VIEWPOINT

RESILIENCY, RECOVERY, and RESOLUTION

Revisiting the 3 R's for Central Clearing Counterparties

OCTOBER 2016

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The mandate for central clearing of over-the-counter (OTC) derivatives, promoted by the G-20 in the aftermath of the 2008 Crisis, is now being implemented around the globe. While it is broadly recognized that central clearing mitigates many of the counterparty risks inherent in bilateral OTC transactions, there is an increasing understanding that central clearing also concentrates risk into a handful of firms, called central clearing counterparties (CCPs). If this risk is not properly managed, central clearing could actually contribute to, not reduce systemic risk. To this end, there are several regulatory initiatives underway to reinforce CCPs' stability and protect the global financial system from the risk of a CCP failure.[1] Broadly characterized, these initiatives focus on three important issues for CCPs, which we refer to as the "3 R's":

(i) **Resiliency**: safeguards to avoid a potential CCP failure;

(ii) **Recovery**: if resiliency fails, private sources of committed funding or additional voluntary capital sought to keep the CCP operating; and

(iii) **Resolution**: if recovery is not deemed to be in the public interest or fails, measures to facilitate an orderly wind down of the CCP.

In this *ViewPoint*, we make several observations and recommendations with respect to each of the 3 R's as they relate to derivatives clearing.[2] In particular, we highlight that efforts to protect the financial system from the distress or failure of a CCP must also endeavor to protect the ultimate customers of CCPs – end-investors, such as retail savers and pension funds. Notably, while efforts to protect the financial system are designed to avoid taxpayer bailouts, end-investors who are the ultimate customers of CCPs are also taxpayers who deserve protection from the risks that could arise in the event of a CCP failure.

BlackRock is supportive of the concept of central clearing and believes that once the risks associated with CCPs are properly addressed, central clearing will be successful in mitigating systemic risk, as discussed in our April 2014 *ViewPoint*. As such, while the probability of a CCP failure is low, it is not zero, and it is important to recognize that CCPs are businesses that can fail. To fully achieve the risk reducing goals of central clearing, the resilience of CCPs is paramount. In addition to focusing on CCP resiliency, financial stability would be better served by a globally consistent regime that incorporates all 3 R's – meaning a regime where each CCP is required to have a recovery and resolution plan that can prevent its potential failure from impacting market stability.

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Recap of How Clearing Works

Before discussing our recommendations with respect to the 3R's for CCPs, it is important to first understand the role of CCPs in central clearing. CCPs have existed for over 150 years, originally as a mechanism to ensure performance on exchange-traded futures contracts.[3] When they were initially established, the use of CCPs in the futures market permitted commercial users and producers (as well as other participants) to transact on the exchange without having to separately determine the ability of the opposite side of the trade to perform their financial or delivery obligations. This works by substituting the counterparty

KEY OBSERVATIONS AND RECOMMENDATIONS

We believe that with respect to CCP oversight – and with a focus on the 3 R's: (i) resiliency, (ii) recovery, and (iii) resolution – policy makers should consider the following observations and recommendations to best protect the financial system and the end-investor.

Resiliency

We urge policy makers not to lose sight of the enhanced resiliency and incentives created through capital rules. Despite their systemic importance, CCPs are not subject to rigorous capital requirements. The global mandate to clear derivatives has given rise to the systemic importance of many CCPs, making resiliency a key aspect of financial market stability. CCP capital not only adds more loss absorbing resources, particularly when it is dedicated to the default waterfall, but equally importantly, it also serves to align incentives.

We encourage policy makers to adopt more formal standards for CCP disclosure and introduce audit requirements to help ensure the accuracy of information released. CCP disclosure requirements, while improved, lack the rigor of bilateral counterparty disclosures. With the introduction of new requirements,[4] CCPs have started providing standardized risk disclosures to the market.

Recovery & Resolution

Efforts to address CCP recovery should be structured such that the owners and operators of the clearing business are responsible for losses (not the CCP customers who are the end-investors). Most CCPs are for-profit businesses, and a balance needs to be struck between maximizing shareholder value and the role of CCPs as market utilities.

We recommend regulators review CCP rulebooks to help ensure that end-investors are adequately protected, particularly with respect to a CCP risk management failure. Many CCP rulebooks have tools, such as Variation Margin Gains Haircutting, that enable CCPs, which are largely for-profit businesses, to allocate losses to customers, including end-investors, who are ultimately tax payers. When applied in recovery, this loss allocation tool allows the CCP to force end-users to pay for it to stay in business.

Maintaining a CCP's functionality at all costs will not always be in the best interests of the system. The failure of a CCP due to a default event can only be imagined on the heels of a significant market disruption. In such an environment, it is highly likely the market will have lost confidence in the CCP and as such, it is difficult to see how a recovery would necessarily be in the public interest. As a result, CCPs and their regulators must be able to quickly implement a resolution plan that focuses on a rapid and complete wind down of the failing CCP's positions, along with a timely and orderly repayment of margin monies.

credit risk of each counterparty to the transaction for the counterparty credit risk of the CCP. To perform its role, the CCP collects margin from both sides of the transaction and in return, the CCP earns fees for performing this function. Once a trade is executed, whether on an exchange or bilaterally, it is presented to a CCP, and the CCP substitutes itself as counterparty to both sides of the trade—this eliminates the credit risk between the two parties that executed the trade. Once the trade is cleared, both parties face the CCP; these parties have counterparty exposure to the CCP, but they do not have bilateral counterparty exposure to one another.

In contrast to centrally cleared derivatives trades, bilateral trades take place directly between two parties (often referred to as over-the-counter or OTC) without a CCP in the middle of the transaction. Even prior to the 2008 Financial Crisis, OTC derivatives trades began to move to central clearing as market participants recognized the value of reducing the number of bilateral trades outstanding and managing their credit exposures more efficiently. In recent years, the use of CCPs for OTC derivatives transactions has increased significantly as regulatory clearing mandates have taken effect.[5] Additionally, as the benefits of clearing are now more broadly understood, cleared solutions for other products such as securities finance transactions are beginning to emerge (see Appendix A for more details).

One of the key functions of a CCP is to ensure that parties on both sides of the transaction have the resources to make good on their obligations to the other party in the transaction. Ensuring that each party has the necessary resources entails the posting of variation margin (VM) and initial margin (IM) with the CCP. VM and IM are used by CCPs to manage participant default risk. VM is calculated at regular intervals (usually daily) and accounts for the actual daily price changes in the derivative. IM is deposited by the end-investor at the start of the trade to cover any potential losses that could arise from closing out a trade in the event that end-investor defaults. Defaulting participants' VM and IM are thus the first line of defense, and adequate and efficient margining is critical to minimizing losses to others.

A CCP not only collects this margin, but also sets the initial margin levels for all transactions that will be cleared. In

addition, clearing members (CMs), which tend to be large banks,[6] also perform an important role from a risk management standpoint in vetting the credit of their customers to control the amount of risk that is presented to the CCP. CMs put their own capital at risk first in taking financial responsibility for the default of any of their customers, and second in contributing to the CCP's financial resources available to handle a CCP's financial distress. It is important to note that while CMs guarantee their customers (the end-investors) to the CCP, the reverse is not true – CMs do not guarantee the performance of the CCP to end-investors.

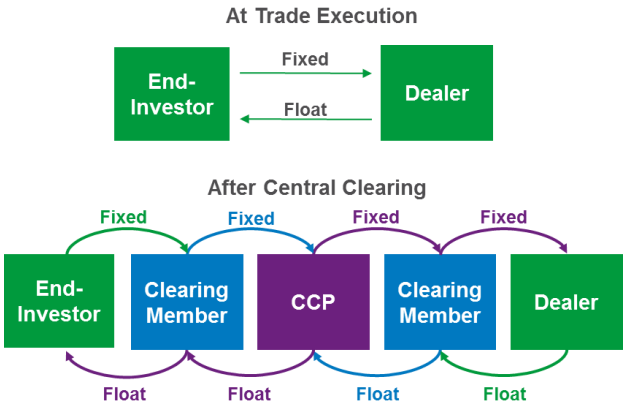
Dealers and end-investors access the clearing services of a CCP through CMs.[7] End-investors, therefore, have credit exposure to both CMs (to whom end-investors send VM and IM) and CCPs. While it is possible, to some extent, for end-investors to control credit exposure to a CM by due diligence in the choice of CM, there are few or no choices as to CCPs, given that derivatives subject to a clearing mandate are often only cleared by one CCP. Exhibit 1, provides a high level overview of the role of CCPs in central clearing.

Loss Absorbing Resources and CCP Guaranty Fund

When they were first established, CCPs were member-owned "utilities" designed to mutualize the risk of clearing by relying on the collective resources of their clearing participants, in particular those firms that are CMs. These resources include both the risk management capabilities of CMs, the requirement that CMs expend their own capital, if needed, if a customer of theirs is in default, as well as financial resources in the form of contributions to the CCP guaranty fund and potential assessments to cover additional losses. The guaranty fund and CM potential assessments "mutualize" losses across all CMs of a particular CCP. Today, CCPs are often commercially-owned, for-profit institutions, yet they largely maintain their historical risk allocation.

In the event of a financial distress of the CCP, a "default waterfall"— defined as the totality of loss-absorbing resources available to a CCP, as well as the relative contributions of CCP stakeholders (CCP and its CMs) and the order in which these resources would be expended – is applied to determine what financial resources are available to address the situation.

Exhibit 1: OVERVIEW OF CENTRAL CLEARING AND ROLE OF CCPS AND CMS



Key items to note:

(1) Trades in a cleared market are in some aspects more complex than in the bilateral world, introducing layers that did not exist before.
(2) The CCP is market risk neutral. They are simply passing along the trade flows. However, if one side of the trade defaults, the CCP needs to cover that market risk, which it does primarily through the use of initial margin.
(3) Credit risk is transformed, as is depicted by the color changing arrows.

Source: BlackRock. As of Oct 2016.

Exhibit 2: OVERVIEW OF KEY CCP POLICY ACTIONS

Jul. 2010	The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank) is enacted, establishing the central clearing mandate for certain OTC derivatives.
Apr. 2012	The Committee on Payment and Settlement Systems (CPSS) (which later became the Committee on Payment and Market Infrastructures (CPMI)) and the International Organization of Securities Commissions (IOSCO) publishes the standards report, Principles for Financial Market Infrastructures (PFMIs).
Aug. 2012	The European Markets Infrastructure Regulation (EMIR) entered into force in the EU, but most provisions only apply after technical standards enter into force (a rolling process through September 2016).
Jan. 2015	The US Financial Stability Oversight Council (FSOC) designates five CCPs as Systemically Important Financial Market Utilities (SIFMU).[8]
Feb. 2015	CPMI and IOSCO publish the Public quantitative disclosure standards for central counterparties.
Apr. 2016	The European Securities and Markets Authority (ESMA) publishes the results of its first EU-wide CCP stress test exercise.
Jul. 2016	US Commodity Futures Trading Commission (CFTC) issues guidance to CCPs subject to its jurisdiction on compliance with stress testing and other regulatory requirements.[9]
Aug. 2016	CPMI-IOSCO publish a report reviewing the financial risk management and recovery practices in place at a selected set of derivatives CCPs and a public consultation of the resiliency and recovery of CCPs.
	The Financial Stability Board (FSB) publishes a public consultation on the resolution measures for CCPs.
Sep. 2016	The US Securities and Exchange Commission (SEC) issues final rules for CCPs subject to its jurisdiction.
Nov. 2016	Expected date for an EU proposal for legislation addressing CCP recovery and resolution.

Source: BlackRock. As of Oct 2016.

A CCP's mutualized guaranty fund is typically the primary line of defense against losses incurred in a CM default in excess of the defaulting member's margin and guaranty fund contribution.

The 3 R's initiatives reflect a recognition by policy makers that CCPs need to strengthen their defenses so that events, such as the default of one or more CMs, can be buffered by sufficient resources so as to have as little impact as possible on the CCP's solvent members, customers (the end-investors), and the global financial system at large.

Resiliency

All CCPs are subject to regulatory oversight, and either as a matter of rule or specific principle are required to be able to demonstrate operational and financial soundness.[10] More recently policy makers have begun to focus on whether CCPs are sufficiently resilient. Specifically, we believe that ensuring CCP resiliency requires CCPs to strengthen their defenses[11] on the following fronts:

- stress testing;
- risk management and governance;
- capital; and
- disclosure

The latest CPMI-IOSCO consultation issued in August 2016, includes aspects designed to enhance resiliency, specifically with respect to more detailed guidance on CCP-run stress tests and assigning specific responsibility for key risk management decisions within a CCP's risk governance structure. In particular, the CPMI-IOSCO consultation sets out guidance on the responsibilities of a CCP's board in overseeing the CCP's risk management framework. A CCP's governance arrangements play an important role in ensuring the CCP's overall resilience and recovery planning. The consultation also provides guidance on the rigor of the credit and liquidity stress tests expected in the PFMIs, as appropriate to the systemic importance of CCPs. While these efforts are constructive, we believe additional steps still need to be taken to adequately strengthen a CCP's resiliency. Specifically, we believe that (i) CCPs should be subject to additional uniform stress tests overseen by regulators, (ii) regulators should develop specific CCP capital requirements, (iii) regulators should specify how much of that capital needs to be dedicated to default loss absorbing resources, and (iv) regulators should require improved information disclosure to reinforce market confidence.

Standardized Stress Testing

Most CCPs will use internally developed and run stress test scenarios to determine how large their financial safeguards need to be. The recent CPMI-IOSCO consultation significantly expands on the expected elements a CCP needs to consider and address in order to run these properly. While this additional guidance is welcome to bolster the reliability of CCP-run stress tests, regulators should not lose site of the need to develop a separate mandatory stress testing framework that is run by regulators and applied across CCPs.

While each CCP has a unique risk profile, market disruptions are not unique to a CCP. CCPs must run stress tests and size their default resources according to their specific risk sensitivities. However, market disruption scenarios should not be similarly customized – all market participants must operate under normal or stressed conditions as they arise. Standardized stress tests will provide a window into the relative performance of a CCP's financial resources under a uniform set of market conditions.

Standardized stress tests should be consistently applied across CCPs and subject to regulatory oversight, with the results publicly disclosed in a manner similar to those run for banks. A consistent, disclosed stress test framework, along with the disclosure of results, will help create CCPs that are more resilient and transparent, fostering confidence in members and their clients, settlement banks, liquidity providers, and other market participants.

Financial Resources and CCP Capital

Central to the discussion of CCP resiliency is a review of the financial resources CCPs have in place to ensure they can withstand stress scenarios—both those that are generated by a CM default and non-default stresses such as a destabilizing "hack" or other operating event.[12] This should start with the CCP's own capital and not be reliant upon the CCP's customers (the end-investors), given that end-investors are taxpayers who should be protected in the event of a CCP failure. The very purpose of a CCP is to mitigate credit risk in the event of a default of a counterparty, and its success in doing so depends upon the layers of protection it has in place, including initial margin and other loss absorbing resources. How these resources are sized and the incentives created by the various layers are important considerations for market participants. Given that most CCPs are for-profit businesses, it is equally important to ensure that the CCP's incentives are aligned to ensure each CCP is incentivized to maintain sufficient financial resources. Specifically, risks and rewards need to be aligned such that CCPs will act rationally to both prevent and/or minimize losses in the event of a market disruption. Where these incentives are not entirely aligned, regulatory requirements are necessary to ensure the resiliency of the organizations, given that the failure of a CCP could engender systemic risk.

Most CCPs make, or commit to make, modest contributions to the loss absorbing resources, often referred to as "skin in the game" (SITG). However, the size of the typical CCP contribution compared to its CMs contributions (generally less than 5% of the total) has led many market participants to

question whether the current level of these contributions is sufficient to properly align incentives, and some have put forward suggestions on how to think about optimal sizing (e.g., as a simple percent of the overall default fund or calculated to cover an expected shortfall, among others).[13] There is a balance to be struck between the commitment of the CCP's own resources to loss absorption and aligning incentives of CMs to monitor their own credit and that of their customers. Nevertheless, at the current low levels of SITG, there is concern that CCPs may be choosing to maximize returns to shareholders rather than commit to more SITG, placing too great a reliance on CMs financial resources.

There has been no meaningful change to the level of CCPs' contribution to their loss absorbing resources, nor has there been any further development in the regulatory framework. In addition, beyond that required under EMIR,[14] there is no regulatory determination on what the SITG commitment should be, leaving CCPs to make this determination themselves, when the incentive for a profit-seeking enterprise is to limit its commitment. We encourage global regulatory bodies such as the FSB, CPMI, and/or IOSCO to undertake rigorous quantitative impact studies around modeling the optimal level of CCP capital and its specific allocation to SITG, and to communicate its position to the market. We would then expect the relevant CCP regulators to act upon this information.

Further discussion and consideration should be given to the following specific questions:

- What level of commitment best aligns the CCP's interests with the goal of a resilient CCP?
- Beyond aligning interest, what is the optimal level of resources a CCP should commit to the default waterfall to absorb losses?
- What form should a CCP's commitment take?

A robust CCP capital framework and requirement for SITG would further strengthen CCP resiliency and by doing so render the possibility of CCP failure even more remote. If necessary to support a more robust capital framework, we believe that market participants could tolerate a small but predictable increase in the cost of clearing that may accompany heightened capital requirements in order to mitigate the possibility of an uncertain liability they would otherwise face if a CCP were to fail.

Disclosure

Disclosure permits market participants to understand the resources a CCP has to ensure its resiliency. Without sufficient risk disclosure, it is difficult to ascertain the likelihood of a CCP failure. We appreciate the strides made with respect to the CPMI-IOSCO PFMI disclosures and the more recent Quantitative Disclosures (QDs). Exhibit 3 lays out an overview of some of the existing risk disclosure requirements for CCPs. The QDs are the first instance where market participants have mostly standardized quantitative disclosures (including the amount of margin held, the size of default funds, liquidity profiles, among others) across global CCPs and while market participants welcome these QDs, more work needs to be done to better standardize the disclosures, provide assurances of accuracy through annual audits, and enhance management discussions of CCP risk profiles.

A well-disclosed CCP will engender confidence in the market by helping all participants to better understand its risks. Participants will be incented to increase cleared trade volumes at a CCP (including those not subject to mandatory clearing), if in the opinion of the participant, the CCP is a sound counterparty. For this to operate effectively, a globally consistent regime needs to be in place where each CCP is explicitly required to provide this disclosure. Further discussion and consideration should be given to the following specific points regarding information disclosure:

- **The disclosures should be formally standardized**. While we appreciate that most CCPs are following an agreed upon format not all CCPs are following it. Regulators should step in if necessary to require all CCPs to use the agreed format.
- **The disclosures should be reviewed by auditors (at least annually), consistent with what is expected from bilateral counterparties.** This would address several issues with the current disclosures, ranging from divergent interpretations of required disclosure, data entry errors, and formatting inconsistencies.
- **There should also be additional disclosure and discussion required, similar to what is provided in a "Management Discussion & Analysis" in a typical bilateral disclosure context.** For market participants to adequately do their diligence on a CCP, there needs to be discussion that explains the CCP's risk profile and any changes that have occurred thereto. The PFMIs are a step forward in this direction, but they are impeded by frequency of disclosure (only every 2 years) as well as the actual content of the disclosure, which tends to be very high level.
- **Additional stress test details should be made available**. While some stress test figures are included in the required disclosures, their usefulness is limited by the lack of supporting details, such as which scenario was used to arrive at the result, or how broadly the test was applied.
- **Risks to end-investors need to be more explicitly outlined in relevant documentation**. A number of market participants, particularly end-investors, presume that central clearing eliminates credit risk, and some may also mistakenly base this presumption on a belief that a CCP has an explicit or implicit government guarantee. CCPs should be required to explicitly disclose how a customer may still face credit risk, not only in the event of a CM default, but also in the event of a CCP default.

Exhibit 3: EXISTING CCP DISCLOSURE REQUIREMENTS

	PFMI	PFMI Disclosures	Quantitative Disclosures
What is it	*Principles for financial market infrastructures*	*Principles for financial market infrastructures: Disclosure framework and assessment methodology*	*Public quantitative disclosure standards for central counterparties*
Date	April 2012	December 2012	February 2015 (implemented January 2016)
Purpose	• Sets principles-based standards that in some cases incorporate specific minimum requirements, such as in the credit, liquidity, and general business risk principles, to ensure a common base level of global risk management across FMIs	• Promotes the disclosure of risk management information by all FMIs (including CCPs) to facilitate implementation and ongoing observance of the PFMI • The disclosure framework is intended to promote a common base level of global transparency across FMIs	• Enables market participants to: – compare CCP risk controls – have a clear, accurate and full understanding of the risks associated with a CCP – understand and assess a CCP's systemic importance – understand and assess the risks of participating in CCPs
Key Strengths	• Established standards for sizing loss absorbing resources (must be sufficient to cover the largest or the two largest CM defaults) • Set 99th percentile initial margin calculation standard • Established liquidity risk management standards	• Provides first ever framework for CCP risk disclosures • Provides some standardization to market participants • Provides some details on risk policies, such as how many CM defaults the CCP assumes when sizing its loss absorbing resources	• Builds upon the qualitative exposures and provides specific information on margin models and quantum of loss absorbing resources • Provides a mostly uniform data set to allow for comparison and trend analysis • Provides some details on stress loss numbers and concentration metrics
Key Weaknesses	• Lacks specificity with respect to governance, stress testing, transparency and disclosure • Does not address how much capital a CCP should commit	• Required only every two years • Not subject to any audit / review standard and not maintained in any central location • Disclosures tend to be principle based with little specificity in the actual document • Often refers back to rule books or other documents, rather than directly addressing the issue	• Lacks explanatory text to meaningfully describe data elements and/or provide rationale for changes • Not subject to any audit / review standard and not maintained in any central location • Disclosure is generally in unformatted spreadsheets with multiple tabs

PFMIs and the Disclosure Framework were developed to cover five types of financial market infrastructures: Payment Systems, Central Securities Depositories, Securities Settlement Systems, Central Counterparties, and Trade Repositories. Source: BlackRock. As of Oct. 2016.

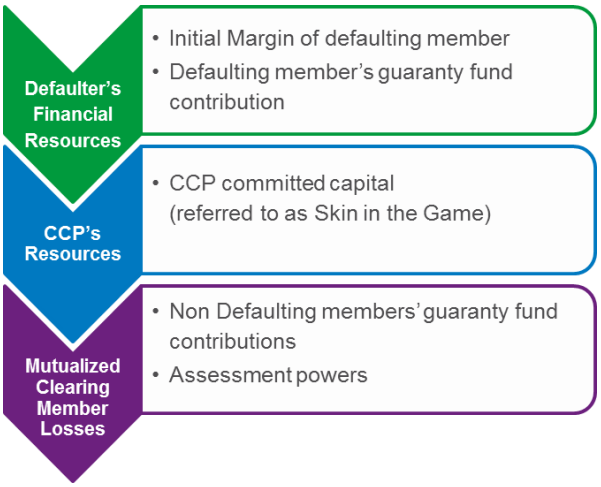
RESILIENCY KEY POINTS

1. We agree with regulators that it is paramount to first make CCPs sufficiently financially **resilient** to withstand specific default scenarios.
2. While additional regulatory guidance may bolster the reliability of CCP-run stress tests, regulators should not lose site of the need to develop a mandatory stress testing framework that would be applied across CCPs.
3. A robust CCP capital framework and specific mandated requirement for SITG would further strengthen CCP resiliency and by doing so render the possibility of CCP failure even more remote.
4. While good progress has been made on PFMI disclosures, including the Quantitative Disclosures, more work needs to be done to: (i) better standardize the disclosures, (ii) provide assurances of accuracy through annual audits, and (iii) enhance management discussions of CCP risk profiles.

Recovery

Recovery of a CCP may be needed if the financial resources available to the CCP are insufficient to cover losses from a CM default. Recovery is a process set out in, and governed by, CCP rule books. To cover losses from a CM default, a CCP will generally follow a "waterfall" in a predefined order. An example of a typical CCP default waterfall is shown in Exhibit 4. The recovery stage is generally considered to be in effect either once all of the defaulter's resources have been exhausted or once the non-defaulting members' prefunded contributions have been exhausted. We encourage global regulators to mandate CCPs to set out the clear and predictable path towards recovering a failing CCP with the resources it has at its and its CM's' disposal. Recovery plans must consider speed of execution, recognizing that a slow recovery could greatly impact market participants.

Exhibit 4: TYPICAL DEFAULT WATERFALL



Source: BlackRock. As of Oct. 2016.

Regardless of the trigger, once these specified resources are exhausted, the CCP must allocate default losses in other ways. Allocation tools that are already in some CCP recovery plans set out in their rule books, or under discussion to be added, include such tools as, Variation Margin Gains Haircutting (VMGH) and Initial Margin Haircutting (IMH). VMGH would take end investors' mark-to-market gains that would otherwise be paid through to it, and use it as part of the loss-absorbing resources of the CCP.[15] Similarly, IMH would use a portion of the monies posted as IM, which was deposited in good faith by end-investors, as a loss absorption resource. As described below, we find these two measures particularly problematic due to both their potential destabilizing impacts on the market and their inherent inappropriate application of a CCP's losses to end-investors.

Destabilizing Impact of Margin Haircutting

VMGH takes cash paid by end-investors and diverts it to cover outstanding losses caused by a CM default. The

> *"VMGH and IMH are tools that enable CCPs, which are largely for-profit businesses, to allocate losses to its customers, including end-investors, who are ultimately tax payers."*

expected recipients of the cash payments are "haircut" and only receive a fraction of what is owed to them. Similarly, IMH takes margin paid in by end-investors and takes a portion of it to cover losses caused by a CM default. Were margin haircutting to be applied in a period of market stress, end-investors – who fear they will be subject to such profit/property seizure – will seek to rapidly close out positions, which is potentially destabilizing for markets. Further, some end-investors may voluntarily default by not meeting VM calls, preferring to lose their positions, rather than continue to pay margin that is subject to haircutting.

THE FACTS ON VMGH

- What is referred to as "margin gains" is actually profit of a CCP's participants, including end-investors, which CCPs can include in their toolkit to cover losses.
- VMGH as a Recovery or Resolution tool is ultimately a form of loss mutualization.
- Without appropriate safeguards, such as timing limits, VMGH can be an unlimited liability.
- VMGH unfairly penalizes end-investors, who in general hold directional positions, vs. CMs or dealers, who generally manage to a flat market position.
- VMGH adds a type of risk to end-investors that does not exist in a bilateral relationship. End-investors or dealers who face a bankrupted bilateral counterparty would close out trades (generally at their side of the market) and submit a claim to the bankruptcy or insolvency regime proceeding. If, as is the case in most bankruptcies, there are insufficient assets to pay all claims in full, the dealer or end-investor would suffer a loss on their closed out trade.
- The key differences are, in a bilateral insolvency: (i) the end-investor's or dealer's loss is not enabling a failed business to operate; (ii) collateral could be held at a custodian bank, under a "triparty" agreement, which could improve asset protection; and (iii) the end-investor (or its agent) chose to have a relationship with the defaulting counterparty. In contrast, the end-investor has limited choice in CCPs and while the end-investor chooses its clearing broker, it has no control over the CCPs' choice of CMs.

Inappropriateness of Margin Haircutting

VMGH and IMH are tools that enable CCPs, which are largely for-profit businesses, to allocate losses to its customers, including end-investors, who are ultimately tax payers. When applied in recovery, this loss allocation tool allows the CCP to force end-users to pay for it to stay in business. There is no precedent for users of a service, who pay fees to access a service, to also be responsible for keeping that service in business after it has failed in its core mission, which for a CCP is the provision of credit risk mitigation. While CCPs are a critical part of the market infrastructure, they are also generally for-profit businesses who provide the service of credit risk mitigation in exchange for fees.

> *"The latest point at which a resolution authority must step in is when private sources of capital are depleted, and no further providers of capital are willing to invest in its continued operation."*

CCP-Led vs. Resolution Authority-Led Recovery

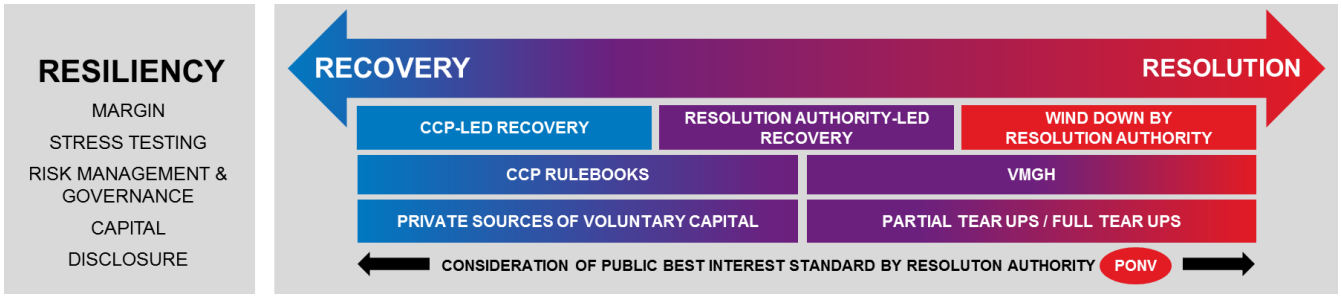
While a CCP-led recovery is preferred by most market participants, this preference should not preclude the early intervention of resolution authorities in the recovery process. A clear distinction between recovery and resolution tools would be helpful. That said, there is some grey area between resolution and recovery and discretion on the part of the resolution authority to determine the appropriate action given the situation, as highlighted in Exhibit 5. Notwithstanding this discretion, the resolution authority must act quickly to determine the appropriate course of action.

Importantly in the first instance the supervisory authority approves the rule book, and should examine closely the incentives created by recovery processes in these rulebooks and the ways in which the end-investor would be protected from losses in such a process. Just as importantly, the resolution authority should be the sole entity responsible for overseeing any losses to market participants in recovery. A CCP-led recovery should be limited to private sources of voluntary capital. Depending on market conditions a resolution authority may need to step in to administer the allocation of losses using the available private sources of capital. The latest point at which a resolution authority must step in is when private sources of capital are depleted, and no further providers of capital are willing to invest in its continued operation. We firmly believe this is the point, if not sooner, where the resolution authority must take control. The resolution authority may decide to recover the CCP or to wind it down, which we will discuss in the next section, Resolution.

A recovery led by a resolution authority could be orchestrated if the resolution authority determines that the continuation of the CCP's services would be in the public interest. While this outcome is theoretically possible, we believe the lack of further private capital sources is likely to coincide with a lack of market confidence in the CCP, and as a result, most participants, including end-investors, will seek to close out positions. This underscores the need for a resolution authority to act swiftly in order to provide certainty to market participants in what will be a very unstable market.

In the unlikely event that there is a viable business to recover, the resolution authority should have additional tools to allocate losses, which could include additional (though limited) cash calls on members or a limited amount of VMGH. We do not support the use of IMH in any loss allocation scenario, given that it leaves the CCP under margined in a time of market stress and may incentivize participants in some jurisdictions to post securities rather than cash (which can lead to liquidity concerns). Any application of VMGH in this process must be subject to a public interest standard, accompanied by senior debt claims against the CCP in the amount of the VMGH, and subject to strict limitations in terms of number of days it is applied.

Exhibit 5: RECOVERY AND RESOLUTION CONTINUUM



Source: BlackRock. As of Oct. 2016. For illustrative purposes only.

RECOVERY KEY POINTS:

1. We encourage global regulators to mandate CCPs to set out the clear and predictable critical path towards **recovering** a failing CCP with the resources it has at its and its CMs' disposal. Recovery plans must consider speed of execution, recognizing that a slow recovery could greatly impact market participants.
2. A CCP-led recovery should be limited to private sources of voluntary capital.
3. Actions of a resolution authority must be swift in order to restore confidence to a stressed market.
4. IM and VM gains should not be subject to haircutting to fund a CCP recovery. When applied in recovery, this loss allocation tool allows the CCP to force end-users—who are also ultimately taxpayers-- to pay for it to stay in business, after the CCP has failed in its core mission, which is the provision of credit risk mitigation.

Resolution

If CCP-led recovery efforts fail and the resolution authority determines the continuation of its services do not meet a public interest standard, then the CCP must be placed into resolution. Resolution is a process set out in a resolution plan and is governed by the resolution authority when it is deemed to be in the public interest to wind up critical functions. Market participants would benefit from knowing that resolution authorities will step up to make the resolution decision when it is apparent recovery will be unsuccessful.

Policymakers should not presume that that continuity of all services in all CCPs would be preferable to resolution. When a CCP has failed, it should be required to quickly implement a resolution plan that focuses on a rapid and complete wind down of the failing CCP's positions, along with a timely and orderly repayment of margin monies. During this process the resolution authority will allocate remaining losses to all market participants, including end-investors.

A rapid liquidation and return of margin would minimize end-investor losses and would allow market participants to have optionality to re-establish positions at a viable CCP, use other instruments to hedge risk or in some cases remain unhedged if the credit exposure to CCPs is viewed as greater than the market exposure that is being hedged. Consideration should also be paid to the possibility of temporarily removing the clearing requirement to enable market participants to re-establish their hedging trades on a bilateral basis.

By definition, the failure of a CCP reflects a flawed risk management process which in turn will impact customer confidence in the abilities of the CCP on a forward-looking basis. Some may argue that a CCP failure could be the result of unexpected adverse market wide events, and in such a situation a CCP's failure may not be the result of a flawed risk management process. However, given the primary function of a CCP is to appropriately size initial margin, default funds, and capital amounts in a manner so as to maintain sufficient resources even in unexpectedly adverse environments, we believe such a failure, even in extreme market conditions, would likely have a significant negative impact on customer confidence in the CCP. BlackRock believes that maintaining a CCP at all costs will not always be in the best interests of the financial system.

> *"BlackRock believes that maintaining a CCP at all costs will not always be in the best interests of the financial system."*

Policymakers appropriately have focused on the risks of CM default as the source of financial distress of a CCP. However, CCPs also must risk manage for operational risks (including cyber events), and we would consider the failure of a CCP due to a non-default event as evidence of a flawed CCP risk management process. In such an instance, a similar loss in end-investor confidence should be expected.

Market participants need to have confidence that resolution authorities can and will quickly identify the Point of Non-Viability (PoNV) of a CCP and will trigger action by public authorities to resolve the failed entity. This may be at the point where no further private funds are available, but it may be much sooner than this as well. At this point, public confidence in the CCP will have been eroded and recovery of the failed entity at all costs would not be a viable option. The PoNV could be the point at which no bids for one or more such positions were received in an auction, or where the losses arising from accepting the best bids for the positions is likely to exceed the CCP's available loss absorbing resources. In such a situation, the CCP's resolution plan should be swiftly invoked by the CCP and overseen by the relevant authority.

BlackRock strongly believes that a resolution plan that focuses on a rapid and complete wind down of the failing CCP's positions, along with a timely and orderly repayment of margin monies is preferable to a recovery plan that uses end-investors' margin to extend the state of a failed or failing CCP. The wind down process within which no creditor is worse off (NCWO) should be one area, on which international consistency is sought. CCP resolution plans would contain a prefunded re-capitalization fund if authorities believe it would be prudent to re-start the services of the CCP in a timely manner. Under a new management structure and fully re-capitalized default fund, there is a higher probability that

market participants will return to use the new CCP facility relative to one that has been recovered with participants experiencing loss of margin.

RESOLUTION KEY POINTS:

1. Policymakers should not presume that continuity of all services in all CCPs would be preferable to **resolution**.
2. Market participants need to have confidence that resolution authorities can and will quickly identify the PoNV of a CCP and will trigger action by public authorities to resolve the failed entity.
3. A resolution plan that focuses on a rapid and complete wind down of the failing CCP's positions, along with a timely and orderly repayment of margin monies is preferable to a recovery plan that uses customer margin to extend the state of a failed or failing CCP. The wind down process within which no creditor is worse off should be one area on which international consistency is sought.

Conclusion

Investor confidence is built on certainty. The potential of losses through VMGH in recovery to support a failed or failing CCP will undermine investor confidence in clearing, lead to suboptimal investment and could ultimately become an additional source of volatility. Haircutting variation margin introduces uncertain liability at a point in time when the CCP has failed to adequately model risk, if the standard default waterfall remains insufficient. We believe VMGH should only be considered as a measure of last resort in resolution if CCP resilience is addressed and subject to strict conditionality of subsequently recovering the haircut funds to users.

Likewise, a clear distinction between owners' funds and users' funds is also important to reflect in global principles. Owners are the CCP itself/its shareholders and its Clearing Members. Owners will generally profit from central clearing. In contrast, users are the firms required to use a CCP by legislation and generally pay for using a CCP. As such, users pay fees to access the benefits of central clearing. Given they do not participate in the upside (share profits), we consider it wholly inappropriate for users to be exposed to the failure of the CCP as a for profit entity.

RELATED CONTENT

- Discussion Note re: Essential Aspects of CCP Resolution Planning, Letter to FSB, Oct. 17, 2016
- Consultative Report on Resilience and Recovery of Central Counterparties, Letter to CPMI-IOSCO, Oct. 17. 2016
- *ViewPoint* – Central Clearing Counterparties and Too Big to Fail, Apr. 2014

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Notes

1. See e.g., FSB, Discussion Note, Essential Aspects of CCP Resolution Planning (Aug. 16, 2016), available at http://www.fsb.org/wp-content/uploads/Essential-Aspects-of-CCP-Resolution-Planning.pdf; CPMI-IOSCO, Consultative Report, Resilience and recovery of central counterparties (CCPs): Further guidance on the PFMI (Aug. 2016), available at http://www.bis.org/cpmi/publ/d149.pdf; CFTC, Memorandum, Recovery Plans and Wind-down Plans Maintained by Derivatives Clearing Organizations and Tools for the Recovery and Orderly Wind-down of Derivatives Clearing Organizations (Jul. 21, 2016), available at http://www.cftc.gov/idc/groups/public/@lrlettergeneral/documents/letter/16-61.pdf.
2. See Appendix A for a discussion of using CCPs for clearing securities finance transactions.
3. CME Group, *Timeline of CME Achievements*, available at http://www.cmegroup.com/company/history/timeline-of-achievements.html.
4. Committee on Payment and Settlement Systems-International Organization of Securities Commissions (CPSS-IOSCO), Disclosure Framework and Assessment Methodology (Dec. 2012), available at http://www.bis.org/cpmi/publ/d106.pdf.; Committee on Payment and Market Infrastructures-IOSCO (CPMI-IOSCO), Public Quantitative Disclosure Standards for Central Counterparties (Feb. 2015), available at http://www.bis.org/cpmi/publ/d125.pdf.
5. See, e.g., Commodity Futures Trading Commission ("CFTC"), Clearing Requirement Determination under Section 2(h) of the Commodity Exchange Act for Interest Rate Swaps, 81 Fed. Reg. 71202 (Oct. 14, 2016), available at http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2016-23983a.pdf. Additional clearing mandates are expected by the CFTC and SEC in the future.
6. While large banks dominate the market for cleared swaps and most futures, there are a number of smaller, non-bank clearing members who generally focus on a more narrow set of futures.
7. Some CCPs have direct access programs but this is an exception.
8. The five SIFMU CCPs are: CME, FICC, NSCC, OCC, ICE Credit. *See* Federal Reserve Board, Designated Financial Market Utilities, available at https://www.federalreserve.gov/paymentsystems/designated_fmu_about.htm.
9. CFTC, Release: PR7409-16 (Jul.21, 2016), available at http://www.cftc.gov/PressRoom/PressReleases/pr7409-16. Under the comprehensive framework for regulating swaps and security-based swaps established in Title VII, the CFTC is given regulatory authority over swaps, the SEC is given regulatory authority over security-based swaps, and the Commissions jointly are to prescribe such regulations regarding mixed swaps as may be necessary to carry out the purposes of Title VII. CFTC, Final Rules and Interpretations i) Further Defining "Swap," "Security-Based Swap," and "Security-Based Swap Agreement"; ii) Regarding "Mixed Swaps"; and iii) Governing Books and Records for "Security-Based Swap Agreements", available at http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/fd_factsheet_final.pdf; Section 712 (b) of the Dodd Frank Act.
10. See 17 CFR 39.11 and Regulation (EU) No 648/2012.
11. Though not discussed in detail in this *ViewPoint*, we note that liquidity risk should also be carefully considered. Liquidity risk is both substantial and multidimensional as it involves the form of collateral posted, the level of collateral posted as well as the interdependencies of the participants in the CCP ecosystem.
12. Current operational risk capital standards are simplistic and limited. For example, 17 CFR 39.11 (a)(2) requires CCPs to maintain 12 months of operating expenses to support non-default risks. (EU) No 152/2013 requires CCPs to maintain a minimum of 6 months of operating expenses to support non-default risks.
13. See e.g., JPMorgan Chase & Co. "Perspectives: What is the Resolution Plan for CCPs (Sep. 2014) available at https://www.brookings.edu/wp-content/uploads/2015/02/jpmc_packet.pdf; BlackRock 2014 CCP *ViewPoint*; PIMCO "Viewpoints: Setting Global Standards for Central Clearinghouses" (Oct. 2014) available at https://www.pimco.com/insights/viewpoints/viewpoints/setting-global-standards-for-central-clearinghouses; Risk.net, "CCPs Need Thicker Skins – Citi Analysis" (Apr. 2015), available at http://www.risk.net/risk-magazine/feature/2419321/ccps-need-thicker-skins-citi-analysis.
14. Under EMIR, CCP skin in the game is mandated at 25% times the minimum capital (including retained earnings and reserves) held in accordance with Article 16 of Regulation (EU) No 648/2012 and Commission Delegated Regulation (EU) No 152/2013.
15. While we focus on the impact to the end-investor, clearing members would also be subject to VMGH and IMH.

Appendix A – Securities Finance CCPs

USE OF CCPS FOR SECURITIES FINANCING TRANSACTIONS

Whilst not currently mandated, many European and US institutions are now exploring the benefits of centrally clearing Repo and Securities Lending transactions for buy-side participants. Models for cleared Securities Finance transactions ("SFT's") are conceptually similar to the cleared derivatives market; however structures, features and operational details are still being defined by market practitioners.

The industry sees the following key benefits to clearing SFT's:

- **Capital efficiency** – proposed structures reduce capital costs of banks and broker dealer counterparties; this should lead to tighter bid-ask spreads to the benefit of all market participants
- **Enhanced liquidity** – elimination of bilateral credit risks through a CCP enables a wider range of participants in SFTs
- **Counterparty and Operational risk** – robust CCP risk management framework

Certain issues remain to be addressed for the end user participants such as membership structures and compliance with existing regulatory requirements (e.g. UCITS V). A core focus for cleared SFT's will remain the implementation of the CPMI's principles on Resiliency, Recovery and Resolution.

We anticipate the ongoing development of the operating models through the remainder of this year and into next, with the first end user participants likely entering the cleared SFT arena in 2017.

GOV-0118

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