390 Greenwich Street
New York, NY 10013

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Mr. Daniel Heller
Head of Secretariat
CPSS
Bank for International Settlements
4002 Basel
Switzerland
Email: cpss@bis.org

Mr. Greg Tanzer
Secretary General
IOSCO
Calle Oquendo 12
28006 Madrid
Spain
Email: fmi@iosco.org

Dear Messrs. Heller and Tanzer:

Please find attached the response of Citigroup to the CPSS-IOSCO consultative report, *Principles for Financial Market Infrastructures*.

We appreciate the opportunity to comment on the important financial market infrastructure issues addressed in this report, and we are available at your convenience to answer questions or provide clarifications to our comments.

Yours sincerely,

Gregory E. Fell
Managing Director
Payments Systems Risk Management (PSRM)
NEW YORK (212) 816-2250

eMail: Gregory.e.fell@citi.com

Comments of Citigroup on the CPSS-IOSCO Consultative Report on "Principles for Financial Market Infrastructures"

Principle 1 – Legal Basis

- Applicable laws governing the rights and interests in a financial instrument should be based on the specific legal jurisdiction of the account where the financial instrument is registered (the so-called Place of the Relevant Intermediary Approach, or PRIMA).

Principle 2 – Governance

- FMIs should be required to establish risk committees.
- The composition of the Risk Committee should adequately reflect the risks borne by the FMI participants (e.g. clearing members).
- For CCPs, the risk committee should be composed of a majority of members whose capital is at risk through loss mutualization, irrespective of whether members have representatives on the CCP's Board of Directors.
- 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.
- The risk committee of an FMI should establish a risk tolerance statement. The statement should be vetted by members and the FMI's Board of Directors. Risk tolerance statements should set out the nature of the back tests and stress tests being performed, the assumptions and methodologies used and the extent of mutualized loss exposure that members would face in the event that stress scenarios occur.
- FMIs should be required to obtain regulatory approval of specific risk methodologies and internal risk management processes as part of their governance structure.

Principle 3- Framework for Comprehensive Management of Risk:

- Principle 3 does not specifically require FMIs to provide for a capped liability structure so that members can measure and manage their risks to the FMI/CCP. Only a capped liability structure can provide each member with the ability and incentives to manage its counterparty exposure to other members of the FMI and the FMI itself.
- In the event that a CCP's total financial resources are depleted, clearing members should not be subject to a legal obligation to finance the CCP with unlimited liability.
- The CPSS-IOSCO Principles should recommend clearly that FMIs/CCPs should implement a capped liability default management structure that limits potential clearing members' losses in a way to be measured and managed.
- 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.
- The tools to manage the risk that a FMI, a CCP in particular, has to its members are under the control of the FMI/CCP. Margin, collateral, assessment powers and the timing and

frequency of applying the tools rest with the CCP. Uncapped liability of clearing members introduces systemic risk and potential “moral hazard”, as the CCPs resources are only limited by the total capital and resources of all the members; what is sometimes referred to as “uncapped liability”, “good to the last drop”, “last man standing”. Uncapped liability across a member group of large financial institutions in a crisis scenario would result in systemic risk by increasing the likelihood of a cascading series of defaults across multiple members.

- In the case of CCPs, exposure of non-defaulting clearing members to guaranty fund assessments by the CCP should be capped for 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 subjects the sequential defaults to the same overall cap.

Principle 4 – Credit Risk

- Financial safeguard coverage of a FMI should be set at a level where 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, taking into account the FMI membership base and the specific risks associated with the products it clears.
- A FMI’s financial safeguards must be determined by robust back and stress testing, incorporating risk factors within each member’s portfolio, using the worst historical case for each factor and summing the results across products (assuming no correlation within a cross-asset portfolio) and adding a sufficient cushion to account for unobserved events.
- A ”defaulter pays” model in which all participants (both members and indirect participants) provide sufficient resources to be able to cover, with a high confidence factor, risks associated with their position in extreme but plausible circumstances.
- There should be an appropriate balance between a member’s collateral, which protects the FMI against a default by the member who posts it, and guarantee fund contributions, which protect the FMI against a potential default by any member.
- For a CCP, 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.
- There needs to be 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 the Rules, should be subject to an appropriate haircut and should not count for a significant portion of a FMI’s total financial resources package.
- It is important for FMIs to establish rigorous back and stress tests (which have effective regulatory oversight), sufficient risk methodology disclosure and continuous industry review of risk standards. An 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.

- 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.
- The risk committee of each FMI should be responsible for calculating the appropriate coverage level, and regulators would be responsible for monitoring the determination by each FMI. At a minimum the risk factors to be taken into consideration are: price volatility of products cleared, liquidation/close-out period of products cleared, and correlation of default probability among members.

Principle 5 – Collateral

- There is a need for the dynamic adjustment of collateral requirements, in accordance with changes in underlying risks and reducing pro-cyclical impacts.
- This principle should provide more detail as to what makes a collateral type low risk, using objective parameters such as risk ratings, trading volumes and price volatility.
- There should be limitations on the circumstances in which CCPs have the ability to re-hypothecate/re-use clearing member securities collateral. Other than situations where the provision of collateral to central banks is required for the purpose of day to day settlements of cash instruments. 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 members default, and if immediately liquidating the collateral would lead to severe asset value depreciation.

Principle 6- Margin

- Clarification and more detail are needed to cover cross margining principles.
- FMIs must work with their members to develop effective margin and stress testing methodologies for the given market. Due to the loss sharing feature of CCPs in particular, clearing members undertake to absorb some or all of the losses experienced by a CCP.
- FMIs must provide their members with full transparency over their risk margin models, as well as stress test and back test methodologies and internal credit review processes. FMIs should provide copies of their financial models to members to facilitate independent testing and replication, and to include tools that can be shared with clients that are not members but have access to clearing through clearing members. Rigorous, transparent back and stress test standards, should be subject to strict oversight by prudential and product regulators.
- For CCPs, 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. The appropriate liquidation period should depend upon the specific characteristics of the underlying instruments being cleared and be updated as needed to reflect market changes.

- 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.
    - 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 or limit their activity.

Principle 7: Liquidity Risk

- Collateral requirements demanded by other regulators or monetary policies may reduce the availability of collateral. The requirement to establish financial resources to cover a minimum of 2 failed participants (instead of one) may have unintended consequences such as delaying outward payments that would affect operational efficiency or create additional risks. However, minimum one cover should only be effective subject to the following being achieved:
    1. Participants under the same group should be considered as one participant. Therefore, 'participant and affiliates' is not sufficiently explicit.
    2. To achieve the above, FMIs must be able to measure and control the highest intra-day credit risk.
    3. Robust default procedures (including 2 or more participants failing) should be put in place to allow implementation without delay.
- Completion of final settlement by the end of the FMI's business day on the value date is essential. Deferral of final settlement to the next business day can create credit and liquidity pressures and potentially systemic risk.

Principle 8: Settlement Finality

- Settlement Finality (SF) is a major component of systemic stability. Therefore it is important to have a common definition of SF on a global basis.
- In addition to the end of day settlement, consideration should be given to target settlement intraday, if not real-time.
- As it relates to FMI Links and Interoperability, there should only be one system providing SF for any transaction.

Principle 9: Money Settlements

- FMIs offering banking-type services should be required to hold a banking license and be subject to prudential supervision to ensure level playing field. In any event, settlement in central bank money should be preferred over commercial bank money.

Principle 11: Central Securities Depositories

- There needs to be a clear distinction between core (custody and settlement services) and ancillary (corporate actions, issuer services and investor CSD) functions of CSDs, to prevent high-risk services compromising the stability of the infrastructure (as per the proposed European CSD legislation). From our perspective, the key elements of focus in the CSD legislation should be:

  1. Tight definition of a CSD (provision of both core services, namely (i) combined central safekeeping/notary service and (ii) central securities settlement).
  2. Ring-fencing of core services and ancillary services (corporate actions, issuer services and investor CSD; but only investor CSD services to be settled in central bank money).
  3. CSDs can offer additional services, but only through a separate legal entity.
  4. The separate legal entity would be out of scope of the CSD legislation, so that there would not be any restrictions on its activities (except those imposed by existing regulation (banking licenses etc)
  5. As account providers, CSDs would fall within the scope of the SLD.
  6. CSDs would be required to be designated under the Settlement Finality Directive (SFD).
  7. Strong support for elimination of Barrier 9, and for harmonization work.

Principle 13: Participant – default rules and procedures

- Needs to guarantee adoption of clear rules and conditions for the use of available resources (waterfall mechanisms).

Principle 14: Segregation and Portability

- It is important to segregate indirect participants' positions and collateral to allow safe and effective holding and transfer (portability) of assets, thus reducing the impact of the failure of a direct participant.
- Under a strong segregation and portability model, if a clearing member defaults, their clients can readily transfer their positions to another clearing member. But portability is not guaranteed. Clearing members 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 because clearing members are liable to the CCP for performance by the client. Clearing members take on 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. This arrangement 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.
- Portability is critically important in maintaining systemic integrity and any breakdown could result in mass liquidation of positions in a stress environment 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. 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 and risk 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.
- There should be a transparent methodology around the how guaranty fund is calculated that can be replicated by the individual clearing members in an acceptable timeframe and allocated or charged back to clients.
- 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.
- 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 dispersed among clearing members.
- Legal constraints that limit segregation and portability include several jurisdictional issues pertaining to perfecting security interests and ownership of securities. In addition, 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 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.

Principle 16: Custody and investment risk

- Need for a clearer definition of investment strategy criteria and for strict risk management over such investments. Collateral assets should only be reinvested pursuant to strict risk management standards and regulatory oversight. Regulators should ensure that collateral be protected on a global scale, irrespective of the jurisdiction where they are posted.
- FMIs should ensure that they hold their assets at strongly regulated entities and should consider their overall risk exposure to custodian banks. Diversification should not be the overriding factor in deciding with which custodian(s) an FMI should place its assets. The most important consideration should be the quality and robustness of the custodian itself.

Principle 17: Operational risk

- Need for robust operational risk-management frameworks, clear classification of operational risks and full disclosure to participants of any operational failure. A robust operational risk management framework would allow for easy identification, monitoring and prevention of plausible risks. To facilitate this, a clear classification of the operational risks and a business continuity plan are necessary. When operational failures occur, the FMI should inform participants so that they can take appropriate measures to deal with the situation as soon as possible. Lastly, establishment of regular testing provisions is crucial to manage operational risks.

Principle 18: Access and Participation Requirements

- We acknowledge that CPSS and 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. The key elements are:
    - 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 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 well understood by the experienced traders of those products.
- 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 react to such market conditions.
- While outsourcing of some clearing member criteria to third parties may be appropriate, we do not believe that core risk management functions should be outsourced to unaffiliated third parties because such arrangements may not perform as anticipated during periods of market dislocation.
- 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. CCPs should have an ongoing obligation to monitor these risks against their member's capital.

Principle 19: Tiered participation arrangements

- Principle 19 is difficult to implement, as FMIs do not typically have sufficient detailed knowledge of clients' customers (indirect participants), hence there is need for more clarity here. Nevertheless, involving the regulators to supervise the setting of the participation criteria may help manage risks arising from tiered participation.
- Tiered participation needs to be sufficiently transparent to adequately reduce systemic risk.

- 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 to support expected trading activity.
- Each direct participant should be required to regularly stress test its indirect participants' positions. Stress market conditions will give rise to unforeseen capital needs. 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

- Concerns over increased concentration risks; links to be established based on significant user demand, as an excessive number of links may create unnecessary complexities and increase systemic risks; need for precise clarity over settlement finality issues across such interoperable links.
- Links between CCPs have the potential to create systemic risk. Requirements 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.
- FMI 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.
- 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 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. Transparency will be required for each CCP to understand the risks held at other CCPs.
- Interoperability will help in achieving a competitive marketplace and allowing prudent risk management for direct and indirect participants' exposure to CCPs.

Principle 21: Efficiency and effectiveness

- The report should address the degree of responsibility that market participants have for the integrity and accuracy of data once it has submitted to the Trade Repository (TR). If market participants do have on-going responsibility, it should be limited to correcting errors or corrupted data that the market participant "knows" or "becomes aware" is inaccurate.

Principle 23: Disclosure of rules and key procedures

- The governance structure of the FMI should require a high standard for the alteration of its rules, procedures or contracts. In addition, the discretion of the FMI to make these changes should be limited and should look to align such revisions with the interests of its major stakeholders (subject to regulatory approval). It is not enough that the process is "fully disclosed" – market participants have an interest in clear, comprehensible rule sets that are applied consistently in conformity with the expectations that participants had when they first joined the FMI.

Principle 24: Disclosure of market data

- The drafting should be expanded to explicitly recommend that regulators and legislators coordinate internationally to revise privacy legislation or regulations that would thwart the ability of TRs to disclose transaction-level data to appropriate regulatory authorities, or to exempt TRs from such restrictions. These restrictions (typically coming from the EU or Asia) will make it impossible for TRs (and market participants) to be compliant with requirements on the disclosure of customer data without exposing themselves to potential regulatory action and uncertain liabilities.