DTCC Risk Framework

Risk Governance

Risk management is the primary function of DTCC – and it has been since the organization’s inception more than 40 years ago. The company’s risk-management role entails effective and efficient identification, measurement, monitoring and control of credit, market, liquidity, systemic, operational, and other risks for the DTCC enterprise, its users and the marketplace.

DTCC’s risk-management framework and governance structure foster the identification, discussion and escalation of risk issues as part of the company’s comprehensive controls and ongoing management of the risks inherent to a critical financial market infrastructure. Risk management is independent of the company’s business areas and provides oversight of DTCC’s risk management and control framework. The Risk Management function is headed by the Group Chief Risk Officer (GCRO), who is a member of the DTCC Management Committee and chairs the Management Risk Committee. The GCRO reports to the Executive Chairman who is accountable to the Board of Directors.

The Board of Directors maintains its own Risk Committee to assist the Board in fulfilling its oversight responsibilities for risk management focusing on three critical aspects: (1) oversight of enterprise risk management systems and processes designed to identify and manage credit, market and liquidity risks to DTCC’s domestic subsidiaries; (2) oversight of operational risks to DTCC arising from the operation of DTCC’s subsidiaries; and (3) due to DTCC’s unique capabilities and position, oversight of DTCC’s efforts to mitigate certain "systemic risks" that may undermine the stable operation of the financial system.

The Board Risk Committee reports its findings, decisions and actions to the full Board. A separate Board committee, the Audit Committee, is responsible for overseeing financial reporting, internal controls, compliance, adherence to DTCC’s Code of Ethics, and the performance of Internal Audit and DTCC’s external auditor. Other committees of the Board as well as the Board itself will also be provided information regarding significant risks specific to the committee’s area of concern or related to the entirety of DTCC. The Board and its committees also receive at each meeting Risk Tolerance statements which compare the current level of inherent and residual risk measures of DTCC as compared to specific risk appetite levels previously reviewed and approved by the Board.

DTCC’s Management Committee provides overall direction for all aspects of the firm’s business and operations. In turn, the Management Risk Committee has responsibility for the oversight and governance of risk, including establishing risk-management priorities, assessing risk metrics/controls, and addressing emerging risk issues.

Risk mitigation is also a critical component of several other DTCC governance committees and advisory councils:

- DTCC’s New Initiatives Committee follows a multi-step process to assess the pertinent aspects and potential risks of new business, product and service offerings.

- DTCC’s Anti-Money-Laundering Oversight Committee (AMLOC) is responsible for the oversight and governance of DTCC’s Bank Secrecy Act (BSA), anti-money-laundering (AML) and Office of Foreign Assets Control (OFAC) program and related matters, collectively referred to as AML. The AMLOC’s primary mission is to oversee the development and maintenance of an effective AML program for the organization.
• The Systemic Risk Council is an advisory group comprising senior representatives from DTCC’s core business and control functions. The Council is responsible for annually reviewing the company’s systemic risk strategy in the context of the current state of systemic threats in the global financial services industry. Additionally, the Council oversees and advises on the identification and monitoring of systemic threats to the company and its members, as well as providing advice regarding the prioritization and coordination of internal initiatives aimed at mitigating systemic risks. In this regard, the Council ensures appropriate resources are made available to support the company’s systemic risk objectives, including, among other things, ongoing member and regulatory communication and the development of education resources for the industry.

• The Model Risk Governance Council has responsibility for the testing, review, approval, oversight and governance of risk-assessment models and how DTCC’s various entities employ those models to measure and monitor risk exposure. The ability to identify, manage, and mitigate model risk is critical to the soundness of the services that DTCC provides to its clients and to the financial markets.

• The Risk Advisory Council and Clearing Agency Liquidity Council are external advisory groups comprised of senior executive representatives from our clients who provide critical insight and advice to us on specific risk initiatives.

Risk Management Regime

The principal risks DTCC faces in the ordinary course of doing business are:

• **Credit Risk**: The risk that a client does not comply with DTCC’s financial and operational requirements, which results in a financial loss or a disruption to settlement. Risk management’s objective is to create standards and/or controls that limit DTCC’s exposure to credit risk by: i) approving applicants that meet membership standards from a financial, operational and business suitability standpoint; ii) monitoring that clients remain in compliance with these standards; and iii) timely reporting of potential deterioration of clients’ credit quality to senior management.

• **Market Risk**: The risk that DTCC will incur a loss in the event of a client default if the value realized from the liquidation of assets held by DTCC against the firm’s obligations is not sufficient to cover DTCC’s exposure to the firm. The prices of the respective securities and positions settled by DTCC’s subsidiaries are subject to equity, interest rate, credit, foreign exchange and/or commodity market risks commencing at the time of the default through the execution of replacement transactions to settle the outstanding obligations of the defaulting client.

DTCC’s market-risk management strategy is for each subsidiary to maintain collateral from each individual client sufficient to meet the potential losses incurred by the execution of replacement cost transactions to settle the outstanding obligations of the client if it were to default, as well as to manage the execution of replacement cost transactions in an orderly and prudent manner. Economic losses would be incurred if the amount of net losses resulting from replacement transaction costs are in excess of the margin posted by a defaulting client and potential risk mitigation available to DTCC under cross-guarantee arrangements with other central counterparties.

Margin Requirements and Deposits

DTCC margin models estimate possible losses for a specific portfolio based on 1) market volatility, 2) a confidence level typically calibrated at 99% or higher, and 3) an appropriate liquidation/hedging period. To ensure that the Value at Risk (VaR) model accurately reflects market conditions and portfolio stresses, and therefore provides adequate coverage against risk, the model is subject to:

- Back testing to determine the adequacy of clearing fund requirements.
- Related tests to measure the adequacy of haircuts (mark-downs) on collateral and other factors, where relevant.
• Stress testing based on real historical and hypothetical scenarios, to assess the model’s performance under extreme but plausible market conditions.

Results from the model performance and stress tests are discussed by the Management Risk Committee monthly and at each Board Risk Committee meeting. In 2013, the margins requirements for DTC, GSD, and NSCC exceeded our targets. Given the significant volatility in the mortgage backed securities market in the third quarter, our MBSD margin model underperformed the 99th percentile coverage level. We reviewed the model performance and made recommendations to our risk committees to mitigate the underperformance. Upon receiving approval for these changes by the appropriate committees, we instituted steps to adjust the MBSD margin methodology in September 2013, and the clearing fund requirements achieved our target for each month in the fourth quarter.

• **Liquidity Risk:** The risk that a DTCC subsidiary will not have sufficient funding resources to cover the settlement of a defaulting client’s transactions. DTCC’s liquidity risk management measures the potential liquidity demands under a variety of stress scenarios against available liquidity resources by subsidiary. DTCC’s liquidity risk management strategy for each subsidiary is to maintain liquidity resources sufficient to meet the potential amount of funding required to settle the outstanding transactions of a defaulting client in a timely manner. In the past couple of years, we have seen our potential liquidity exposure rise in NSCC. In response, we increased our NSCC credit facility by $5.29 billion in 2013. We also obtained approval for the Supplemental Liquidity Deposit to cover peak liquidity risk during monthly option expiry. We continue to work with our clients to address DTCC liquidity exposures and effectively engage our membership in developing future liquidity proposals.

• **Quantitative Risk:** The risk that the models utilized in assessing risk may have shortcomings and/or flaws, and thus may expose DTCC to risk of loss. Risk Management works closely with all key business units of DTCC and provides quantitative support to facilitate that risks are appropriately measured, controlled and reported in line with relevant regulatory requirements and guidance, as well as international financial industry standards and prudent risk-management practices.

• **Investment Risk:** The risk that a DTCC subsidiary invests funds in a manner that is not prudent or conservative. DTCC’s investment approach is based on maintaining maximum liquidity and low risk – its highest priorities. Investment counterparties are reviewed by DTCC’s Finance unit and approved by Risk Management.

• **Operational Risk:** The risk of financial loss due to inadequate or failed processes caused by human error, system failure or external events. DTCC has established a risk management architecture based upon the identification of inherent operational risks for each business, function and process, the establishment of appropriate risk management procedures and metrics to appropriately control such risk and, finally, the identification and acceptance of any residual risk. DTCC has also established operational risk profiles for each of the key business and functional units within DTCC. These profiles also consolidate all other control findings (incidents, audit findings, compliance testing results, etc.) and mitigation action plans. The profiles are reviewed monthly by the management of individual business units or corporate function as well as by the Management Risk Committee. The Board Risk Committee as well as other committees of the Board also receive profiles at each Board meeting.

• **Systemic Risk:** Threats to the stable operation of the financial system as a whole that, if realized, would trigger a loss of economic value or confidence in the system that ultimately could adversely impact the economy and the effective functioning of DTCC. DTCC strives to understand and mitigate potential systemic threats that may arise from its day-to-day operations, extraordinary market events, and interconnections with other entities.

For each of these risk categories, there is a comprehensive policy/procedure framework, analytical tools for risk quantification, and risk metrics for monitoring, control and escalation.