



## PFMI Quantitative Disclosure

As of December 31, 2015

All financial data in USD

<b>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</b>	
<i>Disclosure Frequency - Quarterly as at quarter end</i>	
<b>4.1.1</b> Prefunded - Own Capital Before	See explanatory note
<b>4.1.2</b> Prefunded - Own Capital Alongside	0
<b>4.1.3</b> Prefunded - Own Capital After	0
<b>4.1.4</b> Prefunded - Aggregate Participant Contributions - Required	11,652,234,753
<b>4.1.5</b> Prefunded - Aggregate Participant Contributions - Post-Haircut Posted	11,943,747,540
<b>4.1.6</b> Prefunded - Other	0
<b>4.1.7</b> Committed - Own/parent funds that are committed to address a participant default (or round of participant defaults)	0
<b>4.1.8</b> Committed - Aggregate participant commitments to address an initial participant default (or initial round of participant defaults)	See explanatory note
<b>4.1.9</b> 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	See explanatory note
<b>4.1.10</b> Committed - Other	0
<b>4.2 Kccp</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>4.2.1</b> Kccp - Kccp need only be reported by those CCPs which are, or seek to be a "qualifying CCP" under relevant law	168,512,820 See explanatory note

**4.3 Value of pre-funded default resources (excluding initial and retained variation margin) held for each clearing service, in total and split by the following:**

*Disclosure Frequency – Quarterly as at quarter end (See explanatory note)*

<b>4.3.1</b> Cash deposited at a central bank of issue of the currency concerned	See explanatory note
<b>4.3.2</b> Cash deposited at a central bank of issue of the currency concerned	0
<b>4.3.3</b> Cash deposited at other central banks	0
<b>4.3.4</b> Cash deposited at other central banks	0
<b>4.3.5</b> Secured cash deposited at commercial banks (including reverse repo) – Market Value Pre Haircut	5,176,000,000
<b>4.3.6</b> Secured cash deposited at commercial banks (including reverse repo) – Market Value Post Haircut	5,279,520,000
<b>4.3.7</b> Unsecured cash deposited at commercial banks Market Value Pre Haircut	100,107,984
<b>4.3.8</b> Unsecured cash deposited at commercial banks Market Value Post Haircut	100,107,984
<b>4.3.9</b> Non-Cash Sovereign Government Bonds – Domestic – Market Value Pre Haircut	6,730,876,557
<b>4.3.10</b> Non-Cash Sovereign Government Bonds – Domestic – Market Value Post Haircut	6,594,303,438
<b>4.3.11</b> Non-Cash Sovereign Government Bonds – Canadian – Market Value Pre Haircut	76,171,179
<b>4.3.12</b> Non-Cash Sovereign Government Bonds – Canadian – Market Value Post Haircut	73,336,117

**4.4 Credit Risk Exposures**

*Disclosure Frequency – Quarterly*

<b>4.4.1</b> State whether the CCP is subject to a minimum “Cover 1” or “Cover 2” requirement in relation to total pre-funded default resources.	Cover 1
<b>4.4.2</b> 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.	2 Days See explanatory note
<b>4.4.3</b> For each clearing service, what is 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? - Peak Day in 12 Months	2,729,921,350

<b>4.4.4</b> For each clearing service, what is 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? - Average in 12 Months	1,540,997,772
<b>4.4.5</b> Report the number of business days, if any, on which the above amount exceeded actual pre-funded default resources (in excess of initial margin) and by how much. – Number of Days	0
<b>4.4.6</b> Report the number of business days, if any, on which the above amount exceeded actual pre-funded default resources (in excess of initial margin) and by how much. – Amount of excess on each day	NA
<b>4.4.7</b> For each clearing service, what was the actual largest aggregate credit exposure (in excess of initial margin) to any single participant and its affiliates (including transactions cleared for indirect participants)? - Peak Day in 12 Months	5,456,725 (8/21/2015)
<b>4.4.8</b> For each clearing service, what was the actual largest aggregate credit exposure (in excess of initial margin) to any single participant and its affiliates (including transactions cleared for indirect participants)? - Average in 12 Months	5,456,725 (based on one observation on 8/21/2015)
<b>4.4.9</b> For each clearing service, what is 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? - Peak Day in 12 Months	4,281,677,435
<b>4.4.10</b> For each clearing service, what is 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? - Average in 12 Months	2,694,990,562
<b>4.4.11</b> Report the number of business days, if any, on which the above amount exceeded actual pre-funded default resources (in excess of initial margin) and by how much. – Number of Days	0
<b>4.4.12</b> Report the number of business days, if any, on which the above amount exceeded actual pre-funded default resources (in excess of initial margin) and by how much. – Amount of excess on each day	0
<b>4.4.13</b> 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)? - Peak Day in 12 Months	5,456,725 (8/21/2015)

4.4.14 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)? - Average in 12 Months	5,456,725 (based on one observation on 8/21/2015)
--	---

<b>5.1 Assets eligible as initial margin and the respective haircuts applied</b>	
<i>Disclosure Frequency – Update as changes are made (See explanatory note)</i>	
5.1.1 Cash	No Haircut on Cash
5.1.2 US Government Securities	See explanatory note
5.1.3 Government Sponsored Enterprise Debt Securities	See explanatory note
5.1.4 Stock	See explanatory note
5.1.5 Canadian Government Securities	See explanatory note
5.1.6 Money Market Funds	See explanatory note
5.1.7 Letters of Credit	No Haircut on Letters of Credit

<b>5.2 Assets Eligible for pre-funded participant contributions to the default resources, and the respective haircuts applied (if different from 5.1)</b>	
<i>Disclosure Frequency – Update as changes are made</i>	
5.2.1 Cash	See 5.1
5.2.2 US Government Securities	See 5.1
5.2.3 Canadian Government Securities	See 5.1

<b>5.3 Results of testing of haircuts</b>	
<i>Disclosure Frequency – Quarterly</i>	
5.3.1 Confidence interval targeted through the calculation of haircuts - Cash	No Haircut on Cash
5.3.2 Confidence interval targeted through the calculation of haircuts – US Government Securities	99%
5.3.3 Confidence interval targeted through the calculation of haircuts – Canadian Government Securities	99%
5.3.4 Assumed holding/liquidation period for the assets accepted	Coverage horizon and VAR calculation (2 day)
5.3.5 Look-back period used for testing the haircuts	VAR Calculation 2 Years and 5 Years; validate Haircuts monthly
5.3.6 The 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	0

<b>6.1 For each clearing service, total initial margin required, split by house and client (or combined total if not segregated)</b>	
<i>Disclosure Frequency – Quarterly</i>	
6.1.1 House	4,881,779,304
6.1.2 Client Gross Position	2,050,592,590 See explanatory note
6.1.3 Client Net Position	30,595,283,707
6.1.4 Total if Not Segregated	0

<b>6.2 For each clearing service, total initial margin held, split by house and client</b>	
<i>Disclosure Frequency – Quarterly as at quarter end</i>	
6.2.1 House - Cash deposited at a central bank of issue of the currency concerned - Market Value Pre-Haircut	NA
6.2.2 House - Cash deposited at a central bank of issue of the currency concerned - Market Value Post-Haircut	NA
6.2.3 House - Cash deposited at other central banks - Market Value Pre-Haircut	NA
6.2.4 House - Cash deposited at other central banks - Market Value Post-Haircut	NA
6.2.5 House - Secured cash deposited at commercial banks (including reverse repo) - Market Value Pre-Haircut	See explanatory note
6.2.6 House - Secured cash deposited at commercial banks (including reverse repo) - Market Value Post-Haircut	NA
6.2.7 House - Unsecured cash deposited at commercial banks - Market Value Pre-Haircut	1,216,434,379
6.2.8 House - Unsecured cash deposited at commercial banks - Market Value Post-Haircut	1,216,434,379
6.2.9 House - Non-Cash Sovereign Government Securities – US Government Securities - Market Value Pre-Haircut	1,391,976,479
6.2.10 House - Non-Cash Sovereign Government Securities – US Government Securities - Market Value Post-Haircut	See explanatory note
6.2.11 House - Non-Cash Sovereign Government Securities – Canadian Government Securities - Market Value Pre-Haircut	58,102,697
6.2.12 House - Non-Cash Sovereign Government Securities – Canadian Government Securities - Market Value Post-Haircut	55,546,946
6.2.13 House - Non-Cash Agency Securities - Government Sponsored Enterprise Debt Securities - Market Value Pre-Haircut	0
6.2.14 House - Non-Cash Agency Securities - Government Sponsored Enterprise Debt Securities - Market Value Post-Haircut	0
6.2.15 House - Non-Cash State/municipal bonds - Market Value Pre-Haircut	NA

<b>6.2.16</b> House - Non-Cash State/municipal bonds - Market Value Post-Haircut	NA
<b>6.2.17</b> House - Non-Cash Corporate bonds - Market Value Pre-Haircut	NA
<b>6.2.18</b> House - Non-Cash Corporate bonds - Market Value Post-Haircut	NA
<b>6.2.19</b> House - Non-Cash Equities (Stock) - Market Value Pre-Haircut	6,489,693,885
<b>6.2.20</b> House - Non-Cash Equities (Stock) - Market Value Post-Haircut	See explanatory note
<b>6.2.21</b> House - Non-Cash Commodities – Gold - Market Value Pre-Haircut	NA
<b>6.2.22</b> House - Non-Cash Commodities – Gold - Market Value Post-Haircut	NA
<b>6.2.23</b> House - Non-Cash Commodities – Other - Market Value Pre-Haircut	NA
<b>6.2.24</b> House - Non-Cash Commodities – Other	NA
<b>6.2.25</b> House - Non-Cash - Mutual Funds / UCITs - Market Value Pre-Haircut	NA
<b>6.2.26</b> House - Non-Cash - Mutual Funds / UCITs - Market Value Post-Haircut	NA
<b>6.2.27</b> House - Non-Cash – Money Market Funds - Market Value Pre-Haircut	0
<b>6.2.28</b> House - Non-Cash – Money Market Funds - Market Value Post-Haircut	0
<b>6.2.29</b> House - Non-Cash – Letters Of Credit - Market Value Pre-Haircut	29,500,203
<b>6.2.30</b> House - Non-Cash – Letters Of Credit - Market Value Post-Haircut	29,500,203
<b>6.2.31</b> Client - Cash deposited at a central bank of issue of the currency concerned - Market Value Pre- Haircut	NA
<b>6.2.32</b> Client - Cash deposited at a central bank of issue of the currency concerned - Market Value Post-Haircut	NA
<b>6.2.33</b> Client - Cash deposited at other central banks - Market Value Pre-Haircut	NA
<b>6.2.34</b> Client - Cash deposited at other central banks - Market Value Post-Haircut	NA
<b>6.2.35</b> Client - Secured cash deposited at commercial banks (including reverse repo) - Market Value Pre-Haircut	NA
<b>6.2.36</b> Client - Secured cash deposited at commercial banks (including reverse repo) - Market Value Post-Haircut	NA
<b>6.2.37</b> Client - Unsecured cash deposited at commercial banks - Market Value Pre-Haircut	3,094,928,852
<b>6.2.38</b> Client - Unsecured cash deposited at commercial banks - Market Value Post-Haircut	3,094,928,852

<b>6.2.39</b> Client - Non-Cash Sovereign Government Securities – US Government Securities - Market Value Pre-Haircut	5,209,205,630
<b>6.2.40</b> Client - Non-Cash Sovereign Government Securities – US Government Securities - Market Value Post-Haircut	See explanatory note
<b>6.2.41</b> Client - Non-Cash Sovereign Government Securities – Canadian Government Securities - Market Value Pre-Haircut	731,207,589
<b>6.2.42</b> Client - Non-Cash Sovereign Government Securities – Canadian Government Securities - Market Value Post-Haircut	704,715,692
<b>6.2.43</b> Client - Non-Cash Agency Securities - Government Sponsored Enterprise Debt Securities - Market Value Pre-Haircut	0
<b>6.2.44</b> Client - Non-Cash Agency Securities - Government Sponsored Enterprise Debt Securities - Market Value Post-Haircut	0
<b>6.2.45</b> Client - Non-Cash State/municipal bonds - Market Value Pre-Haircut	NA
<b>6.2.46</b> Client - Non-Cash State/municipal bonds - Market Value Post-Haircut	NA
<b>6.2.47</b> Client - Non-Cash Corporate bonds - Market Value Pre-Haircut	NA
<b>6.2.48</b> Client - Non-Cash Corporate bonds - Market Value Post-Haircut	NA
<b>6.2.49</b> Client - Non-Cash Equities (Stock) - Market Value Pre-Haircut	29,620,684,494
<b>6.2.50</b> Client - Non-Cash Equities (Stock) - Market Value Post-Haircut	See explanatory note
<b>6.2.51</b> Client - Non-Cash Commodities – Gold - Market Value Pre-Haircut	NA
<b>6.2.52</b> Client - Non-Cash Commodities – Gold - Market Value Post-Haircut	NA
<b>6.2.53</b> Client - Non-Cash Commodities – Other - Market Value Pre-Haircut	NA
<b>6.2.54</b> Client - Non-Cash Commodities - Other	NA
<b>6.2.55</b> Client - Non-Cash - Mutual Funds / UCITs - Market Value Pre-Haircut	NA
<b>6.2.56</b> Client - Non-Cash - Mutual Funds / UCITs - Market Value Post-Haircut	NA
<b>6.2.57</b> Client - Non-Cash – Money Market Funds - Market Value Pre-Haircut	6,000,000
<b>6.2.58</b> Client - Non-Cash – Money Market Funds - Market Value Post-Haircut	5,880,000
<b>6.2.59</b> Client - Non-Cash – Letters Of Credit - Market Value Pre-Haircut	956,000,000

<b>6.2.60</b> Client - Non-Cash – Letters Of Credit - Market Value Post-Haircut	956,000,000
---	-------------

**6.3 Initial Margin rates on individual contracts, where the CCP sets such rates**  
*Disclosure Frequency – Update as changes are made*

<b>6.3.1</b>	See explanatory note
--------------	----------------------

**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**  
*Disclosure Frequency – Quarterly; list all changes made during the quarter including effective dates*

<b>6.4.1</b> Model Name	See explanatory note
-------------------------	----------------------

**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**  
*Disclosure Frequency – Quarterly*

<b>6.5.1</b> 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 – Peak (once-per-day)	10 (Q3-2015)
<b>6.5.2</b> Number of observations – Peak (once-per-day)	14,983 (Q4-2015)
<b>6.5.3</b> Achieved coverage level – Peak (once-per-day)	99.96% (Q2-2015)
<b>6.5.4</b> Where breaches of initial margin coverage (as defined in 6.5(a)) have occurred, report on size of uncovered exposure – Peak (once-per-day)	42,405,811 (8/21/2015)
<b>6.5.5</b> 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 – Average (once-per-day)	8
<b>6.5.6</b> Number of observations – Average (once-per-day)	14,499
<b>6.5.7</b> Achieved coverage level – Average (once-per-day)	99.94%
<b>6.5.8</b> Where breaches of initial margin coverage (as defined in 6.5(a)) have occurred, report on size of uncovered exposure – Average (once-per-day)	2,874,820

**6.6 Average Total Variation Margin Paid to the CCP by participants each business**  
*Disclosure Frequency – Quarterly; average per business day over the quarter*

<b>6.6.1</b> Average Total Variation Margin Paid to the CCP by participants each business	See explanatory note
---	----------------------



**6.7 Maximum total variation margin paid to the CCP on any given business day over the period**  
*Disclosure Frequency – Quarterly; maximum over quarter*

6.7.1 Maximum total variation margin paid to the CCP on any given business day over the period	See explanatory note
--	----------------------

**6.8 Maximum aggregate initial margin call on any given business day over the period**  
*Disclosure Frequency – Quarterly; maximum over quarter*

6.8.1 Maximum aggregate initial margin call on any given business day over the period	2,381,476,427
---	---------------

**7.1 Liquidity Risk - State whether the clearing service maintains sufficient liquid resources to 'Cover 1' or 'Cover 2'**  
*Disclosure Frequency – Quarterly*

7.1.1 State whether the clearing service maintains sufficient liquid resources to 'Cover 1' or 'Cover 2'.	Cover 1
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	0
7.1.3 Size and composition of qualifying liquid resources for each clearing service - (b) Cash deposited at other central banks	0
7.1.4 Size and composition of qualifying liquid resources for each clearing service - (c) Secured cash deposited at commercial banks (including reverse repo)	5,176,000,000
7.1.5 Size and composition of qualifying liquid resources for each clearing service - (d) Unsecured cash deposited at commercial banks	100,107,984
7.1.6 Size and composition of qualifying liquid resources for each clearing service - (e) secured committed lines of credit (i.e. those for which collateral/security will be provided by the CCP if drawn) including committed foreign exchange swaps and committed repos;	Secured Committed Lines of Credit: \$2 billion syndicated credit facility collateralized by Clearing Fund securities \$1 billion liquidity facility collateralized by Clearing Fund securities
7.1.7 Size and composition of qualifying liquid resources for each clearing service - (f) unsecured committed lines of credit (i.e. which the CCP may draw without providing collateral/security);	NA - no unsecured committed lines of credit
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;	0
7.1.9 Size and composition of qualifying liquid resources for each clearing service – other	NA

<b>7.1.10</b> State whether the CCP has routine access to central bank liquidity or facilities.	No
<b>7.1.11</b> 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.	NA

**7.2 Size and composition of any supplementary liquidity risk resources for each clearing service above those qualifying liquid resources above**  
*Disclosure Frequency – Quarterly*

<b>7.2.1</b> Size and composition of any supplementary liquidity risk resources for each clearing service above those qualifying liquid resources in 7.1 - Uncommitted Facilities with # of Partners	NA - no uncommitted facilities
--	--------------------------------

**7.3 Liquidity Risk - Multiple Items**  
*Disclosure Frequency – Quarterly*

<b>7.3.1</b> What is the 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 measure reported quarterly	4,369,875,274
<b>7.3.2</b> Report the 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. - No. of days in quarter, and amount of excess on each day	0
<b>7.3.3</b> What is the 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	1 Day Horizon: 2,691,733,782 on 6/22/2015 2 Day Horizon: 2,842,651,016 on 6/23/2015
<b>7.3.4</b> What is the 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) - Forward looking measure reported quarterly - USD	4,369,875,274

<b>7.3.5</b> Report the 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. - No. of days in quarter, and amount of excess on each day - USD	0
---	---

<b>12.1 Percentage of settlements by value effected using a DvP, DvD or Pvp settlement mechanism</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>12.1.1</b> Percentage of settlements by value effected using a DvP settlement mechanism	NA
<b>12.1.2</b> Percentage of settlements by value effected using a DvD settlement mechanism	NA
<b>12.1.3</b> Percentage of settlements by value effected using a Pvp settlement mechanism	NA

<b>12.2 Percentage of settlements by value effected using a DvP, DvD or Pvp settlement mechanism</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>12.2.1</b> Percentage of settlements by volume effected using a DvP settlement mechanism	NA
<b>12.2.2</b> Percentage of settlements by volume effected using a DvD settlement mechanism	NA
<b>12.2.3</b> Percentage of settlements by volume effected using a Pvp settlement mechanism	NA

<b>13.1 CCPs are encouraged, subject to legal constraints on timing and content, to disclose as soon as practicable quantitative information related to defaults</b>	
<i>Disclosure Frequency – Ad-Hoc; As Time Permits</i>	
<b>13.1.1</b> Amount of loss versus amount of initial margin	0
<b>13.1.2</b> Amount of other financial resources used to cover losses	0
<b>13.1.3</b> Proportion of client positions closed-out/ported	0
<b>13.1.4</b> Appropriate references to other published material related to the defaults	NA

**14.1 Total Client Positions held in the following as a share of notional values cleared or of the settlement value of securities transactions**

<i>Disclosure Frequency – Quarterly</i>	
14.1.1 Total Client Positions held in individually segregated accounts	0%
14.1.2 Total Client Positions held in omnibus client-only accounts, other than LSOC accounts	100%
14.1.3 Total Client Positions held in legally segregated but operationally comingled (LSOC) accounts	0%
14.1.4 Total Client Positions held in comingled house and client accounts	0%

**15.1 General business risk**

<i>Disclosure Frequency – Annually</i>	
15.1.1 Value of liquid net assets funded by equity	247,000,000 As of 12/31/2015
15.1.2 Six months of current operating expenses	243,391,081 As of 12/31/2015

**15.2 General business risk; Financial Disclosures**

<i>Disclosure Frequency – Annually</i>	
15.2.1 Total Revenue	250,115,089 As of 12/31/2015
15.2.2 Total Expenditure	227,585,849 As of 12/31/2015
15.2.3 Profits	22,529,240 As of 12/31/2015
15.2.4 Total Assets	12,738,419,631 As of 12/31/2015
15.2.5 Total Liabilities	12,491,419,631 As of 12/31/2015
15.2.6 Explain if collateral posted by clearing participants is held on or off the CCP's balance sheet	See explanatory note
15.2.7 Additional items as necessary	NA

**15.3 General business risk; Income breakdown**

<i>Disclosure Frequency – Annually</i>	
15.3.1 Percentage of total income that comes from fees related to provision of clearing services	96% of Total Revenue As of 12/31/2015
15.3.2 Percentage of total income that comes from the reinvestment (or rehypothecation) of assets provided by clearing participants	0.66% of Total Revenue As of 12/31/2015

<b>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</b>	
<i>Disclosure Frequency – Quarterly as at quarter end</i>	
<b>16.1.1</b> Total cash (but not securities) received from participants, regardless of the form in which it is held, deposited or invested, received as initial margin	4,311,363,230
<b>16.1.2</b> 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	5,276,107,984

<b>16.2 How total cash received from participants (16.1) is held/deposited/invested, including;</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>16.2.1</b> 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	0
<b>16.2.2</b> Percentage of total participant cash held as cash deposits (including through reverse repo) - as cash deposits at other central banks	0
<b>16.2.3</b> Percentage of total participant cash held as cash deposits (including through reverse repo) - as cash deposits at commercial banks (Secured, including through reverse repo)	90.5%
<b>16.2.4</b> Percentage of total participant cash held as cash deposits (including through reverse repo) - as cash deposits at commercial banks (Unsecured)	9.5%
<b>16.2.5</b> Percentage of total participant cash held as cash deposits (including through reverse repo) - in money market funds	NA
<b>16.2.6</b> Percentage of total participant cash held as cash deposits (including through reverse repo) - in other forms	NA
<b>16.2.7</b> 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 – USD	NA
<b>16.2.8</b> 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	NA
<b>16.2.9</b> Percentage of total participant cash invested in securities - Domestic sovereign government bonds	90.5%

<b>16.2.10</b> Percentage of total participant cash invested in securities - Other sovereign government bonds	NA
<b>16.2.11</b> Percentage of total participant cash invested in securities - Agency Bonds	NA
<b>16.2.12</b> Percentage of total participant cash invested in securities - State/municipal bonds	NA
<b>16.2.13</b> Percentage of total participant cash invested in securities - Other instruments	NA
<b>16.2.14</b> Percentage of total participant cash invested in securities - percentage split by currency of these securities - USD	NA
<b>16.2.15</b> Percentage of total participant cash invested in securities - weighted average maturity of securities	2,041 days
<b>16.2.16</b> Provide an estimate of the risk on the investment portfolio (excluding central bank and commercial bank deposits) (99% one-day VaR, or equivalent)	NA
<b>16.2.17</b> 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	NA
<b>16.2.18</b> State the number of times over the previous quarter in which this limit has been exceeded	0

<b>16.3 Rehypothecation of participant assets (ie non-cash)</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>16.3.1</b> Total value of participant non-cash rehypothecated - Initial Margin	0
<b>16.3.2</b> Total value of participant non-cash rehypothecated - Default Fund	0

<b>17.1 Operational availability target for the core system(s) involved in clearing (whether or not outsourced) over specified period for the system (e.g. 99.99% over a twelve-month period)</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>17.1.1</b> Operational availability target for the core system(s) involved in clearing (whether or not outsourced) over specified period for the system (e.g. 99.99% over a twelve-month period)	100%

<b>17.2 Actual availability of the core system(s) over the previous twelve month period</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>17.2.1</b> Actual availability of the core system(s) over the previous twelve month period	99.95% See explanatory note

<b>17.3 Total number and duration of failures</b> <i>Disclosure Frequency – Quarterly</i>	
<b>17.3.1</b> Total number and duration of failures affecting the core system(s) involved in clearing over the previous twelve month period	5 Failures – 2 hours and 15 minutes

<b>17.4 Recovery time objective(s)</b> <i>Disclosure Frequency – Quarterly</i>	
<b>17.4.1</b> Recovery time objective(s) (e.g. within 2 hours)	Two Hours

<b>18.1 Number of clearing members, by clearing service</b> <i>Disclosure Frequency – Quarterly as at quarter end</i>	
<b>18.1.1</b> Category of membership - General Clearing Member	116
<b>18.1.2</b> Participants – Domestic	108
<b>18.1.3</b> Participants - Foreign	8 See explanatory note

<b>18.2 Open Position Concentration</b> <i>Disclosure Frequency – Quarterly</i>	
<b>18.2.1</b> 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	NA
<b>18.2.2</b> 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 - Peak during Quarter	NA
<b>18.2.3</b> 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	51%
<b>18.2.4</b> 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 - Peak during Quarter	51%
<b>18.2.5</b> 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	68%

<b>18.2.6</b> 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 - Peak during Quarter	69%
--	-----

<b>18.3 Initial Margin Concentration</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>18.3.1</b> 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	NA
<b>18.3.2</b> 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 - Peak during Quarter	NA
<b>18.3.3</b> 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	40%
<b>18.3.4</b> 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 – Peak during Quarter	39%
<b>18.3.5</b> 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	60%
<b>18.3.6</b> 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 - Peak during Quarter	63%



<b>18.4 Segregated Default Fund Concentration</b> <i>Disclosure Frequency – Quarterly</i>	
<b>18.4.1</b> 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	NA
<b>18.4.2</b> 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	40%
<b>18.4.3</b> 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	59%

<b>19.1 Tiered participation arrangements, measures of concentration of client clearing</b> <i>Disclosure Frequency – Quarterly as at quarter end</i>	
<b>19.1.1</b> Number of clients (if known)	See explanatory note
<b>19.1.2</b> Number of direct members that clear for clients	104
<b>19.1.3</b> Percent of client transactions attributable to the top five clearing members (if CCP has 10+ clearing members)	57%
<b>19.1.4</b> Percent of client transactions attributable to the top ten clearing members (if CCP has 25+ clearing members)	70%

<b>20.1 FMI Links, Value of Trades</b> <i>Disclosure Frequency – Quarterly</i>	
<b>20.1.1</b> Value of trades cleared through each link – as a share of total trade values/total notional values cleared	NA

<b>20.2 FMI Links, Initial Margin or equivalent financial resources provided</b> <i>Disclosure Frequency – Quarterly</i>	
<b>20.2.1</b> 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	NA

<b>20.3 FMI Links, Initial Margin or equivalent financial resources collected</b> <i>Disclosure Frequency – Quarterly</i>	
<b>20.3.1</b> 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)	NA

<b>20.4 FMI Links, Results of Back-testing coverage</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>20.4.1</b> 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	NA
<b>20.4.2</b> 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	NA
<b>20.4.3</b> Achieved coverage level - Intraday or Continuous or Once-a-day	NA

<b>20.5 FMI Links, Additional pre-funded financial resources provided to each linked CCP</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>20.5.1</b> 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	NA

<b>20.6 FMI Links, Additional pre-funded financial resources collected from each linked CCP</b>	
<i>Disclosure Frequency – Quarterly</i>	
<b>20.6.1</b> 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	NA

<b>20.7 FMI Links, Cross Margining</b> <i>Disclosure Frequency – Quarterly</i>	
<b>20.7.1</b> Value of trades subject to cross margining, by clearing service, as a percentage of total trade values/total notional values cleared	OCC/CME 0.5% quarterly average as a result of OCC/CME cross margin accounts reporting margin credits versus all OCC accounts reporting margin debits  OCC/ICE Clear US -0.2% quarterly average as a result of OCC/ICE cross margin accounts reporting margin credits versus all OCC accounts reporting margin debits
<b>20.7.2</b> 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.	OCC/CME 94% quarterly average  OCC/ICE Clear US 100% quarterly average

<b>23.1 Disclosure of rules, key procedures, and market data; Average Daily Volumes</b> <i>Disclosure Frequency – Quarterly, average per business day</i>	
<b>23.1.1</b> Average Daily Volumes - Options	16,009,596
<b>23.1.2</b> Average Daily Open Interest - Options	326,669,574
<b>23.1.3</b> Average Daily Volumes – Futures	271,991
<b>23.1.4</b> Average Daily Open Interest - Futures	1,280,340
<b>23.1.5</b> Average Daily Volumes – OTC	0
<b>23.1.6</b> Notional value of trades cleared - OTC	0
<b>23.1.7</b> Average Daily Volumes – Stock Loan	3,044
<b>23.1.8</b> Notional Value of trades cleared – Stock Loan	165,647,8588,552

<b>23.2 Disclosure of rules, key procedures, and market data; Not-Yet-Settled</b> <i>Disclosure Frequency – Quarterly as at quarter end</i>	
<b>23.2.1</b> Gross notional outstanding/total settlement value of novated but not-yet settled securities transactions	NA
<b>23.2.2</b> Gross notional outstanding/total settlement value of novated but not-yet settled securities transactions	NA
<b>23.2.3</b> Gross notional outstanding/total settlement value of novated but not-yet settled securities transactions	NA
<b>23.2.4</b> Notional Value of trades cleared – Futures	NA

**23.3 Disclosure of rules, key procedures, and market data; Execution Facility***Disclosure Frequency – Quarterly as at quarter end***23.3.1** Average daily volumes submitted by Execution facility or matching/confirmation venue Execution Facility or Matching/Confirmation Venue

NA

## Explanatory notes to accompany the quantitative disclosure

- 4.1.1 In 2015, OCC significantly increased its capital in connection with its responsibilities as a systemically important financial market utility. In accordance with PFMI Principle 15, OCC holds liquid capital to cover potential business losses so that it can continue to operate as a going concern. This capital is in addition to the considerable financial resources OCC holds to cover participant defaults. Under certain circumstances, as provided for in OCC's By-Laws Article VIII Section 5(d), OCC could contribute its corporate capital in the event of a default.
- 4.1.8 OCC By-Law Article VIII, Section 6 states, "Whenever an amount is paid out of the Clearing Fund contribution of a Clearing Member, whether by proportionate charge or otherwise, such Clearing Member shall be liable promptly to make good the deficiency in its contribution resulting from such payment." The deficiency could be any amount up to the Clearing Member's required contribution.
- 4.1.9 OCC By-Law Article VIII, Section 6 states that "a Clearing Member will not be liable to make good more than an additional 100% of the amount of its then required contribution if (i) within five business days following such proportionate charge the Clearing Member notifies the Corporation in writing that it is terminating its status as a Clearing Member, (ii) no opening purchase transaction or opening writing transaction is submitted for clearance through any of the Clearing Member's accounts and (if the Clearing Member is a Market Loan Clearing Member or a Hedge Clearing Member) no Stock Loan is initiated through any of the Clearing Member's accounts after the giving of such notice, and (iii) the Clearing Member closes out or transfers all of its open positions with the Corporation."
- Therefore a Clearing Member's commitment is capped at the "then required contribution," which is the amount of the required clearing fund contribution on the day on which the first proportionate charge was made, provided that the Clearing Member gives appropriate notice to OCC and closes out all open positions as promptly as practicable.
- 4.2.1 The KCCP is a hypothetical capital requirement for OCC due to its counterparty credit risk exposures to all its Clearing Members. OCC calculates the KCCP using the Current Exposure Method to assist its clearing members in calculating their exposure to OCC arising from default fund contributions under the Basel III regulatory capital framework. To arrive at these amounts, OCC has utilized a standardized template and its accompanying guidance published by the Basel Committee on Banking Supervision that is designed to facilitate consistency in the calculation of capital charges for exposures arising from default fund contributions across all clearinghouses and/or other CCPs of which banks and their affiliated entities are members (BCBS 227).
- 4.3 Per OCC By-Laws, contributions to the Clearing Fund shall be in cash or certain Government securities.
- 4.3.1 OCC has filed an application with the Federal Reserve System for access to a central bank account, in accordance with Federal Reserve Regulation HH.

4.4.2 The liquidation horizon assumption used in OCC's margin model ties directly to the timeframes OCC assumes are required to facilitate the close-out approach employed under OCC default management procedures. Based on the results of default management exercises and observations of actual close-outs, which provide for one day to identify the suspension event and prepare for liquidation (including establishing any hedges or risk mitigating steps) and a second day to facilitate the sale of the positions, a two-day liquidation horizon is utilized as the time expectation for liquidation under a net margining process.

The liquidation horizon assumption for certain segregated futures customer accounts subject to gross margining is one day, which is consistent with other futures markets that support trading in contracts economically equivalent to those cleared by OCC.

4.4.6 When estimated stress losses approach the value of pre-funded resources, OCC requests additional resources from the Clearing Member(s). OCC is required to issue an intra-day margin call based on certain thresholds, and if further thresholds are still exceeded, OCC will immediately resize the Clearing Fund to cover the estimated losses.

5.1 According to OCC's Rules, Clearing Members may deposit cash, Government securities, Government Sponsored Enterprise debt securities, money market fund shares, equity issues, and letters of credit as margin assets. OCC has discretion to not give margin credit to a particular Clearing Member when such Clearing Member deposits a concentrated amount of any common stock and/or when a common stock, deposited as margin, presents "wrong-way risk" to OCC. OCC has discretion to give margin credit to common stock deposited as margin that would otherwise not be given margin credit in circumstances when such common stock acts as a hedge (i.e., the member holds an equivalent short position in cleared contracts on the same underlying security).

5.1.2 Government securities are valued for margin purposes at 99.5% of the current market value for maturities of up to one year; 98% of the current market value for maturities in excess of one year through five years; 96.5% of the current market value for maturities in excess of five years through ten years; and 95% of the current market value for maturities in excess of ten years.

5.1.3 Government Sponsored Enterprise debt securities are valued for margin purposes at (1) 99% of the current market value for maturities of up to one year; (2) 97% of the current market value for maturities in excess of one year through five years; (3) 95% of the current market value for maturities in excess of five years through ten years; and (4) 93% of the current market value for maturities in excess of ten years.

5.1.4 OCC values all equity securities deposited as margin collateral and certain Government securities deposited as margin collateral within its STANS (System for Theoretical Analysis and Numerical Simulations) margin model. Under this method, cleared options positions and underlying securities are analyzed as a single portfolio, thus providing a more accurate valuation of securities deposited as collateral in relation to the other positions in the account.

- 5.1.5 Canadian Government Securities are discounted an additional 3% compared with U.S. Government securities to account for exchange rate risk.
- 5.1.6 Money market fund shares deposited by a Clearing Member are valued on a daily basis at 98% of current market value or such lower value as the Risk Committee may prescribe from time to time.
- 6.1.2 This number represents client margin for segregated futures accounts. OCC calculates a margin requirement for segregated futures accounts using both STANS (net basis) and SPAN (Standard Portfolio Analysis of Risk, gross basis) and uses the greater of the two for the margin requirement.
- 6.2.5 On 12/31/2015, margin cash on deposit totaled \$4.3 billion. Of the total, \$3.5 billion was invested in reverse repurchase transactions. Cash held for segregated futures accounts was not invested. OCC does not separately report house and client margin cash used in reverse repurchase transactions.
- 6.2.10 See note 5.1.4. Equity securities and certain Government securities are not subject to standard haircuts. Instead, they are valued along with other cleared contracts in OCC's margin model. Therefore, OCC does not report separate post-haircut market values for equity securities or Government securities.
- 6.2.20 See note for 6.2.10
- 6.2.40 See note for 6.2.10
- 6.2.50 See note for 6.2.10
- 6.4.1 STANS is OCC's proprietary risk management system that calculates clearing members' margin requirements. STANS utilizes large-scale Monte Carlo simulations to forecast price movement and correlations in determining a clearing member's margin requirement. A detailed narrative on STANS can be found on OCC's website under the tab Risk Management.
- 6.6.1/6.7.1 Due to the size of the amount of margin held related to cleared future's contracts, OCC collects a de minimis amount of variation margin on a daily basis when compared with the total amount of margin OCC holds for all products for which it provides clearance and settlement services. OCC does not separately report variation margin settlement payments.
- 15.2.6 Clearing Fund assets are reported on OCC's balance sheet; all other collateral is off balance sheet.
- 18.1.3 OCC's foreign members are Non-U.S. Securities Firms.
- 17.2.1 Availability is reported for the last six months of 2015.

19.1.1

OCC holds Clearing Member customer accounts on an omnibus basis and therefore does not hold information specific to individual customers of Clearing Members.