



DTCC

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Q4 2018

**FIXED INCOME CLEARING
CORPORATION**

AND

**NATIONAL SECURITIES
CLEARING CORPORATION**

QUANTITATIVE DISCLOSURES FOR CENTRAL COUNTERPARTIES

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EXECUTIVE SUMMARY

In February 2015, CPMI-IOSCO issued its final report on Quantitative Disclosure Standards for Central Counterparties (“CCPs”), which provides specific quantitative disclosure requirements for CCPs relative to a number of the PFMI principles. These disclosures are intended to complement the narrative disclosures included in the CPMI-IOSCO Disclosure Framework*. This document contains the quantitative disclosures for the two divisions of the Fixed Income Clearing Corporation (“FICC”) — the Government Securities Division (“GSD”) and Mortgage-Backed Securities Division (“MBSD”) — and the National Securities Clearing Corporation (“NSCC”). FICC and NSCC are wholly owned subsidiaries of The Depository Trust & Clearing Corporation (“DTCC”).

The attached disclosures include, in addition to those required by CPMI-IOSCO, some supplemental disclosures as proposed by the Payments Risk Committee’s Recommendations for Supporting Clearing Member Due Diligence of Central Counterparties (Feb 2013).

The information provided in this disclosure is reported as of the dates specified. For further information, please contact **CPMI-IOSCO_Quant@dtcc.com**.

* The Disclosure Frameworks for FICC and NSCC can be found at **www.dtcc.com**

| Disclosure Reference | Disclosure Description | Frequency | Data Type | FICC | | NSCC | Explanatory Notes |
|---|--|---------------------------|-----------|--------|-------|-------|---|
| | | | | GSD | MBSD | | |
| Disclosure 4.1 - Total value of default resources (excluding initial and retained variation margin), split by clearing service if default funds are segregated by clearing service | | | | | | | |
| 4.1.1 | Prefunded - Own Capital Before | Quarterly/ Quarter End | USD \$MM | 53.9 | | 76.5 | The Company maintains an amount referred to as the corporate contribution, to be applied to losses of the Company as provided in the clearing agency rules. The amount of the corporate contribution is generally equal to 50% of the Company's general business risk capital requirement. |
| 4.1.2 | Prefunded - Own Capital Alongside | | USD \$MM | n/a | n/a | n/a | |
| 4.1.3 | Prefunded - Own Capital After | | USD \$MM | n/a | n/a | n/a | |
| 4.1.4 | Prefunded - Aggregate Participant Contributions - Required | | USD \$MM | 14,962 | 4,452 | 6,828 | NSCC and each FICC Division calculates and collects Clearing Fund from its Members using a risk-based margin methodology. These amounts (a Member's "Required Fund Deposit") operate as the Member's margin, and the aggregate of all such Members' deposits is, collectively, the Clearing Fund, which operates as NSCC's/FICC (with respect to each division's) default fund. |
| 4.1.5 | Prefunded - Aggregate Participant Contributions - Post-Haircut Posted | | USD \$MM | 20,068 | 5,713 | 8,227 | |
| 4.1.6 | Prefunded - Other | | USD \$MM | n/a | n/a | n/a | For NSCC, on September 5, 2017, the US cash equities markets moved to a T+2 settlement cycle. Accordingly, after that date, the clearing fund has been calculated to take into account the shortened settlement cycle. |
| 4.1.7 | Committed - Own/parent funds that are committed to address a participant default (or round of participant defaults) | | USD \$MM | n/a | n/a | n/a | |
| 4.1.8 | Committed - Aggregate participant commitments to address an initial participant default (or initial round of participant defaults) | | USD \$MM | n/a | n/a | n/a | |
| 4.1.9 | Committed - Aggregate participant commitments to replenish the default fund to deal with a subsequent participant default (or round of participant defaults) after the initial participant default (or round of participant defaults) has been addressed | | USD \$MM | n/a | n/a | n/a | |
| 4.1.10 | Committed - Other | | USD \$MM | n/a | n/a | n/a | |
| Disclosure 4.2 - Kccp - Quarter End | | | | | | | |
| 4.2.1 | Kccp - Kccp need only be reported by those CCPs which are, or seek to be a "qualifying CCP" under relevant law. | Quarterly | USD \$MM | 561 | n/a | n/a | |
| Disclosure 4.3 - Value of pre-funded default resources (excluding initial and retained variation margin) held for each clearing service | | | | | | | |
| 4.3.1 | Cash deposited at a central bank of issue of the currency concerned | Pre Haircut | USD \$MM | 3,450 | 950 | 4,900 | See Explanatory Note from 4.1 |
| | | Post Haircut | USD \$MM | 3,450 | 950 | 4,900 | |
| 4.3.2 | Cash deposited at other central banks | Pre Haircut | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | USD \$MM | 0 | 0 | 0 | |
| 4.3.3 | Secured cash deposited at commercial banks (including reverse repo) | Pre Haircut | USD \$MM | 350 | 100 | 375 | |
| | | Post Haircut | USD \$MM | 357 | 102 | 382 | |
| 4.3.4.1 | Unsecured cash deposited at commercial banks | Pre Haircut | USD \$MM | 771 | 346 | 820 | |
| 4.3.4.1 | Unsecured cash deposited at commercial banks; | Post Haircut | USD \$MM | 771 | 346 | 820 | |

| Disclosure 4.3 - Value of pre-funded default resources (excluding initial and retained variation margin) held for each clearing service - Cont'd | | | | | | | | |
|--|--|--------------|---------------------------|----------|--------|-------|-------|-------------------------------|
| 4.3.4.2 | Unsecured cash invested in Money Market Mutual Funds | Pre Haircut | Quarterly/ Quarter End | USD \$MM | 831 | 100 | 1,556 | See Explanatory Note from 4.1 |
| 4.3.4.2 | Unsecured cash deposited at commercial banks; | Post Haircut | | USD \$MM | 831 | 100 | 1,556 | |
| 4.3.4.3 | Unsecured cash invested in US Treasury Bills | Pre Haircut | | USD \$MM | 0 | 0 | 0 | See Explanatory Note from 4.1 |
| 4.3.4.3 | Unsecured cash deposited at commercial banks; | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.5 | Non-Cash Sovereign Government Bonds - Domestic | Pre Haircut | | USD \$MM | 12,591 | 3,696 | 615 | See Explanatory Note from 4.1 |
| | | Post Haircut | | USD \$MM | 12,171 | 3,555 | 591 | |
| 4.3.6 | Non-Cash Sovereign Government Bonds - Other | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.7 | Non-Cash Agency Bonds | Pre Haircut | | USD \$MM | 2,762 | 723 | 0 | See Explanatory Note from 4.1 |
| | | Post Haircut | | USD \$MM | 2,569 | 673 | 0 | |
| 4.3.8 | Non-Cash State/municipal bonds | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.9 | Non-Cash Corporate bonds | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.10 | Non-Cash Equities | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.11 | Non-Cash Commodities - Gold | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.12 | Non-Cash Commodities - Other | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.13 | Non-Cash Commodities - Mutual Funds / UCITS | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |
| 4.3.14 | Non-Cash Commodities - Other | Pre Haircut | | USD \$MM | 0 | 0 | 0 | |
| | | Post Haircut | | USD \$MM | 0 | 0 | 0 | |

| Disclosure 4.4 - Credit Risk Disclosures | | | | | | | |
|--|--|--|--|--|--|--|--|
|--|--|--|--|--|--|--|--|

| | | | | | | | | |
|-------|---|-------------------------------------|-----------|-----------|---------|---------|---------|--|
| 4.4.1 | State whether the CCP is subject to a minimum "Cover 1" or "Cover 2" requirement in relation to total pre-funded default resources. | | Quarterly | | Cover 1 | Cover 1 | Cover 1 | |
| 4.4.2 | For each clearing service, state the number of business days within which the CCP assumes it will close out the default when calculating credit exposures that would potentially need to be covered by the default fund. | | | Bus. Days | 3 | 3 | 3 | This is our risk horizon for liquidation and hedging of market risk. |
| 4.4.3 | For each clearing service, the estimated largest aggregate stress loss (in excess of initial margin) that would be caused by the default of any single participant and its affiliates (including transactions cleared for indirect participants) in extreme but plausible market conditions. (Previous 12 Months) | Peak Day/ Previous 12 Months | | USD \$MM | 797 | 1,618 | 1,836 | |
| | | Mean Avg/ Previous 12 Months | | USD \$MM | 517 | 885 | 474 | |
| 4.4.4 | Report the number of business days, if any, on which the above amount (4.4.3) exceeded actual pre-funded default resources (in excess of initial margin). | | | Bus. Days | 0 | 0 | 0 | |
| 4.4.5 | The amount in 4.4.3 which exceeded actual pre-funded default resources (in excess of initial margin) (Previous 12 Months) | Amt Exceeded/ Previous 12 Months | | USD \$MM | 0 | 0 | 0 | |
| 4.4.6 | For each clearing service, the actual largest aggregate credit exposure (in excess of initial margin) to any single participant and its affiliates (including transactions cleared for indirect participants) (Previous 12 Months) | Peak Day/ Previous 12 Months | | USD \$MM | 1 | < 1 | 265 | Amount represents Peak/Average VaR model back test results. |
| | | Avg/ Previous 12 Months | | USD \$MM | < 1 | < 1 | 12 | |
| 4.4.7 | For each clearing service, the estimated largest aggregate stress loss (in excess of initial margin) that would be caused by the default of any two participants and their affiliates (including transactions cleared for indirect participants) in extreme but plausible market conditions (Previous 12 Months) | Peak Day/ Previous 12 Months | | USD \$MM | 1,478 | 2,478 | 3,083 | |
| | | Mean Avg/ Previous 12 Months | | USD \$MM | 872 | 1,458 | 722 | |
| 4.4.8 | Number of business days, if any, on which the above amount (4.4.7) exceeded actual pre-funded default resources (in excess of initial margin) and by how much. | | | Bus. Days | 0 | 0 | 0 | |

| Disclosure 4.4 - Credit Risk Disclosures - Cont'd | | | | | | | | |
|---|--|-------------------------------------|-----------|----------|-----|-----|-----|---|
| 4.4.9 | The amount in 4.4.7 which exceeded actual pre-funded default resources (in excess of initial margin) (Previous 12 Months) | Amt Exceeded/ Previous 12 Months | Quarterly | USD \$MM | 0 | 0 | 0 | |
| 4.4.10 | For each clearing service, what was the actual largest aggregate credit exposure (in excess of initial margin) to any two participants and their affiliates (including transactions cleared for indirect participants)? (Previous 12 Months) | Peak Day/ Previous 12 Months | | USD \$MM | 2 | < 1 | 513 | Amount represents Peak/Average VaR model back test results. |
| | | Avg/ Previous 12 Months | | USD \$MM | < 1 | < 1 | 18 | |

| Disclosure 5.1 - Assets eligible as initial margin, and the respective haircuts applied | | | | | | | | |
|---|---|--|----------------------------|-----------------------|---|---|---|--|
| 5.1.1 | Assets eligible as initial margin and the respective haircuts applied | | Update as changes are made | Website/ Hyperlink | http://www.dtcc.com/~media/Files/Downloads/legal/rules/ficc_gov_rules.pdf | http://www.dtcc.com/~media/Files/Downloads/legal/rules/ficc_mbsd_rules.pdf | http://www.dtcc.com/~media/Files/Downloads/legal/rules/nsccl_rules.pdf | |
| | | | | | Section: "SCHEDULE OF HAIRCUTS FOR ELIGIBLE CLEARING FUND SECURITIES" | Section: "SCHEDULE OF HAIRCUTS FOR ELIGIBLE CLEARING FUND SECURITIES" | Section: "PROCEDURE XV", "III. Collateral Value of Eligible Clearing Fund Securities" | |

| Disclosure 5.2 - Assets Eligible for pre-funded participant contributions to the default resources, and the respective haircuts applied (if different from 5.1) | | | | | | | | |
|---|--|--|----------------------------|--|---------------|---------------|---------------|--|
| 5.2.1 | Assets Eligible for pre-funded participant contributions to the default resources, and the respective haircuts applied (if different from 5.1) | | Update as changes are made | | See 5.1 above | See 5.1 above | See 5.1 above | |

| Disclosure 5.3 - Results of testing of haircuts | | | | | | | | |
|---|---|-----------|-----------|------------|----------|----------|----------|--|
| 5.3.1 | Confidence interval targeted through the calculation of haircuts | | Quarterly | Percentage | 99% | 99% | 99% | |
| 5.3.2 | Assumed holding/liquidation period for the assets accepted | | | Bus. Days | 3 Days | 3 Days | 3 Days | See Explanatory Note from 4.4.2 |
| 5.3.3 | Look-back period used for testing the haircuts | | | | 10 years | 10 years | 10 years | |
| 5.3.4 | Number of days during the look-back period on which the fall in value during the assumed holding/liquidation period exceeded the haircut on an asset. | Treasury | | Bus. Days | 9 | n/a | n/a | For Treasuries based on a 10 year look-back period, 1 day for 20 yr. and 9 days for 30 yr. tenors were observed, where a change in rate caused a breach in respective HC. The total day count for Treasuries is 9 (as 1 day caused the breach for both tenors, 20 & 30 yr.). For Agencies and Mortgages no breaches were observed under current HCs. |
| | | Agency | | Bus. Days | 0 | 0 | n/a | |
| | | Mortgages | | Bus. Days | 0 | 0 | n/a | |

| Disclosure 6.1 - Total initial margin required split by house, client gross, client net and total (if not segregated) | | | | | | | | |
|---|--|----------------|-----------|----------|------------------|------------------|------------------|---------------------------------|
| 6.1.1 | Total initial margin required split by house, client gross, client net and total (if not segregated) | House (Net) | Quarterly | USD \$MM | 14,962 | 4,452 | 6,828 | See Explanatory Note from 4.1.4 |
| | | Client (Gross) | | USD \$MM | n/a ¹ | n/a ¹ | n/a ¹ | |
| | | Client (Net) | | USD \$MM | n/a ¹ | n/a ¹ | n/a ¹ | |
| | | Total | | USD \$MM | 14,962 | 4,452 | 6,828 | |

¹ Not applicable. GSD/MBSD/NSCC does not hold client margin. See NSCC/FICC's Disclosure Frameworks, Principle 14 discussion.

Disclosure 6.2 - For each clearing service, total initial margin required, split by house and client (or combined total if not segregated)

Not applicable. GSD/MBSD/NSCC does not hold client margin. See NSCC/FICC's Disclosure Frameworks, Principle 14 discussion. For aggregate numbers, see 6.1.1 above.

| | | | | | | | |
|-------|---|------------------------|-----------|----------|------------|------------|------------|
| 6.2.1 | Cash deposited at a central bank of issue of the currency concerned | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 6.2.2 | Cash deposited at other central banks | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 6.2.3 | Secured cash deposited at commercial banks (including reverse repo) | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 6.2.4 | Unsecured cash deposited at commercial banks | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 6.2.5 | Non-Cash Sovereign Government Bonds - Domestic | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 6.2.6 | Non-Cash Sovereign Government Bonds - Other | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 6.2.7 | Non-Cash Agency Bonds | House IM Pre Haircut | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | House IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Client IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Pre Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Total IM Post Haircut | | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |

Disclosure 6.2 - For each clearing service, total initial margin required, split by house and client (or combined total if not segregated) (cont'd)

Not applicable. GSD/MBSD/NSCC does not hold client margin. See NSCC/FICC's Disclosure Frameworks, Principle 14 discussion. For aggregate numbers, see 6.1.1 above.

| 6.2.8 | Non-Cash State/municipal bonds | House IM Pre Haircut | Quarterly | USD \$MM | n/a | n/a | n/a | |
|--------|---------------------------------|------------------------|-----------|----------|-----|-----|-----|--|
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| 6.2.9 | Non-Cash Corporate bonds | House IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| 6.2.10 | Non-Cash Equities | House IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| 6.2.11 | Non-Cash Commodities - Gold | House IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| 6.2.12 | Non-Cash Commodities - Other | House IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| 6.2.13 | Non-Cash - Mutual Funds / UCITS | House IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| 6.2.14 | Non-Cash - Other | House IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |

| Disclosure 6.2 - For each clearing service, total initial margin required, split by house and client (or combined total if not segregated) (cont'd) | | | | | | | | Not applicable. GSD/MBSD/NSCC does not hold client margin. See NSCC/FICC's Disclosure Frameworks, Principle 14 discussion. For aggregate numbers, see 6.1.1 above. |
|---|--|------------------------|-----------|----------|-----|-----|-----|--|
| 6.2.15 | Cash deposited at a central bank of issue of the currency concerned; Total (if not segregated) | House IM Pre Haircut | Quarterly | USD \$MM | n/a | n/a | n/a | |
| | | House IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Client IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Pre Haircut | | USD \$MM | n/a | n/a | n/a | |
| | | Total IM Post Haircut | | USD \$MM | n/a | n/a | n/a | |

| Disclosure 6.3 - Initial Margin rates on individual contracts, where the CCP sets such rates | | | | | | | | |
|--|--|--|----------------------------|--|-----|-----|-----|--|
| 6.3.1 | Initial Margin rates on individual contracts where the CCP sets such rates | | Update as changes are made | | n/a | n/a | n/a | |

| Disclosure 6.4 - Type of initial margin model used (e.g. portfolio simulation or risk aggregation) for each clearing service and the key model design parameters for each initial margin model applied to that clearing service | | | | | | | | |
|---|--|--|----------------------------|--|---------------------------------|---------------------------------|--------------------------|--|
| 6.4.4 | Type of initial margin model used (e.g. portfolio simulation or risk aggregation) for each clearing service and the key model design parameters for each initial margin model applied to that clearing service | | Update as changes are made | | Historical Simulation + Haircut | Historical Simulation + Haircut | Parametric VaR + Haircut | |

| Disclosure 6.5 - Results of back-testing of initial margin. At a minimum, this should include, for each clearing service and each initial margin model applied to that clearing service | | | | | | | | |
|---|--|-------------------------------------|-----------|------------|--------|--------|--------|--|
| 6.5.1 | Number of times over the past twelve months that margin coverage held against any account fell below the actual marked-to-market exposure of that member account – based on daily back-testing results | Once-a-day/ Previous 12 Months | Quarterly | Count | 112 | 25 | 132 | |
| 6.5.2 | Number of observations ((Number of accounts * number of days)) | Previous 12 Months | | Count | 26,872 | 28,750 | 31,133 | |
| 6.5.3 | Achieved coverage level [aggregate CCP-level backtest coverage] | Previous 12 Months | | Percentage | 99.6% | 99.9% | 99.6% | |
| 6.5.4 | Where breaches of initial margin coverage (as defined in 6.5(a)) have occurred, report on size of uncovered exposure | Peak Size/ Previous 12 Months | | USD \$MM | 55 | 28 | 137 | |
| 6.5.5 | Where breaches of initial margin coverage (as defined in 6.5(a)) have occurred, report on size of uncovered exposure | Average Size/ Previous 12 Months | | USD \$MM | 6 | 2 | 10 | |

| Disclosure 6.6 - Average Total Variation Margin Paid to the CCP by participants each business | | | | | | | | |
|---|--|---------|-----------|----------|-------|-------|-----|---|
| 6.6.1 | Average Total Variation Margin Paid to the CCP by participants each business day | Average | Quarterly | USD \$MM | 2,010 | 1,170 | 826 | For GSD, VM is a cash pass-through process across the members; for MBSD and NSCC, VM debits are included as part of the Clearing Fund requirements. Additional details are provided in PRC 2 Explanatory Notes. MTM debits were aggregated across all members to reflect the variation margin paid to all members. |

| Disclosure 6.7 - Maximum total variation margin paid to the CCP on any given business day over the period | | | | | | | | |
|---|--|---------|-----------|----------|-------|-------|-------|-------------------------------|
| 6.7.1 | Maximum total variation margin paid to the CCP on any given business day over the period | Maximum | Quarterly | USD \$MM | 3,081 | 2,228 | 3,401 | See Explanatory Note from 6.6 |

Disclosure 6.8 - Maximum aggregate initial margin call on any given business day over the period

| | | | | | | | | |
|-------|---|---------|-----------|----------|-------|-----|-------|---|
| 6.8.1 | Maximum aggregate initial margin call on any given business day over the period | Maximum | Quarterly | USD \$MM | 1,960 | 917 | 3,302 | Amount represents the largest aggregate deficit over amounts on deposit. This is the actual call made, to be reduced by any excess collateral that was held. Call amount would be inclusive of any intraday calls made. |
|-------|---|---------|-----------|----------|-------|-----|-------|---|

Disclosure 7.1 - Liquidity Risk

| | | | Quarterly/ Quarter End | | Cover 1 | Cover 1 | Cover 1 | |
|--------|--|--------------------------|---------------------------|----------|---------|---------|---------|---|
| 7.1.1 | State whether the clearing service maintains sufficient liquid resources to 'Cover 1' or 'Cover 2'. | | | | | | | |
| 7.1.2 | Size and composition of qualifying liquid resources for each clearing service; (a) Cash deposited at a central bank of issue of the currency concerned | | | USD \$MM | 3,450 | 950 | 11,207 | |
| 7.1.3 | Size and composition of qualifying liquid resources for each clearing service; (b) Cash deposited at other central banks | | | USD \$MM | n/a | n/a | n/a | |
| 7.1.4 | Size and composition of qualifying liquid resources for each clearing service; (c) Secured cash deposited at commercial banks (including reverse repo) | Repo Only | | USD \$MM | 350 | 100 | 375 | |
| 7.1.5 | Size and composition of qualifying liquid resources for each clearing service; (d) Unsecured cash deposited at commercial banks | Commerical Bank Deposits | | USD \$MM | 721 | 346 | 1,920 | |
| | | Money Market Funds | | USD \$MM | 831 | 100 | 1,556 | |
| | | US Treasury Bills | | USD \$MM | n/a | 0 | n/a | |
| 7.1.6 | Size and composition of qualifying liquid resources for each clearing service; (e) secured committed lines of credit (ie those for which collateral/security will be provided by the CCP if drawn) including committed foreign exchange swaps and committed repos | | | USD \$MM | 72,585 | 41,743 | 11,359 | For MBSD & GSD, amount represents the total size of the rules-based facility, Capped Contingency Liquidity Facility ("CCLF"). For NSCC, the amount represents a secured line of credit with a syndicate of lenders excluding the largest contributor to the line of credit. |
| 7.1.7 | Size and composition of qualifying liquid resources for each clearing service; (f) unsecured committed lines of credit (ie which the CCP may draw without providing collateral/security) | | | USD \$MM | n/a | n/a | n/a | |
| 7.1.8 | Size and composition of qualifying liquid resources for each clearing service; (g) highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements even in extreme but plausible market conditions | | | USD \$MM | 15,353 | 4,419 | 615 | Amounts include Clearing Fund securities. |
| 7.1.9 | Size and composition of qualifying liquid resources for each clearing service; (h) other | | | USD \$MM | 73,431 | 551 | 0 | For GSD and MBSD, the portfolio of a defaulting member, comprised of highly marketable collateral would also be available as a liquidity resource. Value and composition of that portfolio would vary by day and by member. 12/31 was not an MBSD class-settlement day. For GSD/MBSD, amount represents the Repo Value of Underlying Securities. NSCC's Supplemental Liquidity Deposit ("SLD") program provides for additional rules-based liquidity resources around monthly option expiry periods. Option expiry settlement cycles typically present elevated liquidity needs to NSCC. Members may be required to provide additional funding based on historical activity, or may voluntarily pre-fund outside liquidity needs. Sizing of supplemental liquidity resources will vary based on the historical activity presented by NSCC's largest members as well as market dynamics during the current settlement cycle. (As of 12/31 there were no SLD deposits on hand) Resources reported in Section 7.1 are as of the end of the quarter and do not correspond to the dates of the actual largest obligations. On the dates of the actual largest obligations sufficient liquidity resources were available. |
| 7.1.10 | State whether the CCP has routine access to central bank liquidity or facilities. | | | | n/a | n/a | n/a | |
| 7.1.11 | Details regarding the schedule of payments or priority for allocating payments, if such exists, and any applicable rule, policy, procedure, and governance arrangement around such decision making. | | | | n/a | n/a | n/a | |

| Disclosure 7.2 - Size and composition of any supplementary liquidity risk resources for each clearing service above those qualifying liquid resources above. | | | | | | | |
|--|---|---------------------------|----------|---|--|---|--|
| 7.2.1 | Size and composition of any supplementary liquidity risk resources for each clearing service above those qualifying liquid resources in 7.1 | Quarterly/ Quarter End | USD \$MM | GSD can use collateralized loans from clearing banks as additional liquidity resources. | MBSD can use collateralized loans from clearing banks as additional liquidity resources. | NSCC can use collateralized loans/equity repo utilizing the cash market securities that were destined to defaulter as collateral. | |

| Disclosure 7.3 - Liquidity Risk | | | | | | | |
|---------------------------------|---|-------------------------------|-----------------------|--------|--------|--------|---|
| 7.3.1 | Estimated largest same-day and, where relevant, intraday and multiday payment obligation in total that would be caused by the default of any single participant and its affiliates (including transactions cleared for indirect participants) in extreme but plausible market conditions | Forward looking/ Quarterly | USD \$MM | 82,672 | 24,119 | 25,219 | For GSD and MBSD, values are estimated liquidity obligations that are based on trades that are due to settle the following business day. For NSCC, values are estimated liquidity obligations that are based on an Accelerated Trade Guarantee ("ATG") which covers the multi-day obligations throughout the (T+2) settlement cycle plus the Long Allocation and CALM offsets. |
| 7.3.2 | Number of business days, if any, on which the above amount exceeded its qualifying liquid resources (identified as in 7.1, and available at the point the breach occurred), and by how much. | Quarterly | Bus. Days USD \$MM | 0 0 | 0 0 | 0 0 | |
| 7.3.3 | Actual largest intraday and multiday payment obligation of a single participant and its affiliates (including transactions cleared for indirect participants) over the past twelve months; Peak day amount in previous twelve months | Previous 12 Months | USD \$MM | 64,010 | 25,013 | 10,060 | GSD/MBSD/NSCC did not utilize any of its liquidity resources to cover any member payment obligations. NSCC reflects multi-day settlement obligations. GSD obligations that are based on trades that are due to settle the following business day. MBSD obligations are based on bilateral trades due to settle the next business day. |
| 7.3.4 | Estimated largest same-day and, where relevant, intraday and multiday payment obligation in each relevant currency that would be caused by the default of any single participant and its affiliates (including transactions cleared for indirect participants) in extreme but plausible market conditions | Forward looking/ Quarterly | USD \$MM | 82,672 | 24,119 | 25,219 | See Explanatory Note from 7.3.1 |
| 7.3.5 | Number of business days, if any, on which the above amounts exceeded its qualifying liquid resources in each relevant currency (as identified in 7.1 and available at the point the breach occurred), and by how much | Quarterly | Bus. Days USD \$MM | 0 0 | 0 0 | 0 0 | See Explanatory Note from 7.1.9 reference for SLD |

| Disclosure 12.1 - Percentage of settlements by value effected using a DvP, DvD or PVP settlement mechanism | | | | | | | |
|--|--|-----------|------------|------|------|------|--|
| 12.1.1 | Percentage of settlements by value effected using a DvP settlement mechanism | Quarterly | Percentage | 100% | 100% | 100% | FICC data provided with respect to GSD GCF Repo and non-GCF Repo CCP services and MBSD clearing services. |
| 12.1.2 | Percentage of settlements by value effected using a DvD settlement mechanism | | Percentage | n/a | n/a | n/a | NSCC data provided with respect to CNS, NSCC's CCP service, which uses a model 2 DvP Settlement mechanism. |
| 12.1.3 | Percentage of settlements by value effected using a PVP settlement mechanism | | Percentage | n/a | n/a | n/a | |

| Disclosure 12.2 - Percentage of settlements by volume effected using a DvP, DvD or PVP settlement mechanism | | | | | | | |
|---|---|-----------|------------|------|------|------|--|
| 12.2.1 | Percentage of settlements by volume effected using a DvP settlement mechanism | Quarterly | Percentage | 100% | 100% | 100% | FICC data provided with respect to GSD GCF Repo and non-GCF Repo CCP services and MBSD clearing services. |
| 12.2.2 | Percentage of settlements by volume effected using a DvD settlement mechanism | | Percentage | n/a | n/a | n/a | NSCC data provided with respect to CNS, NSCC's CCP service, which uses a model 2 DvP Settlement mechanism. |
| 12.2.3 | Percentage of settlements by volume effected using a PVP settlement mechanism | | Percentage | n/a | n/a | n/a | |

| Disclosure 13.1 - Quantitative information related to defaults | | | | | | | |
|--|--|--------|--|------------|------------|------------|--|
| 13.1.1 | Quantitative information related to defaults; Amount of loss versus amount of initial margin | Ad-hoc | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 13.1.2 | Quantitative information related to defaults; Amount of other financial resources used to cover losses | | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 13.1.3 | Quantitative information related to defaults; Proportion of client positions closed-out/porting | | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 13.1.4 | Quantitative information related to defaults; Appropriate references to other published material related to the defaults | | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |

| Disclosure 14.1 - Total Client Positions held as a share of notional values cleared or of the settlement value of securities transactions | | | | | | | |
|---|---|---------------------------|------------|-------------|-------------|-------------|---|
| 14.1.1 | Total Client Positions held in individually segregated accounts | Quarterly/ Quarter End | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | Not applicable for the US cash markets. See NSCC and FICC Disclosure Frameworks, Principle 14 discussion. |
| 14.1.2 | Total Client Positions held in omnibus client-only accounts, other than LSOC accounts | | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 14.1.3 | Total Client Positions held in legally segregated but operationally comingled (LSOC) accounts | | | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 14.1.4 | Total Client Positions held in comingled house and client accounts | | Percentage | 100% | 100% | 100% | |

| Disclosure 15.1 - General business risk | | | | | | | |
|---|---|--------|----------|------------|------------|---|--|
| | | | | | | Values representative of the 2018 Annual Audited Financial Statements. Values will remain static until publication of the 2019 Annual Audited Financial Statements (Q4 2019). | |
| 15.1.1 | Value of liquid net assets funded by equity | Annual | USD \$MM | 266 | 446 | | |
| 15.1.2 | Six months of current operating expenses | | USD \$MM | 108 | 153 | | |

| Disclosure 15.2 - General business risk; Financial Disclosures | | | | | | | | |
|--|---|--------|----------|---------------|--|---|--|--|
| | | | | | | Values representative of the 2018 Annual Audited Financial Statements. Values will remain static until publication of the 2019 Annual Audited Financial Statements (Q4 2019). | | |
| 15.2.1 | Total Revenue | Annual | USD \$MM | 263 | 453 | | | |
| 15.2.2 | Total Expenditure | | USD \$MM | 224 | 322 | | | |
| 15.2.3 | Profits | | USD \$MM | 39 | 131 | | | |
| 15.2.4 | Total Assets | | USD \$MM | 26,835 | 16,360 | | | |
| 15.2.5 | Total Liabilities | | USD \$MM | 26,547 | 15,802 | | | |
| 15.2.6 | Explain if collateral posted by clearing participants is held on or off the CCP's balance sheet | | | | Collateral is held on Balance Sheet | Collateral is held on Balance Sheet | | |
| 15.2.7 | Additional items as necessary | | USD \$MM | <i>n/a</i> | <i>n/a</i> | | | |

| Disclosure 15.3 - General business risk; Income breakdown | | | | Values representative of the 2018 Annual Audited Financial Statements. Values will remain static until publication of the 2019 Annual Audited Financial Statements (Q4 2019). | | |
|---|--|--------|------------|---|---------|--|
| 15.3.1 | Percentage of total income that comes from fees related to provision of clearing services | Annual | Percentage | 100% | 100.00% | |
| 15.3.2 | Percentage of total income that comes from the reinvestment (or rehypothecation) of assets provided by clearing participants | | Percentage | n/a | n/a | |

| Disclosure 16.1 - Total cash (but not securities) received from participants, regardless of the form in which it is held, deposited or invested, split by whether it was received as initial margin or default fund contribution | | | | | | | |
|--|--|---------------------------|----------|-------|-------|-------|---|
| 16.1.1 | Total cash (but not securities) received from participants, regardless of the form in which it is held, deposited or invested, received as initial margin | Quarterly/ Quarter End | USD \$MM | 5,352 | 1,496 | 7,651 | See Explanatory Note from 4.1.4 and 4.1.5 |
| 16.1.2 | Total cash (but not securities) received from participants, regardless of the form in which it is held, deposited or invested, received as default fund contribution | | USD | n/a | n/a | n/a | |

| Disclosure 16.2 - How total cash received from participants (16.1) is held/deposited/invested, including; | | | | | | | |
|---|---|---------------------------|------------|------|------|------|-----|
| 16.2.1 | Percentage of total participant cash held as cash deposits (including through reverse repo) | Quarterly/ Quarter End | Percentage | 100% | 100% | 100% | |
| 16.2.2 | Percentage of total participant cash held as cash deposits (including through reverse repo); as cash deposits at central banks of issue of the currency deposited | | Percentage | 64% | 64% | 64% | |
| 16.2.3 | Percentage of total participant cash held as cash deposits (including through reverse repo); as cash deposits at other central banks | | Percentage | 0% | 0% | 0% | |
| 16.2.4 | Percentage of total participant cash held as cash deposits (including through reverse repo); as cash deposits at commercial banks (Secured, including through reverse repo) | | Percentage | 7% | 7% | 5% | |
| 16.2.5 | Percentage of total participant cash held as cash deposits (including through reverse repo); as cash deposits at commercial banks (Unsecured) | | Percentage | 13% | 23% | 11% | |
| 16.2.6 | Percentage of total participant cash held as cash deposits (including through reverse repo); in money market funds | | Percentage | 16% | 7% | 20% | |
| 16.2.7 | Percentage of total participant cash held as cash deposits (including through reverse repo); in other forms | | Percentage | 0% | 0% | 0% | |
| 16.2.8 | Percentage of total participant cash held as cash deposits (including through reverse repo); percentage split by currency of these cash deposits (including reverse repo) and money market funds by CCY; Specify local currency in comments | | Percentage | 100% | 100% | 100% | USD |
| 16.2.9 | Percentage of total participant cash held as cash deposits (including through reverse repo); weighted average maturity of these cash deposits (including reverse repo) and money market funds | | Bus. Days | 1 | 1 | 1 | |
| 16.2.10 | Percentage of total participant cash invested in securities; Domestic sovereign government bonds | | Percentage | 0% | 0% | 0% | |
| 16.2.11 | Percentage of total participant cash invested in securities; Other sovereign government bonds | | Percentage | 0% | 0% | 0% | |
| 16.2.12 | Percentage of total participant cash invested in securities; Agency Bonds | | Percentage | 0% | 0% | 0% | |
| 16.2.13 | Percentage of total participant cash invested in securities; State/municipal bonds | | Percentage | 0% | 0% | 0% | |
| 16.2.14 | Percentage of total participant cash invested in securities; Other instruments | | Percentage | 0% | 0% | 0% | |
| 16.2.15 | Percentage of total participant cash invested in securities; percentage split by currency of these securities; Specify local currency in comments; | | Percentage | 0% | 0% | 0% | USD |
| 16.2.16 | Percentage of total participant cash invested in securities; weighted average maturity of securities; Specify local currency in comments; | | Bus. Days | 0 | 0 | 0 | |
| 16.2.17 | Provide an estimate of the risk on the investment portfolio (excluding central bank and commercial bank deposits) (99% one-day VaR, or equivalent) | | USD \$MM | < 1 | < 1 | < 1 | |

| Disclosure 16.2 - How total cash received from participants (16.1) is held/deposited/invested, including; (cont'd) | | | | | | | |
|--|---|---------------------------|-------|-----|-----|-----|--|
| 16.2.18 | State if the CCP investment policy sets a limit on the proportion of the investment portfolio that may be allocated to a single counterparty, and the size of that limit. | Quarterly/ Quarter End | | Yes | Yes | Yes | Size of limits will vary depending on credit rating and other factors. |
| 16.2.19 | State the number of times over the previous quarter in which this limit has been exceeded. | | Count | 0 | 0 | 0 | |

| Disclosure 16.3 - Rehypothecation of participant assets (ie non-cash) | | | | | | | | |
|---|---|-------|---------------------------|----------|---|---|---|---|
| 16.3.1 | Total value of participant non-cash rehypothecated (Initial margin) | | Quarterly/ Quarter End | USD \$MM | 0 | 0 | 0 | Rehypothecation used for liquidity purposes only in the event of a default. |
| 16.3.2 | Total value of participant non-cash rehypothecated (Default fund) | | | USD \$MM | 0 | 0 | 0 | |
| 16.3.3 | Rehypothecation of participant assets (ie non-cash) by the CCP where allowed; initial margin; over the following maturities: Overnight/one day; one day and up to one week; One week and up to one month; One month and up to one year; One year and up to two years; Over two years | ON_1D | | USD \$MM | 0 | 0 | 0 | |
| | | 1D_1W | | USD \$MM | 0 | 0 | 0 | |
| | | 1W_1M | | USD \$MM | 0 | 0 | 0 | |
| | | 1M_1Y | | USD \$MM | 0 | 0 | 0 | |
| | | 1Y_2Y | | USD \$MM | 0 | 0 | 0 | |
| | | 2Y+ | | USD \$MM | 0 | 0 | 0 | |
| 16.3.4 | Rehypothecation of participant assets (ie non-cash); default fund; over the following maturities: Overnight/one day; one day and up to one week; One week and up to one month; One month and up to one year; One year and up to two years; Over two years | ON_1D | | USD \$MM | 0 | 0 | 0 | |
| | | 1D_1W | | USD \$MM | 0 | 0 | 0 | |
| | | 1W_1M | | USD \$MM | 0 | 0 | 0 | |
| | | 1M_1Y | | USD \$MM | 0 | 0 | 0 | |
| | | 1Y_2Y | | USD \$MM | 0 | 0 | 0 | |
| | | 2Y+ | | USD \$MM | 0 | 0 | 0 | |

| Disclosure 17.1 - Operational availability target for the core system(s) involved in clearing (whether or not outsourced) over specified period for the system | | | | | | | |
|--|--|-----------|------------|-------|-------|-------|---|
| 17.1.1 | Operational availability target for the core system(s) involved in clearing (whether or not outsourced) over specified period for the system | Quarterly | Percentage | 99.6% | 99.6% | 99.6% | This target and the actual results below are calculated at the individual product-line level and then averaged across all of the systems identified below, in accordance with the established calculation for the applicable SLA. |

| Disclosure 17.2 - Actual availability of the core system(s) over the previous twelve month period | | | | | | | |
|---|---|-----------|------------|--|--------|--|--|
| 17.2.1 | Actual availability of the core system(s) over the previous twelve month period | Quarterly | Percentage | | 99.77% | | Availability is calculated across multiple systems. Specifically, CMU, CNS, Risk Management, GSD, MBS and Trade Capture. Since Risk Management is across FICC and NSCC, actual availability cannot be captured at the individual entity level. Actual availability is across all three in total. |

| Disclosure 17.3 - Total number of failures | | | | | | | |
|--|---|-----------|---------------------|--|--------------|--|--|
| 17.3.1 | Total number of failures and duration affecting the core system(s) involved in clearing over the previous twelve month period (Duration of Failure) | Quarterly | Count / hh:mm:ss | | 3 / 28:55:00 | | Total number of failures and duration are for Reg SCI reportable failure incidents impacting the CCP systems. Incidents that do not result in a direct business impact are not included. One incident accounted for 26 hours and 15 minutes, but only impacted a small subset of accounts. |

| Disclosure 17.4 - Recovery time objective(s) | | | | | | | |
|--|--|-----------|------|----------------|----------------|----------------|--|
| 17.4.1 | Recovery time objective(s) (e.g. within two hours) | Quarterly | Time | Within 2 Hours | Within 2 Hours | Within 2 Hours | Recovery time objective is within 2 hours. |

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| Disclosure 18.1 - Number of clearing members, by clearing service | | | | | | | For GSD, there are Broker/Dealers, Government Sponsored Entities, Banks For MBS, there are Broker/Dealers, Hedge Fund, Mortgage Companies, Government Sponsored Entities, Registered Investment Companies, etc. For NSCC there are Broker/Dealers, certain stock exchanges (for omnibus account reporting), and one CSD. |
|--|--|--|--|--|--|--|--|

| | | | | | | | |
|----------|---|---------------------------|-------|-----|----|-----|--|
| 18.1.1.1 | Number of general clearing members | Quarterly/ Quarter End | Count | 120 | 78 | 61 | FICC does not distinguish membership categories between members that clear for others and self-clearing. Accordingly, the total number of FICC members are reported here. |
| 18.1.1.2 | Number of direct clearing members | | Count | 0 | 0 | 89 | |
| 18.1.1.3 | Number of others category (Describe in comments) | | Count | 0 | 0 | 0 | Numbers do not include types of members that are not eligible for CCP services: GSD Comparison-Only members, MBS Electronic Pool Notification (EPN)-only members, and NSCC has several limited membership categories that are not reported here. |
| 18.1.2.1 | Number of central bank participants | | Count | 0 | 0 | 0 | |
| 18.1.2.2 | Number of CCP participants | | Count | 0 | 0 | 0 | |
| 18.1.2.3 | Number of bank participants | | Count | 41 | 16 | 12 | |
| 18.1.2.4 | Number of other participants (Describe in comments) | | Count | 79 | 62 | 138 | Includes Broker/dealers, Stock Exchanges, CSD's and Trust members. Excludes Banks. |
| 18.1.3.1 | Number of domestic participants | | Count | 91 | 76 | 147 | |
| 18.1.3.1 | Number of foreign participants | | Count | 29 | 2 | 3 | US Branches/Agencies of Non US legal entities will be considered Non-US (foreign) |

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| Disclosure 18.2 - Open Position Concentration | | | | | | | |
|--|--|--|--|--|--|--|--|

| | | | | | | | |
|--------|--|--------------------|-----------|------------|------------|------------|------------|
| 18.2.1 | For each clearing service with ten or more members, but fewer than 25 members; Percentage of open positions held by the largest five clearing members, including both house and client, in aggregate | Average End of Day | Quarterly | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| | | Peak End of Day | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> |
| 18.2.2 | For each clearing service with 25 or more members; Percentage of open positions held by the largest five clearing members, including both house and client, in aggregate | Average End of Day | | Percentage | 23% | 41% | 25% |
| | | Peak End of Day | | Percentage | 25% | 45% | 37% |
| 18.2.3 | For each clearing service with 25 or more members; Percentage of open positions held by the largest ten clearing members, including both house and client, in aggregate | Average End of Day | | Percentage | 36% | 70% | 39% |
| | | Peak End of Day | | Percentage | 39% | 72% | 57% |

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|---|--|--|--|--|--|--|--|
| Disclosure 18.3 - Initial Margin Concentration | | | | | | | |
|---|--|--|--|--|--|--|--|

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|--------|--|--------------------|-----------|------------|------------|------------|------------|--|
| 18.3.1 | For each clearing service with ten or more members, but fewer than 25 members; Percentage of initial margin posted by the largest five clearing members, including both house and client, in aggregate | Average End of Day | Quarterly | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | Under NSCC's and each of FICC Division's current rules and structure, they do not maintain separate Guaranty Funds. NSCC and each FICC Division collect Clearing Fund deposits from their Members using a risk-based margin methodology. These amounts operate, individually, as the Member's margin, and the aggregate of all such Members' deposits* is referred to, collectively, as the Clearing Fund, which operates as NSCC's and each of FICC Division's default fund. * Member's deposits include excess deposits exceeding the requirement that can be withdrawn by members. |
| | | Peak End of Day | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 18.3.2 | For each clearing service with 25 or more members; Percentage of initial margin posted by the largest five clearing members, including both house and client, in aggregate | Average End of Day | | Percentage | 31% | 51% | 32% | |
| | | Peak End of Day | | Percentage | 36% | 63% | 37% | |
| 18.3.3 | For each clearing service with 25 or more members; Percentage of initial margin posted by the largest ten clearing members, including both house and client, in aggregate | Average End of Day | | Percentage | 47% | 68% | 48% | |
| | | Peak End of Day | | Percentage | 51% | 78% | 54% | |

| Disclosure 18.4 - Segregated Default Fund Concentration | | | | | | | |
|---|---|---------------------------|------------|------------|------------|------------|--------------------------------|
| 18.4.1 | For each segregated default fund with ten or more members, but fewer than 25 members; Percentage of participant contributions to the default fund contributed by largest five clearing members in aggregate | Quarterly/ Quarter End | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 18.3 |
| 18.4.2 | For each segregated default fund with 25 or more members; Percentage of participant contributions to the default fund contributed by largest five clearing members in aggregate | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 18.4.3 | For each segregated default fund with 25 or more members; Percentage of participant contributions to the default fund contributed by largest ten clearing members in aggregate | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |

| Disclosure 19.1 - Tiered participation arrangements, measures of concentration of client clearing | | | | | | | |
|---|--|---------------------------|------------|------------|------------|------------|---|
| 19.1.1 | Number of clients (if known) | Quarterly/ Quarter End | Count | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 14.1 |
| 19.1.2 | Number of direct members that clear for clients | | Count | <i>n/a</i> | <i>n/a</i> | 61 | NSCC: Number denotes members that clear for other Broker/Dealers. |
| 19.1.3 | Percent of client transactions attributable to the top five clearing members (if CCP has 10+ clearing members) | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 14.1 |
| 19.1.4 | Percent of client transactions attributable to the top ten clearing members (if CCP has 25+ clearing members) | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 14.1 |

| Disclosure 20.1 - FMI Links, Value of Trades | | | | | | | |
|--|--|-----------|----------|------------|------------|------------|---|
| 20.1.1 | Value of trades cleared through each link – as a share of total trade values/total notional values cleared in that service | Quarterly | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | NSCC does not maintain any interoperable links as described by these items. CDS Clearing and Depository Services, Inc. (the Canadian CSD) is a full service member of NSCC, and is subject to margining and the other requirements of membership as a member. The CDS relationship is described in NSCC's Disclosure Framework under Principle 20. The GSD/CME Cross-Margining Agreement, which is described in GSD's disclosure with respect to PFMI Principle 20, is not an interoperable link as described by sections 20.1 through 20.6 of the quantitative disclosure. |

| Disclosure 20.2 - FMI Links, Initial Margin or equivalent financial resources provided | | | | | | | |
|--|---|---------------------------|----------|------------|------------|------------|--------------------------------|
| 20.2.1 | Initial margin or equivalent financial resources provided to each linked CCP by the CCP to cover the potential future exposure of the linked CCP on contracts cleared across link | Quarterly/ Quarter End | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 20.1 |

| Disclosure 20.3 - FMI Links, Initial Margin or equivalent financial resources collected | | | | | | | |
|---|--|---------------------------|----------|------------|------------|------------|--------------------------------|
| 20.3.1 | Initial margin or equivalent financial resources collected from each linked CCP to cover potential future exposure to the linked CCP on contracts cleared across link (at market value and post-haircut) | Quarterly/ Quarter End | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 20.1 |

| Disclosure 20.4 - FMI Links, Results of Back-testing coverage | | | | | | | |
|---|---|-----------|------------|------------|------------|------------|--------------------------------|
| 20.4.1 | Number of times over the past twelve months that coverage provided by margin and equivalent financial resources held against each linked CCP fell below the actual marked-to-market exposure to that linked CCP – based on daily back testing results; Intraday or Continuous or Once-a-day | Quarterly | Count | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 20.1 |
| 20.4.2 | Number of observations (i.e. number of accounts multiplied by number of days covered in the back test); Intraday or Continuous or Once-a-day | | Count | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |
| 20.4.3 | Achieved coverage level; Intraday or Continuous or Once-a-day | | Percentage | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | |

Disclosure 20.5 - FMI Links, Additional pre-funded financial resources provided to

| | | | | | | | |
|--------|--|---------------------------|----------|------------|------------|------------|--------------------------------|
| 20.5.1 | Additional pre-funded financial resources (if any) beyond initial margin and equivalent financial resources provided to each linked CCP, that are available to the linked CCP to cover exposures to the CCP and whether part of, additional to, or separate from the standard default fund | Quarterly/ Quarter End | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 20.1 |
|--------|--|---------------------------|----------|------------|------------|------------|--------------------------------|

Disclosure 20.6 - FMI Links, Additional pre-funded financial resources collected from

| | | | | | | | |
|--------|--|---------------------------|----------|------------|------------|------------|--------------------------------|
| 20.6.1 | Additional pre-funded financial resources (if any) beyond initial margin and equivalent financial resources provided to each linked CCP, that are available to the linked CCP to cover exposures to the CCP and whether part of, additional to, or separate from the standard default fund | Quarterly/ Quarter End | USD \$MM | <i>n/a</i> | <i>n/a</i> | <i>n/a</i> | See Explanatory Note from 20.1 |
|--------|--|---------------------------|----------|------------|------------|------------|--------------------------------|

Disclosure 20.7 - FMI Links, Cross Margining

| | | | | | | | |
|--------|--|---------------------------|------------|--------------|------------|------------|---|
| 20.7.1 | Value of trades subject to cross margining, by clearing service, as a percentage of total trade values/total notional values cleared | Quarterly/ Quarter End | Percentage | 17% | <i>n/a</i> | <i>n/a</i> | NSCC does not maintain any cross margining arrangements. NSCC does maintain an arrangement with OCC for the settlement of exercised and assigned options, which is described in NSCC's Disclosure Framework under Principle 20. GSD has a cross-margining arrangement with the Chicago Mercantile Exchange. For GSD under section 20.7, disclosures are quarterly averages. |
| 20.7.2 | Reduction in total initial margin held by the CCP as a result of cross margining, as a percentage of total initial margin that would otherwise have been held. | | Percentage | 0.39% | <i>n/a</i> | <i>n/a</i> | |

Disclosure 23.1 - Disclosure of rules, key procedures, and market data; Average Daily Volumes

| | | | | | | | | |
|--------|--|---------------|-----------|----------|------------------|----------------|-------------------|---|
| 23.1.1 | Average Daily Volumes by Asset Class, CCY and OTC/ETD | OTC | Quarterly | | 190,746 | 13,954 | 38,455,112 | For GSD/MBSD and NSCC, average daily volume data is based on sides (as opposed to trades). For NSCC: OTC: Includes OMGEO, NASDAQTRF, MUNI BONDS, FINRA ORF, ETF CR/RD, ECN/QSR, and CORP/UIT Bonds |
| | | NSCC_Exchange | | | - | - | 99,237,453 | |
| 23.1.2 | Notional Value of trades cleared by Asset Class, CCY and OTC/ETD | OTC | | USD \$MM | 3,881,241 | 327,692 | 654,139 | For NSCC: Exchange: Includes OCC, NYSE ARCA, NYSE AMEX, NYSE2, NYSE, NYSE NATIONAL, NASDAQ PHLX, NASDAQ BX, NASDAQ, DIRECT EDGE X, DIRECT EDGE A, CHX, BATS BYX and BATS |
| | | NSCC_Exchange | | USD \$MM | - | - | 616,981 | |

Disclosure 23.2 - Disclosure of rules, key procedures, and market data; Non-Yet-Settled

| | | | | | | | | |
|--------|--|---------|---------------------------|----------|------------------|----------------|----------------|--|
| 23.2.1 | Gross notional outstanding/total settlement value of novated but not-yet settled securities transactions by Asset Class, CCY and OTC/ETD | CDS_OTC | Quarterly/ Quarter End | USD \$MM | 1,160,000 | 333,000 | 176,000 | Sources: FICC and NSCC financial statements, as available in the DTCC public website |
|--------|--|---------|---------------------------|----------|------------------|----------------|----------------|--|

Disclosure 23.3 - Disclosure of rules, key procedures, and market data; Execution Facility

Frequency: Quarterly

| | | | | | | | |
|--------|---|-----------|----------|------------|------------|-----------------------|---|
| 23.3.1 | Average daily volumes submitted by Execution facility or matching/confirmation venue | Quarterly | | <i>n/a</i> | <i>n/a</i> | See 23.1 above | For NSCC: <u>OTC</u> - Includes OMGEO, NASDAQTRF, MUNI BONDS, FINRA ORF, ETF CR/RD, ECN/QSR, and CORP/UIT Bonds <u>Exchange</u> - Includes OCC, NYSE ARCA, NYSE AMEX, NYSE2, NYSE, NASDAQ PHLX, NASDAQ BX, NASDAQ, DIRECT EDGE X, DIRECT EDGE A, CHX, BATS BYX and BATS |
| 23.3.2 | Notional contract values submitted by Execution facility or matching/confirmation venue | | USD \$MM | <i>n/a</i> | <i>n/a</i> | See 23.1 above | |

| Payment Risk Committee Disclosure 1 - Concentration Measures | | | | | | | | |
|--|---|---------------|---------------------------|----------|--------|-------|-------|--|
| | Initial Margin Required | Top 3 Members | Quarterly/ Quarter End | USD \$MM | 3,020 | 1,913 | 1,477 | |
| | Number of Members with x% of Initial Margin Requirement | > 20% | | Count | 0 | 0 | 0 | |
| | | 15% to 20% | | Count | 0 | 2 | 0 | |
| | | 10% to 15% | | Count | 0 | 0 | 1 | |
| | | 5% to 10% | | Count | 2 | 2 | 2 | |
| | | < 5% | | Count | 133 | 99 | 147 | |
| | Total Initial Margin Posted (Market Value) | Total | | USD \$MM | 20,605 | 5,917 | 8,251 | |

| Payment Risk Committee Disclosure 2 - Intial Margin Detail | | | | | | | | |
|--|---------------------------------------|-------------------------------------|---------------------------|----------|--------|-------|-------|---|
| | Initial Margin Breakdown by Component | VaR / Volatility | Quarterly/ Quarter End | USD \$MM | 14,845 | 4,211 | 3,769 | The Value-at-Risk (VaR) and Volatility components are based on the potential price fluctuations of unsettled positions. With the implementation of SVaR for FICC, Margin Proxy is now used as a backup VaR methodology in the event of a significant vendor data disruption. |
| | | Coverage Component (CC) | | USD \$MM | n/a | n/a | 70 | The Coverage Component is a back-test-like component that is meant to address potential model deficiencies. The Coverage Component is designed by NSCC to mitigate the risks associated with a Member's Required Deposit being insufficient to cover projected liquidation losses to the Coverage Target by adjusting a Member's Required Deposit towards the Coverage Target. |
| | | Blackout Period Exposure Adjustment | | USD \$MM | 4 | n/a | n/a | Blackout Period Exposure: Refers to the exposure to GSD and Reverse Repo participants of the potential overvaluation of MBS Collateral in GCF Repos during the Blackout Period. An adjustment to Clearing Fund Requirements (increase to Repo participants and decrease to Reverse Repo participants) is made based on MBS positions in Member's GCF portfolios during the Blackout Period. The adjustment is based on the average realized pay-down rate transactions. The adjustment is made during the Blackout Period, the first 5 to 7 business days each month. |
| | | CME Cross Margin | | USD \$MM | -58 | n/a | n/a | GSD has a cross-margining arrangement with the Chicago Mercantile Exchange. The amount represents the aggregate margin savings for common members who elect to participate in the cross-margining arrangement. |
| | | Margin Req. Differential (MRD) | | USD \$MM | n/a | n/a | 1,604 | The NSCC MRD is designed to address position-variability risk by estimating the shortfall of end-of-day VaR and mark-to-market compared with the next day's intraday risk and the risk that the next margin call will not be satisfied. |
| | | Market to Market (MTM) | | USD \$MM | n/a | 0 | 231 | As a cash market CCP, NSCC uses a continuous net system where securities within the settlement system are marked daily to the prior night's closing price. Net portfolio debits per Member are collected as part of the Member's Required Deposit; net portfolio credits are not included. In FICC, GSD maintains a pass-through MtM process whereby it collects MTM debits from those Members with debits and passes those to the Members with MTM credits. For MBS, there is a Deterministic Risk Component ("DRC") in the Clearing Fund Requirement that reflects mark-to-market results on outstanding positions, regardless of settlement date, cash items and adjustments that are the result of netting, and principal and interest exposure on failed positions. At least once daily, MBS calculates the DRC that reflects the mark-to-market of the portfolio to account for the difference between the contract price and current market prices, interest and other cash settlement obligations. DRC can be a credit or debit amount. If the DRC is a debit, this amount will increase the Clearing Fund requirement. If the DRC is a credit, it can be used to reduce the amount of the Required Fund requirement (subject to the VaR Floor). |
| | | Illiquid | | USD \$MM | n/a | n/a | 81 | NSCC may apply an additional charge on positions in OTC Bulletin Board or Pink Sheet securities based on size, average daily volume or price; and financial condition of the participant. This charge is separate from both VaR and SPC. |
| | | Special Charge | | USD \$MM | 149 | 1 | 118 | Special charges include backtesting charges and other Clearing Fund premiums. |
| | | Other Charges | | USD \$MM | 21 | 240 | 955 | At NSCC, includes FIS and CNS Fails charges. For GSD & MBS, includes Membership Type Adjustments. |