process

FICC's proposal to utilize Historical Data in MBSD's historical stress scenario selection process would affect FICC's management of risk because the change would incorporate a broader range of risk factors to better understand a Clearing Member's exposure to these risk factors. As described above, the proposed change would enable MBSD to leverage vendor expertise in supplying the risk data attributes that would then be incorporated into MBSD's stress testing model. The data would expand the number of tenors for the existing interest rate risk factor and expand the number of individual factors to the existing mortgage option adjusted spread risk factor. The proposed interest rate risk factor would include 11 tenors and the proposed mortgage option adjusted spread risk factor would include up to approximately 32 individual factors.[34] In addition, FICC would include two new risk factors in the methodology – interest rate volatility and mortgage basis. FICC believes that the proposed change would provide more comprehensive, granular and transparent risk representations that enable sensitivity analysis on key model parameters and assumptions.

---

[34]   The proposed interest rate risk factor would include 11 tenors between 3 months and 30 years, and the proposed mortgage option adjusted spread risk factor would include factors related to relative value, spread between 15-year and 30-year products, and spread between GNMA and FNMA.

B.   **Proposed change to the 10-year look-back period used for the identification of historical stress scenarios in the Scenario Selection process**

FICC's proposal to change the current 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward would affect FICC's management of risk because the change (which includes at least 16 years of historical data) would give MBSD the ability to assess a broader spectrum of historical stressed market events that would be used in the stress testing methodology to design a comprehensive set of historical stress scenarios.

C.   **Proposed change to use Security-Level Data and Historical Data in the stress testing model's stress P&L calculation**

FICC's proposal to use Security-Level Data and Historical Data in the stress testing methodology's calculation of stress P&L would affect FICC's management of risk because leveraging the vendor-supplied data would improve the estimation of the stress P&L calculation by giving FICC the ability to attribute the stress loss under a given stress scenario to specific risk factor changes. As described above, FICC would replace the current empirical regression based profit-and-loss calculation with a financial profit-and-loss calculation that uses Security-Level Data and Historical Data, which are not included in the current algorithm.[35] Thus, FICC believes the proposed change would improve the stress testing model's stress P&L calculation because the calculated results would be closer to actual price changes for TBA securities during larger market moves which are typical of stress testing scenarios.

---

[35]   As described above, the empirical regression algorithm incorporates fewer risk factors and a shorter look-back period.

In an effort to assess the impact of the proposed change, FICC compared the results of the current stress testing methodology with the proposed stress testing methodology for the period of February 1, 2018 through January 1, 2019 with respect to the historical stress scenarios. The average of the maximum daily historical Cover 1 Ratio for this period is 20.3% for the proposed stress testing methodology compared to 19.2% for the current stress testing methodology (meaning that the proposed methodology would be approximately 1.1% higher (on average) than the current methodology).

D. Proposed change to use a back-up calculation in the event of a Vendor Data Disruption

FICC's proposal to use a back-up calculation would affect FICC's management of risk because it would help to ensure that FICC continues to test the adequacy of MBSD's prefunded financial resources in the event of a Vendor Data Disruption. As described above, FICC would manage the risks associated with a potential data disruption by using the most recently available data (before the disruption) on the first day that a data disruption occurs. If the vendor fails to provide any data or a significant portion of the data in accordance with the timeframes agreed to by FICC and the vendor, FICC would use the most recently available data on the first day that such disruption occurs. Subject to discussions with the vendor, if a Managing Director, who oversees Market Risk Management, determines that the vendor would resume providing data within five (5) business days, such Managing Director would determine whether the daily stress testing calculation should continue to be calculated by using the most recently available data or whether the back-up calculation should be invoked, subject to the approval of DTCC's Group Chief Risk Officer or his/her designee. Subject to discussions with the vendor, if a

Managing Director, who oversees Market Risk Management, determines that the data

disruption would extend beyond five (5) business days, the back-up calculation would be

applied, subject to the approval of DTCC's Management Risk Committee, followed by

notification to the Board Risk Committee.

III. *Consistency with the Clearing Supervision Act and the Covered Clearing Agency Standards*

Although the Clearing Supervision Act does not specify a standard of review for

an advance notice, its stated purpose is instructive: to mitigate systemic risk in the

financial system and promote financial stability by, among other things, promoting

uniform risk management standards for systemically important financial market utilities

and strengthening the liquidity of systemically important financial market utilities.[36]

Section 805(a)(2) of the Clearing Supervision Act[37] authorizes the Commission to

prescribe risk management standards for the payment, clearing and settlement activities

of designated clearing entities, like FICC, and financial institutions engaged in designated

activities for which the Commission is the supervisory agency or the appropriate financial

regulator. Section 805(b) of the Clearing Supervision Act[38] states that the objectives and

principles for the risk management standards prescribed under Section 805(a) shall be to,

among other things, promote robust risk management, promote safety and soundness,

reduce systemic risks, and support the stability of the broader financial system. The

Commission has adopted risk management standards under Section 805(a)(2) of the

---

[36]   See 12 U.S.C. 5461(b).

[37]   See 12 U.S.C. 5464(a)(2).

[38]   See 12 U.S.C. 5464(b).

Clearing Supervision Act[39] and Section 17A of the Act[40] (the risk management standards

are referred to as the "Covered Clearing Agency Standards").[41] The Covered Clearing

Agency Standards require registered clearing agencies to establish, implement, maintain,

and enforce written policies and procedures that are reasonably designed to be consistent

with the minimum requirements for their operations and risk management practices on an

ongoing basis.[42]

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

FICC believes that the proposed changes in this advance notice are consistent

with the objectives and principles of the risk management standards as described in

Section 805(b) of the Clearing Supervision Act and in the Covered Clearing Agency

Standards. As discussed above, FICC is proposing several changes to MBSD's stress

testing methodology. FICC believes the proposed changes are consistent with promoting

robust risk management because the changes are designed to enhance MBSD's stress

testing methodology, which is used to help ensure that MBSD collects 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

stress conditions.

---

[39]   See 12 U.S.C. 5464(a)(2)

[40]   See 15 U.S.C. 78q-1.

[41]   See 17 CFR 240.17Ad-22.

[42]   Id.

First, FICC is proposing to leverage Historical Data in the Scenario Selection process. FICC believes the proposed change would promote robust risk management because the Historical Data would incorporate a broader range of risk factors that would be used in MBSD's stress testing model to better understand a Clearing Member's exposure to these risk factors.

Second, FICC is proposing to change the 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward. FICC believes the proposed change would promote robust risk management because the change, which includes at least 16 years of historical data, would capture the potential market price changes of TBA securities over a longer time period, preserve historical dates that would otherwise be eliminated under the current 10-year look-back period and provide the stress testing model with a larger set of scenarios for the historical Scenario Selection process.

Third, FICC is proposing to leverage Security-Level Data and Historical Data in the methodology's calculation of stress P&L. FICC believes the proposed change would promote robust risk management because it would replace the current empirical regression-based profit-and-loss calculation with a financial profit-and-loss calculation that utilizes the Security-Level Data and Historical Data. The change would cause the stress testing model's stress P&L calculation to calculate amounts that are closer to actual price changes for TBA securities during larger market moves in an effort to test the adequacy of MBSD's prefunded resources.

Fourth, FICC is proposing to use a back-up calculation in the event of a Vendor Data Disruption. FICC believes the proposed change would promote robust risk

management because the change would help to ensure that FICC has a stress testing methodology in place that allows it to continue to test the adequacy of MBSD's prefunded financial resources in the event of a Vendor Data Disruption.

For these reasons, FICC believes the proposed changes would help to promote MBSD's robust risk management, which, in turn, is consistent with reducing systemic risks and supporting the stability of the broader financial system, consistent with Section 805(b) of the Clearing Supervision Act.[43] FICC also believes the changes proposed in this advance notice are consistent with promoting safety and soundness, which, in turn, is consistent with reducing systemic risks and supporting the stability of the broader financial system, consistent with Section 805(b) of the Clearing Supervision Act.[44] As described above, the proposed changes are designed to help ensure that FICC's stress testing methodology measures whether MBSD 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 stress conditions. Because the proposed changes would better position FICC to limit its exposures to Clearing Members in the event of a Clearing Member's default, FICC believes the proposed changes are consistent with promoting safety and soundness, which, in turn, is consistent with reducing systemic risks and supporting the stability of the broader financial system.

---

[43]   See 12 U.S.C. 5464(b).

[44]   Id.

B. Consistency with Rule 17Ad-22(e)(4) under the Act

This proposal is also designed to be consistent with Rule 17Ad-22(e)(4) under the Act, which requires, in part, that each covered clearing agency 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.[45]

Rule 17Ad-22(e)(4)(i) under the Act requires that a covered clearing agency maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.[46] The proposed changes are consistent with Rule 17Ad-22(e)(4)(i) because they describe how FICC has developed and carries out a credit risk management strategy to maintain sufficient prefunded financial resources to cover fully its credit exposures to each Clearing Member with a high degree of confidence.

FICC believes (1) the proposal to use Historical Data in the historical Scenario Selection process and incorporate a broader range of risk factors that would be used in MBSD's stress testing model would enable FICC to better understand a Clearing Member's exposure to these risk factors, (2) the proposal to change the 10-year look-back period to a look-back period that starts on a fixed date of May 29, 2002 and continues to expand forward would better capture the potential market price changes of TBA securities, preserve historical dates that would otherwise be eliminated under the current 10-year look-back period and provide the stress testing model with a larger set of scenarios for the historical selection process, (3) the proposal to leverage Security-Level

---

[45]   17 CFR 240.17Ad-22(e)(4).

[46]   17 CFR 240.17Ad-22(e)(4)(i).

Data and Historical Data in the stress testing methodology's calculation of stress P&L for

Clearing Members' portfolios would provide for calculated amounts that are closer to

actual price changes for TBA securities during larger market moves in an effort to test the

adequacy of MBSD's prefunded resources, and (4) the proposal to use a back-up

calculation would help to ensure that FICC has a methodology in place that allows it to

continue to measure the adequacy of MBSD's prefunded financial resources in the event

of a Vendor Data Disruption. FICC believes that the proposed changes would improve

MBSD's stress testing methodology, which is used to test the sufficiency of MBSD's

prefunded resources daily to support compliance with Rule 17Ad-22(e)(4)(i). As such,

FICC believes that, taken together, the proposed changes are designed to be consistent

with the requirements of Rule 17Ad-22(e)(4)(i) under the Act.[47]

Rule 17Ad-22(e)(4)(vi)(A) under the Act requires that a covered clearing agency

conduct stress testing of its total financial resources once each day using standard

predetermined parameters and assumptions.[48] FICC believes the proposal to (1) use

Historical Data in the historical Scenario Selection process, (2) change the 10-year look-

back period to a look-back period that starts on a fixed date of May 29, 2002 and

continues to expand forward, (3) leverage Security-Level Data and Historical Data in the

stress testing methodology's calculation of stress P&L for Clearing Members' portfolios,

and (4) use a back-up calculation in the event of a Vendor Data Disruption would reflect

---

[47]   17 CFR 240.17Ad-22(e)(4)(i).

[48]   17 CFR 240.17Ad-22(e)(4)(vi)(A). The Framework identifies the sources of
         MBSD's prefunded resources for purposes of meeting FICC's requirements under
         Rule 17Ad-22(e)(4)(iii).

standard predetermined parameters and assumptions that FICC would use in MBSD's stress testing methodology to conduct daily stress testing.

FICC believes that the proposed changes would reflect its use of standard predetermined parameters and assumptions in FICC's daily stress testing of its financial resources in order to support compliance with Rule 17Ad-22(e)(4)(vi)(A) under the Act.[49] As such, FICC believes that, taken together, the proposed changes are designed to be consistent with the requirements of Rule 17Ad-22(e)(4)(vi)(A) under the Act.[50]

III.   <u>Date of Effectiveness of the Advance Notice, and Timing for Commission Action</u>

The proposed change may be implemented if the Commission does not object to the proposed change within 60 days of the later of (i) the date that the proposed change was filed with the Commission or (ii) the date that any additional information requested by the Commission is received. The clearing agency shall not implement the proposed change if the Commission has any objection to the proposed change.

The Commission may extend the period for review by an additional 60 days if the proposed change raises novel or complex issues, subject to the Commission providing the clearing agency with prompt written notice of the extension. A proposed change may be implemented in less than 60 days from the date the advance notice is filed, or the date further information requested by the Commission is received, if the Commission notifies the clearing agency in writing that it does not object to the proposed change and authorizes the clearing agency to implement the proposed change on an earlier date, subject to any conditions imposed by the Commission.

---

[49]   <u>Id.</u>

[50]   17 CFR 240.17Ad-22(e)(4)(vi)(A).

The clearing agency shall post notice on its website of proposed changes that are implemented.

IV.   Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the Advance Notice is consistent with the Clearing Supervision Act. Comments may be submitted by any of the following methods:

Electronic Comments:

- Use the Commission's Internet comment form (http://www.sec.gov/rules/sro.shtml); or

- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-FICC-2020-801 on the subject line.

Paper Comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549.

All submissions should refer to File Number SR-FICC-2020-801. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (http://www.sec.gov/rules/sro.shtml). Copies of the submission, all subsequent amendments, all written statements with respect to the Advance Notice that are filed with the Commission, and all written communications relating to the Advance Notice between the Commission and any person, other than those that may be withheld from the public in

accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and

printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC

20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of

the filing also will be available for inspection and copying at the principal office of FICC

and on DTCC's website (http://dtcc.com/legal/sec-rule-filings.aspx). All comments

received will be posted without change. Persons submitting comments are cautioned that

we do not redact or edit personal identifying information from comment submissions.

You should submit only information that you wish to make available publicly. All

submissions should refer to File Number SR-FICC-2020-801 and should be submitted on

or before [insert date 21 days from publication in the Federal Register].

By the Commission.

Secretary

Methodology Document

MBSD Market and Credit Risk Stress Test Models

REMAINDER OF PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

FIXED INCOME CLEARING CORPORATION

MORTGAGE-BACKED SECURITIES DIVISION

IMPACT ANALYSIS

February 2018 – January 2019

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY

PAGE REDACTED IN ITS ENTIRETY