



*Regulatory Policy Insights*

## **A BALANCING ACT**

Aligning incentives through financial resources  
for effective CCP resilience, recovery and resolution

**J.P.Morgan**

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# Executive Summary

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Derivatives market reforms<sup>1</sup>, including mandatory clearing and non-cleared derivative margin rules, have significantly increased the volume of transactions cleared by central counterparties (CCPs). While this has reduced risk in the financial system through netting and collateralization, credit and operational risks have become increasingly concentrated in a small number of large, globally interconnected CCPs, creating a new central point of potential systemic failure.

Much progress has been made since the publication of our 2014 white paper “[What Is the Resolution Plan for CCPs?](#)” Regulators, with input from CCPs, their members and other market participants, have worked together to develop and strengthen a global framework and limit the potential for future pro-cyclical or destabilizing behavior. As this work continues, we believe there are still areas that require additional analysis and action to ensure a continuum of capital and financial resources across CCP resilience, recovery and resolution.

The inherent tension stemming from the CCP’s role as a market utility that can mutualize potential losses among its members and its commercial objectives and duty to shareholders creates a misalignment of incentives. This is exacerbated by the fact that, for the majority of cleared products, a limited number of CCPs clear those products, and participants must accept the terms of membership set by each of those CCPs.

Thoughtful planning and globally consistent standards for financial safeguards and capital requirements will contribute to the strength of the clearing infrastructure, promoting confidence and providing transparency to all participants in the event of severe market stress.

We believe that risk management, governance and oversight models of CCPs must be enhanced to keep pace with their growing systemic importance. This includes a clear understanding of the continuum of resources available for the CCP to manage stress scenarios. At the same time, incentives must be properly aligned so that clearing members and their shareholders do not serve as a backstop for CCPs that are for-profit institutions.

To achieve this balance, this paper sets forth our recommendations for the financial resources – including CCPs’ own-funds capital – that are available to CCPs during resilience, recovery and resolution and for recapitalization. It is our hope that these proposals inform ongoing regulatory and policy initiatives at the FSB<sup>2</sup> and CPMI-IOSCO level, as well as at an individual jurisdictional level, in order to provide the market with clarity during extreme periods of stress.

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<sup>1</sup> See, for example, [G20 Leaders’ Statement](#), The Pittsburgh Summit, Sept. 24-25, 2009, p.9, and FSB, [Implementing OTC Derivatives Market Reforms](#), Oct. 25, 2010.

<sup>2</sup> The Financial Stability Board (FSB), as mandated by the G20, is an international coordinating body of central banks and national finance authorities that monitors and makes recommendations to promote international financial stability. The FSB’s work in progress on CCPs focuses on developing global standards to guide individual resolution authorities as to how to resolve a CCP should it fail.

## Proposals for a globally consistent framework of financial safeguards and capital requirements

### Resilience

- Funded financial resources should cover, at a minimum, the default of the two clearing members<sup>3</sup> to which the CCP has the largest exposure. Individual CCP coverage should be based on that CCP's unique member risk profile.<sup>4</sup>
- CCP's own-funds, first-tranche contribution, or "skin in the game," should be right-sized and scale with the level of risk to ensure alignment of incentives.
- CCP's own-funds capital should be right-sized at an appropriate level to absorb non-default losses and to ensure that CCPs can invest adequately to build up appropriate cyber defenses, among other things.
- Regulators should undertake quantitative impact studies to model the optimal level of a CCP's own-funds capital to cover default and non-default losses.

### Recovery

- Member assessments should be predictable and capped, over a reasonable period, at an amount equal to members' respective default fund contributions.
- Residual losses that arise in extreme tail events should be covered by the entirety of the CCP's own-funds, right-sized capital to ensure alignment of incentives between for-profit CCPs and their members.

### Resolution

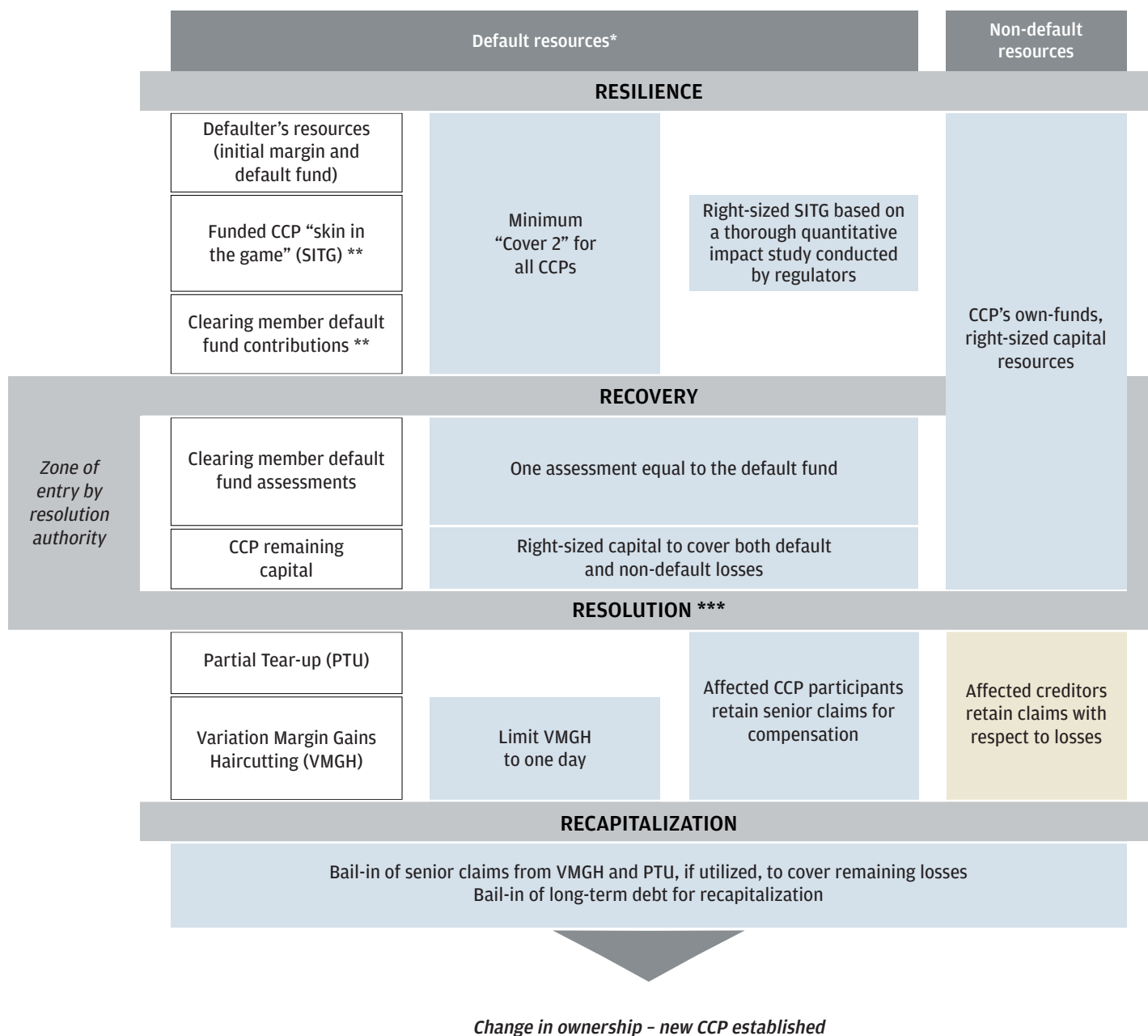
- Authorities should have the flexibility to commence resolution when there are sufficient resources remaining for loss absorption.
- As a last resort, once a CCP's right-sized capital has been fully utilized, authorities could use Variation Margin Gains Haircutting (VMGH) for a single day. This interim measure averts payment default and allows time for position rebalancing and recapitalization.
- If auctions or on-exchange liquidations by the CCP have failed to return the CCP to a matched book, Partial Tear-ups (PTU) should be the only other rebalancing tool available to the resolution authority, but it should be applied in the most limited way.
- Authorities must have access to reliable resources to ensure recapitalization and protect against future losses, without relying on either public funds or clearing members as a backstop. One option would be to require CCPs or their holding companies to issue long-term debt to unaffiliated institutional investors that could be bailed in to facilitate recapitalization.

*See a diagram of our recommendations for CCP financial safeguards and capital requirements on page 3.*

<sup>3</sup> The [Principles for Financial Market Infrastructures](#) published in April 2012 by the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions (CPMI-IOSCO) currently require a minimum coverage or amount of financial resources for potential default by the single largest member, also known as Cover 1, and requires Cover 2 only for CCPs that are involved in a more complex risk profile or are systemically important in multiple jurisdictions.

<sup>4</sup> See David Murphy and Paul Nahai-Williamson, "Dear Prudence, won't you come out to play? Approaches to the analysis of central counterparty default fund adequacy" in [Bank of England's Financial Stability Paper No. 30](#) - October 2014.

## J.P. Morgan’s recommendations: CCP financial safeguards and capital requirements



KEY	
	= J.P. Morgan recommendations
	= Tools typically used by CCPs
	= Legal recourse for creditors

\* Our recommendations reflect the full range of default resources and tools that we believe should be available to CCPs and/or their respective regulatory and/or resolution authorities.

\*\* Assuming that the CCP recovers, at the end of the default management process covering sequential defaults over a reasonable period, the CCP and non-defaulting members would be expected to replenish their respective SITG and default fund contributions.

\*\*\* Limited use of PTU may be permitted in recovery but only at the direction and control of the CCP’s regulatory authority. However, use of VMGH should be permissible only in resolution, and only after CCP’s remaining capital has been fully utilized.

# CCP resilience, recovery, resolution and recapitalization

## Resilience

A CCP's capital and financial safeguards should be at a level that ensures its ability to withstand significant stress events and maintain continuity of operations, whether due to either clearing member default(s) or non-default event(s), such as cyberattack or fraud.

### Scenario 1: Default losses

A key area of CCP risk management is to assure the adequacy of financial safeguards to cover a member default. In an extreme market event, it is likely that more than one clearing member would default simultaneously or sequentially. Therefore, we recommend that funded financial resources should be subject to a universal minimum "Cover 2" requirement, with coverage appropriately sized based on the risk distribution of each CCP's membership in consultation with its respective regulators. Cover 2 is in place for some CCPs and is required under some local regulations; however, it is not applied globally or consistently today.

While many CCPs currently maintain own-funds capital in the form of "skin in the game" (SITG) to cover default losses prior to utilization of the member default fund, there are no global regulatory standards for the amount of these funds. Absent guidance, most CCP contributions tend to be relatively modest compared with the size of member default funds. We propose that CCPs' own-funds, first-tranche contribution be meaningful, right-sized and scale with the level of risk to ensure alignment of incentives between the CCP and its members.<sup>5</sup>

### Scenario 2: Non-default losses

Unlike default losses, non-default losses (e.g., general business, operational, custody and investment losses) must be borne by CCPs and their shareholders. It is unclear, however, whether CCPs are adequately capitalized to absorb non-default losses, since there are no globally consistent and comprehensive capital standards. The absence of such benchmarks limits industry confidence in the financial and operational resilience of CCPs and their ability to withstand a major non-default loss.

Furthermore, in a non-default stress event, the interconnectedness of CCPs and their members creates the potential to transmit risk, with severe stress at one CCP cascading to other CCPs and their members, settlement banks, custodians, credit providers such as banks, and other financial market infrastructures. To minimize this risk, we believe that CCPs' minimum own-funds capital should be at an appropriate level to absorb non-default losses. This will ensure

### A closer look: CCP ownership structures

A CCP's owners and management make key decisions affecting the risk profile of its membership with respect to the products that can be cleared, the members who participate and the risk management framework used, including minimum margin standards, acceptable collateral and stress testing. CCPs also select vendors and deploy technology that impacts all participants, given their dependency on these critical infrastructures.

CCPs began as member-owned utilities. The risk of default losses was fully mutualized among the member-owners through default funds and additional assessments, creating an alignment of incentives between the CCP's owners and its members. Demutualization of financial exchanges and clearinghouses began in the early 1990s and has been described as "incomplete," in that ownership, but not the risk of default losses, was demutualized.\* Most global CCPs are now subsidiaries of publicly owned holding companies. As such, they face competitive pressure to maximize shareholder returns, even as the risk of default losses beyond the defaulter's collateral remains largely mutualized among CCP members.

This incomplete demutualization model creates an imbalance by separating the rewards of ownership from its risks. This gives rise to a potential conflict of interest due to misalignment of risk-management incentives. Furthermore, the implementation of conservative non-cleared derivative margin rules creates an incentive to clear less liquid instruments that may be harder to close out in a default scenario.

The combination of partial demutualization and industry motivation to clear more non-mandated products amplifies the unique risks created by CCP ownership structures. CCPs' financial safeguards and own-funds capital should, therefore, be evaluated for adequacy in order to ensure that those who reap the rewards also bear the risk of loss.

\* Robert T. Cox and Robert S. Steigerwald, "Incomplete demutualization" and financial market infrastructure: central counterparty ownership and governance after the crisis of 2008-9, *Journal of Financial Market Infrastructures* 4(3), January 2016, at 25-38.

<sup>5</sup> In our 2014 paper, we proposed that CCP SITG should equal the greater of 10% of the default fund or the largest single clearing member's contribution.

that CCPs are adequately resourced to support, among other critical priorities, the significant resources needed to build and maintain effective cyber defenses.

In order to evaluate the optimal amount of capital required to be held by CCPs with regard to both default and non-default losses, we encourage regulators to conduct quantitative impact studies and continue to engage with CCPs on potential solutions.

## Recovery

CCP resilience and governance are critical and should continue to be the primary areas of focus, but they may not be sufficient in certain cases. A CCP would enter recovery if funded resources, including member-funded default funds, are not sufficient to cover losses.

In a default scenario, if funded resources are exhausted, most CCPs would look to non-defaulting members to provide additional loss absorption by means of assessments. Member assessments should be predictable and capped, over a reasonable period, at an amount equal to members' respective default fund contributions. This standard should be applied regardless of the number of simultaneous or sequential defaults. Presuming funded resources are sufficient to cover, at a minimum, the default of the two clearing members to which the CCP has the largest exposures, this would address the theoretical default of approximately the four clearing members<sup>6</sup> to which the CCP has the largest exposure. That would typically account for approximately 40% of the market<sup>7</sup> for several of the largest derivatives CCPs. Having a globally consistent, transparent and well understood assessment standard would provide market clarity and mitigate performance and liquidity risk in times of stress.

Further calls on members for assessments, beyond the capped amount described above, would be pro-cyclical and destabilizing. We believe that the entirety of CCP right-sized, own-funds capital should be used to cover residual losses that arise in extreme tail events in order to ensure alignment of incentives.<sup>8</sup>

## Resolution

Resolution authorities must have the flexibility to commence resolution early enough, while there are still sufficient resources available to absorb remaining losses and ensure continuity of critical functions. They should enter either at the point when funded default fund contributions are exhausted or soon thereafter, when it is clear that funds from assessments may themselves be insufficient.

Resolution tools such as VMGH and PTU should be used only in the most limited way because even anticipation of their use during any stage could incentivize a rapid closeout of positions, speeding up exits from the CCP and further destabilizing the market.

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<sup>6</sup> The assessment may not fully cover the third and fourth largest members in some cases, as the defaulting members would not be contributing to the assessments.

<sup>7</sup> Please refer to disclosures on concentration by Initial Margin (IM) (disclosure no. 18.3) made by Chicago Mercantile Exchange Inc. (CME), ICE Clear Credit LLC, LCH Clearnet SA, Japan Securities Clearing Corporation, Singapore Exchange Derivatives Clearing Ltd., ASX Clear (Futures) Pty Ltd., and ASX Clear Pty Ltd. for both listed derivatives and OTC segments as of Dec. 2016 pursuant to "[Public quantitative disclosure standards for central counterparties](#)" set by CPMI-IOSCO in February 2015. We have conservatively assumed an equal IM distribution among the five largest members, but concentration among the top four could be much higher than 40%.

<sup>8</sup> A scenario in which losses exceed those incurred by the default of approximately the four largest clearing members, or the equivalent of that risk concentrated among many smaller members, would be an extraordinary tail event.

## Limited use of Variation Margin Gains Haircuts

The resolution authority will need to have sufficient funds available to address cash shortfalls resulting from a defaulter's failure to meet variation margin calls. As a last resort, once a CCP's right-sized, own-funds capital has been fully utilized, we believe that the resolution authority could use VMGH<sup>9</sup> to avert payment default, provide resources for loss absorption and allow time for position rebalancing.

However, we believe that VMGH should not be permitted for more than one day and should be structured as a payment suspension with affected participants retaining claims for deferred payment. These claims would be senior to those of the CCP's shareholders in the statutory priority of creditors, and could be bailed in as, or exchanged for, equity (common or preferred) in the new or resolved CCP.

## Use of Partial Tear-up

If auctions or on-exchange liquidations by the CCP have failed to return the CCP to a matched book, PTU should be the only other rebalancing tool available to the resolution authority, but it should be applied in the most limited way. Of all the possible tools,<sup>10</sup> we believe that PTU would be the least disruptive to the market and should be used on the day that the resolution authority steps in.

Although effective in terminating the remaining positions of the defaulting member, PTU also affects the corresponding offsetting positions of non-defaulting members and/or their clients. Those non-defaulting participants could suffer losses in the form of potentially significant replacement costs; therefore, the price for the tear-up of any transaction should be as close as possible to its replacement cost or fair market value, bearing in mind the difficulty of establishing a fair market price during a period of illiquidity. Thus, appropriate price discovery mechanisms using objective criteria need to be established *ex ante*.<sup>11</sup>

If there are insufficient funds available in the default waterfall (including the CCP's right-sized, own-funds capital) to pay in full the termination amounts due to participants whose positions are torn up, then the affected participants should retain claims for the deficiency. These claims would be senior to those of the CCP's shareholders in the statutory priority of creditors, and could be bailed in as, or exchanged for, equity (common or preferred) in the new or resolved CCP.

## A closer look: Variation Margin Gains Haircuts

In response to a CPMI-IOSCO requirement that a CCP establish explicit rules that address fully any credit losses it may face as a result of participant default,\* several major global derivatives CCPs have implemented VMGH as a recovery tool.

A CCP would engage in VMGH when member assessments are fully utilized and it had no remaining cash available to meet its payment obligations. VMGH would permit the CCP to simply extinguish its obligation to pay some, or all, of the variation margin it would otherwise have to transfer based on member and client positions. As a consequence, end users who expected cash payments would not receive them. This would have knock-on destabilizing effects in an already distressed market.

By extinguishing its obligation to transfer variation margin, the CCP would prevent its payment default and insolvency. This mechanism would be comparable to a bank being allowed to haircut its depositors in order to avoid its own insolvency and thereby protect its equity, an action we would not support. Similarly, use of VMGH could be viewed as forcing participants to support a CCP when they no longer have confidence in its management. This could increase participant flight risk, thereby undermining the prospects of a successful recovery.

VMGH was conceived as a response to the need to ensure continuity of operations at a time when there were no effective CCP resolution regimes in place. However, with resolution regimes soon to be established, we believe that VMGH should no longer be permitted in recovery, and should be reserved for one-time use by the resolution authority.

\*Refer to Principle 4, Key Consideration 7 of *Principles for Financial Market Infrastructures* published by CPMI-IOSCO in April 2012.

<sup>9</sup> VMGH should not be used with respect to certain cash products, including repo transactions where marking to market serves to mitigate counterparty credit risk and does not represent the potential economic gain that could be realized on the trade.

<sup>10</sup> For more information on recovery tools, see [CPMI-IOSCO 2014 Report on tools for recovery of financial market infrastructures](#)

<sup>11</sup> PTU may be permitted in recovery but only as directed by and under the supervision of the CCP's regulatory authority. The CCP on its own should not be determining the price for a tear-up or the portfolio of trades to be torn up.



## Recapitalization

Authorities must have access to reliable resources to ensure recapitalization without relying on either public funds or clearing members and their shareholders as a recapitalization backstop. Recapitalization resources must include CCP's right-sized own-funds capital to cover SITG and non-default losses. At the time of resolution, continuing clearing members would replenish a resized default fund.

### Funding of recapitalization resources

A regulatory framework for recapitalization is needed to ensure that CCPs can remain open for business and continue to provide critical services to the market. There is currently no regulatory standard in place requiring a CCP or its parent to maintain sufficient resources for recapitalization. If recapitalization is required during resolution, associated liquidity and funding costs are likely to be significantly higher than today and might not be readily available. Therefore, it would be preferable to raise these resources up front and address pricing structures and operating models in the current, relatively stable market environment.

We have examined potential sources of recapitalization funds against three key objectives: i) reliability of the resources in distressed markets; ii) the potential for such resources to facilitate a change in control of the resolved CCP; and iii) the need to minimize negative impacts on the market.

In analyzing alternatives against these factors, we believe one option would be for CCPs or their holding companies to issue unsecured long-term debt to unaffiliated institutional investors.<sup>12</sup> Proceeds from such debt would be invested in high-quality liquid assets in order to be available for recapitalization should resolution occur. The long-term debt would be bailed in as, or exchanged for, equity in the resolved CCP (or holding company).<sup>13</sup> We recognize that the implementation of this proposal would affect a CCP's and/or its parent's overall operating costs and could impact clearing costs for members and end users. By comparison, alternative sources of recapitalization resources, particularly retained earnings by CCPs or resolution cash calls, do not measure up against the key objectives defined above.

- **CCP retained earnings** would allow the CCP to hold an amount of its retained earnings or funds from the parent in escrow for recapitalization resources. While this would provide pre-funded resources, it would not separate the resolved CCP from the control of the failed CCP's parent and senior management.

For fully member-owned CCPs, however, raising resources through retained earnings over time may be feasible as the change of ownership may not be relevant given alignment of interests.

- **Resolution cash calls** funded by members at resolution have been proposed by the Financial Stability Board and the European Commission. We believe it is not appropriate for clearing members and their shareholders to be a recapitalization backstop for CCPs, many of which are for-profit institutions not owned by members.

Furthermore, cash calls would be pro-cyclical and entail post-facto funding at the time of resolution. They therefore could not be relied upon to be available in distressed markets. If default losses were the precipitating stress event, several of the CCP's largest members (or many smaller members), which are subject to resolution plans to prevent a disorderly failure, would have already defaulted. Margin requirements would have increased for both cleared and non-cleared positions due to higher market volatility, which would have placed significant liquidity pressures on members. In this scenario, issuance of further cash calls would increase the potential for members to default in meeting their calls, leading to further market instability.

<sup>12</sup> Such long-term debt would be issued by the entity that would be subject to resolution. The question of the level of the corporate chain of ownership at which the resolution authority would enter raises a number of structuring issues, including, those related to complications resulting from a CCP's segmentation of services, the desire to avoid triggering closeout of a CCP's financial contracts, the feasibility of use of a bridge, and cross-border considerations of entering at a failing CCP's ultimate parent if it owns CCPs in multiple jurisdictions. We believe that entry should be at the level of the CCP or an intermediate holding company established for the sole purpose of serving as the entity taken into resolution, and it is important for a resolution regime to provide a resolution authority with optionality in structuring a strategy that best addresses CCP and jurisdiction-specific considerations.

<sup>13</sup> However, holders of any compensation claims arising from PTU or VMGH should be senior to the CCP's long-term debtholders, including with respect to the bail-in or exchange of claims for equity of the resolved CCP.

Once the resolved CCP is recapitalized to fund a fresh start and ensure its viability as a going concern, the pre-funded recapitalization resources would ensure replenishment of right-sized capital, including an appropriately resized SITG contribution. Thus, capital would be available to absorb future non-default losses, create sufficient resources to continue critical functions and operations without interruption, and cover future costs for wind-down of non-critical services. At the same time, those clearing members who elect to continue clearing would contribute to a new, resized default fund.

## Conclusion

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Through open and frank dialogue and strong partnership, we have made substantial progress in building robust market infrastructures since the 2009 G20 summit in Pittsburgh, which mandated clearing of standardized OTC derivatives. The ability to support market activity with healthy resilience, recovery, resolution and recapitalization standards and processes relies on predictability and appropriately aligned incentives. As regulators and policymakers look to finalize and implement global standards, we believe they should act to create a balance of financial resources and incentives by:

- Developing a cohesive capital framework for CCPs that is connected and comprehensive, commensurate with the critical role of large, globally interconnected CCPs in our financial system.
- Limiting member assessments, over a reasonably defined period, to an amount equal to members' respective default fund contributions to avoid destabilizing market effects in a stressed environment. In conjunction with our recommendation that funded financial resources should, at minimum, be sufficient to cover the default of the two clearing members to which the CCP has the largest exposures, one standard and single capped assessment would provide sufficient resources to address an extreme market event that entails multiple defaults occurring simultaneously or sequentially.
- Restricting the use of VMGH and PTU to resolution. VMGH would be limited to one day and as a last resort once CCP's right-sized, own-funds capital has been fully utilized, if the resolution authorities do not step in early enough. PTU would be used if auctions or on-exchange liquidations by the CCP have failed to return the CCP to a matched book. It should be the only other rebalancing tool available to the resolution authority, but it should be applied in the most limited way. Those participants affected by either VMGH or PTU receive claims that would be senior to those of CCP shareholders and could be bailed in as, or exchanged for, equity in the new or resolved CCP.
- Aligning the interests of CCP shareholders as part of the overall risk framework and continuum of financial resources by right-sizing the CCP's own-funds capital for default and non-default losses, such that shareholders appropriately participate in both the potential for rewards and associated risks commensurate with a for-profit institution. The optimal amount of capital should be based on quantitative impact studies conducted by regulators.
- Promoting resolvability and assuring recapitalization with dedicated capital resources provided by the CCP or its parent, which could come from the issuance of long-term debt. It is not appropriate for clearing members and their shareholders to be a recapitalization backstop for CCPs.

Central clearing is essential to managing systemic risk, but the global clearing framework is only as strong as the adequacy and seamless continuum of the financial resources underpinning it. Creating the right balance and aligning incentives between members and CCPs/their shareholders will be critical to supporting resilience, recovery and resolution in times of stress.

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