

EXHIBIT 5

Bold and underlined text indicates proposed added language.

~~Bold and strikethrough text~~ indicates proposed deleted language.

DTCC

Clearing Agency Risk Management Framework

Section 1 ~~Executive Summary~~Purpose

The purpose of this Clearing Agency Risk Management Framework (“Framework”) is to provide an outline for how each applies, in relevant part and as the context indicates, to The Depository Trust Company (“DTC”), National Securities Clearing Corporation (“NSCC”), and Fixed Income Clearing Corporation (“FICC”), including the Government Securities Division (“FICC/GSD”) and the Mortgage-Backed Securities Division (“FICC/MBSD”) of FICC (DTC, NSCC, and FICC, including each of FICC/GSD and FICC/MBSD, are each a “Clearing Agency” and collectively the “Clearing Agencies”). ~~The parent company of the Clearing Agencies is The Depository Trust & Clearing Corporation (“DTCC”).~~

~~This Framework provides an outline for how each of the Clearing Agencies~~ (i) comprehensively manages legal, credit, liquidity, operational, general business, investment, custody, and other risks that arise in or are borne by it, (ii) maintains a well-founded, clear, transparent and enforceable legal basis for each aspect of its activities; (iii) identifies, monitors, and manages risks related to links it establishes with one or more clearing agencies, financial market utilities, or trading markets; (iv) publicly discloses certain information, including market data; (v) meets the requirements of its participants and the markets it serves efficiently and effectively; (vi) uses, or at a minimum accommodates, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing and settlement; and (vii) conducts an annual review of FICC/GSD’s access models. In this way, the Framework supports the Clearing Agencies’ compliance with Rules 17Ad-22(e)(1), (3), (18)(iv)(C), (20), (21), (22), and (23), 17ad-25(i) and 17ad-26 of the Standards for Covered Clearing Agencies (“CCAS”), under the Securities Exchange Act of 1934 (“Act”).¹ This Framework also assists in assessing consistency with the Principles for Financial Market Infrastructures (“PFMIs”).²

~~More specifically, the Framework sets forth the general manner in which the Clearing Agencies manage the risks that arise in or are borne by the Clearing Agencies, which include, for example, legal, credit, liquidity, operational, general business, investment, custody, and other risks, in Section 3, through the governance and oversight of internal management committees, the solicitation of participant and other stakeholder views, an annual review of GSD’s access models, and the maintenance of comprehensive policies, procedures, rulebooks, and frameworks designed to identify, measure, monitor, and manage risks. Section 4 sets forth the specific manner in which the Clearing Agencies manage certain risks, identified therein, by (i) providing information and incentives for management of risk by their respective participants,³ (ii) addressing risks related to material interdependencies and external links, and (iii) being responsive to market needs. The manner in which the Clearing Agencies develop and maintain plans for the recovery of the Clearing Agencies in the event of uncovered losses or liabilities due to the default of one or more of their~~

¹ See 17 CFR 240.17Ad-22(e)(1), (3), (18), (20), (21), (22), (23), 17ad-25(i) and 17ad-26.

² Committee on Payment and Settlement Systems (“CPSS”) and Technical Committee of the International Organization of Securities Commissions (“IOSCO”), Principles for financial market infrastructures (Apr. 16, 2012), available at <http://www.bis.org/cpmi/publ/d101a.pdf>. In 2014, the CPSS became the Committee on Payments and Market Infrastructures.

³ ~~FICC and NSCC refer to their participants as “Members,” while DTC refers to its participants as “Participants.” These terms are defined in the Clearing Agencies’ Rules (defined below). In this Framework, “participant” or “participants” refers to both the Members of FICC and NSCC and the Participants of DTC.~~

~~participants, liquidity shortfalls, business losses or other losses and, in the event such recovery is not successful, plans for the orderly wind-down of their businesses is set forth in Section 5.~~

~~The manner in which the Clearing Agencies more specifically address risk not addressed in this Framework, including the manner in which they address operational risks, both financial and non-financial; risks related to information technology and business continuity; and other financial risks, including those related to liquidity and their general businesses, is addressed in other documents, including, without limitation, the Clearing Agencies' respective Rules (defined below), policies, procedures, frameworks or other documents (which are generally described in Section 3).~~

~~The Clearing Agencies may develop policies, procedures and other supplemental documentation, some of which may be described herein to support execution of this Framework. In the event of a conflict between this Framework and such other supplemental documentation, as applied to the Clearing Agencies, this Framework shall prevail.~~

~~References herein to the Clearing Agencies and governance bodies should be read in the singular or the plural as the context requires. References herein to individual officers or employees, management, or functional areas generally refer to employees or functions of DTCC, acting on behalf of the relevant Clearing Agencies.~~

Section 2 ~~Framework Ownership and Change~~ Management Roles and Responsibilities

The Framework sets forth the general manner in which the Clearing Agencies manage the risks that arise in or are borne by the Clearing Agencies, which include, for example, legal, credit, liquidity, operational, general business, investment, custody, and other risks, in Section 4, through the governance and oversight of internal management committees, the solicitation of participant and other stakeholder views, an annual review of GSD's access models, and the maintenance of comprehensive policies, procedures, rulebooks, and frameworks designed to identify, measure, monitor, and manage risks. Section 5 sets forth the specific manner in which the Clearing Agencies manage certain risks, identified therein, by (i) providing information and incentives for management of risk by their respective participants,⁴ (ii) addressing risks related to material interdependencies and external links, and (iii) being responsive to market needs. The manner in which the Clearing Agencies develop and maintain plans for the recovery of the Clearing Agencies in the event of uncovered losses or liabilities due to the default of one or more of their participants, liquidity shortfalls, business losses or other losses and, in the event such recovery is not successful, plans for the orderly wind-down of their businesses is set forth in Section 6.

The manner in which the Clearing Agencies more specifically address risk not addressed in this Framework, including the manner in which they address operational risks, both financial and non-financial; risks related to information technology and business continuity; and other financial risks, including those related to liquidity and their general businesses, is addressed in other documents, including, without limitation, the Clearing Agencies' respective Rules (defined below), policies, procedures, frameworks or other documents (which are generally described in Section 4).

The Clearing Agencies may develop policies, procedures and other supplemental documentation, some of which may be described herein to support execution of this Framework. In the event of a conflict between this Framework and such other supplemental documentation, as applied to the Clearing Agencies, this Framework shall prevail.

References herein to the Clearing Agencies and governance bodies should be read in the singular or the plural as the context requires. References herein to individual officers or employees, management, or functional areas generally refer to employees or functions of The Depository Trust and Clearing Corporation ("DTCC"), the parent company of the Clearing Agencies, acting on behalf of the relevant Clearing Agencies.

This Framework is owned and managed by an officer, within the General Counsel's Office of DTCC, on behalf of each Clearing Agency.

The processes described in this Framework, and any policies, procedures or other documents created to support those processes, may be owned by other departments within DTCC, on behalf of each Clearing Agency. Such documents are subject to the Document Standards (described in Section 3.3.1 below), pursuant to which those documents shall include necessary information

⁴ FICC and NSCC refer to their participants as "Members," while DTC refers to its participants as "Participants." These terms are defined in the Clearing Agencies' Rules (defined below). In this Framework, "participant" or "participants" refers to both the Members of FICC and NSCC and the Participants of DTC.

~~related to their ownership, regular reviews and approvals, and other governance matters. As such, such information is not provided herein.~~

~~Changes to this Framework shall be approved by either (1) the Boards of Directors of the Clearing Agencies (each a "Board" and together, the "Boards"), (2) such Board committees as may be delegated authority by the Boards from time to time pursuant to their charters, or (3), with respect to certain changes, the General Counsel or Deputy General Counsels of the Clearing Agencies, pursuant to authority delegated by the Boards and with the advice and direction of the Framework owner.~~

~~The General Counsel's Office shall review this Framework no less frequently than annually, and shall work with all departments that are responsible for the processes described herein in connection with such review. This Framework shall be reviewed and approved annually by the Boards, or duly authorized committees of the Boards, as required by Rule 17Ad-22(e)(3)(i).~~

~~Any and all changes to this Framework are subject to the legend on the cover page.~~

Section 3 Audience

This Framework is owned and managed by an officer, within the General Counsel's Office of DTCC, on behalf of each Clearing Agency, who shall review this Framework no less frequently than annually, and shall work with all departments that are responsible for the processes described herein in connection with such review.

The processes described in this Framework, and any policies, procedures or other documents created to support those processes, may be owned by other departments within DTCC, on behalf of each Clearing Agency. Such documents are subject to the Document Standards (described in Section 4.3.1 below), pursuant to which those documents shall include necessary information related to their ownership, regular reviews and approvals, and other governance matters. As such, such information is not provided herein.

Section 4.13 Clearing Agency Risk Management

In compliance with Rule 17Ad-22(e)(3), the Clearing Agencies maintain a sound risk management framework for comprehensively managing a range of risks, including legal, credit, liquidity, operational, general business, investment, custody, and other risks, that arise in or are borne by the Clearing Agencies (referred to herein as, “Key Clearing Agency Risks”).⁵ This Section describes some of the ways in which the Clearing Agencies manage Key Clearing Agency Risks, in support of their compliance with this Rule. This Section also describes how the Clearing Agencies’ solicitation of participant and other stakeholder views supports their management of risks, including in connection with FICC’s compliance with the requirements of Rule 17Ad-22(e)(18)(iv)(C).

The Clearing Agencies’ fundamental approach to risk management is a process in which Key Clearing Agency Risks are assessed on an inherent basis (that is, in the absence of any mitigating controls) and then evaluated against the strength of the existing controls (and, as appropriate, for new and additional controls).

One way in which the Clearing Agencies comprehensively manage Key Clearing Agency Risks is by establishing, communicating and monitoring risk tolerances, and by providing guidelines for managing these key risks in a comprehensive, consistent and effective manner, while at the same time facilitating strategic business objectives within established risk tolerances.

The Boards have delegated to management the responsibility for identifying, assessing, measuring, monitoring, mitigating and reporting risks through a process of developing individual risk tolerance statements for identified risks. Risk tolerance statements provide the overall risk reduction or mitigation objectives for each of the identified risk categories. In addition to these objectives, these statements also set out the risk controls and other measures used to manage the risk, and the escalation process. The Clearing Agencies’ performance relative to the risk tolerance statements is assessed quarterly and is shared with senior management, the Management Risk Committee (“MRC”), and the Board Risk Committee (“BRC”) for discussion.

Risk tolerance statements are reviewed and approved by the MRC and the BRC.

4.13.1 Three Lines of Defense

The “Three Lines of Defense” approach, described below, is one way in which the Clearing Agencies manage Key Clearing Agency Risks, and supports the Clearing Agencies’ compliance with Rule 17Ad-22(e)(3).

Each of the Clearing Agencies adheres to the Three Lines of Defense approach for identifying, assessing, measuring, monitoring, mitigating, and reporting Key Clearing Agency Risks. The Three Lines of Defense approach also addresses the roles and responsibilities of the ~~Risk Department~~**Group Chief Risk Office** of DTCC (~~“Risk Department”~~**Group Chief Risk Office**) and Internal Audit Department of DTCC (“Internal Audit”) as they relate to risk management of the Clearing Agencies, including their authority, resources, independence from management, and access to the Boards. The Legal Department of DTCC supports each line of defense in the management of legal risks.

Collectively, the Three Lines of Defense approach to risk management is designed to identify and manage the Key Clearing Agency Risks so that such risks remain within their tolerance thresholds and, to the extent

⁵ See 17 CFR 240.17Ad-22(e)(3).

there is any deviation outside a defined risk tolerance threshold, to monitor it on an ongoing basis and escalate it as appropriate.

4.1.13.1.1 First Line of Defense – Clearing Agency Businesses / Support Areas

The **first line of defense** is comprised of the various business lines and functional units that support the products and services offered by the Clearing Agencies (collectively, “Clearing Agency Business/Support Areas”). These include, without limitation, product management, operations management, information technology, and other areas critical to the daily operations and functioning of the Clearing Agencies.

In their role as the first line of defense, the Clearing Agency Business/Support Areas proactively manage risk by, for example:

- Identifying and assessing Key Clearing Agency Risks applicable to their function;
- Determining how best to mitigate Key Clearing Agency Risks through internal controls;
- Periodically self-testing internal controls to ensure that they are operating as designed;
- Defining and monitoring business risk metrics applicable to their function;
- Clearly understanding and reporting the residual, unmitigated risk that is acceptable to their function; and
- Creating and implementing action plans to mitigate the Key Clearing Agency Risks.

4.1.23.1.2 Second Line of Defense – ~~Risk Department~~Group Chief Risk Office

The **second line of defense** is comprised of control functions that support the Clearing Agencies, including the organization’s legal, privacy and compliance areas, as well as the **~~Risk Department~~Group Chief Risk Office**, which is specifically dedicated to risk management concerns (collectively, “Clearing Agency Control Functions”).

In their role as the second line of defense, the Clearing Agency Control Functions provide advice and guidance to the first line of defense in adhering to established risk standards and to monitor compliance with those standards. Their responsibilities include, without limitation:

- Working with the Clearing Agency Business/Support Areas on Key Clearing Agency Risks mitigation efforts and levels;
- Providing tools to enable Clearing Agency Business/Support Area owners to analyze, monitor, and proactively manage their Key Clearing Agency Risks;
- Helping to create reporting mechanisms to inform Clearing Agency Business/Support Area owners of the effectiveness of risk controls in place, as well as identifying areas of potential increasing Key Clearing Agency Risks levels; and
- Assisting Clearing Agency Business/Support Areas in creating action plans to address and mitigate gaps (if applicable).

~~Risk Department~~Group Chief Risk Office

As part of their compliance with Rule 17Ad-22(e)(3), the Clearing Agencies provide the **~~Risk Department~~Group Chief Risk Office** with sufficient authority, resources, independence from management, and access to

the Boards,⁶ and provide the ~~Risk Department~~**Group Chief Risk Office** with a direct reporting line to, and oversight by, the Chair of the Risk Committees of the Boards,⁷ in the manner described below.

The ~~Risk Department~~**Group Chief Risk Office** is functionally independent from all other Clearing Agency Business/Support Areas and Clearing Agency Control Functions, and the Group Chief Risk Officer has a direct reporting line to the Chair of the Risk Committee of the Boards, pursuant to that committee's charter. As part of the second line of defense, the ~~Risk Department~~**Group Chief Risk Office** is the Clearing Agency Control Function specifically charged with managing the various risks affecting the Clearing Agencies. In addition to the responsibilities outlined above, the ~~Risk Department~~**Group Chief Risk Office's** responsibilities include, without limitation:

- Establishing the processes by which Clearing Agency Business/Support Areas report on Key Clearing Agency Risks;
- Approving (i) written requests for exceptions to ~~Risk Department~~**Group Chief Risk Office** policies, procedures, and frameworks; and/or (ii) action plans for compliance with such policies and procedures, as circumstances require.
- Promptly escalating identified risk tolerance threshold breaches and/or other material exposures to Key Clearing Agency Risks to the Boards (or such committees as may be delegated by the Boards from time to time) and senior management.

As part of the first line of defense all personnel in all Clearing Agency Business/Support Areas (including personnel within the ~~Risk Department~~**Group Chief Risk Office** and other Clearing Agency Control Functions) are responsible for identifying internal incidents within their area, with designated staff responsible for performing root cause analysis, and developing action plans, if needed. Certain incidents must be reported to the Operational & Technology Risk area ("Operational Risk") within the ~~Risk Department~~**Group Chief Risk Office** in a timely manner. Operational Risk reviews, rates, reports, escalates, if appropriate, and monitors all incidents, whether submitted to Operational Risk or discovered by Operational Risk. These incidents are escalated by Operational Risk based on their risk rating. For example, incidents with a "low" rating are escalated to the general management of the impacted area through a periodic report, whereas incidents with a "high" rating are escalated (1) promptly to the general management of the impacted area, the Management Risk Committee, and regulators; and (2) to the Board Risk Committee at its next meeting.

In addition to the tools and processes described in this Section ~~34.1~~, the ~~Risk Department~~**Group Chief Risk Office** may employ other procedures, processes, tools, mechanisms, analyses, and testing controls, as it deems appropriate but within the parameters of Section ~~34.3~~ below, for purposes of identifying plausible sources of Key Clearing Agency Risks, both internal and external, and mitigating their impact to the Clearing Agencies.

4.1.33.1.3 Third Line of Defense – Internal Audit

The **third line of defense** is performed by Internal Audit. Internal Audit provides independent, objective assurance services to assist in maintaining effective Clearing Agency risk management and control practices. Their responsibilities include, without limitation:

- Determining areas of significant Key Clearing Agency Risks, and directing Internal Audit's resources to review and test key controls that help mitigate those significant Key Clearing Agency

⁶ See 17 CFR 240.17Ad-22(e)(3)(iii).

⁷ See 17 CFR 240.17Ad-22(e)(3)(iv).

Risks, using the annual audit plan, proactive and reactive testing, and continuous monitoring to accomplish this objective;

- Reporting on the results of audit testing and on the status of issues arising from the activities of Internal Audit, control functions, business management, external audits, and regulatory bodies;
- Increasing management's awareness of Key Clearing Agency Risks and controls, to enable identification of emerging Key Clearing Agency Risks and areas of systemic concern;
- Monitoring and evaluating the effectiveness of management of Key Clearing Agency Risks generally;
- Assessing the adequacy of controls for monitoring compliance with applicable laws and regulations and established key policies and procedures;
- Examining and assessing the adequacy of the system of controls for significant new functions and information technology systems being developed; and
- Contributing to the organization's governance process by evaluating and improving the activities through which accountability is enforced and the organization's values are preserved.

Internal Audit

As part of their compliance with Rule 17Ad-22(e)(3), the Clearing Agencies provide (i) Internal Audit with sufficient authority, resources, independence from management, and access to the Boards;⁸ (ii) Internal Audit with a direct reporting line to, and oversight by, the Chairs of the Audit Committees of the Boards;⁹ and (iii) for independent Audit Committees of the Boards.¹⁰

Internal Audit is functionally independent from all other Clearing Agency Business/Support Areas and Clearing Agency Control Functions. As part of the third line of defense, Internal Audit provides assurances to the Boards and senior management on the effectiveness with which the Clearing Agencies assess and manage Key Clearing Agency Risks, including the manner in which the first and second lines of defense operate. The Audit Committees of the Boards, which consists only of members of the Boards who are not employed by DTCC (i.e. non-management directors) and are independent from management, pursuant to its charter, is responsible for overseeing the internal audit function. The General Auditor reports directly to the Boards' Audit Committee, reinforcing the independence and objectivity of the internal audit function.

Internal Audit provides independent ~~validation and objective assurance~~ of the Key Clearing Agency Risks and control environment and reviews the adequacy of internal controls, procedures, and records of Clearing Agencies with respect to Key Clearing Agency Risks through the audit process.

4.23-2 Management Committees and Oversight

A set of senior management committees provide oversight of the Three Lines of Defense approach to management of Key Clearing Agency Risks, as well as other aspects of the Clearing Agencies' risk management, as provided for in such committees' charters.

The requirements for the establishment and governance of internal committees and councils are governed by a policy. This policy provides that internal committees identify a "Committee/Council Liaison" to work with the Corporate Secretary's Office in establishing a proper governance structure and appropriate

⁸ See 17 CFR 240.17Ad-22(e)(3)(iii).

⁹ See 17 CFR 240.17Ad-22(e)(3)(iv).

¹⁰ See 17 CFR 240.17Ad-22(e)(3)(v).

procedures, and adopt a charter, prepare agendas for meetings, take minutes, and maintain meeting records when required. The policy requires that committees conduct an annual review of its charter and evaluate committee effectiveness on an annual basis to ensure that **each committee continues to fulfill its purpose successfully and** appropriate procedures are followed. The policy also describes the process for creating a new internal committee or council and dissolving an internal committee or council.

4.33-3 Policies, Procedures, Rules and Risk Management Frameworks

The Clearing Agencies also manage Key Clearing Agency Risks through the maintenance of risk management policies, procedures, rules and frameworks designed to identify, measure, monitor, and manage such risks.

The Clearing Agencies are subject to the proposed rule change and advance notice filing requirements of Section 19(b)(1) of the Act,¹¹ and the rules thereunder, and the advance notice filing requirements pursuant to Section 806(e)(1) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, entitled the Payment, Clearing, and Settlement Supervision Act of 2010,¹² and the rules thereunder (“Filing Requirements”).

The General Counsel’s Office maintains a policy and procedure to govern the steps taken to meet the Filing Requirements, when applicable, and outlines the responsibilities of both the Clearing Agency Business/Support Areas and the General Counsel’s Office in meeting the Filing Requirements. The policies, procedures, Clearing Agency Rules (defined below), Risk Management Frameworks (defined below) and other documents subject to the Document Standards (defined below) and maintained by the Clearing Agencies are analyzed pursuant to this policy and procedure to determine the applicability of the Filing Requirements.

4.3.13-3.1 Policies and Procedures

As part of their compliance with Rule 17Ad-22(e)(3), the Clearing Agencies maintain comprehensive policies and procedures designed to identify, measure, monitor, and manage Key Clearing Agency Risks.¹³ These documents demonstrate how the Clearing Agencies adhere to laws, regulations, and in some instances, the Clearing Agencies’ Rules (defined below) and standards, and instruct employees on their job responsibilities. Policies, procedures, frameworks and certain related documents that address Key Clearing Agency Risks must be approved by the Boards, or authorized Board committees, on at least an annual basis.

The Clearing Agencies have established a set of standards (“Document Standards”) for creating and managing these documents. The Document Standards provide for a holistic approach for the development, management and maintenance of these documents, such that they are designed holistically and consistently.

The Document Standards recommend material linkages between documents to be identified as changes to one document may require review for impact to other documents. A change management process reminds stakeholders to assess the impact of changes to linked documents. The Document Standards

¹¹ 15 U.S.C. 78s(b)(1).

¹² 12 U.S.C. 5465(e)(1).

¹³ See 17 CFR 240.17Ad-22(e)(3)(i).

provide guidance for the regular, periodic review of policies, procedures, frameworks and certain related documents by the document owners. Through these reviews, document owners are able to confirm that such documents continue to effectively mitigate the risks they were designed to address, including the risk of financial loss to the participants of each Clearing Agency and the markets the Clearing ~~Agencies~~**Agencies**² serve. The Document Standards also establish governance for the ownership and approval of those documents.

The Document Standards set a timeframe for the periodic review of these documents by an appropriate ~~business person~~**businessperson** and provide a central location where these documents are maintained, which includes a system for the automated workflow for review, approval and dissemination of these documents.

Each Clearing Agency Business/Support Areas and Clearing Agency Control Functions has assigned individual(s) responsible for maintaining that group's documents against the Document Standards.

4.3.23.3.2 Clearing Agency Rules

DTC, NSCC, and each division of FICC maintain rules that are filed with the SEC and include, for example, rulebooks, the DTC Service Guides and Operational Arrangements, and the NSCC Procedures, which are annexed to the NSCC rulebook (collectively, "Rules"). As part of the Clearing Agencies' compliance with Rule 17Ad-22(e)(1), the Rules provide for a well-founded, clear, transparent, and enforceable legal basis for each aspect of their activities in all relevant jurisdictions.¹⁴

Based on the primary location of their operations and the markets they serve, the relevant jurisdiction for each material aspect of the Clearing Agencies' activities is the United States and the State of New York. As such, New York law is expressly provided to govern the Clearing Agencies' Rules.

The Clearing Agencies' Rules are transparent to the public by being maintained on the DTCC website. In general, the Rules describe the material aspects of the Clearing Agencies' activities, and, among other things, provide for risk management tools and establish membership responsibilities with respect to both the operations and risk management activities of the Clearing Agencies.

As part of each of the Clearing Agencies' membership onboarding process, which is established pursuant to their respective Rules, all Clearing Agency participants are required to execute membership agreements under which they agree to be bound by the relevant Clearing Agency's Rules. As part of this onboarding, the Clearing Agencies may also require or otherwise obtain legal opinions, analyses or advice, as necessary, in connection with the evaluation of applications for membership, and other relevant matters. Such agreements and legal opinions support the enforceable legal basis for the Rules.

The well-founded and enforceable legal basis of the Rules is further supported through the Clearing Agencies' compliance with the Filing Requirements, described above. Through the Filing Requirements, the Clearing Agencies must articulate the legal basis for any proposed changes to their Rules in a clear and understandable way within public filings.

The Clearing Agencies' Rules are also subject to the Document Standards, which provides that certain policies and procedures may be considered part of the Clearing Agencies' Rules and, therefore, subject to the Filing Requirements cited above.

¹⁴ See 17 CFR 240.17Ad-22(e)(1).

4.3.3.3 Management of Risk Through Risk Management Frameworks

The Clearing Agencies have adopted and maintain frameworks (“Risk Management Frameworks”), separate and apart from, but in support of, this Framework, that provide an outline for certain policies and procedures that address, in whole or in part, the management of operational, liquidity, credit, market, collateral, and other risks.

Certain of these Risk Management Frameworks are described below. The creation of these and other Risk Management Frameworks and the management of any existing Risk Management Frameworks is undertaken pursuant to the Document Standards. The Risk Management Frameworks identified below have been filed with and approved by the SEC pursuant to the Filing Requirements. All Risk Management Frameworks are reviewed and approved annually by the Boards or applicable committees of the Boards.

- The *Clearing Agency Operational Risk Management Framework* (~~“ORM Framework”~~) sets forth the general manner in which the Clearing Agencies manage all of their operational risks, both financial and non-financial, and addresses related matters.
- The *Clearing Agency Liquidity Risk Management Framework* (~~“LRM Framework”~~) sets forth the manner in which each of the Clearing Agencies measures, monitors and manages the liquidity risks that arise in or are borne by such Clearing Agency, including (i) the manner in which each Clearing Agency deploys its liquidity tools to meet its settlement obligations on an ongoing and timely basis and (ii) each applicable Clearing Agency’s use of intraday liquidity, in accordance with applicable legal requirements, and addresses related matters.
- The *Clearing Agency **Price and Margin Input Data Framework*** ~~*Securities Valuation Framework*~~ (~~“SV Framework”~~) sets forth the manner in which each of the Clearing Agencies identifies, measures, monitors, and manages the risks related to (i) the pricing of securities processed or otherwise held by the Clearing Agencies and (ii) inputs to Clearing Agencies’ margin methodologies, as applicable, and addresses related matters.
- The *Clearing Agency Stress Testing Framework* (~~“Stress Testing Framework”~~) sets forth the manner in which each of the Clearing Agencies tests the sufficiency of its prefunded financial resources and liquidity resources in accordance with applicable legal requirements, and addresses related matters.
- The *Clearing Agency Model Risk Management Framework* (~~“Risk Model Framework”~~) sets forth the manner in which each of the Clearing Agencies identifies, measures, monitors, and manages the risks related to the design, development, implementation, use, and validation of models, and addresses related matters.
- **The Clearing Agency Framework for Certain Requirements on Governance and Conflicts of Interest sets forth the manner in which the Boards of Directors of the Clearing Agencies manage conflicts of interest among directors and senior management, the risks from relationships with service providers for core services and the solicitation of stakeholder viewpoints on material developments in risk management and operations.**

4.4.3.4 Solicitation of Participant and Stakeholder Views

4.4.13.4.1 General Solicitation of Views

The Clearing Agencies may solicit the views of their participants and other industry stakeholders in a number of ways, including, for example, through targeted outreach to specific participants impacted by a

proposal, widely distributed surveys, and ad hoc forums. The Clearing Agencies may establish standing advisory councils made up of representatives of the Clearing Agencies' participants and other stakeholders.

In addition to representatives of the Clearing Agencies' participants, the Clearing Agencies may also solicit the views of representatives from other industry stakeholders, including, for example but not limited to, transfer agents, liquidity providers, market infrastructures, institutional and retail investors, customers of the Clearing Agencies' participants, securities issuers, and securities holders.

Advisory councils may meet on a recurring basis and provide the Clearing Agencies with the views and feedback of participants and stakeholders in connection with evaluating and developing proposed changes to, or conducting regular reviews of, their existing risk management practices, products, services and operations, for example.

4.4.23.4.2—Required Solicitation of Views—Annual Review of GSD Access Models

An advisory council, consisting of participants, their customers and other industry stakeholders, shall assist in an annual review of the access models of FICC/GSD. Such review is then escalated to the FICC Board of Directors, or a Committee thereof, as required by Rule 17Ad-22(e)(18)(iv)(C).

The goal of the annual review of FICC/GSD's access models is to determine whether the GSD Clearing Rules and any other written policies and procedures are reasonably designed to ensure appropriate and flexible means to facilitate access to clearance and settlement of all eligible secondary market transactions in U.S. Treasury securities, including those of indirect participants, consistent with FICC's responsibility to provide sound risk management and comply with its applicable regulatory requirements.

In furtherance of this goal, the annual review shall:

- (1) document any instance in which FICC/GSD's policies and procedures treat transactions differently based on (i) the identity of the participant submitting the transaction, (ii) the fact that an indirect participant is a party to the transaction, or (iii) the method of execution, or in any other way; and confirm that any variation in the treatment of such transactions is necessary and appropriate to meet the minimum standards regarding, among other things, operations, governance, and risk management identified in the CCAS;
- (2) consider whether to establish or modify existing policies and procedures that would further facilitate clearing activity;
- (3) consider the volumes and proportion of the markets that are being centrally cleared through different access models in determining whether FICC/GSD's access models are meeting the needs of the market; and
- (4) consider whether it is appropriate to develop and propose an additional category or categories of Netting Members to the GSD Rules to reflect the types of legal entities that applied to be a Netting Member over the prior 12 months and did not fit into one of the existing Netting Member categories.

Section 54 Management of Certain Risks

5.14.1 Information and Incentives for Participant Management of Risk

In support of the Clearing Agencies' compliance with Rule 17Ad-22(e)(3), the Clearing Agencies provide their respective participants with information and incentives to enable them, and, through them, their

customers, to understand, monitor, manage and contain the risks they pose to the respective Clearing Agencies, in the manner described below. The disclosure of information described below also supports the Clearing Agencies' compliance with Rule 17Ad-22(e)(23).

The Clearing Agencies provide their participants with a number of tools to assist participants in understanding the Clearing Agencies' products and services, and their use. Topics covered in these documents and tools include both functional and operational aspects of Clearing Agency services, and risk management practices and methodologies. Some of these sources of information are listed below, by way of example. Such list is not intended to be exhaustive, however, and the Clearing Agencies may, from time to time develop additional informational tools as necessary and appropriate.

- The Rules of the Clearing Agencies, which are publicly available on the DTCC website, ~~among other things,~~ establish membership responsibilities, including participants' daily responsibilities to meet Clearing Fund or Participants Fund requirements, as applicable, and complete settlement.
- User guides and training courses are made available to participants through DTCC Learning on the DTCC website.
- Each of the Clearing Agencies publishes to the DTCC website disclosure frameworks, updated on a biennial basis, and updated more frequently for material changes. These disclosure frameworks provide a comprehensive description of how the businesses and operations of the Clearing Agencies reflect the applicable CCAS and Principles for financial market infrastructures, issued by CPSS and IOSCO (see footnote 2).
- Each of FICC and NSCC, as central counterparties, publishes to the DTCC website quantitative disclosures, updated on a quarterly basis. These quantitative disclosures disclose certain quantitative data and other information as set out in the Public quantitative disclosure standards for central counterparties, published by CPSS and IOSCO (see footnote 2).
- **Each of FICC and NSCC publish public guides to the methodology for calculating the components of their Clearing Funds and calculators for estimating certain margin requirements.**
- Clearing Agency participants receive additional, various reports throughout the day detailing their margin and liquidity requirements as well as their transaction volumes and values. For example, on a daily basis each of the Clearing Agencies provides their participants **with** an entire suite of reports showing their activity in all phases of the settlement cycle.

Some of the incentives the Clearing Agencies provide to their participants to enable them, and through them, their customers, to monitor, manage and contain the risks they pose to the respective Clearing Agencies, are listed below, by way of example. Such list is not intended to be exhaustive, however, and the Clearing Agencies may, from time to ~~time~~**time**, develop additional incentives for risk management, as necessary and appropriate.

- The Clearing Agencies' participants are required to meet their daily Clearing Fund or Participants Fund requirement deposits, as applicable, which are calculated in close correlation with the amount of risk each participant poses to the relevant Clearing Agency. Therefore, participants have a vested interest in monitoring their activity and related required deposits continuously as these requirements have a direct impact on the amount of collateral and liquidity at their disposal.
- In order to enforce the requirements of their respective Rules, each of the Clearing Agencies has and may establish tools, including monetary fines, the consequence of reporting certain incidents to regulators, and, in some cases, limitation on access to one or more services or limitation on activities, which would ultimately result in termination of membership should a participant fail to meet its requirements to the Clearing Agency.

5.24.2 Management of Risks Related to Material Interdependencies and External Links

Each of the Clearing Agencies may establish external links or be party to other relationships that create material external interdependencies. In support of the Clearing Agencies' compliance with Rule 17Ad-22(e)(3), the Clearing Agencies regularly review the material risks they bear from and pose other entities (including other clearing agencies, settling banks, liquidity providers and service providers) as a result of these interdependencies, in the manner described below.¹⁵

5.2.14.2.1 Material Interdependencies

Relationships between the Clearing Agencies and other parties may potentially pose a number of risks to other entities and expose the Clearing Agencies to risks. Some of the existing key relationships that may create a material interdependency, and the method in which the Clearing Agencies address risks arising from those relationships, are described below.

These examples of existing relationships are not intended to be exhaustive, however, and the Clearing Agencies may, from time to time, enter into new relationships, as necessary and appropriate. Any such new relationships would be subject to the process described in Section 45.2.2 below.

Risks Related to Participants and Settling Banks. The Clearing Agencies may manage risk posed by their participants and settling banks, as applicable, in a number of ways, some of which are described below, as way of example.

- The Clearing Agencies maintain clear and objective membership requirements for each category of membership, which provide fair and open access for firms seeking membership, while maintaining prudent risk management standards.
- The Clearing Agencies conduct ongoing monitoring and review of participants, regular calculation and collection of deposits to their Clearing Funds or Participants Fund, as applicable, and use other tools that enable them to obtain adequate assurances that their participants are capable of meeting their membership obligations.
- A number of systems support the oversight of the Clearing Agencies' risk management activities, including systems that (i) capture and evaluate participants' regulatory reports; (ii) calculate participant's required deposits to the Clearing Funds or Participants Fund, as applicable; (iii) monitor participants' compliance with the Clearing Funds or Participants Fund requirements; and (iv) evaluate the potential closeout exposure of a participant portfolio in the event of a default.
- ~~as applicable; (iii) monitor participants' compliance with the Clearing Funds or Participants Fund requirements; and (iv) evaluate the potential closeout exposure of a participant portfolio in the event of a default.~~
- Settling banks, which are selected by, and act on behalf of, the participants of the Clearing Agencies are held to strict operational standards and may be subject to fines and other disciplinary measures (in their capacity as participants or settling bank participants) should they fail to abide by such requirements.

Each of these risk management activities is described within the Rules of each of the Clearing Agencies and is managed within the ~~Risk Department~~Group Chief Risk Office, on behalf of the Clearing Agencies.

¹⁵ See 17 CFR 240.17Ad-22(e)(3).

The Clearing Agencies may establish policies, procedures or frameworks to govern its management of these activities, as necessary.

Risks Related to Investment Counterparties. Investment risk, including risks related to the investment of cash in their Clearing Funds and Participants Fund, as applicable, is managed through a policy that outlines, among other matters, credit reviews of investment counterparties and the process for setting investment limits.

Risks Related to Third Party Service Providers. The Clearing Agencies manage risks presented by material third party service providers that provide services to a Clearing Agency (each, a “Third Party”) through a comprehensive review and vetting process that includes both credit and operations risk reviews and controls. The review and risk assessment of contractual arrangements described below also supports the Clearing Agencies’ compliance with Rule 17Ad-22(e)(1) by supporting the maintenance of clear, understandable contracts that are consistent with relevant laws and regulations.¹⁶ **In compliance with Rule 17ad-25(j), the Clearing Agencies have established policies and procedures to manage risks from relationships with service providers for core services.**¹⁷

The Third Party Risk (“TPR”) function provides guidance for identifying, assessing, controlling, and monitoring Third Party risks to the Clearing Agencies. The Third Party risk management assessment process evaluates and manages risks periodically, throughout the lifecycle of a Third Party relationship. This includes protocols for reporting, escalation and remediation of vendor risk and potential exposures. TPR utilizes a tiered, risk-based approach to assess the need and level of due diligence activities associated with the evaluation of new and existing Third Party relationships. This process is initiated by a business through the submission of certain information related to the proposed Third Party relationship, which should focus on confidentiality, integrity, availability and recoverability related to that relationship.

Subject matter experts may assist in the assessment (both new or reassessments) of risk related to a Third Party relationship, including by providing recommendations as to how to minimize identified risks, in order to maintain underlying contracts that are enforceable and consistent with relevant laws and regulations. For example, the General Counsel’s office reviews certain ~~third party~~**third-party** contracts’ legal terms/risks, as appropriate, depending on the risks associated with the matter, specific legal and regulatory considerations, and applicable jurisdictionally-specific provisions required or recommended by relevant key regulators.

The Clearing Agencies maintain policies, procedures or templates that assist in carrying out its risk management functions related to the management of risks related to Third Party relationships.

Management and Monitoring of Systemic Risks. The Clearing Agencies identify and assess risks that have the potential of creating systemic impact, as well as potential mitigants of those risks. These matters are evaluated and discussed with senior management, the Boards and, through outreach, with the Clearing Agencies’ participants, when necessary and appropriate.

5.2.24.2.2 Other External Links

In support of the Clearing Agencies’ compliance with Rule 17Ad-22(e)(20), the Clearing Agencies maintain policies and procedures that define link arrangements and address how they identify, monitor and manage risks related to such links between one or more of the Clearing Agencies and one or more other clearing

¹⁶ See 17 CFR 240.17Ad-22(e)(1).

¹⁷ See 17 CFR 240.17ad-25(j).

agencies, financial market utilities or trading markets, in the manner described below.¹⁸ Such documents are maintained by the various groups that are involved in the review of links.

The Clearing Agencies' approach for managing risks related to link arrangements includes both the review and approval of prospective link arrangements, and the identification, monitoring and management of risks related to established links on an ongoing basis.

Both proposed new and existing links are subject to a series of comprehensive reviews that include input from a cross-functional group, including the relevant subject matter experts when necessary, designed to identify and address applicable risks related to the proposed or existing link.

Prospective links are subject to a formal, initial risk assessment designed to identify the risks inherent in the link and the controls and processes designed to monitor and mitigate those risks. ~~Relevant~~ Relevant risk categories including, but not limited to, operational, market, credit, liquidity and legal risks, are addressed in this comprehensive assessment. Proposed link arrangements may also be reviewed to determine applicability of Filing Requirements.

Regular reviews of existing link arrangements also include review of changes to relevant laws and regulations as they arise, in order to make changes to link arrangements as may be necessary or appropriate. In order to manage the review of existing links, the Clearing Agencies maintain an inventory of links that are subject to these risk reviews.

Certain, specified, key link arrangements may be subject to further review by the General Counsel's Office, as described in a policy and procedure maintained by the Clearing Agencies. Such review takes place either in response to a particular event implicating the arrangement or on a specified, regular basis, and would assess, among other matters, whether the link has a well-founded legal basis, in all relevant jurisdictions, that support its design and provide adequate protection to the relevant Clearing Agency.

5.34.3 Scope of Services Responsive to Market Needs

In support of the Clearing Agencies' compliance with Rule 17Ad-22(e)(21), the Clearing Agencies have implemented certain processes and take certain steps in order to be efficient and effective in meeting the requirements of their participants and the markets they serve.¹⁹

For example, in connection with their development of new initiatives and improvement of existing services, the Clearing Agencies develop the scope of services offered in a manner designed to be responsive to market needs by engaging with the industry and evaluating new initiatives, enhancements, strategic thinking, and their performance through the mechanisms listed below. This list is not intended to be exhaustive, however, and the Clearing Agencies may, from time to time employ other methods for efficiently and effectively meeting the requirements of their participants and the markets they serve, as necessary and appropriate.

- The Clearing Agencies employ a structured approach for the implementation of new initiatives, which includes defining the process being proposed, evaluating and approving all initiatives and, among other things, conducting a comprehensive risk assessment of new initiatives that are in scope of this approach. Such new initiatives are subject to necessary governance and oversight to enable the Clearing Agencies to bring initiatives to market in a timely and efficient manner, while

¹⁸ See 17 CFR 240.17Ad-22(e)(20).

¹⁹ See 17 CFR 240.17Ad-22(e)(21).

helping ensure, where relevant, that these initiatives are designed in a way that appropriately mitigates risk to the Clearing Agencies, their participants and the financial markets. This review and risk assessment of new initiatives, which addresses compliance with applicable laws, regulations and standards, also supports the Clearing Agencies' compliance with Rule 17Ad-22(e)(1) by permitting the Clearing Agencies to demonstrate a well-founded legal basis for the activities to be conducted in connection with such new initiative.²⁰

- The Clearing Agencies lead strategic thinking across the industry by participation in industry working groups and through the development of various White Papers, which are designed to provoke discussions on relevant topics of note in an effort to continually improve the overall market infrastructure. White Papers are made publicly available on the DTCC website.
- **The Clearing Agencies established advisory councils comprised of representatives from Clearing Agency participants, their customers and other stakeholders in order to solicit views on material developments in the Clearing Agencies' risk management and operations and escalate these viewpoints to the Board or the appropriate Board committee for its consideration in compliance with Rule 17ad-25(j).**
- The Clearing Agencies actively evaluate whether they are meeting and will continue to meet the requirements and needs of their participants through periodic customer satisfaction surveys for all business lines. Customer Account Representatives are product-aligned to better support participants' needs. The Clearing Agencies maintain a policy to address escalation, tracking and resolution of certain customer complaints.
- **The Clearing Agencies holistically measure and monitor performance against their goal of achieving certain measurable and achievable targets. Mid-year and year-end reports inform the relevant Board Committees of progress against the Clearing Agencies' corporate and strategic pillars and drivers. These reports include year-to-date operational health metric results, key priority status updates, and relevant table stakes. The Clearing Agencies leverage several dashboards to holistically measure and monitor performance against their goal of achieving certain measurable and achievable targets. The scorecards include measures across operations, client services, risk management, and information technology that enable each of the Clearing Agencies to focus on goals within those respective areas to help ensure that participant requirements are met. The scorecards and associated targets are refined annually. The results are tracked by the senior most management committee and the Board, with specific attention given to any metric that is at risk for not meeting its target.**

5.44.4 Use of Internationally Accepted Communication Procedures and Standards

In support of the Clearing Agencies' compliance with Rule 17Ad-22(e)(22), the Clearing Agencies maintain a policy to use and accommodate industry accepted communication procedures and standards in order to facilitate efficient payment, clearing, and settlement.²¹

The policy describes how the Clearing Agencies have developed and use proprietary communication standards and data formats for payment, clearing and settlement that are regarded as accepted industry

²⁰ See 17 CFR 240.17Ad-22(e)(1).

²¹ See 17 CFR 240.17Ad-22(e)(22).

standards for transactions processed through the Clearing Agencies due to their wide acceptance and long-standing use by the Clearing Agencies' respective participants. The policy also provides that the Clearing Agencies accommodate relevant internationally accepted communication procedures and standards when new industry standards are introduced and where there is both industry support and a business case for implementing such standard.

To support this policy, the Clearing Agencies also maintain a communication standard document that includes (1) an overall statement of the Clearing Agencies' communications standard; (2) the qualifications for a network to provide participants with access to the

-Clearing Agencies' services; (3) the protocols that the Clearing Agencies will support over the communications networks to ensure reliable exchange (delivery and receipt) of data; and (4) the standards the Clearing Agencies will support for data exchange over ~~its~~their networks.

Section ~~65~~ Recovery and Orderly Wind-down

In support of the Clearing Agencies' compliance with Rule 17Ad-22(e)(3) ~~and Rule 17ad-26~~, the Clearing Agencies identify scenarios that may potentially prevent them from being able to provide critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery and orderly wind-down, and maintain appropriate plans for recovery and orderly wind-down based on the results of that assessment ("R&W Plans").²²

The Clearing Agencies also maintain policies and procedures to govern the development and maintenance of the R&W Plans, which define the roles and responsibilities of the relevant business units in the development and documentation of the R&W Plans and supporting materials and outline the general contents of the R&W Plans. **Rule 17ad-26 requires that the R&W Plans identify the core staffing and service providers for core services needed to support the core services.** The R&W Plans are reviewed internally with a cross-functional team of subject matter experts. The R&W Plans have been approved by the Board. The R&W Plans provide that Board approval of the R&W Plans is required ~~biennially~~annually. The Board reviews the R&W Plans through formal and ad hoc Board meetings, receiving any necessary interim updates as determined by the senior most management committee.

The Clearing Agencies may engage in participant and regulatory outreach regarding recovery and orderly wind-down planning and provide relevant authorities with information needed for purposes of recovery, orderly wind-down and resolution planning. The R&W Plans have been approved by the SEC pursuant to the Filing Requirements.

²² See 17 CFR 240.17Ad-22(e)(3)(ii).

Section 7 Exceptions

Potential exceptions to this Framework must be escalated as soon as identified to the owner of the Framework to determine the appropriate course of action. Approval of an exception shall be provided by both the owner of the Framework and the head of the business area that owns the responsibilities that are subject to the exception. Documentation evidencing the exception request and approval are maintained by the owner of the Framework in the General Counsel's Office records.

Section 8 Framework Governance

This Framework shall be reviewed and approved annually by the Boards, or duly authorized committees of the Boards at least annually, as required by Rule 17ad-22(e)(3)(i).

Changes to this Framework shall be approved by either (1) the Boards of Directors of the Clearing Agencies (each a “Board” and together, the “Boards”), (2) such Board committees as may be delegated authority by the Boards from time to time pursuant to their charters, or (3), with respect to certain changes, the General Counsel or Deputy General Counsels of the Clearing Agencies, pursuant to authority delegated by the Boards and with the advice and direction of the Framework owner. Any and all changes to this Framework are subject to the legend on the cover page.