PRC
Payments Risk Committee

July 29, 2011

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Dear Messrs. Heller and Tanzer:

Please find attached the response from the Payments Risk Committee[1] to the CPSS-IOSCO consultative report, *Principles for financial market infrastructures*. The Committee is a private sector industry group comprised of major users of payments, clearing and settlement services and is sponsored by the Federal Reserve Bank of New York. The Committee identifies and analyzes risk issues in payments, clearing, and settlement of financial transactions, seeks to foster broad industry awareness and discussion, and develops input on public and private sector initiatives.

We are pleased to have the opportunity to comment on the important issues addressed in this report and would welcome further dialogue as appropriate.

Yours sincerely,

Robin Vince
Chairman

[1] The PRC's objective is to foster enhancements to the safety and resiliency of financial market infrastructures, including steps to strengthen the clearing and settlement of financial transactions. The PRC institutions submitting this letter include Bank of America, Bank of New York Mellon, Bank of Tokyo-Mitsubishi UFJ, Citibank, Deutsche Bank, Goldman Sachs, JPMorgan Chase, Morgan Stanley, State Street, UBS and Wells Fargo. More information on the PRC and its members is available at: http://www.newyorkfed.org/prc/

July 29, 2011

Payments Risk Committee

Comments to CPSS-IOSCO report, *Principles for Financial Market Infrastructures*

Introduction

In formulating the remarks set out below the Payments Risk Committee ("PRC") has focused primarily on the issues raised in the cover note to the consultative report on *Principles for Financial Market Infrastructures* (the "Report").[1] In addition, our remarks below apply primarily to central clearing counterparties ("CCPs"), but in some cases the underlying principles are relevant to other FMIs.

PRINCIPLE 4 – CREDIT RISK

Q1 – "What are the pros and cons of establishing for credit risk (1) a "cover one" minimum requirement for all CCPs; (2) a "cover two" minimum requirement for all CCPs; and (3) either a "cover one" or a "cover two" minimum requirement for a particular CCP, depending upon on the risk and other characteristics of the particular products it clears, the markets it serves and the number and type of participants it has? What potential risk, competitiveness or other concerns might arise if certain CCPs that clear certain products would be subject to a "cover one" minimum requirement, while certain other CCPs that clear certain other products would be subject to a "cover two" minimum requirement? How and to what extent could these concerns be addressed?"

Q2 – "Which risk and other characteristics of the products cleared by a CCP are relevant in weighing the pros and cons of a "cover one" versus a "cover two" minimum credit requirement for a CCP? In particular, to what extent are any or all of the following product and market characteristics relevant: OTC versus exchange-traded; mandatory versus voluntary clearing; "cash" versus "derivative"; the duration, volatility and degree of leverage; the number and type of CCP participants; the degree of market concentration; and the availability and reliability of prices from continuous, transparent and liquid markets?"

1. Support adopting a "Defaulter Pays" Model

We recommend the financial safeguard coverage be set at a level whereby the collateral of each participant is sufficient to cover the losses caused by that participant in the event of its default under extreme but plausible circumstances. It is necessary, of course, to take into account each CCP's membership base and the specific risks associated with the products it clears. A CCP's required financial safeguards must be determined by robust back and stress testing, incorporating the most sensitive individual risk factors within each member's portfolio, using the worst historical case for each factor, summing the results across products (assuming

[1] http://www.bis.org/publ/cpss94covernote.pdf

no correlation within a cross-asset portfolio) and adding a sufficient cushion to account for unobserved events.

While there is no ”one-size fits all” approach, we recommend a ”defaulter pays” model, which would entail all participants (both clearing members and indirect participants) providing sufficient resources to be able to cover, with a very high confidence factor, risks associated with extreme but plausible circumstances. In our view it is important for a CCP to find the appropriate balance between a member's collateral, which protects the CCP against a default by the clearing member who posted it, and guarantee fund contributions, which protect the CCP against a potential default by any clearing member. Both collateral and guarantee fund constitute financial resources of the CCP, which in the aggregate must be sufficient to meet the appropriate confidence factor. A very high confidence factor would be 99.9%. In the instance of clearing members, initial margin should be set at a minimum 99% confidence factor with guaranty funds set up to cover for unexpected loss to a combined 99.9%. In the instance of indirect participants, each client's contribution would be required in an amount sufficient to reach at least a 99.9% confidence factor that losses related to that client's failure would be absorbed. This confidence factor could be assessed on a “per account” basis so that in circumstances where there is no loss mutualization between clients (irrespective of whether the accounts are operationally commingled), each client would post to its client account at the CCP collateral required to cover expected losses with a 99.9% confidence factor (each client will hold a client account at the CCP through its clearing member). In structures that implement a loss mutualization feature between clients, the 99.9% confidence factor would be assessed taking into account the overall risk position within the client account, which may benefit from risk offsetting positions. In our view, the question of a “cover one” or “cover two” minimum stress scenario requirement refers to a CCP's total financial resources package (inclusive of initial margin, funded/unfunded guaranty fund and the CCP's own capital contribution) being designed to compensate for potential shortfalls caused by the failure of the single largest (or two largest) “family” clearing members of the CCP. By “family” clearing member we refer to all affiliates forming part of a single corporate group. This is based on the assumption that the failure of a key affiliate within a corporate group will likely result in the failure of the whole group. It is appropriate to draw a distinction between initial margin and guaranty fund. Initial margin generally is intended to cover the expected risk of loss and the guaranty fund (as well as CCP capital contribution, funded clearing member contributions and further assessments) is intended to cover any incremental “tail risks” associated with unexpected loss as determined by appropriate stress testing. Unfunded assessments, if permitted under CCP rules, should be subject to an appropriate haircut and should not count for a significant portion of a CCP's total financial resources package.

While a “cover two” minimum requirement would appear to raise the bar on credit risk standards vis-à-vis the 2004 Recommendations for Central Counterparties, this could only potentially be the case if the underlying risk standards themselves are rigorous, transparent and consistently applied across different CCPs and jurisdictions. For example, if one CCP were to adopt a “cover one” standard with extremely conservative model assumptions and exceptionally rigorous back and stress tests while another CCP adopted a “cover two” approach using lax standards, it would likely be that the former would achieve greater coverage than the latter notwithstanding the latter's application of the “cover two” standard. We would argue that it is more important for CCPs to establish rigorous back and stress tests (which have effective regulatory oversight), sufficient risk methodology disclosure and continuous industry review of risk standards, rather than to adopt a “cover two” standard without these practices in place. Moreover, independent

review of CCP models should be conducted by those with the requisite experience and results of such reviews should be shared with clearing members and regulators.

Thus, determining the amount and composition of financial resources needed by a CCP to withstand one or more clearing member defaults depends upon the specific market for which it clears. As a result, we would not recommend calling for specific parameters to be applied universally to all CCPs as they provide different services and support different product types in different jurisdictions. Specifying coverage in such a way could result in a CCP simply adopting the baseline without its own risk management committee and local regulator performing the requisite risk management and supervisory work, respectively, to determine the appropriate amount of coverage for its market.

The risk committee of each CCP should be responsible for calculating the appropriate coverage level, and regulators would be responsible for monitoring the determination by each CCP. At a minimum, the following risk factors should be taken into consideration:

- Price volatility of products cleared
- Liquidation/close-out period of products cleared, as well as collateral held and price transparency – a longer period could result in greater risk of subsequent member defaults
- Correlation of default probability among clearing members – higher correlation should result in a greater number of member defaults being covered
- Correlation of clearing members, products cleared and collateral held – higher correlation should also result in greater coverage ratios
- Concentration of risk shared by a few clearing members or risk more dispersed among the clearing member population
- Concentration of contracts/positions at aggregate CCP level
- Whether the CCP is systemically important (systemically important CCPs should be subject to strict criteria). This is not to say that CCPs which are not systemically important should be subject to excessively lenient criteria. In particular, it would be appropriate to avoid creating an unfair advantage for CCPs that are not systemically important, and it would be appropriate to consider the aggregate effect on the financial system of the failure of several or all non systemically important CCPs.
- The proportion of a CCP's funded vs. unfunded guaranty fund contributions and how this relates to risk limits applied to clearing members (this has a direct effect on CCP liquidity risk management).

2. *Ex Ante* Loss Sharing Arrangements and Limited Liability of Clearing Members to a CCP

In our view, while no CCP should be considered "too big to fail," we need to acknowledge that CCPs are and will be systemically important and any potential failure should be proactively managed through previously agreed rules. Therefore, we would recommend the establishment upfront of a CCP default management process, through clear and transparent rules that would be applied in the event a CCP suffers losses that fully deplete its financial safeguard resources, inclusive of initial margin, funded/unfunded guaranty fund contributions and the CCP's own contribution. Clearing member liability to a CCP through loss mutualization (be it guaranty fund

contributions, forced allocation or other mechanisms) should be limited to an amount that can be calculated and risk managed *ex ante*. In addition, if the CCP fails, these ex ante rules should establish a framework in which all participants (both clearing members and indirect participants) would share in losses by bearing pro rata haircuts on any mark-to-market gains on their positions since the time at which the defaulting clearing member ceased to post collateral (i.e., the time of default). This way both losses and gains would be limited in a CCP failure: a clearing member's exposure to the CCP through loss mutualization would be limited to the aggregate of (1) the clearing member's guaranty fund contributions (funded and unfunded) and (2) the clearing member's mark-to-market gains on cleared positions since the time of the default. This structure acts as a natural limit on a clearing member's potential mark-to-market gain in the case of a default of the CCP and provides a scalable incentive for a clearing member to properly risk-manage its position exposure to the CCP.

These *ex ante* rules would be the contractual equivalent of a judicial insolvency procedure, but would obviate the uncertainties, delays and other risks that may be associated with such a procedure, such as the tear-up of contracts that have been cleared by the CCP. This procedure would also serve to "reset" the CCP's variation margin payments.

Notwithstanding such *ex ante* loss sharing arrangements, in the event that a CCP's total financial resources are depleted, there would still be a need for clearing members and regulators to discuss whether to recapitalize the CCP. A decision to recapitalize would enable the CCP to continue to remain in business going forward. If it is not possible to recapitalize the CCP, then the CCP would be closed down in a contractual process similar to a judicial insolvency. This would involve the termination of all trades between clearing members and the CCP or the transfer of such positions to an alternative CCP. Clearing members should not be subject to a legal obligation to finance the CCP with unlimited liability. However, clearing members will be incentivized to recapitalize the CCP where possible because if the CCP is not recapitalized then clearing members will have to incur considerable cost to replace the contracts that used to be cleared in that CCP. The solution described above is dependent on its enforceability in the jurisdictions where the CCP is organized and operates (e.g., where the CCP holds margin). The jurisdiction of organization of the CCP should have clear laws supporting all ex ante rules along with the legal enforceability of its default management framework, collateral segregation and close-out netting in the case of a default of (a) the CCP; (b) a clearing member; (c) a client; or (d) any combination of the above.

- **Full Transparency:** CCPs must work hand-in-hand with their clearing members to develop appropriate and effective margin and stress testing methodologies and processes for the given market. Due to the loss sharing feature of CCPs, clearing members undertake to absorb some or all of the losses experienced by a CCP. This means that the risk management decisions of a CCP affect directly each clearing member. The effect is similar to that of clearing members having outsourced part of their risk management to the CCP. It is critical that CCPs provide their clearing members with full transparency over their risk margin models, as well as stress test and back test methodologies and internal credit review processes. CCPs should be encouraged to provide copies of their financial models to clearing members to facilitate independent testing and replication, and to include tools that can be shared with clients that are not clearing members but have access to clearing through clearing members. Rigorous, transparent back and stress test standards, subject to strict oversight by prudential and

product regulators, are key to the ability of the framework to withstand the next financial crisis.

- **Risk Tolerance:** CCPs should be required to establish risk committees. The risk committee of a CCP should establish risk tolerance statements for that CCP. These statements should be vetted by clearing members and the CCP's board of directors. Risk tolerance statements would delineate the nature of the back tests and stress tests being performed, the assumptions and methodologies used and the extent of mutualized loss exposure that clearing members would face in the event that stress scenarios unfold.
- **Prudential regulation of CCPs:** As noted in section 4 of the Report (Responsibilities of central banks, market regulators, and other relevant authorities for financial market infrastructures), supervisors must play an active role in overseeing CCPs. CCPs should be required to obtain regulatory approval of specific risk methodologies and internal risk management processes.

3. Initial Margin

Given the wide spectrum of level and volume of activity, product complexity and clearing member composition across asset types and jurisdictions, we hesitate to define a single specific coverage level to be adhered to universally by all CCPs as this would likely not be appropriate for all CCPs and may have unintended consequences from a risk management perspective in specific markets.

Specifying coverage in such a way could result in CCPs simply adopting the baseline without its own risk management committee and local regulator performing the requisite risk management and supervisory work respectively to determine the appropriate amount of coverage for its market.

As noted above, we would expect the financial safeguard coverage to be set by a CCP such that all participants (both clearing members and indirect participants) provide sufficient resources to enable coverage of the risks associated with extreme but plausible conditions at a combined 99.9% confidence factor. Initial margin posted by clearing members and participants would serve as the first and foremost credit risk mitigant, covering the likelihood of default to a high degree of confidence. We support a minimum confidence interval of 99% for initial margin as suggested by CPSS-IOSCO for direct participants, as long as the sum of initial margin plus guaranty fund contribution posted by a clearing member brought it to a 99.9% standard. For indirect participants we support a 99.9% confidence factor for initial margin.

If both client and clearing member margins are sufficiently high, each participant's margin would cover that participant's respective individual default, including residual tail risk under extreme but plausible conditions. This would minimize the likelihood that the CCP would have to use non-defaulting clearing members' collateral except in the event of completely unanticipated second order events. Moreover, for there to be the right level of incentives for active participation in default management, there needs to be enough "skin in the game," which tells us not only that that a member's required guaranty fund contribution should be allocated in proportion to the risk introduced by that member, but also that the guaranty fund-to-initial margin ratio should reflect the estimated percentage of market risk remaining following the completion of the default management hedging phase. While there is no hard and fast rule determining the

appropriate liquidation period, the appropriate period should depend upon the specific characteristics of the underlying instruments being cleared and be updated as needed to reflect market changes. Setting a minimum holding period removes the incentive for CCPs to develop, practice and own a default management plan, which is at the core of greater systemic stability.

In the case of the swap markets, five days may be viewed as a sufficient holding period for initial margin calculation purposes for most plain vanilla interest rate swaps but would then need to be increased appropriately to determine coverage for the extreme tail events, in cases where initial margin is insufficient. In addition, in determining the appropriateness of initial margin requirements it would be appropriate to consider the following factors:

- **Concentration risk** to cover large positions which may take longer to liquidate than the assumed holding period used in the initial margin calculation. (Concentration margin could also be used to address thinly capitalized entities that are able to post requisite amounts of initial margin, but that might not be able to post incremental guaranty fund contributions when required to do so.) For clients, concentration risk should be assessed net on a portfolio basis.
- **Wrong way risk**, which, while discussed in the Report, should include examples beyond when an entity buys or sells protection on itself or an affiliate and should note the adverse correlation risk that arises from a clearing member selling protection on the government of the jurisdiction in which it is domiciled, selling protection on a CDS index which includes as a reference entity the seller, an affiliate or their group parent and the potential for the simultaneous reduction in counterparty creditworthiness of the clearing member and the issuer of the collateral provided by that clearing member (in the case of collateral other than cash). A wrong way risk methodology needs to address both measurement and thresholds with corresponding incremental margin charges paid by clearing members exceeding those measurements and thresholds.
- **Clearing member creditworthiness**: clearing members should only be able to clear in proportion to the capital they hold. We recommend determining the specific threshold taking into account the likelihood that a clearing member will be required under extreme but plausible circumstances to fund its exposure to the CCPs of which it is a clearing member. Clearing members wishing to clear any risk beyond the level that such clearing member's available capital can support should be encouraged to seek additional capital. Otherwise, their clearing activity and the amount of risk they introduce into the financial system and into each CCP must be capped.

4. Loss Mutualization

Non-defaulting clearing members should only be exposed to losses which they can anticipate and for which they have the means and incentive to control. While some degree of loss sharing (funded plus unfunded amount) may be required, such loss sharing should be limited to the proportion of the risk a clearing member brings to the CCP as determined by appropriate stress tests. It is appropriate to cap exposure of non-defaulting clearing members to guaranty fund assessments by the CCP. In our view it is appropriate to cap a clearing member's exposure to both a single default and a series of defaults that occur during a pre-defined number of days, with the day count rolling from the day of the most recent default, until a full period expires without the occurrence of a default. This aims at capturing all defaults related to one systemic crisis and subject the sequential defaults to the same overall cap.

To this point, we agree with Explanatory Note 3.3.5 of the Report, which states that an FMI should provide incentives for its participants to identify, measure, and manage their own risks. In our view, transparency in a CCPs' risk management processes is critical. Principle 3, however, does not specifically require CCPs to provide for a capped liability structure so that clearing members can measure and manage their risks to CCPs. Only a capped liability structure can provide each clearing member with the ability and incentives to manage its counterparty exposure, through the CCP, to other clearing members of the CCP.

We believe it would be appropriate for CPSS-IOSCO to recommend clearly that CCPs should implement a capped liability default management structure that limits potential clearing members' losses to their guaranty fund contributions (both funded and unfunded) and their mark-to-market gains on cleared positions since the time of the default. This structure acts as a natural limit on a clearing member's potential mark-to-market gain in the case of a default of the CCP and provides a scalable incentive for a clearing member to manage its exposure to the CCP through position management.

The guaranty fund should be stress-tested daily, and any clearing member whose guaranty fund liability materially increases (by more than 10%) since the prior guaranty fund contribution should be required to post incremental collateral that same day. Such amounts should be posted in the form of initial margin until the next call for updated guaranty fund contribution requirements among all clearing members. This is intended to be a safeguard for the clearing member posting this additional contribution. It means that the additional contribution would not be subject to loss mutualization in case of default by another clearing member, but it would be accessible by the CCP if the clearing member posting it experiences a default.

5. Risk Committee

The Report states that "An FMI should consider the case for a board risk committee, and a CCP, in particular, is expected to have such a risk committee or its equivalent. A risk committee should be chaired by a sufficiently knowledgeable independent board clearing member and consist of a majority of board clearing members that are independent of management. The committee should also have a clear and public mandate and operating procedures."[2] We support a framework where the risk committee of a CCP is composed of a majority of clearing members whose capital is at risk through loss mutualization, irrespective of whether clearing members have representatives on the CCP's board of directors. In some jurisdictions proposals are being discussed to restrict the representation of clearing members on the board of directors. In circumstances where that is the case, clearing members should still be able to be represented on a CCP's risk committee. Clearing member representation on a CCP risk committee should constitute more than 50% of the risk committee. In particular, it is essential that clearing members have a majority say in matters that potentially impact clearing member capital which forms the basis of a CCP's financial safeguards. Such matters would include, among other things, sizing and composition of the financial safeguards package, default management procedures and similar matters. All risk committee representatives (not only clearing member representatives) should follow appropriate guidelines and procedures designated to mitigate potential conflicts of interest, including in respect of commercial considerations. Typically the board of directors would represent a good counterbalance to the

[2] See Report at page 27.

risk committee, with the risk committee more focused on risk issues and the board more focused on profit making and commercial considerations. Please refer below to the section titled "Safe and Sound Governance Standards Must be Met by CCPs Irrespective of Whether They are Utilities or For-Profit Entities" where we address the respective role of shareholders and clearing members in a CCP.

In jurisdictions where clients are also exposed to some degree of loss mutualization, it would be appropriate for clients to be represented in the risk committee, subject to clearing members whose capital is at risk having a majority of the votes on the risk committee in any case.

6. Safe and Sound Governance Standards must be met by CCPs Irrespective of whether they are Utilities or For-Profit Entities

In our view CCPs should have as their primary goal the safe functioning of the markets for which they clear, and, as such, a strict risk management framework should apply irrespective of whether a CCP is a for-profit entity or a utility. As background, the main difference between a utility and a for-profit entity is that in the case of a utility the prevailing interest is to provide a service to the users of that service (in this case, clearing members and clients). In the case of a for-profit entity, a tension exists between the interests of shareholders, on the one hand, and users (clearing members and clients), on the other. Shareholders want to maximize profit, and users (clearing members and clients) want a prudently managed CCP that works well. In the case of clearing, users (clearing members and, in some cases, clients) are exposed to the risk of default of the CCP because their capital forms the largest portion of the CCP's financial safeguards and are, therefore, particularly interested in making sure the CCP adopts prudent risk management standards.

Several CCPs that are for-profit are also part of a group that owns an exchange, in a vertically integrated model. We are in favor of promoting competition and open access to clearing services. To help ensure an effective risk management structure for the entire market, a CCP, whether organized as a for-profit or a utility should:

- Be required to fund a meaningful first-loss position as part of the financial safeguard waterfall, and such amount should be held in a segregated account in the CCP's name rather than at the holding company level.
- Establish a capped clearing member loss-sharing structure such that clearing members can effectively measure and manage their risks while CCP staff maintains the appropriate risk management incentives in managing a clearing member default.
- Support open access and interoperability (subject to the considerations set out below in our comments relating to Principle 20: FMI links). Contracts traded on an execution venue must be clearable at multiple CCPs, regardless of whether they are affiliated to that exchange or not. No execution venue should be permitted to have a monopoly over a certain type of contract, such that if the execution venue is unavailable for any reason, it can be cleared elsewhere.
- Establish an independent risk committee with clearing members constituting a majority of the committee. (While it is understood that such a risk committee could be outvoted by the CCP's board of directors, any such occurrence should be subject to prior regulatory consultation and concurrence.)

7. Systemically Important Exchanges, SEFs and Organized Trading Facilities

Another potential source of systemic risk for CCPs is exchanges, swap execution facilities (SEFs), and organized trading facilities (referred here collectively as "exchanges"). Market participants and CCPs rely on exchanges to provide them with data with respect to transactions executed in the market. If the exchange suffers an operational failure such as, a technical fault in a new technology system, CCPs and market participants will not be able to manage their risk. Market participants and CCPs that are not able to manage their risk as a result of the operational disruption of an exchange are exposed to the risk of failing, therefore multiplying the pro-cyclical effect of a operational disruption by the exchange. This risk is particularly acute in the case of a vertically integrated model, but relevant to non-vertically integrated models as well. Exposure of a CCP to an execution venue becomes a credit risk issue if the CCP is not able to risk manage as a result of the failure of the execution venue.

We support the development of internationally recognized standards that protect CCPs by introducing safeguards that apply to exchanges, SEFs and organized trading facilities:

- Clear corporate governance regulatory principles applicable to exchanges to promote accountability and systemic stability.
- Change control risk management for exchanges to regulate technology rollouts and other mission critical developments. In particular, regulators, market participants, and exchanges themselves must ensure that exchanges are adequately prepared to manage machine to machine automated high frequency trading before being launched. The downside of not having an adequate operational and risk management infrastructure as well as prudential oversight to manage exponentially increased transactions flows could be a significant increase in systemic risk.
- The introduction of market-wide trading standards, to enable market participants to trade on other exchanges if one of them is suffering a technical failure.
- Less vertical integration among exchanges, CCPs and middleware/technology providers would likely facilitate more open access to these venues.
- On-site testing reviews by regulators.
- Clear documented procedures and processes for crisis management and resolution of exchanges.
- An exchange's contingency fund to absorb losses incurred by market participants caused by a critical operational disruption.
- Recovery and contingency plans implemented based on the specific characteristics of the underlying asset traded (e.g., futures vs. OTC) and the execution method (e.g., CLOB vs. RFQ) adopted.

In order to be effective, safety and soundness criteria applicable to exchanges should apply globally in a uniform manner. CPSS-IOSCO principles would be an effective medium for promoting greater systemic stability for exchanges. The CPSS-IOSCO definition of FMI currently covers payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories, but not exchanges. We are in favor of developing and applying similar criteria to exchanges, SEFs and organized trading facilities as a way to protect CCPs and other FMIs.

PRINCIPLE 5: COLLATERAL

Collateral is posted to secure both current ("variation margin") and potential future ("initial margin") exposures. Variation margin must be posted in cash denominated in the currency of the instrument/contract. For initial margin, we agree with CPSS-IOSCO's identification of assets with "low credit, liquidity and market risk" as eligible collateral for CCPs. In our view, however, this principle would be more effective if this was defined in more detail as to what makes a collateral type low risk, whenever possible using objective parameters such as risk ratings, trading volumes and price volatility.

We support clear limitations on the circumstances in which CCPs should have the ability to re-hypothecate or re-use clearing member securities collateral and do not believe that this should be a business-as-usual risk management tool. More specifically, CCPs should only have the ability to re-hypothecate or re-use defaulting clearing member securities collateral in order to raise liquidity in the event of one or more clearing member defaults if immediately liquidating the collateral would lead to severe asset value depreciation. The Report currently does not state whether CCPs should be permitted to re-hypothecate or re-use clearing member collateral, but only that "*an FMI's investment risk-management strategy for investing participants' assets should be consistent with its overall risk-management strategy and fully disclosed to its participants."*

PRINCIPLE 6: LIQUIDITY RISK

Q1 – "What are the pros and cons of establishing for liquidity risk (1) a "cover one" minimum requirement for all FMIs; (2) a "cover two" minimum requirement for all FMIs; and (3) either a "cover one" or a "cover two" minimum requirement for a particular FMI, depending on the risk and other characteristics *of the particular payment obligations it settles, the products it clears, the markets it serves and the number and type of participants it has? What potential risk, competitiveness or* other concerns might arise if certain FMIs that settle certain payment obligations or that clear certain products would be subject to a "cover one" minimum requirement, while certain other FMIs that settle certain other payment obligations or that clear certain other products would be subject to a "cover two" minimum requirement? How and to what extent could these concerns be addressed?"

Q2- "Which risk and other characteristics of the payment obligations settled by a payment system, CSD or SSS are relevant in weighing the pros and cons of a "cover one" versus a "cover two" minimum liquidity requirement for such an FMI? Which risk and other characteristics of the products cleared by a CCP are relevant in weighing the pros and cons of a "cover one" versus a "cover two" minimum liquidity requirement for a CCP? In particular, to what extent are any or all of the following risk and other characteristics of the payment obligations settled or the products cleared by an FMI relevant: OTC versus exchange-traded; mandatory versus voluntary clearing; "cash" versus "derivative"; the duration, volatility and degree of leverage; the number and type of CCP participants; the degree of market concentration; and the availability and reliability of prices from continuous, transparent and liquid markets?"

We acknowledge that completion of final settlement by the end of the FMI's business day on the value date or value dates is essential. Deferral of final settlement to the next business day can create credit and liquidity pressures and potentially systemic risk.

As is the case with credit risk, a single approach to liquidity risk management cannot be applied across all CCPs. For example, covering liquidity needs for the simultaneous failure of the two largest clearing member families in a CCP with many clearing members and whose two largest families do not represent a large concentration is a different matter from covering for the simultaneous failure of two families in a CCP with a high degree of clearing member concentration.

Mandating coverage of the two largest families would require a significant draw on liquidity from the market. The decreasing availability of credit and the wrong-way risk inherent in drawing on committed liquidity during periods of market stress would be exacerbated by requiring coverage for the CCP's top two families and would result in a significant increase in required liquid deposits, thus introducing systemic risk to the marketplace. Analyzing highly correlated clearing members and vulnerable clearing members and employing various default time horizons would be a more appropriate approach.

We recommend the following principles with regard to CCP liquidity:

- CCP liquidity needs should be assessed via well governed, rigorous stress tests that cover the failure of the largest single family. We note that this "enhanced cover 1" minimum requirement goes beyond the liquidity needs on the day of default. Specifically in the case of physical settlement of securities, currencies, commodities, settlement will occur more typically over a customary number of days after trade date (e.g.,T+1, T+3, etc.), depending on the convention and regulatory framework for each market.
- A CCP stress test conducted on a daily basis with reference to each value date may result in a different clearing member representing the largest exposure for that CCP on different days. The liquidity test should be aimed at covering the cash needs of the CCP following the failure of the largest defaulter on any given value date,
- Given the need to reflect the settlement cycle, the enhanced cover 1 model should reflect the aggregate of the single day high points to cover the gross settlement needs of the member representing the highest exposure per asset class. If the CCP clears different products and there is a shared guarantee fund, different clearing members may be the largest defaulter for different asset classes.
- CCPs should maintain sufficient liquidity by requiring clearing members to post a minimum amount of liquid margin (cash and qualifying government securities) and default guaranty fund contributions with their CCPs. In addition, all clearing members should be invited to participate in a liquidity facility. The liquidity facility should also be open to creditworthy market participants that are not clearing members.
- CCPs should arrange a committed collateral liquidity facility, from a diversified group of providers, with an aggregate amount equal at a minimum to the largest clearing member family exposure. The size of the facility should include a cushion to cover a potential default by at least one of the liquidity facility providers. As noted above, a CCP should have the ability to repo a defaulting member's securities so that it may avoid having to liquidate the securities at a deep discount in a temporarily dislocated market

environment. Establishing formal, committed repo financing facilities should also be encouraged.

- We note that CCPs typically have the ability under their rules to defer payment by up to three business days. In our view this grace period is appropriate.
- In our view it would be appropriate for each CCP to have clear *ex ante* rules for the ratable allocation of liquidity shortfalls. These should be distributed pro rata between participants in a predictable manner. The goal of appropriate liquidity coverage should be to avoid the tearing up of CCP cleared trades following the default of a CCP that is sufficiently capitalized but lacks the necessary liquidity to cover more than one default. A tearing up of trades cleared by a solvent CCP would have a negative systemic impact. For this reason it seems appropriate to us to explore what is the appropriate allocation of this liquidity risk amongst market participants and it seems that ratable distribution is appropriate.
- It is not clear that, as of today, most CCPs would have the requisite liquidity to settle a default by the two largest clearing members same day or intraday. However, for a CCP that determines that given its particular circumstances and risks, a stress scenario could require coverage of the two families with the largest aggregate payment obligations, the CCP should undertake efforts to plan for such a scenario.
- In the case of CCPs clearing FX products, the required liquidity coverage is likely to be substantial, given the need for a CCP clearing FX to support physical settlement of contracts.

PRINCIPLE 14: SEGREGATION AND PORTABILITY

Principle 14 on segregation and portability is only applicable to CCPs. The substantially new principle recommends that CCPs should have segregation and portability arrangements that protect client positions and collateral, to the extent practicable and where feasible and supported by the legal framework. This qualifying language recognizes that there may be market structure or legal impediments to a CCP facilitating segregation and portability in the cash markets.

The principle is designed to offer CCPs flexibility in achieving segregation of client collateral and identifies the advantages and disadvantages associated with the use of omnibus and individual accounts. The principle also provides expanded guidance on the way that margin is collected by the CCP (gross or net basis) and explains how different levels of client protection can be achieved. While the principle presents options, the overall objective is to protect client positions and collateral, particularly in the case of insolvency of a participant.

CPSS-IOSCO request comment on challenges associated with establishing segregation and portability regimes for CCPs. In particular, while no specific model of segregation and portability is prescribed in the relevant principle, CPSS-IOSCO would particularly welcome comments on the following questions:

Q1 – "What are the different models and approaches to establishing segregation and portability? What are their pros and cons respectively, for example in terms of efficiency and level of protection that can be achieved?"

SEGREGATION

There are four models currently being discussed in the US for purposes of segregating client collateral in the context of cleared swaps and following a clearing member default caused by a loss in the client account. For the latest proposal, please refer to the U.S. Commodity Futures Trading Commission's ("CFTC") Notice of Proposed Rulemaking "Protection of Cleared Swaps Client Contracts and Collateral: Conforming Amendments to the Commodity Broker Bankruptcy Definitions."[3] In the case of a clearing member default caused by loss in the house account or by difficulties elsewhere in the corporate group, client collateral would be segregated in all cases. The four models referred to below are relevant only in the case of a clearing member default that is caused by a client default. These are:

- The current US futures model (the "**Futures Model**")[4] where all the collateral posted by the clients of the same clearing member is held in that clearing member's omnibus client account. In this model, client collateral is segregated from house collateral but collateral belonging to clients is commingled in one omnibus client account both from an operational and a legal point of view.
- A proposed "**Physical Segregation Model**" (formerly known as the "Full Physical Segregation Model")[5] where collateral posted by each client is fully segregated from a legal and operational point of view from both house collateral and the collateral posted by other clients of the same clearing member and is applied only in connection with obligations of the client that pledged that collateral.
- A proposed "**Complete Legal Segregation Model**" (formerly known as the "Legal Segregation with Commingling Model" or "LSOC")[6] where client collateral is operationally commingled but legally segregated for the benefit of the client that pledges it.
- A proposed "**Legal Segregation with Recourse Model**" (formerly known as the "Moving Clients to the Back of the Waterfall" Model where, in the waterfall of liability, client collateral is moved to the back of the waterfall: clearing member guaranty fund contributions would be applied to meet any shortfall arising from a default by a clearing member (caused by a client default) before non-defaulting client collateral is applied.

This analysis is focused on the proposal introduced by the CFTC in the context of swaps clearing by futures commission merchants ("**FCMs**") with respect to cleared swaps in the US.

It should be noted that the CFTC has not yet proposed any self-clearing model that might enable buy-side clients to directly manage their risk to CCPs. Presumably the main concern with introducing such a model is that direct membership of a CCP would expose clients to loss

[3] http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/federalregister042711b.pdf
[4] ID, page 13
[5] ID, footnote 18
[6] ID, footnote 16

mutualization to the CCP resulting from defaults by other members and the significant investment of capital and operational infrastructure required to face a CCP directly.

The pros and cons we list in this response focus on the relative risks and costs of doing business (operational and compliance costs, along with the effects on the size of the guaranty fund that would result from including or excluding the client loss mutualization element) borne by respective participants in the clearing process – clients, FCMs and CCPs – and the systemic implications arising from shifting these risks and costs.

These pros and cons are meant to highlight views on different segregation models being discussed and are not mutually exclusive to each model described below. In some situations they may apply to more than one model. Please note that we have further broken down the analysis of the first model (the US Futures Model) into the analysis of the US Futures Model and the US Futures Model with Gross Margining.

We note that in all of the models discussed below, as well as in the clearing models in jurisdictions other than the US, the clearing member guarantees performance by the client to the clearing house. The clearing member takes on credit risk towards the client, and for that reason the clearing member must apply credit limits to manage the extent of their exposure to clients. Clearing members do not guarantee performance by the CCP to the client. The rationale for this construct is that the client should look to the legal segregation framework and the financial guarantees package of the CCP rather than to the clearing member in conducting their counterparty risk assessment. Typically clearing provides clients with the ability to "port" or transfer positions without consent to transfer being required of the outgoing clearing member, which will enable a client to address possible concerns with the financial stability of their clearing member, provided that they are able to find a suitable substitute clearing member. In the US, clearing members are required to provide clients with the ability to port their positions. If a client leaves any residual positions with the outgoing clearing member they may be required to provide adequate collateral because the outgoing clearing member continues to be exposed to the CCP for performance by the client for those positions. Clients will still want to avoid the inconvenience or the risk (or both, depending on the collateral segregation model) resulting from failure of their clearing member. In our view it would be appropriate for clients to conduct a detailed analysis of the CCP as well as their clearing member. For a more detailed analysis of how a clearing member failure can affect a client, please see below the analysis of each collateral segregation model.

US Futures Model:

Pros:

- Operational and legal frameworks governing US futures markets have been in place over an extended period which has included several stressed market scenarios and this model has performed as expected – including provisions for portability and segregation.
- The US futures model was the template for the financial reform of the OTC derivatives market introduced by the Dodd-Frank Act.
- Omnibus commingling of client accounts provide for systemic protection of CCPs. To address potential shortfalls arising from a defaulting FCM, CCPs are able to immediately

access all collateral in FCM client accounts to mitigate defaults extending to the CCP and across multiple clearing members.
    - Immediate availability of collateral to cover potential losses decreases initial margin requirements reducing overall costs for market participants.
    - Commingling of assets typically provide better operational efficiencies.
- Assuming a capped financial safeguards waterfall model, FCM risks and potential liabilities of FCMs against the potential default of another FCM are limited.
- The US futures model gives incentive to FCMs to maintain excess capital and operate with strong risk management practices as a means to attract and maintain clients.
    - Clients can protect themselves by selecting FCMs that are well-capitalized and follow prudent practices (but see below client ability to manage fellow client risk).

Cons:

- "Fellow client risk" may penalize FCMs with duties to others: mutualization of client loss can lead to asymmetric protection of clearing members of CCPs, at the expense of clients, some of which have affirmative duties to protect the assets that they manage. In the current OTC (non-cleared) model, clients are also exposed to fellow client risk (through facing the same counterparty) unless they request that collateral be held at a third-party custodian. (However, collateral held at a third-party custodian is an additional cost and introduces the risk of default by the custodian, with the default risk less acute for custodians that are banks and more pronounced in the case of custodians that are not banks.)
- If non-defaulting client collateral is applied as a result of an FCM default – which can lead to close-out of related positions – non-defaulting clients may need to re-establish their positions elsewhere, which may be difficult especially in stressed market scenarios and may entail substantial re-hedging costs.
- Any given FCM client has no knowledge as to risk positions taken by other FCM clients, and as such are not in a position to manage "fellow client risks."

US Futures Model with Gross Margining:

Pros:

- The clearing member must collect CCP minimum margin amounts from its clients, and gross margins collected from the clients are passed through by the clearing member to the CCP, which holds them in custody accounts.
- Client margin is segregated from a clearing member's own collateral through a client omnibus account established at the CCP for the clearing member.
- If a clearing member defaults because of a house position, client margin is protected by way of the segregated client omnibus account at the CCP. The CCP cannot use client omnibus margin to cover such losses.
- The CCP and clearing members would practice prudent risk management procedures given the knowledge that client margins cannot be used to offset clearing member defaults because of a house position.

- Clients have the ability (in certain circumstances) to transfer positions from one clearing member to another under both pre- and post-default scenarios.

Cons:

- If a clearing member defaults because of a client, and there are losses in the clearing member's client omnibus account, the CCP may mutualize losses among non-defaulting clients using client omnibus margin.
    - Fellow client risk, however, still exists.
- Client default risk is mutualized to the extent of net margins in the defaulting clearing member's client omnibus account;
- There can be delays in the process of the return of margins in the client omnibus accounts which may result in difficulty in reestablishing their positions and higher hedging costs.

Physical Segregation Model:

Pros:

- Theoretically provides the best protections for clients. This protection comes with a very high implementation cost and would require the creation of hundreds of thousands of separate accounts at each CCP, thereby making this model extremely operationally intensive.
- Reflects the trend in the OTC market to use triparty arrangements to achieve full segregation.
- Avoids "fellow client risk" in shifting to CCP clearing of swaps.
- Enables a CCP to track risks associated with individual client portfolios (before any FCM default occurs) but clients remain exposed to mutualization of investment loss.
- Theoretically facilitates portability by defining risks associated with each client and segregating each client's collateral into separate accounts. In the case of a client with several sub accounts this is only possible if such client has already opened accounts with the clearing member to which it intends to port; otherwise the time needed to open several separate accounts for each legal entity client would make prompt porting almost impossible.

Cons:

- Increases operational complexity and costs to achieve full segregation: establishing full physical segregation may require additional operational infrastructure and connectivity for FCM and CCP along with legal documentation relating to the separate account
    - ISDA estimates indicate that: (a) the average upfront operational and compliance cost per FCM would be $33.2 million (as opposed to $1.0 million for the Complete Legal Segregation Model, and $0.8 million for the Legal Segregation with Recourse Model), and (b) the average ongoing operational and compliance cost per FCM would be $136.3 million (as opposed to $16.2 million

for Legal Segregation with Commingling and $16.1 million for the Legal Segregation with Recourse Model)

- Shifts risks onto FCMs and CCPs. CCPs will protect themselves by maintaining larger guaranty funds and/or shifting losses onto FCMs – or potentially by significantly increasing initial margin – which ultimately may increase costs to clients
    - The CME estimates that it would have to double the size of relevant guaranty funds and increase margin significantly (concentration charges would increase $50-250 billion).
    - ISDA estimates the industry-wide guaranty fund contributions for this model at $128 billion, with $581 billion in additional initial margin.
- Potential moral hazard: fewer reasons for clients to pay attention to risk management practices of FCMs

Complete Legal Segregation Model:

Pros:

- Tries to maintain the synergies gained in the current FCM model
- Could provide much of the same benefits as the Physical Segregation Model, with fewer operational complexities and costs
- In practice, this model reflects the actual risks to a CCP in the event that an FCM defaults: while client collateral is commingled, once the FCM becomes insolvent, the remaining risks to the CCP are from each individual client of the FCM
- Enables (and rewards) custodians and FCMs with strong operational practices that are capable of ensuring that client collateral is accurately monitored and valued and segregated.

Cons:

- Avoidance of mutualization of risk depends upon maintaining accurate records on a real-time basis (or near real-time) by FCMs and CCPs, most of whom are currently not equipped to perform this function. Given that the model relies on accuracy of information regarding client accounts that has been transferred by the FCM to the CCP, it is only as good as the latest data transfer from the FCM to the CCP. That data becomes obsolete quickly.
- Potential difficulty in effecting an orderly wind-down of a defaulted FCM (because of the need to disaggregate client collateral to remove non-defaulting client collateral from the commingled pool), which could delay transfer of client positions (which has occurred in a timely manner to date under the Futures Model)
    - Factoring in this delay can lead to higher margin and guaranty fund requirements
- There could be issues with a lack of portability in the end of the waterfall
- Other cons are the same as for the Physical Segregation Model, but with fewer operational burdens and costs

Legal Segregation with Recourse Model:

Pros:

- Protects client collateral from being part of the first line of defense in an FCM default
- The CCP would only have recourse to collateral posted by non-defaulting clients of the defaulting clearing members after exhausting its own contribution to its default resources, as well as the guaranty fund contributions of non-defaulting clearing members.
- Does not directly create additional operational burdens

Cons:

- Does not limit "fellow client risk" to the same extent as the Physical Segregation Model or Complete Legal Segregation Model.
- Portability of non-defaulting clients to another FCM could be delayed until applicability of client funds is resolved.
- To support the Legal Segregation with Recourse Model, CCPs may need information as to ongoing risks arising from client positions – and to do so, CCPs may need to perform reconciliations based upon additional information from FCMs (which means additional FCM reporting requirements).
- Systemic protection may be weakened by potential delays in obtaining client collateral at the end of the waterfall (which, as a practical matter, is likely to take time – potentially longer than margin models would have predicted – in contrast to the immediate availability of client funds under the Futures Model).
- May trigger a "race to the bottom", where clients choose lower cost FCMs that do not have strong capital or risk management practices, since the clients would be insulated from the downside of using risky FCMs.
- Responsible FCMs may be also at risk of poor risk management practices at other FCMs, which they cannot control (unless CCPs acting as DSROs strictly impose and enforce requirements, penalizing FCMs for not meeting those requirements).
- **Since FCMs and DCOs will be more exposed to client defaults, may provide incentive to accelerate close-out of clients that miss margin calls – which may precipitate cross-defaults that may have broader (and potentially systemic) impact that might otherwise be avoided by resolving client stress situations [this is also a con of the individually segregated model].**
- Release of non-defaulting client collateral could be delayed while a CCP identifies the defaulting client(s) and its collateral, and while losses are determined.

PORTABILITY

- Under the portability model, if a clearing member defaults, clients can readily transfer their positions to another clearing member. But portability is not guaranteed. Clearing members will require the ability to review a prospective new client's portfolio of risk before taking it on in case it results in undesirable concentrations of exposure. This is a result of the fact that clearing members are liable to the CCP for performance by the client. Clearing members

take their clients' counterparty risk as well as the market risk represented by the client positions that they clear. If the client defaults, the clearing member will have to make up for the shortfall in the client account. That still leaves clients unsure they will be able to port their trades.

- In a period of market crisis and dislocation, portability may break down since viable clearing members may be forced to decline ported portfolios of systemically important institutions because of the funding burden and uncertainty associated with sizeable and fluctuating guaranty fund requirements. Seamless and timely portability is critically important in maintaining systemic integrity and any breakdown would result in mass liquidation and potential systemic risk.
    - With competing DCOs emerging and each looking to build market share, there may be commercial pressure to minimize the size of initial margin in order to mitigate the liquidity drain resulting from a mandatory centrally cleared environment and attract client business. To the extent initial margin levels are reduced through competitive pressure, guaranty funds and/or CCP contributions must be increased to maintain financial safeguards integrity. Accordingly, as initial margin levels are reduced, the possibility of client loss mutualization in the "baseline" waterfall model is increased. In addition, if the size of the guaranty fund grows excessively large, it will impact the portability of client positions in the case of a default. There will be little incentive for a clearing member to take over another clearing member's client risk if the funding burden is substantial as market conditions deteriorate.
- Pre-default portability is critically important in mitigating systemic risk because it allows the system to rebalance risk as the financial condition of individual clearing members deteriorates.
- One approach could require a transparent standard around how the guaranty fund is calculated and one that can be replicated by the individual clearing members in an acceptable timeframe and allocated or charged back to clients.

Q2 – "In view of the different options and models that may exist, is there any one option or model in particular that could usefully serve as a minimum requirement? Would it be possible to identify a specific approach to segregation and portability that could be defined as best practice?"

- The current US FCM model has worked well for many years for listed derivatives. The full physical segregation model highlighted above is likely too expensive and cumbersome to implement. The legal segregation with commingling model can be considered a compromise between the Full Segregation and Baseline model. CCPs and clearing members may adopt a range of these models to provide their clients with a broad array of options specific to their risk and costs thresholds. It would not be prudent to adopt a "one-size-fits-all" approach as each option has its own set of benefits, risks and costs with end clients, clearing members and CCP having differing views (in many cases) on each of these. Additionally, maintaining this flexibility provides market participants many combinations across market, geography or asset class to leverage economic benefits and optimize risk models.
- Global regulators should synchronize and standardize the financial safeguards packages of CCPs to ensure that the appropriate relationship between initial margin, guaranty fund and CCP contribution to the risk "waterfall" is enforced. Guidelines on the appropriate relationship between initial margin, guaranty fund and the CCP contribution in the design of financial safeguard packages should be established. To achieve balance in these elements,

there is a need to (1) enforce conformance with recommended guidelines on the appropriate relationship between initial margin, guaranty fund and the CCP contribution in the design of financial safeguard packages, (2) require DCOs to redesign the guaranty fund calculation process such that the requirements due to client clearing activity are transparent and may be replicated by market participants and (3) mandate that financial safeguards packages facilitate a "defaulter pays" model whereby individual counterparties' collateral contributions are sufficient to pay for their own risk and instances of mutualization are averted to the greatest extent possible.

Q3 – "Would it be helpful to distinguish between different types of clients, such as by the degree of tiering or by domestic or cross-border activity? Please explain."

- Distinguishing between different types of clients, such as by the degree of tiering or by domestic or cross-border activity, may be helpful especially if viewed in light of potential arbitrage and the associated legal constructs that may apply in terms of securities interests and ownership relating to margin segregation and portability.
- Distinguishing between different types of clients and the tiering of clients in terms of size and creditworthiness is a decision that should be taken by clearing members as part of the risk decision as to who they will clear for.
- Tiering could ultimately lead to a measure of client discrimination as those clients most able to fend for themselves or arrange for appropriate terms on their own would be able to achieve what they desire, taking the focus off of the mass of clients that may not benefit. Also, such tiering would introduce additional monitoring complexity for CCPs and clearing members.

Q4 – "Would it be helpful to distinguish between different types of products? If so, please explain why and how."

- Yes. Differing product characteristics result in potentially different risk management protocols. One decision is whether a particular product set or class should be risk managed separately from other products of the CCP.
- Distinguishing between different types of products may be beneficial specifically to achieve cross-margining and cross-netting benefits and the impact on margin segregation and portability.
- The most liquid products would logically be the easiest to port as they are broadly traded and hopefully dispersed among clearing members. Also, as we move down the road to CCPs offering an increased range of offsets for margin purposes, including across products they themselves do not clear, the ability to port would be impacted by the inclusion of cross-product netting benefits which will reduce the amount of margin available to port to a new clearer as well as potentially limiting the number of clearing members that can handle it. Accordingly, we do not believe that broad product distinctions will be practical, though very specific ones that are narrowly traded or cleared could be.

Q5 – "What are the existing legal constraints that limit segregation and portability?"

- Legal constraints that limit segregation and portability include several jurisdictional issues pertaining to perfecting security interests and ownership of securities. Additionally margin

and guaranty fund methodologies and rules applied by the various CCPs have an impact on segregation and portability.

- The main legal issues revolve around collateral, ensuring valid security interests and the ability to realize on them under different insolvency regimes. In addition there are regulatory issues. Regulators need to act in concert to ensure consistency of approach, especially as many clients and clearers will be dealing across multiple CCPs in multiple jurisdictions.

PRINCIPLES 18 TO 20: ACCESS AND INTEROPERABILITY

The following comments are specific to central counterparties and the risk implications of accessibility and interoperability. We view risk reduction as the primary objective of CCPs. The guiding principle behind our comments is the importance of reducing systemic risk while giving due consideration to competitive and economic implications.

PRINCIPLE 18: ACCESS AND PARTICIPATION REQUIREMENTS

We acknowledge that CPSS-IOSCO seek to permit fair and open access to CCPs by encouraging risk-based clearing membership criteria. We agree with this as a broad policy objective. We encourage the CPSS-IOSCO to carefully consider the multifaceted dimensions of risk management, specifically:

- Clearing member's ability to monitor and manage its credit risk

  Clearing members should demonstrate well-developed credit risk management practices, including initial credit review, ongoing credit surveillance and crisis management plans. Clearing members should have detailed credit risk policies and sufficient staff to effectively adhere to those policies.

- Clearing member's ability to monitor and manage market risk (its own and its clients')

  Clearing members should have both an analytical and practical knowledge of the products they clear. Analytical models are a necessary but not sufficient condition to market risk management. OTC products in particular can contain nuances that are not captured by standard risk models but are very well understood by the experienced traders of those products. Traders are able to spot market anomalies that models might miss. For example, the rates market experienced a recent shift when the LIBOR/ Fed Funds basis began to widen. Practitioners were able to identify the pricing implications of the shift and push forward new standards that better reflected the value of the contracts and by extension, the risk within them.

- Clearing member's ability to review near real time risk metrics

  In periods of market stress it is likely that exposures will move rapidly and credits will decline quickly. Clearing members should demonstrate the ability to update risk numbers on a near real time basis so that they can appropriately react to such market conditions.

- CCP's ability to effectively analyze capital adequacy of its clearing members (e.g., "Call Risk")

  CCPs need to carefully consider the risks introduced by their participants and should regularly compare those risks against each participant's available capital. In addition, due consideration should be given to the possibility/likelihood that the same minimum capital standard is used to support a participant's clearing membership across several CCPs. A participant's obligations at a single CCP may be fully supported by available capital but may be strained across multiple CCPs in a distressed scenario. While best practice would be for the CCP to perform regular stress tests on each participant's house and client positions (and to the extent possible these tests should include non cleared products as well) and compare those against reported capital, such analysis leaves out such clearing member's contingent liabilities at all CCPs for which it holds a clearing membership.

  At this time, while applauding the principle of fair and open access, we do not believe a single CCP is in the position to perform such a capital analysis of its clearing members. Specifically, it would need to be able to ascertain what residual capital is available to it that is not already committed to other CCPs (or other risk enterprises), under extreme but plausible market conditions. Until a CCP can undertake such an analysis, we believe it would be imprudent for a CCP to look to a simple but available capital measure as a substitute for this analysis, and recommend that until that time, a CCP maintain high requirements for capital (in terms of the simple but available measure), putting safety ahead of open access concerns. We recommend that CCPs maintain high yet proportionate requirements for capital that address the legitimate need for safety without creating unreasonable barriers for qualified market participants.

PRINCIPLE 19: TIERED PARTICIPATION ARRANGEMENTS

We agree with CPSS-IOSCO's position that tiered participation needs to be sufficiently transparent to adequately reduce systemic risk.

- As a foundation for tiered agreements, each direct participant needs to be responsible for the financial performance of its indirect participants. Sufficient diligence needs to be performed by both the direct participant and the CCP to establish there are adequate financial resources in the chain to support expected trading activity. This will require establishing information sharing arrangements among all the parties in the risk chain.

- Similar to the discussion regarding each participant's capital adequacy, each direct participant should be required to regularly stress test its indirect participants' positions. Stress market conditions will give rise to unforeseen capital needs and in order to contain any resulting disruptions, each point in the financial chain should regularly test its strength. If stress tests reveal a potential weakness then a CCP's direct participants should have ways to reduce risk, either by requiring additional margin or risk reduction.

PRINCIPLE 20: FMI LINKS

Links among and between FMIs are necessary for an efficient financial system. We limit our comments to CCP–CCP links and note the following:

- Links between CCPs have the potential to cloud the risk picture in a financial system and we encourage CPSS and IOSCO to consider carefully these arrangements. The answer may be different depending on the type of assets cleared. Interoperability may be appropriate in some markets, such as cash securities, but not in others. Financial links have the potential to enhance margin efficiency but can also increase risk in a default scenario. This can be addressed by developing strict risk management standards that are applied consistently by international regulators, and by requiring CCPs to assess their operations against those benchmarks and report progress to their regulators. CPSS-IOSCO would be ideally placed to develop those standards. Careful consideration needs to be given to the legal framework governing enforceability of collateral posted by one CCP to another, default management, close-out and bankruptcy. The legal framework needs to support the contractual obligations between the CCPs and between each CCP and its clearing members to prevent loopholes from being exploited in a default.

- Operational and legal links should be encouraged to reduce friction costs and reduce legal uncertainties with respect to information sharing and default management. To the extent possible, there should be processes and systems, backed by a sound legal framework, to allow for seamless transfer of trades from one CCP to another. This will help incentivize CCPs to remain responsive to the market and provide greater flexibility for both direct and indirect participants. Reducing switching costs in this manner will be a key element to a fair and sound market for CCP services.

- Informational links will be paramount to maintaining a sound financial system. Transparency will be required for each CCP to understand the risks held at other CCPs. Sharing position data across CCPs will help identify situations where there is particular risk factor concentration and then allow the CCP to ascertain its participants' ability to support that risk.

- Though challenging to execute, interoperability will help in achieving a competitive marketplace and allowing prudent risk management for direct and indirect participants' exposure to CCPs.

    - In order to keep CCPs competitive and responsive to market demands, clearing members will need to have alternative venues to clear their trades. For competing CCPs to be viable, switching costs need to be minimized. Interoperability that allows relatively seamless transfer of positions to competing CCPs is key to accomplishing this. Specifically there needs to be a sufficient legal framework established that enables one CCP to accept the trades of another CCP at a clearing member's request. The framework needs to specifically allow for position transfer instead of requiring trades to be closed out and rebooked. Any tax issues that could arise from cross boarder CCP switches need to be adequately addressed.

    - Interoperability will not only serve to enable rational market forces, but will also allow clearing members to balance their risks across CCPs. Since the choice of CCP rests with the client and not the dealer, a dealer's swap book will likely be cleared in more than one CCP (it is highly unlikely that all clients will chose the same CCP). Moreover,

while the market risk of the dealer's book is nearly flat in the aggregate, the risk at a given CCP will be a function of its client's clearing preference. This has the potential to create a much more directional or risky book at each CCP, resulting in calls for considerably more margin at each CCP (assuming no cross-margining arrangement between such CCPs).

For example, one can imagine some very large directional clients that in choosing to clear at one CCP cause the swap book of the executing dealer to be very directional in terms of just the swaps that clear at that CCP. The remainder of the book will be very directional too, but in the opposite direction. If the entire book was to clear at one CCP, it might require a margin of $500mm; when split into two directional books this could result in a requirement in the range of $10B at each CCP or $20B in total. This additional collateral requirement presents a considerable additional business cost.

Without interoperability between the CCPs to mitigate this call for extra margin collateral, and to manage their consequent exposure to the CCPs themselves, dealers will be bound to manage their swap books by CCP, leading to a segmentation of the market. Dealers will be motivated to make different quotes for the same product depending on where it clears. Market liquidity will drop with this product segmentation. As an example, if US GSEs wish to pay fixed at a US CCP, and European pension funds wish to receive fixed, intermediating dealers may provide a good market to both. However, once these client entities clear their swaps, the dealers, to manage their capital cost and exposure to CCPs, will make markets at higher rates to clients wishing to clear in the US CCP(s), and lower rates for clients wishing to clear in a European CCP. [7]

We note that vertical integration without open access and without interoperability results in market participants being captive of exchange/CCP integrated structures at the expense of competition and open access.

In conclusion, enabling interoperability would allow the dealers to balance their risks across CCPs. However there is no one-size-fits-all solution and the answers may be different depending on each asset class. In any case, coordination between regulators and the strict application of prudential regulation and uniform risk management standards are required so as to prevent a race to the bottom and the deterioration of risk management standards between CCPs. The analysis set out above is focused on interoperability from the perspective of a dealer. It is relevant to note that clients may also benefit from having the flexibility to transfer cleared positions from one CCP to another.

[7] This analysis is focused on a dealer's book because in the US under the Dodd-Frank Act a client can request a swap to be cleared on a specific CCP. Nevertheless, a client, in optimizing its exposures, may well want to transfer one or more swaps from one CCP to another.

ADDITIONAL COMMENTS: TRADE DATA REPOSITORIES

In addition to the comments set out above, and in reference to page 9 of the Report we agree with the Committee's view that the "the continuous availability, reliability, and accuracy of such data is critical". There is a significant risk that without a single trade repository per asset class, regulators will only be able to achieve a complete view of the market if they have established the means to aggregate data across multiple repositories. For example, a proliferation of multiple trade repositories per asset will present very significant challenges for the industry to deliver accurate data analysis to supervisors.

From the industry's perspective, a single global trade repository per asset class, run on a cost-recovery basis, would be the most efficient and cost effective model for the industry to implement, and would be able to provide regulators with the most complete view of the OTC derivatives markets. Without a single trade repository per asset class regulators will only be able to achieve a complete view of the market if they have established the means to aggregate data across multiple repositories.