# Interoperability among clearing corporations: PwC's point of view

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# Foreword

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Dear readers,

It is my pleasure to bring you our point of view on the recent regulation on interoperability arrangements among clearing corporations in India. Interoperability is a landmark initiative by SEBI and a major step towards enabling the Indian securities market to enter the league of global technologically interconnected financial markets.

In this document, we have covered the key features of interoperability, and highlighted global trends and some of the important challenges requiring attention from stakeholders to achieve its successful implementation.

I hope you find our insights into the regulation helpful.

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# 1

# Interoperability among clearing corporations: An introduction

In November 2018, the securities market regulator, the Securities and Exchange Board of India (SEBI), released the regulatory framework for interoperability among clearing corporations (CCPs) [Circular no.: CIR/MRD/DRMNP/CIR/P/2018/145]. The framework proposes to operationalise interoperability between the three qualified CCPs, namely the National Securities Clearing Corporation Ltd (NSCCL), Indian Clearing Corporation Ltd (ICCL) and MCX-SX Clearing Corporation Ltd (MCX-SXCCL).

**Below is an extract from the SEBI circular:**

Interoperability among Clearing Corporations (CCPs) necessitates linking of multiple Clearing Corporations. It allows market participants to consolidate their clearing and settlement functions at a single CCP, irrespective of the stock exchange on which the trade is executed. It is expected that the interoperability among CCPs would lead to efficient allocation of capital for the market participants, thereby saving on csts as well as provide better execution of trades.[1]

The recognised clearing corporations shall establish peer-to-peer link for ensuring interoperability. A CCP shall maintain special arrangements with another CCP and shall not be subjected to normal participant (membership) rules. Risk management between the CCPs shall be based on a bilaterally approved framework and shall ensure coverage of inter-CCP exposures. CCPs shall exchange margins and other financial resources on a reciprocal basis based on mutually agreed margining models.[2]

1 *'Interoperability among Clearing Corporations', SEBI, 27 Nov 2018, page 1 (https://www.sebi.gov.in/legal/circulars/nov-2018/interoperability-among-clearing-corporations_41089.html)*
2 *'Interoperability among Clearing Corporations', SEBI, 27 Nov 2018, Page 2 (https://www.sebi.gov.in/legal/circulars/nov-2018/interoperability-among-clearing-corporations_41089.html)*

## Timeline, drivers and interoperability model

The earlier timeline proposed by SEBI for the implementation of the interoperability arrangement was 1 June 2019. However, stock exchanges have given an extension of one month to clearing members to complete thorough development and testing of the interoperability framework, thereby postponing the implementation date to 1 July 2019.

The primary driver for SEBI to introduce interoperability norms in the Indian market is to reduce trading costs through better utilisation of margin and capital resources of market participants. Interoperability between clearing houses will establish a one-to-many link between exchanges and CCPs. It offers market participants the option to select a single clearing house instead of locking operations within a vertically closed set of entities for trading, clearing and settlement for each exchange.

The regulation proposes to introduce interoperability for all exchange-traded products except commodity derivatives.

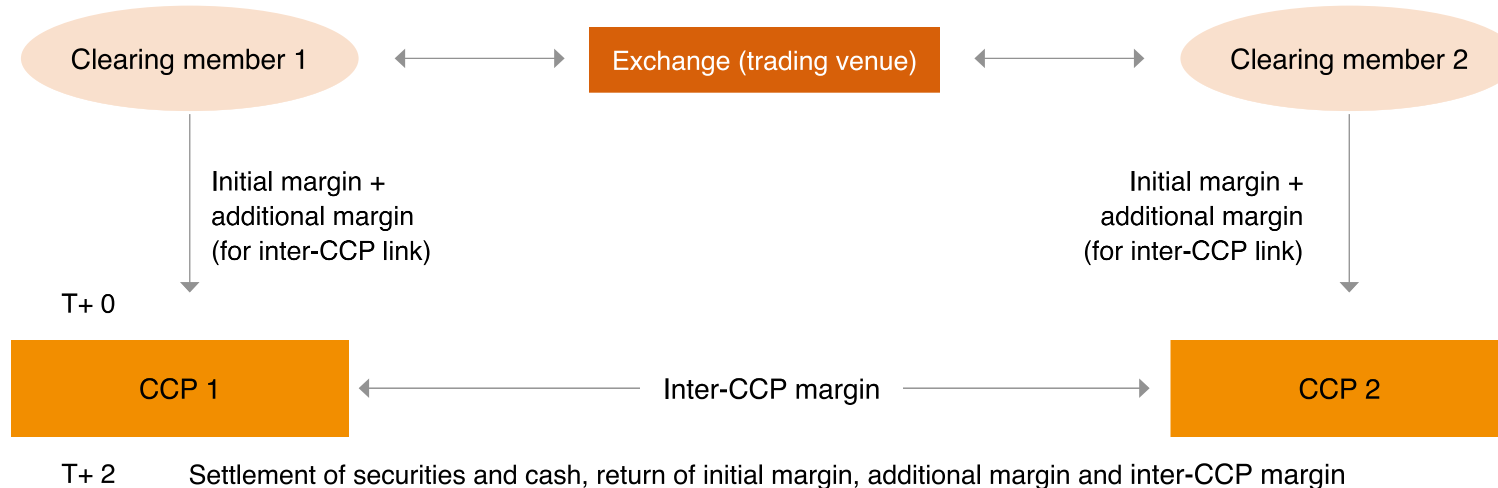
The interoperability arrangement between central counterparties can be typically implemented through one of two models:

**Peer-to-peer model:** Special arrangements between CCPs (no requirement for a CCP to be a member of another CCP) wherein risk management is based on a bilaterally approved framework between CCPs.

**Participant model:** CCPs become each other's members and are subject to the host CCP's participant rules.

SEBI has recommended the peer-to-peer model as the preferred model for the interoperability arrangement between the three recognised CCPs.

**Illustrative representation of peer-to-peer interoperability arrangement for cash segment**




*Source: CCP interoperability arrangements – ESRB (https://www.esrb.europa.eu/pub/pdf/reports/esrb.report190131_CCP_interoperability_arrangements~99908a78e7.en.pdf)*

# 2

# Salient features

The salient features of an interoperability arrangement are listed below:

1. **Better capital utilisation:** Interoperability allows traders to consolidate trades across multiple exchanges and submit them for clearing and subsequent settlement to a single designated clearing house. Thus, the margins and collateral are deposited at a single CCP rather than being spread across the respective clearing house of each exchange. This helps in better utilisation of capital resources for market participants due to reduced fragmentation of their liquid assets and lower post-trade costs for both individual and retail investors. Investors can choose their trading and clearing venues, effectively depositing collateral with one clearing house and taking advantage of reduced costs offered by the other exchange.
2. **Reduced trading disruption:** With interoperability, an exchange can be served by multiple clearing houses. In case of disruption of the link between an exchange and a clearing house, trades can still be routed to other CCPs, ensuring continuation of trading activity.

Similarly, since multiple exchanges are linked to a single CCP, in case of disruption of trading activity on an exchange, traders can route their orders to the other exchanges and still clear their trades with their designated CCP.

3. **Reduced aggregate exposure:** Trades are collected from multiple exchanges by a CCP, resulting in additional netting benefits for its members and reducing the aggregate exposures.
4. **Reduced operational complexity:** Interoperability will simplify operations between market participants and CCPs by requiring them to liaise only with their preferred CCP, instead of multiple CCPs, for operational procedures. Thus, operational hassles and associated costs will be minimised.
5. **Enhanced market competition and lower cost of clearing:** Currently, more than 90%[3] of trading volumes (and, consequently, clearing volumes), both in the cash and derivatives segments, are secured with a single exchange. The flexibility available to market participants to choosing their CCP will increase competitiveness among CCPs. This will lead to reduction in costs and redistribution of clearing and settlement volumes among the three CCPs.

3 *https://www.sebi.gov.in/sebi_data/commondocs/mar-2018/sebibulletinffeb2018_p.xlsx; https://www.moneycontrol.com/stocks/marketstats/turnover/ /*

# 3 Key imperatives

While interoperability increases market participants' access to financial markets in a cost-effective manner, it also brings in financial stability risks due to dependencies created between the interconnected CCPs. One of the consequences of an interoperability arrangement is that it introduces an additional credit risk between the linked CCPs. Also, since derivatives are in scope and derivative contracts have a longer duration than equity exposures, CCPs will need to ensure that they have sufficient margin throughout the contract duration.

In order to overcome the challenges, market participants should consider the following imperatives.

1. **Inter-CCP margin management:** Interoperability causes each CCP to assume a credit exposure to the other CCP. Though the likelihood is very low, a default by one CCP may threaten the solvency of the linked CCP.

   CCPs must implement prudent margining norms to ensure the stability of the securities market with interoperability. Interoperability arrangements require collateralisation and CCPs will have to

provide for the amount to be posted with each other through the collection of 'additional initial margin' from their respective clearing members. A higher 'additional initial margin' than that applicable to clearing members will offset the impact of the restriction on CCPs to contribute to each other's default fund.

SEBI's proposal to include 'additional capital' as a component of the inter-CCP margin will serve as an additional buffer since no exposure can be granted on this component of the inter-CCP margin.

2. **Enhance default waterfall methodology:** The connected CCPs will need to review and enhance their existing default waterfall model to cover default by another CCP while remaining solvent and exercising clearing obligations smoothly. This is especially significant when inter-CCP margin requirements fail to adequately cover losses incurred due to default by the member(s) of another CCP.

3. **'Additional initial margin' limits benefits of interoperability in derivatives:** As more and more market participants decide to clear their trades with their preferred CCP, the balancing positions in clearing CCPs' open interests with each other will continue to increase. An exceedingly large open interest may exceed the defined liquidation period for contracts in the portfolios of CCPs, in which case an 'additional initial margin' (also referred to as the 'concentration margin') may be required as a buffer against the extended liquidation period.

   This makes it imperative for CCPs to continuously monitor exposure to other CCPs and if it exceeds a certain predefined threshold, the CCP should call for an additional initial margin from the other CCP to cover against the exposure. An inherent drawback of this model is that the additional initial margin will ultimately be sourced from the market participants, leading to higher costs.

4. **Technology integration:** CCPs need to establish additional linkages with other CCPs to ensure exchange of trade data, margin, and outstanding exposure and settlement details.

   Low latency connectivity linkages also need to be established with disaster recovery (DR) and resilience centres of other exchanges to ensure near real-time exchange of information.

   Market infrastructure institutions (MIIs) should perform sufficient system integration testing (SIT) and performance and stress testing in line with SEBI requirements. Further, they will need to employ additional resources to monitor operations associated with interoperability.

5. **Market segment specific considerations:** Market participants will be able to select a different CCP for different segments. That is, a clearing member can have one CCP for the cash segment with another CCP for the derivatives segment.

   Price, volume, technical differentiators in the form of STP process flows and value-added services in the form of regulatory, MIS and ad-hoc reporting and data analytics will be the key factors influencing the choice of CCP for market participants across both the cash and derivatives segments.

6. **Revised documentation:** Stock exchanges and CCPs need to repaper their agreements with market participants and sign off before the revised deadline of 1 July 2019. Key agreements that need to be finalised relate to establishing a communication link among CCPs and between CCPs and trading venues, market surveillance, sharing of data, settlement processes, default handling and dispute resolution process. CCPs will need to exercise thorough due diligence and collect all the requisite material information of other CCPs to examine their creditworthiness.

# 4 Global trends

Globally, interoperability was first established in Europe to address the existing fragmented market structure. Similarly, in Asia, the Hong Kong Stock Exchange and Shanghai Stock Exchange are connected through a participant link model with an agreement to clear their trades via their local clearing houses.

Although there is no interoperability arrangement in the US, the Depository Trust and Clearing Corporation (DTCC) serves as a single point of clearing across exchanges and asset classes.

| Region | Interoperable CCPs | Inter-link model | Products |
|---|---|---|---|
| Europe | SIX x-clear AG, LCH Ltd and Euro CCP | Peer-to-peer | Cash equities and ETFs |
| Europe | CC&G and LCH SA | Peer-to-peer | Italian government bonds (cash and repos) |
| Europe | LCH Ltd and SIXX NO | Peer-to-peer | Cash securities (equities and bonds), exchange-traded equity derivatives, repos, securities lending |
| Asia Pacific | ChinaClear and Hong Kong Securities Clearing Corporation (HKSCC) | Participant model | Cash equities |

# 5 Our point of view

Interoperability allows consolidation of the clearing and settlement functions with only a single CCP per segment for a market participant. It will lead to reduced costs and improved capital utilisation while simultaneously reducing the operational complexities associated with subscribing to multiple CCPs.

Interoperability will also further drive competition amongst CCPs with the objective of securing a higher market share in clearing and settlement functions. This will in turn lead to enhanced customer services, differentiated offerings and potentially reduced cost of offerings as CCPs seek to innovate and expand their existing scope of services.

Globally, CCPs have faced challenges in implementing interoperability in the derivatives market. A spike in concentration risk and inter-CCP exposures over the duration of derivatives contracts requires additional margins to cover the risk, potentially leading to increased costs for the market participants.

It will be interesting to see the manner in which the regulator and market participants respond to these challenges as and when they surface. Indian CCPs and regulators must remain vigilant towards concentration risks and inter-CCP exposures and have a defined policy and procedures in place to tackle such risks.

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