Standardizing CCP Rulebook Analysis
Using the FIA's CCP Risk Review to
Evaluate Implementation of the PFMIs
around the World

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FIA Webinar: Standardizing CCP Rulebook Analysis

The webinar will be recorded and posted to the FIA website following the conclusion of the live webinar.

A question and answer period will conclude the presentation.

 Please use the "question" function on your webinar control panel to ask a question to the moderator or speakers.
 Questions will be answered at the conclusion of the webinar.



CPSS-IOSCO Principles for Financial Market Infrastructures (PFMIs) – An Overview

- In April 2012, the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) published the CPSS-IOSCO Principles for Financial Market Infrastructures (PFMIs).
- The PFMIs constitute **new international standards** for **financial market infrastructures (FMIs)**, including **central counterparties (CCPs)**
- The standards are principles-based in recognition that different FMIs may have different approaches to achieve a particular result.
- In some cases, however, the standards set out a **specific minimum** requirement to ensure a common minimum level of risk-management across FMIs and countries.
- CPMI and IOSCO announced on July 9, 2015 that they have started the first Level 3 assessment of PFMIs. This review will examine consistency in the outcomes of PFMI Principles.

PFMIs – 24 Principles, each with Key Considerations

- ➤ P1 Legal Basis
- > P2 Governance
- > P3 Risk Management
- > P4 Credit Risk
- > P5 Collateral
- > P6 Margin
- > P7 Liquidity Risk
- > P8-10 Settlement

- > P13 Default management
- P14 Segregation and Portability
- P15-17 General business and operational risk management
- > P18-20 Access
- > P21-22 Efficiency; and
- > P23-24 Transparency



After nearly four years.....how are we doing?

- The PFMI framework has advanced CCP standardization...
 - Used by US banks and their regulators in the QCCP process
 - Used by ESMA to organize its third country recognition process
 - Most CCPs have published PFMI disclosure documents
 - Clearing members and clients use it to organize their diligence
- But some limitations have become clear....
 - Some portions are concrete and precise have a strong normative impact
 - Others are too vague to use as metrics
 -and implementation varies across CCPs
- Leaving market participants hoping for greater standardization



The Next Step: FIA's CCP Risk Review

- The Problem: CCP Rulebooks (even for different services of the same CCP) are not standardized.
 - Similar terms and concepts are given different names in different rulebooks
 - Different terms and concepts are given the same name across different rulebooks
 - Many rulebooks are written in different languages and the translations into English are often poor
 - CCPs operate across different legal systems and the legal consequences of some provisions may apply differently depending upon the applicable legal system



The Next Step: FIA's CCP Risk Review (Cont'd)

The Process:

- FIA brought together clearing member firms beginning in April 2014 to commission the development of a standardized comparative analysis of CCP rules
- Comprehensive diligence questionnaire developed with contributions from clearing member firms
- Beginning July 2014, template responses and common glossary of terms developed
- Throughout Q4 of 2014 and during 2015, survey responses completed,
 often with CCP input



The Next Step: FIA's CCP Risk Review (Cont'd)

• The Product:

Comparably drafted responses addressing:

Trade Flow	Default resources	Rule changes and emergency
Account Structure	Default management process	powers
Margin & Collateral	CM termination and	CCP resolution and recovery
Custody & investment risks	withdrawal rights	Clearing membership
	CCP liquidity resources	requirements
		Governance

- Online library includes 60 Services at 27 CCPs in 15 jurisdictions
- Online demo available at www.ccpriskreview.org



The Next Step: FIA's CCP Risk Review (Cont'd)

Completed Surveys

US

- CME Clearing
 - CDS, Base OTC, IRS, Listed
- FICC
 - Government securities, GCF Repo, MBS
- ICE Clear US
 - Listed
- ICE Clear Credit LLC
 - CDS
- LCH.Clearnet LLC
 - Swapclear
- Options Clearing Corp
 - Listed, OTC, Securities Lending

<u>UK</u>

- CME Clearing Europe Limited
- ICE Clear Europe Limited
 - CDS, Listed
- LCH.Clearnet Limited
 - EnClear (SCM), EquityClear (SCM), ForexClear (FCM and SCM), NLX (SCM), Nodal (FCM), RepoClear (SCM), SwapClear(FCM and SCM), London Stock Exchange derivatives market (SCM)
- LME Clear

Hong Kong

- HKFE Clearing Corporation Limited
- The SEHK Options Clearing House Limited

Japan

- Japan Securities Clearing Corporation
 - OTC CDS, OTC IRS, Listed derivatives on JGBs/securities indices, Spot/repo on JGBs, Cash bonds/Equities

Australia

- ASX Clear (Futures) Pty Ltd
 - OTC, Exchange Traded Contracts, Cash Bonds and Repos
- ASX Clear Pty Ltd
 - Cash, derivatives

Brazil

- BM&F Bovespa
 - Equities, FX , Financial Commodities Derivatives and Gold

Canada

- Natural Gas Exchange
 - Listed

China

- China Financial Futures Exchange
- Shanghai Clearing Corp
 - IRS

France

- LCH.Clearnet SA
 - Fixed income, Cash/Derivatives, CDSClear (SCM)

Germany

- Eurex Clearing AG
 - OTC IRS, Transactions at Eurex Deutschland and Eurex Z\u00fcrich

India

- Clearing Corporation of India Limited
 - FX Forwards, Securities, CBLO, FX Settlements
- National Securities Clearing Corporation
 - Futures, options and currency derivatives

Italy

Cassa di Compensazione E Garantia Spa

Korea

- Korea Exchange
 - Listed, OTC, Securities

Spain

- BME Clearing (formerly MEFF)
 - Financial Derivatives

Sweden

- Nasdaq OMX Clearing AB (Swedish branch)
 - Financial Products, Commodities



Which principles work and which require more?

- Precise principles have a measurable normative effect
 - Principle 2 Governance
 - Principle 4 Credit Risk
 - KC4 default fund sizing
 - KC 5&6 stress testing
 - Principle 6 Margin
 - KC3 margin methodology
 - KC4 daily VM and intra-day calls
- Others are more general, requiring more granular assessment
 - Principle 13 Default Rules
 - KC1 mostly just requires rules to be in place
 - KC2 CCP must be well-prepared to implement
 - KC3 CCP must disclose key aspects of the default management process
 - Principle 14 Segregation
 - Principle 23 Transparency



Governance – Role of CMs at certain CCPs

	Are clearing members represented on a risk committee	Approval of new clearing members?	Margin methodology responsibility?	Default fund sizing responsibility?	Declaration of default responsibilities?	Are clearing members represented on a default committee?
Chicago Mercantile Exchange (Listed)	YES	YES	YES	YES	NO	NO
Chicago Mercantile Exchange (IRS)	YES	YES	YES	YES	NO	YES
Options Clearing Corp. (Listed)	YES	YES	YES	NO	NO	NO
ICE Clear Credit	YES	NO	YES	YES	YES	YES
ICE Clear U.S.	YES	NO	YES	YES	NO	NO
LCH.Clearnet Ltd. SwapClear SCM	YES	NO	YES	YES	NO	YES
LME Clear Ltd.	YES	NO	YES	YES	NO	NO
HKFE Clearing Corporation	NO	N/A	N/A	N/A	N/A	NO
Korea Exchange (Listed)	NO	N/A	N/A	N/A	N/A	NO

Approval of new clearing members:

Is the risk committee directly involved in determinations regarding the acceptance or rejection of a new clearing member, not merely the assessment or review of eligibility criteria?

Margin methodology responsibility:

Is any form of recommendation, consultation, review and/or ultimate determination by the risk committee required to change the CCP's margin methodology?

Default fund sizing responsibility:

Is any form of recommendation, consultation, review and/or ultimate determination by the risk committee required w/r/t default fund sizing, including but not limited to generic default fund policy reviews, individual clearing member default fund requirements and stress testing?

Declaration of default responsibility:

Does the risk committee participate in the actual determination of a clearing member event of default in accordance with the CCP's rules, including circumstances where such participation is limited to certain specified events of default only?



Amending Margin and Default Fund Methodologies

Ability to amend margin methodology at any time		Ability to unilaterally change default fund calculation methodology			
(bo	ased on 26 CCPs;	60 services overall)	(based on 26 CCPs; 60 services overall)*		
YES	NO	Not addressed in the Rules	YES	NO	Not addressed in the Rules
52	6	2	43	6	7
Process for	Process for amending margin methodology		Process for changing default fund calculation methodology		
Changes effected via rule change	Committee / Board approval or consultation	No process applies or none is specified in rules	Changes effected via rule change	Committee / Board approval or consultation	No process applies or none is specified in rules
15	16	29	13	14	29

^{*4} services do not currently have a default fund and are therefore not included in the calculations above.



Financial Resources – Key Issues to Analyze

- Combined Waterfall vs. Limited Recourse
- Unfunded commitments
 - Replenishments vs. Assessments
- CM Liability and Withdrawal Timeline
- CCP committed capital Skin in the Game
- End of Waterfall Remedies



Combined Waterfall vs. Limited Recourse

- Does the CCP clear different product types through more than one service within the same legal entity?
- Is so, are the **financial resources** available in respect of one service **segregated** from those of any other service?
- Is the waterfall separation always effective (i.e., is the service truly limited recourse)?



Default Waterfall Application & Recourse

Does the CCP clear different products through different services within the same legal entity?				
			(based on	26 CCPs)
	YES			NO
	18			8
If so, does each	If so, does each service have a separate default waterfall?			
YES NO				
14 4				
If so, is there limited recourse?				
YES	NO	Not Addressed in		
159	IVO	the Rules		
4	7	3		



Unfunded Commitments

- Does the CCP distinguish between replenishments and assessments?
- How may replenishments and assessments be utilized by a CCP?
- Is there a cap on the amount of replenishment/assessment the CCP may require from non-defaulting CMs in respect of a single default (or multiple defaults)?
- Is there a different risk profile for consecutive and overlapping defaults?



Replenishments and Assessments

Default Fund Contribution

The contribution of a CM to a default fund.

Replenishment

An amount payable by a CM to restore the default fund to its steady state
following one or more CM defaults, generally with a view to enabling the
CCP to continue providing clearing services through the service after the
default process has completed.

Assessment

Additional contributions to the default fund or to the CCP directly which
the CCP may call upon a CM to make in order to ensure that it has
sufficient resources to enable the CCP to manage the default of one or
more CMs in addition to default fund contributions and replenishments
already made by such CM.



CM Default Fund Replenishment and Assessment Caps

	Cap per default	Cap across multiple defaults	Cap upon notice of withdrawal	Withdrawal subject to CCP approval
Eurex Clearing AG (Listed)	YES	YES	N/A	NO
ICE Clear U.S.	YES	YES	N/A	NO
Chicago Mercantile Exchange (Listed)	YES	YES	N/A	NO
Chicago Mercantile Exchange (IRS)	YES	YES	N/A	NO
LCH.Clearnet Ltd. SwapClear SCM	YES	YES	N/A	NO
BM&FBOVESPA S.A. (Derivatives)	YES	YES	N/A	YES
LME Clear Ltd.	YES	NO	NO	NO
Options Clearing Corp.	NO	NO	YES	NO
Japan Securities Clearing Corp. (Listed)	NO	NO	NO	YES
Korea Exchange (Listed)	YES, but equal to the full DF	NO	NO	YES

<u>Cap per default</u>: CCP rules or applicable law expressly provide for a cap on liability in respect of a single CM default.

<u>Cap across multiple defaults</u>: CCP rules provide for a cap on liability in respect of multiple defaults other than by way of the aggregate of all single default caps.

<u>Cap upon withdrawal</u>: Must a clearing member must give notice of its intent to terminate its clearing membership in order to cap its liability to the CCP?

<u>Withdrawal subject to CCP approval</u>: CCP approval is required in order for a clearing member to withdraw from the service.



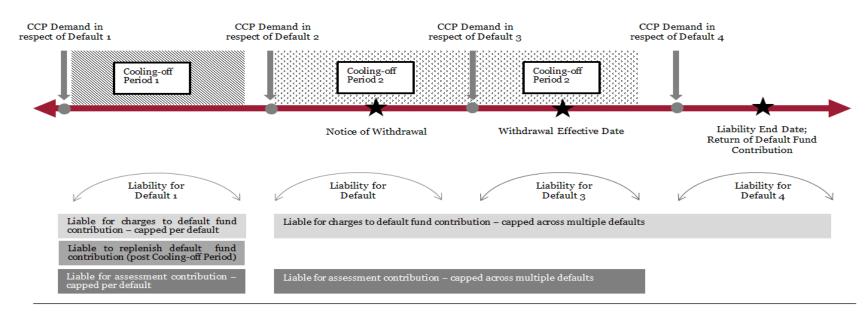
CM Liability and Withdrawal Timing

By when

- is the default fund required to be replenished by the CM following utilisation?
- is the CM required to provide its assessment?
- Are CMs required to terminate their CCP membership to cap their default fund liability?
- Are there constraints on the timing of any such termination?



ICE Clear U.S.



Event timing

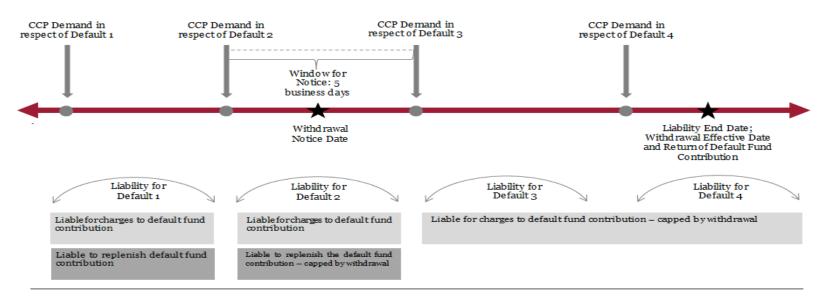
- CM provides a notice of withdrawal after Default 2;
- CM's withdrawal is effective after Default 3 but before the end of Cooling Off Period 2; and
- any unused default fund contribution is returned after Default 4.

CM's liability

- for replenishments ends on the Withdrawal Notice Date;
- for assessments ends on the Withdrawal Effective Date; and
- for charges to its default fund contribution ends on the Liability End Date,

In each case, assuming positions are closed out by the close-out deadline.

Options Clearing Corp.



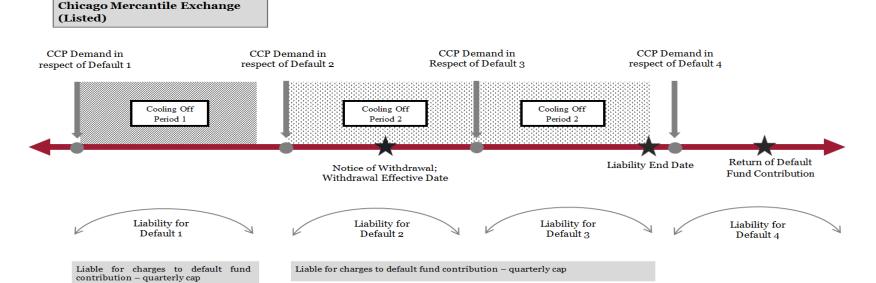
Event Timing

- CM provides a notice of withdrawal after Default 2 and within 5 business days after utilization of the CM's default fund contribution;
- CM's withdrawal is effective after Default 4; and
- any unused default fund contribution is returned after Default 4.

CM Liability

- for replenishment ends on the Withdrawal Notice Date;
- for assessment ends on the Withdrawal Notice Date; and
- for charges to its default fund contribution ends on the Liability End Date





Liable for assessment contribution – capped across multiple defaults

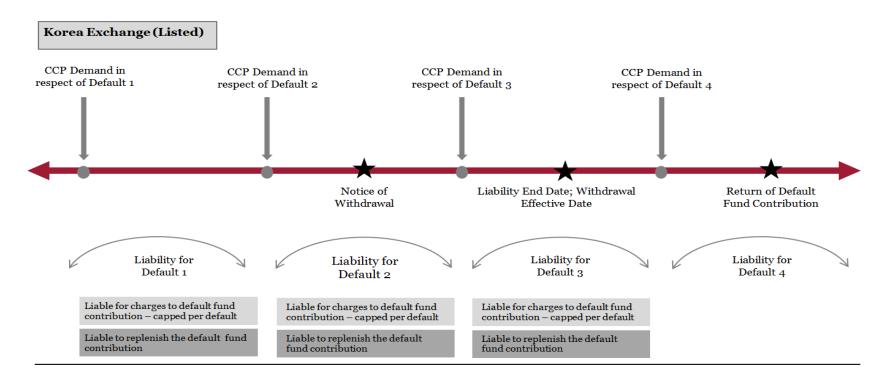
Event Timing

Liable to replenish default fund contribution – generally, quarterly

- CM provides a notice of withdrawal after Default 2; and
- any unused default fund contribution is returned after Default 4.

CM Liability

- for replenishments ends at the beginning of Cooling Off Period 2 (assuming a Withdrawal Notice is sent)
- for assessments ends on the Liability End Date (on the last day of Cooling Off Period 2)
- for charges to its default fund contribution ends on the Liability
 End Date



Event Timing

- CM provides a notice of withdrawal after Default 2;
- CM's withdrawal is effective after Default 3; and
- any unused default fund contribution is returned after Default 4.

CM Liability

ends on the Withdrawal Effective Date/Liability End Date.



CCP skin-in-the-game (SITG) (1)

Key questions

- Does the CCP contribute to the default fund or otherwise to the default waterfall? If so, how much does it contribute and is there a cap?
- Is the CCP's contribution at risk before non-defaulting CMs' contributions?
- When does the CCP provide and replenish such contribution?
- Are such contributions separately identified on the balance sheet and,
 if so, are these funds held in a separate account away from the other
 assets of the CCP?
- What recourse is there to the CCP's assets (i.e. other than those submitted to the default fund) in a default situation?
- Are these assets subject to non-recourse or other ring-fencing provisions?

CCP skin-in-the-game (SITG) (2)

<u>Does the CCP contribute</u> to the default fund or otherwise to the default waterfall? If so, <u>how much does it contribute and is there a cap?</u>

LCH. Clearnet – SwapClear (SCM) Yes

- up to a capped amount determined by the CCP
- **3rd step** of the **default waterfall**, ahead of all non-defaulting CMs' default fund contributions.

Based on the CCP's PFMI self assessment as of 30 June 2014, the amount of the CCP's dedicated own resources was capped at **EUR 64m**

(i.e. in accordance with EMIR's minimum requirement, 25% of its minimum capital).

Allocated to each default waterfall in proportion to the size of each default fund. As of 30 June 2014, there were **6 mutualised**, service-specific default funds.

HKFE Clearing Corporation Limited

At the CCP's discretion

The CCP may credit any of its resources to the default fund but the **amount** and **when** such resources will be credited appear to be **at the discretion of the CCP**.

Additionally, the CCP has established the **Contingent Advance Capital arrangement** with financial support from **HKEx** - to provide additional funding in the event that the resources available under the default fund are not sufficient.

The level of contingent capital made available by the CCP cannot exceed the actual amount of funding made available by HKEx.

The CCP has **power to recover** the utilised amount **from CMs**. Repayment is determined by the CCP on a pro rata basis and must be met by cash payment within the time period specified by the CCP.



CCP skin-in-the-game (SITG) (3)

When does the CCP provide and replenish such contribution?

LCH. Clearnet – SwapClear (SCM)

3rd step of default waterfall

The CCP is required to **immediately inform the Bank of England** if the amount of dedicated own resources held **falls below the amount required under EMIR**, together with:

- the reasons for the breach and
- a comprehensive description in writing of the measures and the timetable for its replenishment

The CCP is required to **reinstate** the dedicated own resources at least **within 1 month** from such **notification to the Bank of England**.

HKFE Clearing Corporation Ltd

At the CCP's discretion



End of Waterfall Remedies

- Forced Allocation
- Invoicing Back
- IM haircutting
- VM/gain haircutting
- Voluntary payments
- Limited recourse
- Service closure



End of Waterfall Remedies (1)

Forced Allocation

A process by which a CCP may require a CM to enter into a Contract at a price and otherwise on terms specified by the CCP

- whether on or off market and
- whether or not (although usually) upon the payment between the CCP and the CM of a sum of money representing the value (which may be historic) of the Contract subject to such forced allocation as determined by the CCP (and generally offset by an opposing obligation to pay variation margin in respect of such Contract),
- such forced allocation customarily to ensure that the CCP retains a
 hedged exposure to market risk following a default, a non-default loss,
 a force majeure or other emergency.



End of Waterfall Remedies (2)

Forced Allocation – key questions

- Does the CCP have the right to forcibly allocate Client and house Contracts to non-defaulting CMs?
- If so, by what mechanism are pricing, size of allocations and CM recipients determined?
- What is the timing for Forced Allocation?
- Is Client business treated separately from house business?



End of Waterfall Remedies (3)

Invoicing Back

- A process by which a CCP may terminate a Contract (or the market exposure in respect of a Contract by requiring a CM to enter into an offsetting Contract), usually upon the payment between the CCP and the CM of a sum of money representing the value (which may be historic) of the Contract subject to such invoicing back (or, where relevant, the offsetting Contract) as determined by the CCP (and generally offset by an opposing obligation to repay variation margin posted in respect of such existing Contract or in respect of the offset achieved).
- Such invoicing back customarily ensures that the CCP retains a hedged exposure to market risk following a default, a non-default loss, a force majeure or other emergency.



End of Waterfall Remedies (4)

Invoicing Back – key questions

- Does the CCP have the ability to liquidate Contracts on opposite sides
 of the market through Invoicing Back Contracts with non-defaulting
 CMs for the purposes of liquidating Contracts or hedging market risks
 of the defaulting CM?
- If so, how are the prices for such Contracts determined?
- What is the timing for Invoicing Back?
- Is Client business treated separately from house business?



End of Waterfall Remedies (5)

Based on 55 CCP services

Does the CCP have	No	Yes	Potentially yes
the right to effect			(The Rules are not 100% clear, potentially yes particularly in emergency conditions)
Forced Allocation?	37	6	12
Invoicing Back?	27	18	10



Transparency

Despite PFMIs, adherence to transparency is uneven

- Margin methodology
- Default fund methodology
- Auction procedures
- Liquidity arrangements
- Custody and investment risks

From whose perspective should transparency be judged?

- CCP
- Regulator
- CM
- Customer



CCP Risk Review Information

Please use the "question" function on your webinar control panel to ask a question to the moderator or speakers.

For more information on the CCP Risk Review, please visit:

- www.ccpriskreview.org
- or call Jackie Mesa at 202.772.3040



