

CCIL Disclosures on

Compliance with

Principles for Financial Market
Infrastructures

Committee on Payments and
Market Infrastructures
Board of the International Organization of
Securities Commissions

Responding Institution:	The Clearing Corporation of India Ltd.
Jurisdiction(s) in which the FMI Operates:	India, United States (for settlement of USD funds in Rupee/ USD Settlement segment.) Switzerland for CLS Settlement
Authority(ies) regulating, supervising or overseeing the FMI:	Reserve Bank of India
The date of this disclosure is:	18th Aug 2023 (Data as on 31st March 2023)

This disclosure is also made available at www.ccilindia.com

For further information, please contact Risk Management department at rmd@ccilindia.co.in

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Glossary

CCIL	The Clearing Corporation Of India Ltd.
CCP	Central Counter Party
CDSIL	Clearcorp Dealing Systems (India) Limited
CLS	Continued Linked settlement
CM	Concentration Margin
CRF	Contingency Reserve Fund
CRO	Chief Risk Officer
DF	Default Fund
FRA	Forward Rate Agreement
GLEIF	Global Legal Entity Identifier Foundation
GoI	Government of India
IM	Initial Margin
IRIS	Integrated Risk Information System
IRS	Interest Rate Swaps
LEI	Legal Entity Identifier
LEIL	Legal Entity Identifier India Limited
LoC	Lines of Credit
LOU	Local Operating Unit
MD	Managing Director
MTM	Marked to Market
RBI	Reserve Bank of India
RMC	Risk Management Committee
SIG	Skin in the Game
SRF	Settlement Reserve Fund
TR	Trade Repository
TREPS	Tri Party Repo Dealing System
VaR	Value at Risk
VM	Volatility Margin

I. Executive summary

The Clearing Corporation of India Ltd. (CCIL), set up in April 2001, is a payment system authorized under the Payment and Settlement Systems Act, 2007 and Regulations there under by Reserve Bank of India (RBI). It provides clearing and settlement in OTC financial market products, mainly to the wholesale market players which are also regulated entities. As a CCP and clearing service provider, it has always managed the incidental risks in a proactive manner. It has also provided innovative products and solutions to its users which have helped in deepening the markets and supporting in its secure growth.

Reserve Bank of India, as regulator, has declared CCIL as a qualified CCP (QCCP) in January '14.

As part of the Financial Stability Assessment Program (FSAP) World Bank team has conducted a detailed assessment of the observance of the Principles for Financial Market Infrastructures (PFMI) by CCIL and its Trade repository. CCIL has complied with 22 out of 24 Principles (2 principles are not applicable). CCIL's Trade Repository has complied with "12" principles out of 24 Principles (12 Principles not applicable).

II. Summary of major changes since the last update of the disclosure

This is the eighth disclosure under Principles for Financial Market Infrastructures (PFMI).

Summary of changes Principle by Principle is attached.

III. General background on the FMI

A. General description of the FMI and the markets it serves

- 1.1. CCIL was set up in April 2001 to provide clearing and settlement for transactions in the debt, money, forex and derivative markets in India. The prime objective of the company is to improve efficiencies in the settlement process and to de-risk the markets. The Company started operations in February 2002.
- 1.2. CCIL is a payment system authorized under the Payment and Settlement Systems Act, 2007 and Regulations there under by Reserve Bank of India (RBI). CCIL is authorized to operate payment systems for the following:
 - a. **Securities Segment** – Outright, Market Repo and Tri-party repo trades in Government Securities. Tri-party Repo trades are entered into on an anonymous platform provided by a CCIL subsidiary.

- b. Forex Segment, comprising the following sub-segments:
- **USD-INR Settlement-** Cash, Tom and Spot trades including Forward trades when these enter the Spot Window
 - **CLS Segment-** Continuous Linked Settlement (settlement of cross currency trades of members through CLS Bank)
 - **Forex Forward Segment-** CCP Clearing of Rupee/USD Forward trades
- c. Rupee Derivatives Segment- Rupee denominated IRS and FRA trades.

CCIL also provides non-guaranteed settlement services for daily cash flows of OTC IRS& FRA trades.

- 1.3. The Company also operates a Trade Repository (TR) for all OTC Derivative trades in credit, interest rate and foreign exchange markets (including for client trades). CCIL's 100% owned subsidiary Clearcorp Dealing Systems (India) Limited (CDSIL) is operating several trading platforms for its members for dealing in Government Securities, Forex and Tri-party Repo. It is also running a trading platform for anonymous order matching electronic trading in Interest Rate Swaps referenced to Overnight MIBOR. The trading system functions in co-ordination with CCP Clearing as mentioned in Para 1.2 above. The trades from trading system are automatically processed for CCP clearing.
- 1.4. CCIL's members primarily constitute banks and financial institutions operating in India. Indian branches of American and European Banks are active players in the markets that CCIL serves.
- 1.5 CCIL 's clearing and settlement covers trade settlements for the wholesale market entities i.e. for the banks, institutions, mutual funds, insurance companies etc. in the over the counter market. For the year 2022 -23 CCIL's foreign exchange clearing handled settlement of trades of about USD 42,282.54 million (equivalent INR 34,76,047.32 million) per day on an average
- In Govt. Securities market and in Tri-party Repo, average daily settlement volumes were:
 - Government Securities- INR 16,69,494.23 million
(Market Repo-INR 12,56,390.89 -million and Outright- INR 4,13,103.35 million)
 - Triparty Repo- INR 34,73,361.96 million
 - Settlement of cross currency foreign exchange trades through CLS bank by CCIL for domestic banks are now at an average of USD 2,941.75million (equivalent INR 2,41,841.10 million @ INR.82.21 per USD as on 31 March 2023).

- In Rupee derivatives guaranteed settlement segment, average daily settlement volumes were of the order of INR 24,896.65 million respectively.

1.6 CCIL is acting as a calculation agent to Financial Benchmark India Pvt. Ltd. (FBIL) CCIL is acting as calculation agent to benchmark rates for Overnight Mumbai Interbank Outright Rate (MIBOR), Term MIBOR, FC - Rupee Options Volatility Matrix, Certificates of Deposit Rate, Treasury Bill Rate and Market Repo Overnight Rate (MROR), Term Mumbai Inter-bank Forward Outright Rate (MIFOR), Forward Premia, MIBOR – OIS.

General Organization of the FMI

CCIL is a public limited company registered under the Indian Companies Act, 1956. The oversight of the governance of CCIL is vested in the Board of Directors. The roles and responsibilities of the Directors are clearly set out in the Companies Act, 2013 and also in a separate Governance policy put in place by the Company. The overall functions of the Company are supervised and managed by the Board whereas specific areas like risk management, information technology etc. have been delegated to the Committees of the Board. The Managing Director looks into the day to day functioning of the Company assisted by a very strong group of senior officials who are professionals and market experts and function as Line Officials. Line Officials are supported by middle management and supervisory grade officials.

CCIL has a sound structure of corporate governance. CCIL has put in place a policy on Director's appointment, remuneration including the criteria for determining qualifications, independence, evaluation of Directors performance etc. in terms of the requirements under the Companies Act, 2013. The Board of Directors presently comprises of thirteen (13) Directors, consisting of nominees of Shareholders (5), Independent Directors (7) and the Managing Director. The Chairman of the Company is an independent Director.

B. Legal and regulatory framework

CCIL is authorized by RBI as a Payment System operator under the Payment and Settlement Systems Act, 2007 (PSS Act) for undertaking Clearing and Settlement of transactions in Government Securities (Market Repo, Outright and Tri-party repo,) Foreign exchange, Rupee Derivatives.

The last amendment to the PSS Act was carried out in 2015. The amendment:

- Introduces a definition for TR and designates of TR as a designated payment system under the PSS Act. CCIL is authorized as a TR and is a designated payment system, Hence, the provisions of the PSS Act are also applicable to TR.

- Expressly also protects irrevocability and settlement finality from directions of any authority established to function as a resolution agency for CCPs.
- Provides for a clear legal framework for CCP resolution, protecting the primacy of the CCP rules and procedures.

CCIL's Bye-Laws, Rules and Regulations that are also included under Schedule to Regulations 5 of the Payment and Settlement Systems Regulations 2008 provides required legal basis on its various material aspects such as netting, finality of settlement, default procedures etc.

Clearcorp Dealing Systems (India) Limited, a wholly owned subsidiary of CCIL, has been authorized as an Electronic Trading Platform operator by the Reserve Bank of India under the Electronic Trading Platforms Directions 2018

Legal Entity Identifier India Limited (LEIL), a wholly Owned Subsidiary of CCIL is accredited by the Global Legal Entity Identifier Foundation (GLEIF) as a Local Operating Unit (LOU) for issuance of Legal Entity Identifiers (LEIs).

C. System Design and Operations

System Design: CCIL is a systemically important payments system recognized under the Payment and Settlement Systems Act 2007. It offers CCP clearing of secondary market OTC trades in Govt. Securities, foreign exchange and Rupee IRS through a process of novation and multilateral netting. The system operates in line with the rules and conventions governing the markets.

Tiered Membership structure, segregation of collaterals and Clearing Member structure has been introduced in:

- a. Securities Segment (market repo outright and tri Party Repo) effective 2nd Mar 2020,
- b. Rupee Derivatives segment – effective 02nd November'20
- c. Forex Forwards segment – effective 1st February'21

The salient features of the the Tiered Participation structure are:

- i. Providing protection to the client collateral from participants' and fellow customer risks through segregation and portability
- ii. Enabling wider access to CCIL's systems. In some cases, some participants may choose to seek the tiered participation route through a Clearing Member. This may include participants who may prefer to access the system as clients or are participants who otherwise do not meet the eligibility criteria for direct membership of CCIL.

Operations: The processes followed for clearing and settlement of trades for various segments is as under:

a. Government Securities Segment

- (i) **Outright and Market Repo:** Secondary market transactions (settlement on T+0 and up to T+2 basis) in Govt. Securities flow to CCIL in two modes. Outright and repo trades concluded on anonymous order matching platforms i.e., NDS-OM and CROMS respectively flow for clearing and settlement through a straight through process. OTC outright and repo trades concluded by the members are reported on NDS-OM and CROMS respectively. These trades are accepted for clearing and settlement by CCIL. In the process, CCIL is subject to market risk which is managed through collection of initial margin, mark to market margin and other additional margins (e.g Volatility Margin)

The trades received as above are subject to on-line exposure check, post which the trades are novated whereby CCIL becomes counterparty to those trades. These trades are then settled on DVP basis on their respective settlement dates. In case of loss arising out of participant default, CCIL has put in place a member contributed default fund with a clearly laid out risk waterfall.

- (ii) **Tri party Repo:** Effective 5th Nov 2018, CCIL has launched Tri Party Repo in government securities by decommissioning Collateralized Borrowing and Lending Obligation (CBLO). The features of Tri-party Repo remain similar to that of CBLO. It facilitates borrowing/lending money on a collateralized basis. Participants are benefitted from Tri-party Repo in the following ways:

- By way of getting the SLR benefit for the collateral held in custody towards their lending in Tri party Repo.
- For the borrower, the amount borrowed is exempted from NDTL and hence from CRR computation.
- Reduction in liquidity requirements due to netting of Tri-party repo trades with market repo and outright trades.

It is issued for a maximum tenor of one year and traded on yield time priority on the TREPS anonymous order matching platform managed by CDSIL. Most of the transactions in Tri-party Repo are on an overnight basis. The balances in Tri-party Repo are held in the custody of CCIL in electronic book entry form. Members can borrow against the eligible collaterals deposited by them with CCIL. Transactions concluded on the trading platform are accepted for guaranteed settlement subject to pre-order margin and borrowing limit check. Settlement is carried out on DVP basis as in case of securities segment.

As the repayment of borrowing against Tri-Party Repo is guaranteed by CCIL, it should have enough collateral to meet any eventuality of a default by the borrower. To take care

of this risk, all borrowings are fully collateralized through setting up of Borrowing Limits for the members against their collateral deposits in eligible Government Securities. These collaterals are subjected to hair-cuts and are revalued at least on a daily basis. Any shortfall in the value of collaterals (to cover outstanding borrowings) is collected through margin calls.

Effective November'19, CCIL has implemented a collateral concentration Policy for tri-party repo trades whereby caps have been introduced on acceptance of illiquid securities as collateral towards borrowing limit. Further, State Development Loans (SDLs) have been made eligible for depositing as collateral with a cap. The current concentration limits are as under:

- i. Illiquid GOI Securities – 20% of the market value of collateral(net of haircut) in semi-liquid and liquid securities
- ii. SDLs – 20% of the market value of collateral(net of haircut) in semi-liquid and liquid securities

Floating Rate Bonds are accepted as collateral for borrowing limit (without any cap, i.e., up to 100% of market value net of haircut.

CCIL is also exposed to the risks due to a member not honoring its settlement obligation. To adequately cover this risk, CCIL collects Initial Margin, Volatility Margin, and MTM Margin from the members in respect of their deals for lending and borrowing. A member contributed default fund with a clearly laid out default waterfall is in place for Tri party Repo trades.

Effective 15th April 2021, coupon accrued on dated Government securities is also allowed as borrowing limit in Tri Party Repo segment.

- b. **Forex Segment:** CCIL settles all inter-bank Cash, Tom, Spot and Forward USD/INR transactions on guaranteed basis. All inter-bank transactions concluded bilaterally by its clearing participants (members) through various dealing platforms are reported to CCIL. Trades done on FX-Clear and Fx-Swap trading platforms run by CDSIL directly flow to CCIL's settlement system.

Details of trades concluded bilaterally by the members are reported to CCIL in a specified format. These trades are validated and matched in CCIL's clearing system. Matched trades are subjected to exposure check and trades that pass such exposure check are accepted for clearing and settlement. The matched forward trades are accepted for clearing and settlement on their entering spot window. Exposure check is carried out on-line, both for trades from FX

Clear and FX Swaps trading systems and also for reported trades. CCIL becomes the central counterparty to every accepted trade through the process of novation.

CCIL settles the net positions of the members on a payment versus payment (PVP) basis. The Rupee leg is settled through the members' current accounts with RBI and the USD leg through CCIL's accounts with its Settlement Banks at New York.

For effective risk management, Net Debit Cap (NDC) is set in both currencies (USD & INR) for each member in this segment. The limit is in terms of maximum net sell position permitted in both the currencies per settlement date. The model has been revised to be in-line with the change in market conditions, exchange rates and liquidity lines available. Margin is collected to cover the market risk based on value at Risk based Margin Factor. For entities with lower short-term Counterparty Risk Assessment (CPRA) Grade, additional margin is collected. Members have to contribute margin in USD to avail the limit.

Members with higher CPRA Grades are allowed to avail higher limits for TOM and SPOT settlement dates. CCIL covers the risk arising out of such higher exposures by collecting Additional Initial Margin (AIM).

For covering the liquidity risk in US Dollar, CCIL has collateralized Lines of Credit (LOC) in place from its overseas settlement banks. Collaterals for availing of such credit facilities are furnished out of USD Treasury bill purchased by CCIL out of the contributions made by the members to the SGF for this segment.

For managing the liquidity risk in Indian Rupee, Lines of credit in Rupee have been arranged from the banks. Such Lines of credit are available at Reserve Bank of India at the time of settlement.

In order to take care of the risk arising out of a default, a member contributed default fund is in place. A clearly laid out risk waterfall is also in place.

Further in order to provide the access of anonymous trading platform to the retail customers, CCIL has launched Fx-Retail trading platform effective 05th August'19.

FX- Retail provides an anonymous and order driven dealing in the USD/INR currency pair for the Customers of banks. The Customers can access the platform through the Internet and place buy/sell orders as per their requirement. The customers can book contracts in CASH (same day currency settlement), TOM (Next day currency settlement), SPOT (Trade +2 days currency settlement) and FORWARD (beyond SPOT currency settlement) instruments up to a period of 13 months including broken dates and Option period (not exceeding a period of 30 days). Customers are benefitted by way of transparency and competitive advantage in the exchange rate.

- c. **Forex Forward Segment:** CCIL extends clearing and settlement of USD/INR Forward trades with residual maturity up to 13 months. Forward trades concluded on FX-swap trading platform run by CDSIL and OTC trades reported by the members are subjected to on-line exposure check. Trades which pass the exposure check are novated by CCIL and accepted for clearing and settlement in this Segment.

Settlement of the trades happens through the USD/INR settlement segment. On S-2 day, the net position of each member is computed. Such net positions are subjected to exposure check for limit adequacy in the USD-INR settlement segment before acceptance.

The risk associated with the clearing process is the pre-settlement risk which is equivalent to market risk on forward positions. The risk is managed through collection of margins in the form of initial margin, concentration margin, volatility margin, and mark to market margin etc. from the members. Margins collected from the members are based on assessment of exposures on their outstanding trade positions also carried out on an on-line basis.

In order to take care of the risk from any default in this segment, a member contributed Default Fund is in place. A clearly laid out risk waterfall is also in place.

Effective 01st Feb'21 Clearing Member Structure has been implemented in Forex Forwards Segment along with auction based Default handling (effective 01st Feb 2021).

- d. **Rupee Derivatives (IRS) Segment:** CCIL extends CCP clearing of Rupee denominated Interest Rate Swap trades and FRAs along with the anonymous trading platform provided by Clearcorp Dealing Systems

The risk management relating to Rupee derivatives segment provides for collection of margins based on the outstanding trade portfolios of the members. CCIL manages to cover the risk through prescription of Initial margin (including spread margin), concentration margin, mark to market margin, volatility margin etc.

In order to take care of the risk of defaults, a member contributed Default Fund is in place. A clearly laid out default waterfall is also in place.

CCIL also provides central trade processing services in Rupee Interest Rate Swaps (IRS) and Forward Rate Agreements (FRA). The instruments covered are Interest Rate Swap - Fixed Float and Basis Swaps with maximum maturity of 10 years and Forward Rate Agreements with maximum maturity of 10 years. CCIL extends post-trade processing services like Interest Rate Reset, Tracking payment obligation of members on their outstanding contracts etc. and settlement of daily cash flows on Non -Guaranteed basis.

CCP Clearing of Interest rate swap trades referenced to the modified MIFOR benchmark commenced from 03rd April 2023

Effective 02nd Nov'20 Clearing Member Structure has been implemented in Rupee Derivatives Segment along with auction based Default handling (effective 01st Feb 2021).

e. CLS Settlement—CCIL also offers settlement of interbank cross currency transactions entered into by banks in India in various currencies through CLS bank on non-guaranteed basis, by availing the third party services of a Settlement member UBS Switzerland AG. Settlement at CLS bank happens on PVP basis. Default handling process for CLS segment has also been put in place effective Dec 2020. Effective 2nd November'20, enhancements were made to Risk Processes namely:

- CPRA Grading linked liquidity Limits and step up factors for currency based haircut rates introduced for members.
 - Provision created to reduce limits or add CRM based step up factors in the event of any deterioration in financial condition/regulatory action/adverse market reports etc.
- f. In order to collect, collate, store, maintain, process and disseminate electronic records or data related to (i) Certificate(s) of Deposit (CDs) (ii) Commercial Paper(s) (CPs) and (iii) Repo/ Reverse repo transactions in Corporate Bonds and Debentures/Certificate(s) of Deposit and Commercial Paper(s), CCIL operates a TR (FTRAC) for the Specified Instruments referred hereinabove
- g. Effective 25th October'19, ETP authorization has been received for NDS-OM, CROMS, NDS-CALL, ASTROID, FX-CLEAR, FX-SWAP trading platforms.
- h. Effective 15th February'20, Clearcorp Repo Order Matching System (CROMS) Web-based on-line platform for facilitating Direct Market Access to the Gilt Account Holders for Market Repos in Government Securities went live.
- i. Effective 12th Nov'21, RBI Retail Direct Scheme - a one-stop solution to facilitate investment in Government Securities by Individual Investors has become operational.
- j. Effective 29th Nov'21, new version of FX-Retail Platform with facility to Rollover and Early Deliver outstanding Forward Contracts went live.

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IV. Principle-by-principle summary narrative disclosure

Principle 1: Legal basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

<i>Assessment of Observation of Principle 1</i>	<i>OBSERVED</i>
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Key Consideration 1: The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

Material aspects of the CCIL's activity requiring legal certainty are:

- i. Laws and regulations specific to CCIL's activities and its Bye-Laws, Rules, Regulations (BRR) there-under.
- ii. Rights of CCIL on collaterals
- iii. Settlement finality.
- iv. Multi-lateral netting including close-out.
- v. Default Handling Procedures.
- vi. CCP resolution

the relevant jurisdictions are:

- i. India
- ii. United States (for Settlement of USD funds) in Rupee/ USD Settlement segment
- iii. Switzerland (For settlement of cross currency transactions through UBS at CLS Bank)

Legal basis for each material aspect:

Assurance of high degree of legal certainty as a CCP:

CCIL has been certified as an authorized —Payment System operator under the Payment and Settlement Systems Act, 2007 (PSS Act) for undertaking Clearing and Settlement of transactions in Government Securities (market repo, outright and Tri-party Repo), Foreign exchange and Rupee Derivatives.

CCIL's Bye-Laws, Rules and Regulations are also included under the schedule under Regulations 5 of the Payment and Settlement Systems Regulations 2008 provides required legal basis on its various material aspects such as netting, finality of settlement, etc.

The Payment and Settlement Systems (Amendment) Act 2015 provides for a clear legal framework for CCP resolution.

The PSS (Amendment) Act, 2015 has extended the applicability of the PSS Act to the designated Trade Repository. The Act further provides legal certainty to the Trade Repository services

carried out by the Company under RBI's mandate. The amended law also provides for legal & regulatory framework for Legal Entity Identifier (LEIL).

Key Consideration 2: *An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.*

The Bye-laws, Rules & Regulations of CCIL approved under PSS Act are approved by the Board of Directors of CCIL and are sent to RBI and notified as specified under the PSS Act.

CCIL has put in place an internal committee comprising of senior officials to formulate, review and update the rules and regulations of the CCIL. Upon such review, the rules and regulations as formulated or amended along with an independent review by the solicitors are placed before the Board's committee for recommendation to the Board for its approval. The Board deliberates and accords its approval subject to changes if any. Periodic review of CCIL Bye-laws, Rules & Regulations is also undertaken.

Any change to Bye-laws, Rules and Regulations requires approval of Board of Directors of CCIL. Further, any change to the Bye-laws, Rules and Regulations is also sent to the Reserve Bank of India (RBI) as Regulator.

In regard to contracts, either legal department validates these or external legal opinion is obtained.

Key Consideration 3: *An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants and where relevant, participant's clients, in a clear and understandable way.*

The legal basis for activities of CCIL is amply and clearly articulated in CCIL's Bye-laws, Rules and Regulations which govern the legal relationship between CCIL and its members and have the status of subordinate legislation under the Payment and Settlement Systems Regulations, 2008 enacted under the Payment and Settlement Systems Act, 2007, a Central Act passed by the Parliament. These govern the processes under the statute and are uploaded on the CCIL's Company's website for easy accessibility to the stakeholders.

Key Consideration 4: *An FMI should have rules, procedures, and contracts those are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.*

Enforceability of rules, procedures and contracts:

The enactment of the Payment and Settlement Systems Act 2007 as amended from time to time by the Government of India had imparted a very high degree of legal basis to CCIL's rules and procedures and consequently the legal enforceability of its operations are fully assured. The

statutory support to the Netting, novation, default procedures, settlement finality and settlement transactions being insolvency remote as also CCP insolvency have increased the confidence levels of the market in the functioning of CCIL.

Degree of certainty for rules and procedures:

On account of a very clear legal basis provided under the PSS Act to the functioning of CCIL in terms of its rules and procedures, authorized and monitored by RBI as Regulator under the PSS Act, the CCP foresees no such scenario where its actions could be reversed.

CCIL's activities or arrangements under its rules and procedures have never been held as unenforceable in any court.

Key consideration 5: An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

All the operations of the CCP are within Indian jurisdiction except where it has Settlement bank arrangements in other jurisdictions for the purposes of settlement of trades in other currencies and to that extent, it subjects itself for that limited purpose to those jurisdictional rules. CCP has obtained wherever required, legal opinions on conflict of laws.

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

<i>Assessment of Observation of Principle 2</i>	<i>OBSERVED</i>
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Key consideration 1: *An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.*

Governance arrangements:

CCIL 's objective is to provide risk mitigated Clearing & Settlement services as a Central Counterparty of institutional trades in OTC financial markets (Securities, Money market Instruments, Forex, and Derivatives etc.). Non -CCP clearing and trade processing is also offered for Interest Rate Swap trades and trades eligible for settlement through CLS Bank. CCIL hosts a Trade Repository (TR) also.

Periodical assessment of the risk processes of CCIL is conducted by independent external experts. Further all the processes of CCIL are also internally assessed by internal and operational auditors of CCIL who place their report before the Audit Committee of the Board for its monitoring. A separate Committee of Directors for risk management is in place for addressing risk management related issues. The Committee ensures tracking of CCIL's performance in meeting its objectives.

As one of the objectives in the Mission statement, safety gets top-most priority. Processes are automated wherever feasible bringing in huge efficiency. Safety is also achieved through well laid IT infrastructure with adequate redundancies. CCIL has obtained an enterprise level ISO certificate and is also complied with ISO-27001standards.

Independent experts in CCIL Board of Directors help to keep adequate focus on relevant public interest considerations. Apart from this, regular interactions with market bodies like FIMMDA, FEDAI etc. and with user groups help CCIL to identify relevant public interest considerations and include those into its objectives.

Key consideration 2: *An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.*

Governance arrangements:

CCIL is a public limited company under the Indian Companies Act, 1956 [replaced by Companies Act 2013]. CCIL is owned by banks, financial institutions primary dealers, Insurance Companies, NBFCs and other corporate bodies. The oversight of the governance of CCIL is vested in the Board of Directors. CCIL has a very healthy and sound structure of corporate governance. It has a number of Committees of the Board and external committees which oversee various functions of CCIL under the overall supervision of the Board.

Under the overall supervision and control of the Board of Directors of CCIL, Managing Director is appointed who is entrusted with the supervision of day to day functions of the Company. The Managing Director is assisted by a very strong group of senior officials who are professionals and market experts and function as Senior Management .Senior management Officials are supported by middle management and Junior management supervisory officials.

CCIL conducts periodic general body meetings and annual general meetings and report to the owners, the developments in respect of CCIL's functioning and take their approvals wherever required under the Companies Act, 2013 or under any other requirements.

The Management and Administration of the Company is within the overall legal framework under the Companies Act, 2013 and PSS Act 2007 as amended in 2015 and the Directions for Central Counterparties (CCP Directions) issued thereunder by RBI. The same is also documented under Company's charter and policies governing its management.

CCIL conducts User Group meetings periodically on critical issues touching upon the functioning of CCIL and take their feedback. For major changes in the risk models/risk processes, consultation papers are also issued for feedback from all relevant stakeholders. Further, under its Bye-laws, Rules and Regulations read with PSS Act and its Regulations, the accountability of CCIL to its members and regulator are clearly provided. Further, adequate and timely disclosure of the information is made to the shareholders from time to time in terms of the requirements under the Companies Act, 2013.

The Company has also formulated Vision, Mission and Values statement to provide brief outline of the Company's Objectives which prioritizes safety, efficiency, systemic and financial stability and other related public interests

Disclosure of governance arrangements:

The relevant governance arrangements, changes and reviews are communicated to the owners, relevant authorities, users either through the Annual Report or statutory returns which are mandatory under the Companies Act or PSS Act or CCP Directions and through necessary disclosures on the website of the Company. The Companies Act, 2013 had stipulated that the Annual Report prepared by the Companies should be more detailed and extensive in terms of information and disclosures. The same is also filed with the Regulators. The audited Financial

Statements are displayed on the website as required under the Payment and Settlement Systems Act 2007. In addition, a separate Code of Conduct for Directors has also been put in place by the Company.

The composition of the board and the board committees are also made available on the CCIL website

Key consideration 3:*The roles and responsibilities of an FMI 's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest.*

The board should review both its overall performance and the performance of its individual board members regularly.

Roles and responsibilities of the board:

The overall functioning of the CCIL is overseen by the Board of Directors of the Company. The roles and responsibilities of the Directors are very clearly set out in the Companies Act, 2013, CCP directions and a separate Corporate Governance Policy has been put in place by the FMI.

The provisions of the Companies Act, 2013 contain detailed disclosure requirements especially those relating to disclosures by Directors of their general and specific interests which the Directors have to furnish from time to time which are broadly as follows:

The Directors are required to furnish disclosure of interest / concern at the time of their appointment at the first meeting of the Board in which he/she participates as a Director.

Further, the Directors are required to furnish yearly disclosure at the first meeting of the Board in every financial year.

The Directors are also required to disclose to the Company of any change in their status / interest on an ongoing basis, mainly at the first Board Meeting after such change / becoming interested.

The Disclosures, Registers of contracts in which Directors are interested are also audited by the Internal Auditors and Secretarial Auditors.

The Company has laid down the Procedural aspects relating to Disclosures by Directors and the same is reviewed upon any relevant changes in law or as and when deemed necessary to do so.

The composite and overall Policy level decisions of CCIL are undertaken by the Board whereas specific functional interest areas have been delegated to the Committees of the Board.

The Committees undertake specific areas of activity entrusted to them and take all decisions connected with it and oversee implementation of the same by close monitoring through periodic

meetings and wherever required make suitable recommendations to the Board. The Committees consist of Directors who are professionally qualified with rich experience to discharge the responsibilities entrusted to them. The various Committees of the Board along with their scope are given below:

LIST OF COMMITTEES

1. Audit Committee

Scope
<ul style="list-style-type: none"> • To recommend the appointment, remuneration and terms of appointment of auditors of the Company;
<ul style="list-style-type: none"> • To review and monitor the auditor's independence and performance, and effectiveness of audit process;
<ul style="list-style-type: none"> • Examination of the financial statement and the auditors' report thereon,
<ul style="list-style-type: none"> • Approval or any subsequent modification of transactions of the Company with related parties as required under the Companies Act, 2013 and Rules thereunder;
<ul style="list-style-type: none"> • Scrutiny of inter-corporate loans and investments;
<ul style="list-style-type: none"> • Valuation of undertakings or assets of the Company, wherever it is necessary;
<ul style="list-style-type: none"> • Evaluation of internal financial controls and risk management systems;
<ul style="list-style-type: none"> • Monitoring the end use of funds raised through public offers and related matters;
<ul style="list-style-type: none"> • Oversee the vigil mechanism i.e. Whistle blower policy of the Company.
<ul style="list-style-type: none"> • To review periodic unaudited financial statements and internal and operational audit reports, concurrent audit reports, secretarial audit reports and systems audit reports:ISO 27001 certification Audit reports
<ul style="list-style-type: none"> • Review of report on compliances of applicable Laws as reported by the Internal and Operations Auditors
<ul style="list-style-type: none"> • Such other matters as may be referred to by the Board or as required under the Companies Act, 2013 or The Payment and Settlement Systems Act, 2007 or Rules and Regulations there under as amended from time to time.

2. Committee of Directors for Bye-Laws, Rules and Regulations (BRR)

Scope
<ul style="list-style-type: none"> • • To advise / review /recommend to the Board of Directors of the Company on the Bye-laws, Rules and Regulations, undertakings, documents, other related matters etc. and such changes/modifications as required from time to time • To advise / review / recommend to the Board of Directors of the Subsidiary Companies on the Bye Laws, Rules and Regulations, undertakings, documents and other related matters etc., for subsidiary company as may be delegated / referred by the Board of the Subsidiary Companies from time to time.

3. Technical Approval Committee (TAC)

Scope
<ul style="list-style-type: none">• To formulate a detailed Information Technology policy for the Company which shall be approved by the Board.
<ul style="list-style-type: none">• To advise / recommend / approve /decide in matters related to IT systems/ infrastructure/ policies/ procedures/ guidelines/ approach etc.
<ul style="list-style-type: none">• To oversee IT related systems and infrastructure of the Company.
<ul style="list-style-type: none">• To oversee the Information Security framework governance and policies of the Company•
<ul style="list-style-type: none">• Consider and accept all audit reports related to systems / IT.
<ul style="list-style-type: none">• Consider and approve the capital and revenue budget for IT and information security related items.
<ul style="list-style-type: none">• Consider and approve/ sanction IT/Information Security related capital and revenue expenditure that exceed the financial powers delegated by the Board to the Managing Director
<ul style="list-style-type: none">• To recommend appointment of Auditors such as Information Security (ISO), Systems Audit, etc. to the Audit Committee for approval by the Board.
<ul style="list-style-type: none">• Review the Business Continuity management processes/ manual and disaster recovery drills that are undertaken periodically
<ul style="list-style-type: none">• To advise / review / recommend Information Technology/Information Security related matters for subsidiary companies as may be delegated / referred by the Board of subsidiaries from time to time.• Any other proposal/item related to technology/information security that the Company may consider relevant or incidental thereto
<ul style="list-style-type: none">•

4. Human Resources Committee

Scope
<ul style="list-style-type: none">• To review the current organizational structure of the Company and compensation package for the staff excluding senior management staff i.e. one level below the Board.
<ul style="list-style-type: none">• To recommend and review recruitment, succession, retirement plan
<ul style="list-style-type: none">• To approve any amendments in Staff Rules as may be required from time to time other than amendments pertaining to compensation package.
<ul style="list-style-type: none">• To approve such other changes in any HR related policies of operational nature other than those which are of monetary nature.
<ul style="list-style-type: none">• To review the staff training and development activities undertaken
<ul style="list-style-type: none">• Such other matters as may be referred to by the Board from time to time.

5. Committee of Directors on Risk Management

Scope
<ul style="list-style-type: none">• Review and approve the Risk Management Framework for the Company
<ul style="list-style-type: none">• Address and decide on all issues relating to the Risk Management of the Company and report the same to the Board at their subsequent meetings.
<ul style="list-style-type: none">• Review and approve review risk management policies and processes covering various risks associated with clearing and settlement for various segments.
<ul style="list-style-type: none">• Review and approve the risk management processes for new products and services.
<ul style="list-style-type: none">• Consider recommendations of RBI Inspection and its compliance by CCIL.
<ul style="list-style-type: none">• Review of Investment Portfolio.
<ul style="list-style-type: none">• To consider views/ recommendations of Risk Advisory Group (RAG) and approve any changes to the composition of RAG.
<ul style="list-style-type: none">• To select External experts for validation of risk model and processes and review assessment reports from the experts
<ul style="list-style-type: none">• To approve appointment of External rating agency for providing risk ratings of members.
<ul style="list-style-type: none">• Take note of the exception events, status of various critical control measures and provide suitable guidance.
<ul style="list-style-type: none">• To lay down criteria/policy for membership relating to admission, continuation and suspension etc., in various business segments from time to time.
<ul style="list-style-type: none">• Approve the first time membership of the company to a new entrant, membership screening and approval process, to call for such additional information and/or clarifications as it deems necessary to consider requests for grant of membership.
<ul style="list-style-type: none">• <u>To advise / review / recommend Risk Management related matters for subsidiary company as may be delegated / referred by the Board of the subsidiary from time to time</u>
<ul style="list-style-type: none">• Such other matter or issue relating to risk as may be relevant

6. Nomination and Remuneration Committee of Directors

Scope
<ul style="list-style-type: none">• To identify persons who are qualified to become directors and who may be appointed in senior management in accordance with the criteria laid down.
<ul style="list-style-type: none">• To recommend to the Board their appointment and removal.
<ul style="list-style-type: none">• To review and recommend to the Board succession plan for the Senior Management
<ul style="list-style-type: none">• To carry out evaluation of every Director's performance and /or to specify the manner for effective evaluation of performance of the Board, its committees and individual Directors to be carried out either by the Board, by the Committee (NRC) or by an independent external agency and review its implementation and compliance..
<ul style="list-style-type: none">• To formulate the criteria for determining qualifications, positive attributes and independence of a director.
<ul style="list-style-type: none">• To recommend to the Board a policy relating to the remuneration for the directors, key

managerial personnel and other employees in terms of the provisions of section 178(4) of the Companies Act, 2013 and to carry out annual review of the Policy.

- To scrutinize the candidature of Directors to —fit and proper test in terms of RBI CCP directions and then recommend to the Board.
- To determine/recommend the terms and conditions of the appointment/reappointment, compensation of the Managing Director and Chairperson of the Company.
- .
- To look into Governance issues of the Company.
- Such other activities as may be delegated by the Board or as required under the Companies Act, 2013 as amended from time to time.

7. Corporate Social Responsibility Committee

Scope

- To formulate and recommend to the Board, a Corporate Social Responsibility Policy which shall indicate the activities to be undertaken by the Company in areas or subject, specified in Schedule VII of the Companies Act, 2013, specifying modalities of execution of such projects or programs which may be annual or ongoing in nature [as defined under the Companies (Corporate Social Responsibility Policy) Amendment Rules 2021 which may be amended from time to time] and implementation schedule for the same and monitoring the process of such projects or programs
- To recommend to the Board an Annual Action Plan of CSR activities to be undertaken in pursuance of Schedule VII of the Companies Act, 2013 and the CSR Policy which shall include the details as specified under the Companies (Corporate Social Responsibility Policy) Rules, 2014 as amended from time to time and recommending any amendment to the approved Action Plan during a financial year.
- To recommend the amount of expenditure to be incurred on the activities in terms of the provisions of Section 135 of the Companies Act, 2013 as amended from time to time;
- To review and recommend to the Board, the treatment of unspent / excess spent of CSR funds and surplus arising out of CSR activities, if any in accordance with the provisions of the Companies Act 2013 and Rules made thereunder as amended from time to time.
- To monitor the activities undertaken pursuant to Corporate Social Responsibility Policy of the Company from time to time by instituting a transparent monitoring mechanism for implementation and reporting of the CSR projects or programs or activities undertaken by the Company.

- To review and recommend to the Board the appointment of an independent agency for carrying out impact assessment and impact assessment reports, if any, of the CSR Projects undertaken by the Company.
- To review and recommend to the Board the funds utilization certificate submitted by the Chief Financial Officer or the person responsible for financial management.
- Such other activities as may be delegated by the Board from time to time or as required under the Companies Act, 2013 and Rules made thereunder as amended from time to time.

8. Investment Committee of Directors

Scope

- To invest the funds of the Company, in terms of Section 179(3) of the Companies Act, 2013 and in accordance with the Investment norms approved by the Board, in the absence of the Managing Director and the Principal Officer.

9. Premises Advisory Committee (External Committee)

Scope

- To advise the Company on its requirements of commercial / residential premises, acquiring of commercial/ residential premises on ownership / lease basis;
- Floating a request for proposal (RFP), inviting proposals from architects for the designing of interiors as well as external finishes including facade for office buildings as well as residential buildings/apartments ;
- Selection and appointment of property consultants ,Project Managers, consultants, contractors etc. for designing and execution of interior flouts and engineering services and Building Management Systems, Fire, Safety and Security related works.,
- To liaise with relevant agencies and other authorities for obtaining necessary permissions / approvals on behalf of the Company;
- Carrying out techno-commercial discussions, negotiations with Architects, Project Managers, Consultants and Contractors;
- Reviewing tenders, Specifications, Bill of Quantities, Designs made by architects, Project Managers, Consultants, Suggest modification, alteration if any;
 - To advise on technical parameters for procurement / replacement of critical capital goods, Engineering services viz. DG sets, UPS, precision air Conditioners etc. and guide in tendering and negotiation process
 -
- Such other matter incidental to acquisition and maintenance of premises.

10. Committee of Directors for the Transfer of Shares

Scope

- To approve and register transfer/transmission of shares

<ul style="list-style-type: none"> • To sub-divide/split, consolidate and issue new share certificates.
<ul style="list-style-type: none"> • To authorize affixation of common seal of the company
<ul style="list-style-type: none"> • To issue share certificates in place of those which are lost or damaged or in which the pages are completely exhausted provided the original damaged certificates are surrendered to the company
<ul style="list-style-type: none"> • To do all such incidental or ancillary acts, things and deeds in connection with above...

11. Regulatory Compliance Committee

Scope
<ul style="list-style-type: none"> • Review the compliance to the requirements under Payment and Settlement Systems Act, 2007 and Regulations made there under
<ul style="list-style-type: none"> • Review the compliance to the requirements under the Companies Act, 2013 and rules framed thereunder
<ul style="list-style-type: none"> • Review the compliance to directions issued by RBI from time to time.
<ul style="list-style-type: none"> • Monitor the compliance of recommendations arising out of inspection carried out by RBI.
<ul style="list-style-type: none"> • Any other matter as may be specified by the Board / RBI from time to time.

The scope of various committees is periodically reviewed by the Board and requisite changes are made as per the requirements.

Review of performance:

Board has delegated many of its core responsibilities to its Committees and decisions taken by the Committees are reviewed by the Board on a continuous basis. Moreover, RBI as Regulator reviews the performance of the Board at the time of its periodic inspections.

Further, the Company has also put in place an evaluation mechanism for the Board members, Board Committees and Board as a whole in terms of the requirements under the Companies Act, 2013.

In terms of the said evaluation mechanism, the performance of the Board as a whole, , non-independent directors and the Chairman is evaluated by the Independent Directors and the performance of Independent Directors is evaluated by the entire Board excluding the independent director being evaluated. The Board also carries out the evaluation of the performance of the Committees constituted by it.

Key consideration 4: *The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).*

1. The Company has put in place policy on appointment and remuneration of Directors including the criteria for determining qualifications, positive attributes and independence of a Director, etc. of the Company.

Skill sets necessary are in the areas of –

- Treasury
- Risk Management
- Information Technology
- Legal
- Management
- Accounts and Audit.

Independent Directors with these skill sets have been inducted into CCIL Board. Further, the core promoters of the Company and other shareholders who are also the market participants and hold at least 5% of the equity share capital have a right to nominate their serving officials as Nominee Directors of CCIL. CCIL pays sitting fees to the Board members except the Managing Director for attending the Board and committee meetings under the Companies Act 2013. As the Directors are professionals of very high standing in the market, these incentives however do not have any bearing on the long-term achievement of the CCIL's objectives. The Managing Director is remunerated subject to the provisions of the Companies Act 2013 and rules made thereunder.

The Board of Directors comprises of Independent Directors, Nominee Directors and the Managing Director. All Independent Directors and Nominee Directors are non-executive directors. The Board of Directors presently comprises of thirteen (13) Directors, consisting of nominees of Shareholders (5), Independent Directors (7) and the Managing Director. The Chairman of the Board is an Independent Director.

The FMI adopts the definition of independent Director as set out under the Companies Act 2013, which is applicable to it and as mentioned below. The FMI also categorizes the Directors into independent and non-independent Directors as per the requirement of the Companies Act as also stipulated by its regulator i.e. RBI under the Directions for Central Counter Parties issued by RBI from time to time and discloses the same accordingly.

Criteria for an Independent Director as laid down under Section 149(6) of the Companies Act, 2013 and rules made there under:

- a. who, in the opinion of the Board, is a person of integrity and possesses relevant expertise and experience;

- b. who is or was not a promoter of the company or its holding, subsidiary or associate company; who is not related to promoters or directors in the company, its holding, subsidiary or associate company;
- c. who has or had no pecuniary relationship, other than remuneration as such director or having transaction not exceeding ten per cent. of his total income or such amount as may be prescribed, with the company, its holding, subsidiary or associate company, or their promoters, or directors, during the two immediately preceding financial years or during the current financial year;

d. none of whose relatives—

- i. is holding any security of or interest in the company, its holding, subsidiary or associate company during the two immediately preceding financial years or during the current financial year:

Provided that the relative may hold security or interest in the company of face value not exceeding fifty lac rupees or two per cent. of the paid-up capital of the company, its holding, subsidiary or associate company or such higher sum as may be prescribed;

- ii. is indebted to the company, its holding, subsidiary or associate company or their promoters, or directors, in excess of such amount as may be prescribed during the two immediately preceding financial years or during the current financial year;
- iii. has given a guarantee or provided any security in connection with the indebtedness of any third person to the company, its holding, subsidiary or associate company or their promoters, or directors of such holding company, for such amount as may be prescribed during the two immediately preceding financial years or during the current financial year;
or
- iv. has any other pecuniary transaction or relationship with the company, or its subsidiary, or its holding or associate company amounting to two per cent. or more of its gross turnover or total income singly or in combination with the transactions referred to in sub-clause (i), (ii) or (iii);

e. who, neither himself nor any of his relatives—

- holds or has held the position of a key managerial personnel or is or has been employee of the company or its holding, subsidiary or associate company in any of the three financial years immediately preceding the financial year in which he is proposed to be appointed;

Provided that in case of a relative who is an employee, the restriction under this clause shall not apply for his employment during preceding three financial years

- is or has been an employee or proprietor or a partner, in any of the three financial years immediately preceding the financial year in which he is proposed to be appointed, of—
 - i. a firm of auditors or company secretaries in practice or cost auditors of the company or its holding, subsidiary or associate company; or
 - ii. any legal or a consulting firm that has or had any transaction with the company, its holding, subsidiary or associate company amounting to ten per cent or more of the gross turnover of such firm;
 - iii. holds together with his relatives two per cent or more of the total voting power of the company; or
 - iv. is a Chief Executive or director, by whatever name called, of any non-profit organization that receives twenty-five per cent or more of its receipts from the company, any of its promoters, directors or its holding, subsidiary or associate company or that holds two per cent or more of the total voting power of the company; or

f. who possesses appropriate skills, experience and knowledge in one or more disciplines of the fields of finance, law, management, sales, marketing, administration, research, Corporate Governance, technical operations or other related to company's business and such other qualifications as may be prescribed.

2. The Independent Directors shall also adhere to the eligibility criteria for appointment of Independent Directors as stipulated under the Directions for Central Counterparties issued by RBI from time to time including the following Fit and Proper criteria for Directors:

A Director shall be deemed to be a “fit and proper” person if:

(i) such person has a record of fairness and integrity, including but not limited to —

- (a) financial integrity;
- (b) good reputation and character; and
- (c) honesty;

(ii) such person has not incurred any of the following disqualifications —

- (a) convicted by a court for any offence involving moral turpitude or any economic offence or any offence under the laws administered by the RBI;
- (b) declared insolvent and not discharged;
- (c) an order, restraining, prohibiting or debarring the person from accessing / dealing in any financial system, passed by any regulatory authority, and the period specified in the order has not elapsed;

(d) found to be of unsound mind by a court of competent jurisdiction and the finding is in force; and

(e) is financially not sound.

(iii) If any question arises as to whether a person is a fit and proper person, the RBI's decision on such question shall be final.

Key consideration 5: *The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.*

Roles and responsibilities of management:

The roles and responsibilities of the senior management have been laid down by the Company duly approved by the the Board of Directors of the Company. The responsibilities of the management are to oversee the overall functioning of the Company and to conduct the affairs of the Company under the control and supervision of the Board. Senior Management is vested with the responsibility of the day to day functions of the Company. They act as line management. In line with the provisions of the CCP Directions, following are the broad responsibilities of Senior Management as contained in the Corporate Governance Policy of the Company:

- a) ensuring consistency of activities with the objectives and strategies determined by the Board;
- b) designing and establishing compliance and internal control procedures promoting the objectives of the Company;
- c) regularly reviewing and testing internal control procedures;
- d) ensuring that sufficient resources are devoted to risk management and compliance, the risk control process; and
- e) Ensuring that risks posed to the Company by its clearing and related activities are addressed.

Board through periodic review of the functioning of CCIL in various areas, sets objectives and goals. Based on these, objectives and goals for senior management are fixed and monitored. A suitable framework for review of the performance of the senior management vis-à-vis these objectives and goals also exists.

Experience, skills and integrity:

In terms of Company's policy, senior management persons are to be identified based on their professional/ technical qualifications, wherever required, market / industry experience as also the knowledge, expertise in the relevant areas of operations. Internally laid down appropriate screening process is also in place.

Senior level management performance is suitably assessed by the top management.

There are necessary checks and balances built in the contract of employment including the process for removal of Senior Management, if necessary.

Key Consideration6: *The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.*

Risk management framework:

A Board approved Enterprise Risk Management Framework document, detailing the various risks faced by CCIL and its subsidiaries and the measures in place to handle such risks, is in place. As per the authority specified in the framework document, the Committee of Directors on Risk Management identifies various risks of the Company. The Committee formulates, monitors and reviews the Company's risk management framework. The risks related to Information Technology are monitored and reviewed by the Technical Approval Committee of the Board. The Audit Committee is responsible for evaluating the risk management systems of the Company in terms of Companies Act, 2013. Various aspects of operational risk are monitored by the Audit Committee, the Risk Management Committee, and the Technical Approval Committee. Further, Regulatory and Compliance Risks are monitored by the Regulatory Compliance Committee and the Audit Committee.

Board level Committee on Risk Management is authorized to examine and approve risk tolerance policies. Some important areas like changes in exposure limits on Settlement Banks etc. are required to be approved by the Board. Limits are approved at various levels and as set out in the respective policy. In the event of any crises or emergencies, Managing Director is authorized to take decisions in regard to the risk containment measures.

The Committee of Directors on Risk Management reviews various risk policies annually. The Committee reviews also the effectiveness of various critical control measures periodically

Further, the Enterprise-wide Risk Management Framework document, detailing various risks CCIL is exposed to and the measures in place to handle those risks, is reviewed annually by the Risk Management Committee and the Board.

Authority and independence of risk management and audit functions:

Risk Management Dept. headed by Chief Risk Officer is entrusted with the responsibility of designing and carrying out risk management processes for the CCP. Reporting lines of risk

function is to MD who is an Executive Director with an additional line of reporting to the Chairperson of the Committee of Directors on Risk Management, who is an independent Director. Audit of risk function is carried out by internal auditors as well as external professionals. Overall audit function is carried out by an Independent external audit firm appointed as Internal cum Operations Auditors. The Internal cum Operations Auditors present their reports to the Audit Committee at its quarterly meetings.

The Committee of Directors on Risk Management approves all risk models. These risk models are also validated annually by external independent experts. The scope of the review covers vetting of various risk management models and processes with respect to efficiency, relevance to the current market conditions and the robustness to withstand extreme but plausible market conditions.

Key consideration 7: *The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.*

Identification and consideration of stakeholder interests:

User Groups are consulted on all important matters and any suggestion is considered carefully and transparently. For new products and services, such consultation starts at the design stage. Moreover, any change in an existing process is notified to the members (Clearing Participants) 30 days in advance...

Interactive meetings with Participants are conducted at regular intervals to discuss the matters concerning Clearing and Settlement services and for obtaining. Feedback regarding their issues, if any, and suggestions for improvements. Apart from this, for developments and changes proposed to be taken up in specific areas, users from the specific clearing service are consulted through user groups meetings. Consultation Papers are issued to members and usually to general public as well when major structural changes are proposed and their feedback is duly considered. Inputs received from members and other stakeholders are made available to the Board. Annual review of risk processes for all the products is carried out by the Committee of Directors on Risk Management. Additionally, annual review of products and risk processes carried out by external experts provides insights into the efficacy, adequacy and efficiency of the risk models

A Risk Advisory Group (RAG) (constituted with the representatives) from the clearing participants (members) is in place. The scope of the RAG is to advise CCIL on various risk related issues. Recommendations made by the RAG are submitted to the Risk Management Committee with majority of members being independent directors.

Disclosure:

Any change in the processes etc., except otherwise indicated by RBI is notified to the members at least 30 days in advance from the date of implementation as required under PSS Act. All major decisions are disclosed to the relevant stakeholders wherever appropriate. CCIL's audited financial statements are published on website. Major announcements and changes are also put on the website.

Principle 3: Framework for the comprehensive management of risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

<i>Assessment of Observation of Principle 3</i>	<i>OBSERVED</i>
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Key consideration 1: *An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.*

Risks that arise in or are borne by the FMI:

CCIL has developed an Enterprise-wide Risk Management Framework which identifies the following types of risks: Credit Risk (Settlement Risk), Market Risk, Liquidity Risk, Operational Risk including Cyber Risk, Business Risk, Investment Risk, Legal & Compliance Risk and Reputational Risk. The risk management framework also takes into account interdependencies with the settlement banks and banks that provide lines of credit and hold CCIL's fixed deposits and accounts. The framework has been enhanced to include the changes in risk processes faced during a pandemic scenario

Risk management policies, procedures and systems:

CCIL has in place Enterprise wide Risk Management Framework which details various risks CCIL is exposed to Risk Management policies and processes to handle these risks for all settlement segments and related activities. These processes allow CCIL to identify measure, monitor and manage the associated risks. Risk Management processes for TR form a part of the Risk Management Framework of CCIL. The Trade Repository (TR) also has adequate system level checks and controls for carrying out the processes.

Credit exposures on members are managed through multilateral netting, DVP/PvP settlements and through collection of margins. Arrangements in the form of lines from Banks and Institutions are in place to take care of settlement shortages. Market risk is managed by using Value at Risk (VaR) based margining models for all products. Back-testing of margining models and stress testing (credit/liquidity) to assess adequacy of resources are carried out on a daily basis.

Procedures are in place to call for additional default fund contributions based on the stress test results. The stress test results are reviewed periodically by the Board committee on risk management and on an annual basis by independent external experts

Tail losses due to participant defaults are handled by pre-funded resources comprising member contributed default fund and CCIL's contribution in the form of skin-in-the game from its Settlement Reserve Fund (SRF).

In order to meet losses that arise out of non-default events, such as failure of settlement bank, failure of banks where investments are made, operational risk events etc., a Contingency Reserve Fund (CRF) is maintained.

Policies are in place to select banks for – functioning as settlement banks, for providing lines of credit and for placing investments. The exposures on these banks are closely monitored against the exposure limits in place for each of them.

Business risks are measured and monitored through ongoing market intelligence gathered by CCIL's management team and are discussed at the Board level. CCIL also prepares market-segment wise revenue statements which provide full-visibility on segment wise business performance.

In respect of credit risk and liquidity risk exposure, segment-wise approach is adopted.

An Integrated Risk Information System (IRIS), a web-based Information dash board is provided to the participants which provides a real-time view of trade positions, status of trades accepted, margin utilization, settlement status, liquidity exposures, collateral related information, default fund details etc. This dashboard provides a comprehensive view of positions of the members on a real-time basis. A replica of the same dashboard is also available to the CCIL's management and other stake holders which enables monitoring of participant's credit and liquidity exposures across segments and take appropriate action in case of any concern arising out of positions of any participant.

Review of risk management policies, procedures and systems:

All risk management policies and procedures are reviewed regularly taking into account changing global risk environment and market practices and updations are carried out accordingly. Further, all risk processes are reviewed annually by independent external experts. An annual review of risk processes for each of the products along with exceptions observed and enhancement carried out during the preceding year is put up to the Risk Committee.

Extensive stress testing process and back testing of margining model on a daily basis for all member portfolios serve as indicators of market volatility, change in risk exposures and risk coverage in the changing environment.

New processes/ policies developed internally are put up to the Board Committee on Risk Management for approval. Also models are reviewed and updated when they throw up exceptions over a period of time owing to changes in the market conditions.

Consultation papers on new developments/enhancements in the existing processes are put out on the website seeking feedback from market participants. Periodic user group consultations are held. The proposals and the member feedback are discussed with the Risk Advisory Group. Thereafter, if required, meetings with the clearing participants are organized to discuss the issues. Any change in process also requires RBI approval and at least 30 days' advance notice is given to the participants before implementation.

Board Committee on Risk Management reviews critical control aspects and all major risk related issues during their periodic meetings (minimum about 4 in a year). There is also a periodic evaluation of risk models and processes by external experts.

Key consideration 2: *An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.*

Clearing participants have been provided with an Integrated Risk Information system (IRIS) through which they can have full access to their own trade data, margin requirements on their trades accepted for clearing and collaterals placed towards margins on an on-line basis. This information is also provided in the form of Reports. They also get timely information in regard to their daily settlement obligations with individual trade details etc. Moreover, any limits set on the clearing participants and the processes employed for setting limits etc. is also provided to them. The participants also receive alerts through various channels – email, SMS and IRIS. In addition, CCIL staff also reaches out to members over phone on issues requiring immediate attention.

Further a margin simulator has also been provided with 'what if analysis' to enable the participants to assess the margin requirements.

Effective April'21, functionality to provide historical time series data on margin utilizations, default fund contributions and collateral etc. was released to participants

Multilateral netting lead to substantial reduction in liquidity requirements while margin offsets provided in some segments by CCIL reduce margin costs. These processes provide significant incentives for the participants.

The quantum of margins and default fund contributions posted to CCIL by the members are dependent on the extent of risk they pose to CCIL. Integrated Risk Information System provides

real-time information on the margins, default fund contributions, trade acceptance status, settlement obligations etc. This helps market participants to monitor and manage the risk they pose to CCIL. This works as an incentive for the participants for better risk management at their end.

Key consideration 3: *An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks*

Material risks

CCIL, to perform its CCP responsibilities, is dependent on other institutions and FMIs. CCIL has identified the following sources of material risks:

- settlement banks,
- banks which provide lines of credit,
- RTGS, Core Banking System (CBS)(E-Kuber) and PDO of RBI
- banks where investments are made by CCIL

CCIL has three settlement banks viz., Wells Fargo, Deutsche Bankers Trust Company Americas (DBTCA) and Bank of America in US for settlement of dollar leg of USD INR trades. CCIL's settlement bank for cross currency settlements is UBS Switzerland AG. Custody holdings in US T-Bills are divided across two custodians- Deutsche Bank Trust Corporation- New York and Well Fargo Bank NA.

INR settlement is in central bank money. In addition to settlement in central bank, CCIL avails the services of six commercial banks for domestic settlements.

The payment systems operated by RBI- RTGS and CBS provide a fall back for each other. CCIL is a member of both SWIFT and SWIFT service bureau, and the latter serves as a fall back for the former. In case SWIFT itself fails, CCIL can use payment functionality provided by settlement banks via online web system.

Measurement and monitoring

The risks on account of interdependencies are identified, measured, and monitored as under: CCIL has established minimum criteria for selection of settlement banks, LOC providers, banks where it maintains its investments and overseas custodians where it maintains its foreign securities. The criteria ~~which~~ include a combination of financial, technical and operational aspects as given below:

- a. Acceptable financial standing (credit rating of investment grade, wherever available). The banks should also have highest short-term rating as given by the

credit rating agency for Forex Segment (CCIL1 and CCIL2 are considered as highest rating for this purpose). For a bank which is selected as a settlement bank for carrying out settlement in a foreign currency, domestic short term rating in India will however not be considered. It should have an investment grade from an international rating agency.

- b. Along with ratings, conformity of key financial ratios of the bank [Capital to Risk (Weighted) Assets Ratio (CRAR %), Liquidity coverage ratio (LCR) and Net Stable funding Ratio (NSFR)] to regulatory prescribed levels is to be considered while selection and continuation of settlement bank relationship.
- c. Previous experience as Settlement Bank with good share of the market
- d. No record of persistent default in complying with regulatory requirement
- e. Existence of effective Risk Management set up
- f. No record of liquidity problem in the last three years
- g. Adequate IT infrastructure to support the Settlement activity (with suitable redundancies) with a well spread out integrated branch network.

Moreover, such banks should be willing to provide CCIL with periodic information including financial data to satisfy CCIL about the continuing adherence to the above-mentioned requirements.

The criteria established for the various institutions are monitored by the Board Committee on Risk Management, which includes an annual review of relationship etc. as well.

CCIL has exposure limits for settlement banks, which are monitored on a daily basis. CCIL requires the participation of these institutions in its business continuity planning exercises. CCIL adheres to the prescribed business continuity arrangements of RTGS and can alternatively use CBS to effect settlements.

In the cases of banks where investments are made by CCIL, exposure limits are set and are monitored on a daily basis. Investment policy and exposure limits are reviewed annually by Risk Committee and Board.

Risk management tools

CCIL explicitly recognizes the critical dependency its clearing participants have on CCIL and implicitly recognizes that this dependency can have an impact on other FMIs (RBI PDO and

RTGS, NSDL and CSDL) and broader financial markets. To mitigate the risks CCIL poses to other FMIs and the markets in general, CCIL has adopted a robust risk management framework for the financial risks it faces as a CCP.

Settlement Banks

Exposures on all six domestic settlement banks, on all three US based banks for USD settlement and one Switzerland based bank for CLS settlements are monitored on a real time basis. Since 8th June'18, USD settlement is being carried out through three settlement banks simultaneously. Custody holdings are divided between two custodians. Process of real-time monitoring and follow up measures to handle exceptions ensure that the settlement bank risk management tasks continue to remain efficient. Board level Risk Management Committee also closely supervises the outcome of risk management processes and activities. *For details on minimum criteria for settlement banks refer Principle 3- Key consideration 3: 'Measurement and Monitoring'*

LOC providers, investments and custody providers: CCIL has established relationships with several institutions for LOC, investments and custody services. This provides alternatives in case of operational issues at one or more of these institutions. As stated above, CCIL has established criteria for selecting institutions providing these services and adherence to the criteria is reviewed annually based on their financial position, credit rating, access to liquidity support from central bank of the country etc.

Other tools:

CCIL has tools for measuring risks, based on the type of risk. The Integrated Risk Management System (IRMS), provides a dashboard of the real time overall exposures and the coverage of the exposures through the margin and default fund contributions of members across market-segments, with ability to drill-down to specific market segments. Functionality has been provided to auto-download historical time series data on utilization of margins, default fund and collateral contribution etc. Effective April 2021.

Key Consideration 4: *An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.*

Scenarios that may prevent an FMI from providing critical operations and services:

These scenarios are identified through Business Continuity management process. Detailed analysis is recorded in the Business Continuity Plan. The exercise is very detailed and takes all possible disruption scenarios into account. The disruption scenarios that could arise on account of "Pandemic" also have been duly incorporated in the BCP

Recovery or orderly wind-down plans

CCIL has outlined detailed default handling procedures in its Byelaws, Rules and Regulations (BRR). CCIL has in place member contributed default fund in all its business segments with a provision for calling additional contributions from members as and when required.

CCIL also has set up from its own resources, a Settlement Reserve Fund (SRF) as its skin in the game in respect of losses due to participant default. Specific Default Waterfall is outlined in CCIL's BRR clarifying the order in which pre-funded default resources such as margins, member contributed Default Funds and CCIL's skin in the game will be used to meet default losses.

Changes have been made in Regulations of Forex Forward Segment and Rupee Derivatives Segment (trades referenced to the MIBOR and MIOIS benchmarks) to facilitate auction based liquidation of a defaulter member's portfolio of outstanding trades and application of Recovery tools at the end of the Prefunded Waterfall.

In order to meet non-default losses that may arise due to failure of settlement bank, failure of banks where investments are made, operational risk events etc., a Contingency Reserve Fund (CRF) is also in place. The balance available on 31 March 2023 is INR 9,610 million.

CCIL's net assets funded by equity as on 31 March 2023 was equivalent to 58 _ months of operating expenses, as against the PFMI requirement of minimum six months of operating expenses necessary to continue its operations and services as a going concern.

Changes have been incorporated in Regulation of Forex Forward Segment and Rupee Derivatives Segment (trades referenced to the MIBOR and MIOIS benchmark) to facilitate auction based liquidation of a defaulter member's portfolio of outstanding trades and application of Recovery tools at the end of the Prefunded Waterfall.

Principle 4: Credit risk

An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

<i>Assessment of Observation of Principle 4</i>	<i>OBSERVED</i>
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Key consideration 1: *An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.*

CCIL has established a well-defined framework for identifying, measuring and managing credit risks and a well-defined waterfall for handling any credit losses.

While credit risk is mitigated owing to the DVP/PVP mode of settlement, CCIL is exposed to market risk arising from its role as a CCP manifesting into credit risk. These exposures are managed by collecting risk-based margins (initial margin, volatility margin, concentration margin and MTM margins) from participants to cover both current and potential future exposures. In addition, CCIL requires participants to contribute to segment wise default fund, which provides additional resources to handle credit losses. Moreover, for each clearing segment, CCIL contributes a specified percentage of segment wise default fund established from its resources to handle credit losses.

Margining is structured market-segment wise and there is no cross margining across different market-segments. Margining is based on VaR at a confidence interval of 99%. The initial margin model varies by market-segment:

- Securities Segment: Historical simulation VAR model
- Tri Party Repo: Historical simulation VAR model
- Forex Segment: Historical simulation VAR model
- Forex forward and Rupees derivative: Volatility weighted historical simulation VAR model

There is a well-established default waterfall:

1. defaulting member's margins (including surplus margins in other segments);
2. defaulting member's contribution to default fund (including surplus contribution to other segments);
3. Tranche 1 of CCIL skin in the game: This constitutes 60% of CCIL's skin in the game (i.e.15% of the Default Fund contribution of the clearing members in each segment).
4. Non Defaulting/ Surviving members default fund contribution.
5. Tranche 2 of CCIL skin in the game- This constitutes 40% of CCIL's skin in the game (i.e.10% of the Default Fund contribution of the clearing members in each segment).

There is a daily stress testing process to determine adequacy of resources to cover credit exposures. The stress testing results are reviewed at each meeting of the Board Committee on Risk management which usually meets about four times a year. There is a monthly internal review of credit stress test model and its parameters.

In addition, there is a comprehensive annual review of all risk models (including stress test model) by external experts, which are then placed before the Committee of Directors on Risk Management. The minutes of the committee meeting are placed before the Board. There is also a Board approved Enterprise Risk Management Framework which is reviewed annually.

Key Consideration 2: *An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.*

CCIL has identified credit risk as one of the risks it is exposed as a CCP.

Sources of credit risks

- Exposures on participants clearing transactions through CCIL across segments.
- Exposures to Settlement banks and other banks where investments are made.

Exposure Management

- In case of exposures to clearing participants
 - i. Initial margin covers potential future exposures,
 - ii. Intra-day and EoD MTM margining covers current exposures
 - iii. Volatility margin (VM) provides an additional layer of protection when market volatility is high and is applied as a percentage of the initial margin. For rupee derivatives, VM is imposed at 50% of the rate applicable for the Securities segment.
 - iv. Concentration Margin (CM) provides additional cover in the event of default by a participant having significantly higher position where liquidation of collaterals take longer time resulting in drop in value
 - v. Concentration Margin is levied on participants having significant exposure in the segment. It is charged as a percentage of Initial Margin.

Concentration margin is levied on the member/s for whom either or both of the below mentioned conditions are met:

- a) Initial Margin (IM) requirement breaches the "IM Threshold for CM imposition" and/or
- b) Gross Trade Position breaches the "Position Threshold for CM imposition".

Concentration Margin is levied in two stages on breach of thresholds set as under:

- i. First Level of threshold set at 8% of respective average values of Initial Margin and gross positions during previous month, computed across all members in the respective segment. Concentration margin is imposed at 15% of applicable Initial Margin on breach of First Level Threshold/s.
- ii. Second Level of threshold set at 15% of respective average values of Initial Margin and gross positions during previous month, computed across all members in the respective segment. Concentration margin is imposed at 20% of applicable Initial Margin on breach of Second Level Threshold/s.

Withdrawal: Concentration Margin, in place for member/s, is withdrawn (partially/fully) once the Initial Margin obligation and/or gross position in excess falls below the respective pre-determined thresholds (average IM and average gross position as stated above) as under:

- i. Level 2 threshold set at 13% for partial withdrawal
- ii. Level 1 threshold set at 6% for complete withdrawal

Margin Shortfall (if any) on account of imposition of concentration margin, is to be replenished in an hour's time to avoid penal charges.

Further, an Integrated Risk Management dashboard (IRMS) provides the Real time information regarding trade acceptance status, margin requirement and d utilisation, settlement status etc

- In case of exposures to clearing participants, margining process allows measuring credit exposures. Assessment of applicability of Intra-day MTM margining is in place in all segments.
- Exposures on Settlement Banks are controlled through setting of exposure limits (intra-day, end of the day and monitoring them on real-time basis).
- Exposures on banks where investments are made monitored through setting ceilings for such investments.

Settlement related exposure management

CCIL offers DvP mode of settlement for trades in Govt. Securities and Tri-Party repo and PVP in Forex (INR/USD) Settlement. In Forex (INR/USD) Settlement, Net Debit Cap is used. In all segments, marking positions to market is in place.

Key Consideration 3: *A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.*

Coverage of exposures to each participant

CCIL covers potential future exposures to participants by various resources which include margins collected from members; member contributed Default Fund in all clearing segments and CCIL's own resources including specially created Settlement Reserve Fund. Sufficiency of financial resources is evaluated through daily stress tests. Margins are collected at 99% Confidence level. Margins along with other resources adequately cover credit exposure on clearing participants and its associates on whom CCIL is having highest exposure.

CCIL is subject to Cover 1 requirements for all its market segments as it does not operate as systemically important payment system in multiple jurisdictions and the products cleared by CCIL are not of complex risk profile.

However for its derivatives segments - forex forward and rupee derivative segments, CCIL maintains Cover 2 requirement, since 1st Sep 2019.

CCIL provides non-guaranteed settlement in the following two segments:

CLS

CCIL offers its members the ability to settle their cross-currency transactions through the CLS Bank under a third-party arrangement with UBS Switzerland AG. Under the arrangement, payments in all CLS eligible currencies are settled on a net basis by members paying into and receiving from CCIL's accounts held with the Settlement Bank. Occasionally, credit exposures could arise when a member bank pays in its obligation in one currency and is awaiting pay out in the counter-value currency. This could be due to funding or time zone constraints. CCIL closely monitors all such exposures and ensures that pay-outs are made as soon as possible after the counter-value obligation is met by the bank under all circumstances.

In all cases, however, the resultant credit exposure is far less than the member would have, under bilateral settlement, as the exposure amount is reduced by over 90% due to multilateral netting, and the duration of exposure is reduced.

Settlement defaults are covered through the collaterals placed by the defaulting member and the Margins contributed by the members.

Effective 2nd November'20, enhancements were made to Risk Processes namely:

- Credit Rating linked liquidity Limits and step up factors for currency based haircut rates introduced for members.
- Provision created to reduce limits or add CRM based step up factors in the event of any deterioration in financial condition/regulatory action/adverse market reports etc.

Interest Rate Swaps

CCIL offers its members who have not joined CCP Clearing, the facility to settle cash flows arising on account of their IRS trades on a multi-laterally netted but non-guaranteed basis. Netted cash flow settlements are either for payouts to or pay-ins from the member; thus there is no credit exposure to CCIL. The members however continue to run a bilateral counterparty credit exposure for the IRS trades during the life of such trades.

In case of non-guaranteed IRS, the settlement file is processed twice and if the shortage noticed in the first time is not replenished even in the second attempt, the settlement process is abandoned.

CCIL since August 2015 provides members an option to submit IRS trades for CCP Clearing mechanism, which has a more elaborate and comprehensive framework for managing settlement failures.

Key Consideration 4: *A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for,*

and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

Coverage of current and potential future exposures to each participant:

Current and potential future exposures on each participant are covered through margins collected from the members, member contributed Default Funds and its own resources. These financial resources are in the form of Govt. of India Securities and cash. Hence, these are easily accessible.

Margins are collected at 99% Confidence level. Margins along with other resources adequately cover credit exposure to largest participants and its affiliates for most of the days. Sufficiency of financial assets is assessed through back testing of margins and stress testing of resources on a daily basis. In the event of stress losses exceeding pre-funded resources, additional contributions are called for.

Risk profile and systemic importance in multiple jurisdictions:

CCIL does not clear any instrument with —jump- to-default risk. It is also not a CCP which is systemically important in multiple jurisdictions.

CCIL covers potential future exposures to participants by various resources which include margins collected from members; member contributed Default Fund in all clearing segments and CCIL's own resources. Members' margins and default fund contributions are in the form of eligible government securities and cash. Cash margin is invested in term deposits of commercial banks with premature termination option and in government of India Treasury Bills. Hence, all financial resources are easily accessible.

Apart from this, CCIL has lines of credit in both funds and securities to take care of immediate liquidity shortfall in an event of a settlement shortage.

Additional financial resources:

Risk profile for the CCP clearing offered by CCIL is taken into consideration while assessing resource requirement. CCP has created a Settlement Reserve Fund (SRF) out of its own resources. The current balance in the fund is INR 23,000 million.

CCIL's skin in the game for each segment is set at 25% of the default fund contribution but not less than the highest individual member contribution for the respective segment. The total skin in the game across all segments is capped at the balance in the Settlement Reserve Fund. *Effective 5th Nov 2018*, CCIL's skin in the game has been split into 2 tranches.

- Tranche 1 constitutes 60% of CCIL's skin in the game (i.e. 15% of the default fund contribution of the clearing members in each segment). This is to be utilized immediately after the defaulting member's contribution to the Default Fund.

- Tranche 2 constitutes 40% of CCIL's skin in the game (i.e.10% of the Default Fund contribution of the clearing members in each segment). This is to be utilized after the non-defaulting members contribution to the default fund is used up.

In order to meet losses that could arise out of non-default events such as failure of banks where investments are made, settlement bank failure, and operational risk events etc., a Contingency Reserve Fund (CRF) is maintained. The balance available on 31 March 2023 is INR 9,610 million.

Capital/ Reserves/ Retained Earnings can be used to replenish whenever SRF is depleted to meet further defaults if any.

Supporting rationale and governance arrangements:

CCIL has documented its credit risk management framework as part of the Enterprise wide risk management framework document, including the default waterfall model, the margining model, stress testing framework and review process. The Board annually reviews the Enterprise wide risk management framework including the credit risk management. The Board of Committee on Risk Management reviews the stress test results in its meetings that happen around four times a year

Key Consideration 5: *A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP 's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP 's participant 's increases significantly. A full validation of a CCP's risk-management model should be performed at least annually*

Stress testing

Stress Test is carried out on a daily basis. Resource requirement is assessed based on the stress losses observed.

CCIL is subjected to Cover 1 requirements for all its market segments as it does not operate as systemically important payment system in multiple jurisdictions and the products cleared by CCIL are not of complex risk profile.

However in the case of the Forex Forward and rupee derivative segment, CCIL maintains *Cover 2 requirement*, since 1st Sep 2019.

The additional contributions fall due at 11.00 a.m. on the next day.

The size of default fund (DF) is reviewed every month and is set at the maximum stress loss for a single participant and its affiliates in the last six months along with stress loss of 5 weak entities on the day of the highest stress loss. That is resources available to CCIL are adequate to cover the default of a single largest participants and its' affiliates- Cover 1. Effective 01st October'21, CCIL maintains pre-funded resources viz., member contributed Default Fund and CCIL's Skin in the game at 1.25 times the Cover 1/Cover 2 stress loss (as the case may be) plus stress losses on account of 5 weak entities observed on the same day and under same scenario. [Weak entities are identified by way of external credit rating obtained by CCIL. In cases where external ratings are not available CCIL's internal risk categorization model is used to determine weak entities.]

Since 1st February 2019 in all segments, the default fund level is floored at 85% of the default fund level prevailing at the time of default fund sizing.

Review and validation:

There is an internal review of stress scenarios and parameters on a monthly basis. There is an annual external review of the stress testing model by independent external experts which includes review of the credit risk management framework and stress testing framework. Also, there is a process whereby the Board reviews the adequacy of resources on a quarterly basis.

CCIL has a process to review and augment the balances in SRF and CRF accounts annually based on projections. Additionally, CCIL has put in place a policy for sizing the resources to meet default and non-default losses. The Policy is reviewed by the Board once in two years or as and when required.

Further, a Board approved Policy is in place to transfer funds from General Reserves and surplus to replenish SRF and CRF in the event of depletion due to losses.

All positions of members are included in credit stress testing. On a monthly basis, sensitivity analysis of stress test model is also done. The results of sensitivity analysis of Credit Stress test model are placed to the Board Committee of Risk Management in its periodic meetings. Price volatility is captured in the rate shifts.

All risk management models are reviewed annually by independent external experts. The margin models are validated through daily backtesting and Stress testing model is reviewed on a monthly basis

Key Consideration 6: *In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulter's positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities,*

shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

CCIL considers historical stress scenarios and hypothetical (statistically derived) stress scenarios for conducting stress testing. Historical stress scenarios are based on historically observed most extreme movements in risk factors. For this purpose, the entire available history of risk factor movements (since 2002) is considered. Hypothetical stress scenarios are derived using extreme value distributions of risk factor movements and estimating VaR at 99.9% confidence level. A total of 32 risk factors are considered for generating stress scenarios covering the entire range of asset classes cleared by CCIL. The risk factors include standard tenor interest rates, foreign exchange rates and swap rates.

Outstanding trade portfolios and collateral deposits of all members are assessed over these stress scenarios and highest losses on account of member and its affiliates (depending on the coverage requirement applicable for the respective segment) are evaluated against the prefunded default handling resources.

CCIL conservatively assumes in its stress testing models that the members will fail in meeting their incremental mark to market requirements and volatility margin requirements.

The key model parameters and assumptions are tested on a monthly basis by conducting Sensitivity Analysis and Reverse Stress Test.

Key Consideration 7: *An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.*

Allocation of credit losses

The allocation of credit losses through a default water fall is detailed in response to Q 13.1.4 under Principle 13

Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

<i>Assessment of Observation of Principle 5</i>	<i>OBSERVED</i>
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Key Consideration 1: An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

CCIL accepts only Cash and Government of India securities (including treasury bills) as collateral.

Trading volume in the market (i.e. market liquidity) is only guiding factor for acceptance of Government Securities as collaterals towards margin requirement in all segments other than in Tri-Party Repo. In Tri-Party repo, all GOI securities (including treasury bills) and some special securities (based on liquidity criteria) issued by Govt. of India are accepted as collateral.

Effective November 2019, concentration limits have been imposed on deposit of illiquid securities as collateral towards borrowing limit in Tri Party Repo. Further, securities issued by State Government are accepted as collateral towards borrowing limit. Concentration limits have been placed on illiquid GOI securities and state government securities as collateral towards borrowing limit against collateral deposited in these two categories is capped at 20% and 10% of the limit available against liquid and semi liquid government of India securities

Further Floating Rate Bonds and Special Securities issued by GoI are accepted as collateral without any cap and with higher haircut rates.

Requirements for acceptable collateral are reviewed monthly based on market and trade data during the preceding month. Securities which are highly liquid are accepted as collateral. No collateral is accepted on an exceptional basis. Though CCIL has the right to accept any collateral, it does not as a policy accept collaterals other than GoI securities and cash.

For forex and CLS segments, CCIL takes contributions from members in the form of US dollars or in any other form as may be notified by CCIL from time to time

The revaluation of the collateral is an automated process and the list of eligible collaterals is reviewed on a monthly basis to check the concentration levels and liquidity. Securities deposited towards default fund contribution are also revalued on a daily basis at the end of the day.

As only Govt. Securities and Cash are taken as collateral, no significant wrong-way risk exposure exist at present.

Key Consideration 2: *An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.*

Valuation practices:

Daily valuation happens at the end of the day. Notional valuation of collateral is done twice intraday as part of intraday MTM margin assessment.

As collaterals are usually liquid Govt. of India Securities, model prices are very rarely used for such valuation – applicable only when a liquid security suddenly turns illiquid. In such a case, such security becomes ineligible in the subsequent month-end review.

For Tri-Party repo trades where semi and illiquid Govt. of India Securities are also taken as collaterals, valuation using model prices happen; but CCIL collects higher haircut to take care of any risk from valuation using model prices.

Haircutting practices:

Haircuts are determined based on Value at Risk. Back testing process provides necessary validation of adequacy of haircut rates used.

The haircut rates are increased when volatility margin is imposed. The haircut rates also assume a five day close-out period for all segments. **Key Consideration 3:** *In order to reduce the need for pro-cyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent*

- As the eligible collaterals are Cash and Govt. Securities, potential pro-cyclicality impact is not very significant. Impact of stress has been built by extending impact of Volatility Margin on haircut as well. Haircuts on Special Securities accepted as collateral for Tri party repo have been kept at a very high level. Haircuts are determined based on VaR. Floors have been introduced to determine margin factors in securities segment. These floors ensure that haircut rates are not procyclical. Margin factors for semi liquid and illiquid securities are stepped up by 50% and 100% respectively.
- The values of parameters used for the computation of margin factors and haircut rate include:
- The floor for volatility adjusted VaR for securities falling in a particular tenor bucket is set at the 95th percentile from the database of historical 1 day VaR values for securities classified in various tenor buckets.

Key Consideration 4: *An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.*

Market liquidity is the determining factor for assets to be considered as eligible collateral. Concentration limits are imposed on the collateral deposited in tri-party repo based on the liquidity criteria. Higher haircuts are charged in the form of concentration charge in cases borrowing limit exceeds certain thresholds in Tri-party Repo.

Concentration risk is assessed through monthly review process. However, as collaterals accepted are Central Govt. Securities and cash, no concentration limit was required to be stipulated.

Key Consideration 5: *An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.*

Cross Border collateral is accepted only in the form of USD funds which is invested in US Treasury Bills. Hence credit, market and operational risk exposures on this account are minimal. Further these T-Bills are placed as collateral for availing LOC from the USD settlement banks and these arrangements are periodically reviewed. Collateral maintained in the form of T- Bills are liquid and can be sold easily to meet liquidity requirements. Such collateral is maintained in the custody of the Settlement Bank itself thus ensuring timely liquidation.

Further, US Dollar deposits out of settlement guarantee fund/ pre funding receipts are placed with settlement banks and international banks in the US in accordance with the Investment Policy.

All such arrangements are periodically reviewed.

Key Consideration 6: *An FMI should use a collateral management system that is well-designed and operationally flexible.*

Collateral management system design:

Securities collateral are held in a consolidated manner in the RBI PDO and allocated to specific market segments in the internal systems of CCIL

Arrangements are in place for Clearing Participants to deposit/withdraw/ substitute collaterals within a very short time. Margin calls are on-line and efficiently managed.

There is no process for re-use of collateral. However, owing to the capability to move collaterals very quickly, clearing participants can use free collaterals effectively.

The collateral management system enables both CCIL and its participants to have a real-time view of the collateral holdings through risk information dash board.

Operational flexibility:

Operational flexibility is of very high order as the participants have full access to information on their collateral holdings and the process of placing, removing and substituting collateral. The IRIS system also allows for simulation to assess impact of any removal or substitution of securities. The internal collateral management system of CCIL is regarded as a core system and is accorded high priority in terms of resources and business continuity planning.

CCIL'S Collateral Management system is adequately staffed and operates in shifts to ensure smooth movement of collateral even during times of market stress. However, CCIL is dependent on the RBI PDO for the actual holding of securities and also for processes related to collateral movement.

Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

<i>Assessment of Observation of Principle 6</i>	<i>OBSERVED</i>
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Key Consideration I: A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.

Description of margin methodology:

Margins cover both already incurred loss in value and Potential Future Exposures. Potential Future Exposures are covered using VAR based margins while; already incurred loss (current exposure) is covered through market to market margin. CCIL collects the following margins from its participants:

- i. Initial margin to cover potential future exposures at the time of accepting a trade and end of the day recomputation of margins.
- ii. Marked to Market (MTM) margins cover current exposures and are collected on a daily basis. Illiquidity is factored in MTM prices of securities accepted towards margin requirement. MTM margin requirements are evaluated thrice a day (twice intra-day and at EOD). Intraday MTM margin calls are collected immediately on its imposition and members are required to replenish within 1 hour in case of shortfall.
- iii. Volatility margins are additional margins collected in periods of sudden volatility. Volatility margin is collected immediately on its imposition and members are required to replenish within 1 hour in case of shortfall.
- iv. Concentration margin (CM) is levied on a member in the event of:
 - a. Initial Margin (IM) of the member exceeds the IM threshold (set equal to 8% of the average daily total IM requirement of all members in the segment in the preceding month.); and/or
 - B. Gross outstanding position of the member exceeds the gross positions threshold (set equal to 8% of the average daily total gross position of all members in the segment in the preceding month.).CM is collected at the rate of 15% of IM and shall continue to be in force till the IM requirement and/or the gross outstanding position of the member, as the case may be, falls below the respective threshold for withdrawal of CM (6%). In the event of

Initial Margin and/or Gross Position of any member exceeding second level threshold of 15% concentration margin is levied at 20% of the initial margin this second level of CM will be brought down once the IM and/or gross position falls below the threshold level of 13% for either or both parameters.

Margin methodology for various segments is detailed in segmental regulations and notifications issued there under. Moreover, there are utilities provided to members so that they can verify their margin requirements on an on-line basis.

Higher Initial Margin is collected from weaker members in Forex settlement, Forex Forward and Rupee Derivatives segments. In derivatives segments like Forex Forwards and Rupee Derivatives, extra margin is collected to cover possible cases of failure to replenish margin shortfall. In other segments, margins collected usually provide adequate coverage. Haircut is also accounted for in the cases of securities provided as collaterals.

Operational components

In case of a margin shortfall, no new trades are accepted except in Securities segment. In case of derivative trades, there is margin buffer which ensures that no new trade is accepted after 95% margin utilization. In case default continues, trades of defaulter member would be closed out.

Existence of adequate Infrastructure facilitates very quick replenishment of margin. Also, penalty is imposed for any delayed deposit of margin. Participants all being based in the same time zone and thus there is no problem of local funding

Key Consideration 2: *A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.*

Sources of price data

In Securities segment (i.e. Outright & market repo and Tri-Party repo trades), CCIL uses trade data available with it. CCIL uses rates from Reuter Information System which is considered very reliable. CCIL uses day end rates published by FBIL for margin calculations in Rupee Derivatives segments.

There is a process to compare the change from previous day's rates which allows necessary control.

Estimation of prices

In case of non-availability of rates from the Reuters system, the same can be obtained from the Bloomberg terminal or directly from market participants.

Back-testing of margining provides an indirect check on quality of model used to estimate the price.

Key Consideration 3: *A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the sub portfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilizing, pro-cyclical changes.*

Initial margin model

Initial margin is based on Value at Risk at 99% Confidence Level. Initial margin models for all segments have floors to mitigate pro-cyclicality. The initial margin model varies by market-segment:

- Securities Segment: Historical simulation by VAR model (historical VAR)
- Tri-party Repo: Historical simulation by VAR model (historical VAR)
- Forex Segment: Historical simulation by VAR model (historical VAR)
- Forex forward and Rupees derivative: Volatility weighted historical simulation VAR model. Also a Spread Margin is collected as part of Initial Margin to account for basis risk (non-parallel shift in tenors).

For Cash Market

Government Securities Settlement (tri-party repo settlement), Forex (USD/INR) Settlement and look back period of 1000 days is used to derive initial margin.

For Derivatives markets-

Forex forward and rupee derivatives segment, look back period of 1000 days is used which comprises:

- a. 750 consecutive volatility scaled (EWMA) returns from the most recent period
- b. 250 consecutive un-scaled returns from the period with the high market volatility termed as "stress period". Initial margin models for all segments have floors to mitigate pro-cyclicality.

Time required to close-out defaulter's positions from the point of trade has been estimated at 3 to 5 days based on the nature of the instruments cleared. Products are relatively simple without any non-linear pay off profile. Confidence interval at 99% has been considered adequate as back testing results have revealed that even in extreme cases, loss in margin cover is well covered by available resources.

Closeout and sample periods:

Consequent upon implementation of auction model for default handling effective 1st February'21, Margin Period of Risk(MPOR) for Derivatives segments has been increased to 5 days considering that the auction process could take longer period as market liquidity is expected to dry up under stressed condition. Position concentration also has been taken into account.

Effective 2nd May'23, for Forward Foreign Exchange and Rupee derivative trades, look back period of 1000 days with 250 days returns, unscaled, and from period representing stress in the market since Oct,2002 for forex forwards and since August, 2008 for Rupee Derivatives from rolling 2500 days windows period is considered for computation of VaR for initial margin. VAR model for Derivatives segments are based on volatility weighted historical models.

Also MPOR for Securities Settlement has been increased to 5 days effective 3rd Jan 2022.

Products cleared by CCIL being less complex, trade-off between prompt liquidation and adverse price effects has not been considered.

Pro-cyclicality and specific wrong-way risk:

Minimum margin is prescribed to take care of the pro-cyclicality issue. However, the possibility of margin requirement suddenly moving up due to increased volatility is possible; CCIL has a provision for collection of volatility margin when there is volatility in the market.

Collaterals being cash and government security, impact of wrong way risk is minimal.

Key Consideration 4: *A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants*

Variation margin, MTM margin in CCIL terminology, is collected based on end of the day market rates. Intra-day MTM margin requirements are evaluated thrice a day (twice intra-day and at EOD). Notional MTM margin based on intra-day valuation reduced by MTM Margin already collected is taken as value depletion on trades. Net MTM loss in the portfolio of a member is the sum of net MTM value depletion on outstanding trades and reduction in value of collaterals under charge, if any.

- a. For trades in Govt. Securities and Tri party repo, if the net MTM Loss arrived at exceeds 30% of the sum of the haircut levied on the collaterals under charge, Initial Margin and Volatility Margin (if applicable) collected at the time of computation of intraday MTM, such net MTM loss will be the Intra-day MTM margin payable by the member.
- b. For forex segment, if loss in portfolio value of a member is higher than 30% of Initial Margin (including additional initial margin and volatility margin) already collected, such loss may also be collected by Clearing Corporation as MTM margin on intraday basis
- c. For IRS, if loss in portfolio value of a member is higher than 30% of total of Initial Margin, Volatility Margin and Concentration margin collected, such loss may also be collected by Clearing Corporation as MTM margin on intraday basis.
- d. For Forex Forward segment, if the loss in portfolio value of a member is higher than 30% of sum of Initial Margin, volatility margin and concentration margin collected from the member, such loss is collected as intraday MTM Margin or intraday MTM gain reduction or both.

The Spot USDINR Exchange rate used for the end of the day MTM margining in Forex Forwards Segment will be the rate of the last Inter-bank trade (of value USD One Million or more) concluded till 5-00 PM on the Fx Clear Dealing Platform operated by Clearcorp Dealing Systems (India) Limited. In case the afore-mentioned spot rate is identified as an outlier or is not available on the aforesaid source latest by 5.10 PM, the rate available on Reuter's page "INR1F" at such time will be taken as applicable end of the day (EOD) MTM spot rate under intimation to the members of this segment.

Intraday MTM margins are collected immediately on its imposition and members are required to replenish within 1 hour in case of shortfall.

CCIL has provisions in its regulations whereby Intra-day margin calls for both additional Initial Margin (in the form of Volatility Margin, concentration margin) and Mark to Market margins are made and the same are collected accordingly. It also has the systems and operational capabilities required for this purpose.

Key Consideration 5: *In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorized to offer cross-margining, they must have appropriate safeguards and harmonized overall risk-management systems.*

Portfolio margining

Each product is margined separately. Even at product level, full offset is not allowed for positions in similar securities or positions settling on different settlement dates. CCIL measures its potential future exposure at portfolio level. Only in the derivative segment, offset is given between positions settling on different settlement dates. In such cases, there is a process of disallowance through imposition of spread margin (which effectively reduces extent of offset).

Cross-margining

Cross-margining arrangement is not in place at present.

Robustness of methodologies

Back-testing of margining on a daily basis helps in assessing the robustness of margining model.

Key Consideration 6: *A CCP should analyze and monitor its model performance and overall margin coverage by conducting rigorous daily back testing and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model 's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.*

Back testing and sensitivity analysis

CCIL conducts back testing of all its member portfolios on a daily basis and 99% confidence level is used to assess efficiency of margining model. As margining model does not allow offset amongst positions in different asset classes, testing for efficiency of cross margining is not required.

Daily back-testing results display adequate coverage. Actual market price data is used for such back testing. Adequacy of margin cover is checked at notional position level and at member portfolio level

The cases of margin cover inadequacies are analyzed in detail and corrective actions are taken in consultation with the Board level Risk Management Committee and Regulatory approval.

Stress losses on participants' portfolios are also arrived at by altering the parameters of the stress test model in Scenarios analysis exercise which is done monthly. The exercise is carried out by independently testing (changing) the model assumptions such as Stress period of risk (SPOR) (increase/decrease by 1 day), look back period for historical data (recent 5 years), second highest shifts in risk factors and confidence level for hypothetical scenarios (99.85% or 99.95%).

Potential shortcomings of the margin model

No such shortcoming noticed

Margin model performance

No shortcomings were indicated in the model. Floors were set in the margin model to take care of pro-cyclicality. If the model throws up exceptions on a regular basis, then the model parameters are reviewed and adjustments made if necessary.

Results of the back testing are shared with Board level Risk Management Committee and are considered for model review (Internal and External). These results are made available to Regulators when asked for.

Key Consideration 7: A CCP should regularly review and validate its margin system.

An annual review process by independent external experts is in place. Additionally, the models are reviewed and revised in the event of frequent exceptions in back-testing owing to change in market conditions. Any material revision of margin system is discussed with participants and Risk Advisory Group and the changes are implemented with the approval of Board Committee on Risk Management and with Regulatory approval. Changes are notified to Clearing Participants well in advance (usually at least 30 days).

Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

<i>Assessment of Observation of Principle 7</i>	OBSERVED
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Key Consideration 1: An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

There is a process of on-line monitoring of liquidity exposures on participants and on settlement banks. There is a stipulated criterion for selection of settlement banks (*Refer Principle 3; Key consideration 3 for details*). Additionally, process is in place for monitoring the liquidity exposures on clearing participants. In case of any sudden and unusual spurt in the liquidity exposures on the participants, the positions are closely monitored for effective and timely action.

As regards the lines of credit provided by the banks, these funds are kept in a fully segregated account at the Reserve Bank of India. Hence these arrangements are not subjected to any liquidity risk.

Highest liquidity need observed during the year 2022 -23 was INR 439,496.50 million (on a large bank at group level on 01-Mar-23) for domestic settlements and USD 299.64 -million (on a large bank at group level on 06-Jan -23) for foreign currency settlements.

Committed Lines of Credit in Rupee and USD funds and, in securities are in place.

In addition, CCIL has adequate Government Securities in its Settlement Guarantee Fund with the help of which it can raise additional liquidity. In case of both INR and USD, Clearing Participants share this risk through shortfall allocation. Moreover, PvP/ DvP settlements reduce liquidity risk significantly. Liquidity stress test run on a daily basis provides good estimate of maximum liquidity exposures and CCIL's ability to handle such exposures. As regards the potential aggregate liquidity risk, multiple roles played by the participants are taken into consideration for the liquidity management.

Key Consideration 2: An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Integrated Risk Management System (A replica of IRIS) provides the details of liquidity exposure of the participants and the settlement status on a real-time basis

CCIL can track any event of shortfall within a short time and take corrective measures.

For Rupee settlements at Central Bank i.e. Reserve Bank of India and for Dollar Settlement at Settlement Banks, any fund shortage is met through automatic usage of LOC.

Process is in place whereby, settlements are monitored on a real-time basis by tracking transactions in settlement accounts with various settlement banks.

Key Consideration 3: *A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.*

There is no intraday or multi-day settlement. All settlements happen at the end of the day. Failure to settle daily obligations in both Rupees and US Dollars by participants, on whom the system would have largest exposures, are taken as the basis for carrying out liquidity stress test.

Key Consideration 4: *A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.*

Sufficient liquid resources:

Please refer to response under Key Consideration 1

Risk profile and systemic importance in multiple jurisdictions

CCIL provides settlement of cash products in the wholesale debt, forex and money markets in India. Additionally, it clears forward forex trades and interest rate swaps as CCP. Thus, products cleared are not “complex”. In regard to INR-USD settlement, while it settles USD leg of the

transactions in US, clearing is on-shore. Hence, CCIL is not treated as systemically important in multiple jurisdictions and thus liquid resources of Cover 1 are maintained.

CCIL's daily liquidity stress test assumes a stress scenario in which the group (entity and its affiliates) with highest payment obligation in INR segment wise and the group with the highest payment obligation in USD, default in their entire payment obligations. Any Line of Credit (LoC) offered by the defaulting member is excluded from the amount of resources available for meeting liquidity shortfall.

Highest liquidity need observed during the year 2022-23 was INR 439,496.50 million (on a large bank at group level on 01-Mar-23) for domestic settlements and USD 299.64 million (on a large bank at group level on 06-Jan-23) for foreign currency settlements.

CCIL's liquidity resources include committed lines of credit, overdrafts against fixed deposits and adequate quantum of Government Securities in Settlement Guarantee Fund that can be used to raise additional liquidity. All these liquidity resources cumulatively were always higher than the highest liquidity needed for the period under consideration. Hence, there was no estimated liquidity shortfall in either of the currencies, viz. USD, INR for the period under consideration.

CCIL does not pay variation margin gains to members in Cash. Instead, CCIL allows members to treat such gains as additional collateral against which members can conclude further trades. Hence variation margin credits do not result in additional liquidity requirements for CCIL.

Key Consideration 5: For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.

Size and composition of qualifying liquid resources and their availability and coverage

LOC at RBI: INR 40,000 million.

LOC at Settlement Banks: INR 56,000.00 million and USD 875 million

Further, CCIL has overdraft limits from banks with whom the cash SGF balances are deposited. In addition, CCIL has adequate quantum of Government Securities INR 1,110,140.77 million as on 31 March '23) in its Settlement Guarantee Fund (excluding collaterals for Tri party Repo) with the help of which it can raise additional liquidity.

As per current assumption, no collateral or investment is likely to be encashed on the day of default. However, counter-value assets held back from the defaulter can be used for default handling. CCIL has adequate quantum of Government Securities in its Settlement Guarantee Fund with the help of which it can raise additional liquidity through a repo arrangement. .

CCIL does not have access to routine credit from Reserve Bank of India.

Key Consideration 6: *An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.*

Size and composition of supplemental liquid resources as on 31st March'23:

Settlement Reserve Fund: INR. 23,000 million

Collaterals in SGF (Cash): INR 77,180.94 million

USD 732.76 million (Collateral in the form of US T-Bills).

Member Contributed DF Quantum: (As on Mar -2023 in INR million)

Securities (Outright & Repo)	<u>5,622.10</u>
Securities (Tri-party Repo)	<u>4,859.30</u>
Forex Settlement	<u>7977.90</u>
Forex Forward	<u>37,727.10</u>
Rupee Derivatives (MIBOR)	<u>12,830.00</u>
Rupee Derivatives (MIFOR)	<u>1831.60</u>

Additional resources could be arranged by using counter-value assets, if available or by using securities available in SGF accounts of the clearing participants.

Availability of supplemental liquid resources:

CCIL accepts collateral only in the form of highly liquid government securities and cash (INR and USD). Hence, liquidation of the same is expected to be carried out smoothly.

Key Consideration 7: *An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider 's performance reliability with*

respect to a particular currency, a liquidity provider 's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.

Use of liquidity providers

Providers of the FMI's minimum required qualifying liquid resources are Clearing Participants and Settlement Banks. These are banks of good financial standing.

Moreover, in case of INR committed LOCs, segregated funds equal to LOC amounts are made available in a separate current account of these banks at Reserve Bank of India. Thus these are not exposed to any liquidity risk even under stress conditions. In case of USD funds, the lines of credit are fully collateralized.

Reliability of liquidity provider:

As indicated above, rupee denominated LOCs at RBI are kept separately funded by the LOC extending banks. Such funds are on an automatic drawdown basis and as such get tested as a part of settlement process.

USD Settlement banks are selected based on their rating, net worth and access to adequate liquidity in USD funds thus assuring their capacity to perform. Moreover, for USD funds, the lines of credit are fully collateralized.

Liquidity providers' potential access to credit at the central bank of the issue is also taken into account. Liquidity stress test is run on a daily basis by considering the highest group exposures in each currency and the result is reviewed for identification of any exceptional situation.

Key Consideration 8: *An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.*

Access to Central Bank accounts, payment and security services are available for settlement in the accounts of clearing participants who have accounts with Central Bank -RBI. Central bank services are used to enhance management of liquidity to the maximum possible extent. Even for settlement through Designated Settlement Banks, final settlement is in central bank's money.

With increased use by the clients of the Clearing Member structure, which is now in place in the Securities Segment, a larger volume of settlements will take place in central bank money.

Settlement of US Dollar leg of INR/USD segment directly through Central Bank is not possible as Federal Reserve does not allow foreign CCPs to have accounts in their system.

Key Consideration 9: *An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to*

report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

Stress test program:

Stress test is carried out on a daily basis assuming settlement default by entity (and its affiliates) with largest exposure in INR and USD.

Stress test scenarios:

The scenarios envisaged in liquidity stress test are failure of single largest participant and its affiliates in INR and USD independently. Default in securities deliverable position by the group is also presumed. As regards simultaneous pressures in funding, it is presumed that the LOC provided by the group in default is not available to meet the shortfall.

Moreover, the liquidity stress test is based on the crystallized settlement obligations of the participant and its affiliates. Hence sudden and significant change in the market liquidity doesn't impact the settlement obligations

Review and validation:

Stress Test Process document lists out its rationale and its governance arrangement. Managing Director reviews the results of Stress Test on a daily basis. Board level Risk Management Committee also reviews the results during its periodic meetings.

Key consideration 10: *An FMI should establish explicit rules and procedures that enable the FMI to affect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.*

Same day settlement:

Processes are in place to use Lines of Credit (LOC) availed by CCIL for this purpose. Processes are also in place for handling shortfalls beyond available LOC by allocation.

Shortfall handling processes are being made more robust to ensure same day settlements. A process for allocation of settlement shortfall to the participants with receivable position is in place

Replenishment of liquidity resources:

The liquidity resources used for shortfall handling are generally replenished within 1 day.

Principle 8: Settlement finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

<i>Assessment of Observation of Principle 8</i>	<i>OBSERVED</i>
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***Key Consideration 1:** An FMI's rules and procedures should clearly define the point at which settlement is final.*

Point of settlement finality:

In terms of the provisions contained in Section 23 of Payments and Settlement System (PSS) Act 2007, Settlement is final and irrevocable when the netting for settlement is over and obligations are determined. The settlement finality is also provided for under the governing document of CCIL i.e. Bye-laws, Rules and Regulations (BRR). The CCIL Bye Laws, Rules and Regulations (BRR) are available on CCIL website.

The Payment and Settlement Systems (Amendment) Act, 2015 further reinforces the legal basis for novation, finality and other material aspects of CCIL's CCP activities.

Finality in the case of links:

Consistency of finality is achieved very clearly in terms of the Payments and Settlement Systems Act, the Bye-laws Rules & Regulations of the CCP in respect of SSS which is run by the CCP and the LVPS run by the Central Bank i.e. RBI.

***Key Consideration 2:** An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.*

Final settlement on the value date:

Final settlement is provided on the settlement date (value date) itself.

CCIL has not experienced any deferral of final settlement so far except handling unscheduled holidays in terms of its Bye-laws, Rules and Regulations.

Intraday or real-time final settlement:

CCIL settles trades only at the end of the day and there are no batch settlements. Hence, intra-day or real time settlement is not considered

As regards the T+0 settlements, trades accepted till the cut-off time (around 2.00 PM of the current day) are settled along with the trades of previous period settling on that day.

On-line view of balances is available to clearing participants maintaining accounts at RBI. Moreover, Settlement Completion Reports are provided to participants by CCIL after the settlement is over.

Existing Risk controls are considered adequate for day-end settlement. Intra-day settlement does not appear beneficial to the market as this will adversely impact efficiency by reducing netting benefits.

Key Consideration 3: An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

Reported transactions cannot be cancelled unilaterally after those are matched in the system. Delivery/ payment, once received from a participant is final. Similarly, obligations cannot be altered after the netting for clearing is completed by CCIL

No provision exists to revoke settlement.-

No extension to the revocation deadline is possible; hence, not applicable.

Principle 9: Money settlements

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.

<i>Assessment of Observation of Principle 9</i>	OBSERVED
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Key Consideration 1: An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

Money Settlements are as under:

Securities Segment (Outright & repo and Tri-party repo)

- INR funds settlement is in Central Bank money (settlement in settlement banks for participants who are not allowed to open funds account at Central Bank). For settlement of Rupee funds in settlement banks, final exchange between Settlement Bank and CCIL happens at Central Bank with minimum delay.
- Securities Settlement – only through depository maintained by Central Bank.

Forex Settlement (INR/USD) Segment –

- a. INR funds settlement in Central Bank money.
- b. USD funds settlement through settlement bank.

A major portion of the settlements is in Central Bank money. Where participants do not have accounts with the Central Bank, their transactions are settled through Settlement Banks (Commercial Banks). The final settlement of amount payable/receivable by settlement banks however is in Central Bank money. CCIL is not allowed to open US Dollar a/c in US with Federal Reserve. US Dollar Settlement is therefore not in Central Bank money.

Key Consideration 2: If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

Settlement Bank Risk Management Policy is in place to manage Settlement Bank Risk which covers both credit and liquidity risk on Settlement Banks.

CCIL has put in place a process (effective 31st Dec 2018) for transferring credit balances in its settlement accounts with the settlement banks to its current account at RBI to reduce the credit risk on settlement banks.

There are laid down stipulated standards for selecting a bank as settlement bank. Moreover, limits are set on these settlement banks for intra-day and overnight exposures; exposures against such limits are closely monitored.

Key Consideration 3: *If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalization, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.*

Criteria laid down for selection of settlement bank is:

- a. Acceptable Financial standing (credit rating of investment grade, wherever available)
- b. Previous experience as Settlement Bank
- c. No record of any persistent default
- d. Existence of effective Risk Management set up
- e. Conformity of key Basel ratios of the bank to the regulatory prescribed levels.
- f. No record of liquidity problem faced by the bank in past 3 years
- g. Adequate IT infrastructure to support settlement activity (with suitable redundancies) with a well spread out integrated branch network and BCP set up

Concentration of credit and liquidity risks to the commercial settlement banks are managed by setting limits on exposures and by closely monitoring such exposures. Limits set as above help in monitoring concentration as well and settlements passing through such settlement banks.

Annual review of position regarding adherence to the eligibility criteria for functioning as settlement bank is carried out. In addition, CCIL bye-laws, rules and regulations specifically recognize that the funds paid in by participants in the settlement banks as final only when they are actually credited into CCIL's current account at RBI.

For Forex Segment,

- In the event of failure of a settlement bank, the loss, if any, shall be allocated to those members who have opted to settle through that Settlement Bank.
- An amount of INR 500 million has been earmarked towards absorption of loss (Skin in the Game) on account of Settlement Bank failure for Forex Settlement Segment by Clearing Corporation.

For CLS segment

- In the event of failure of the Settlement Bank, losses if any shall be allocated to the participating members in the segment.
- An amount of INR 100 million has been earmarked toward absorption of loss (Skin in the Game) on account of Settlement Bank failure.

Key Consideration 4: If an FMI conducts money settlements on its own books, it should minimize and strictly control its credit and liquidity risks.

CCIL doesn't conduct any money settlements in its books

Key Consideration 5: An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

CCIL's legal agreements with its settlement banks state that transfers are final when effected, and that funds received by CCIL are also transferable among its accounts with other settlement banks and RBI.

CCIL has put in place a process (effective 31st Dec 2018) for transferring credit balances in its settlement accounts with the settlement banks to its current account at RBI to reduce the credit risk on settlement banks.

Principle 10: Physical deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

<i>Assessment of Observation of Principle 10</i>	<i>NOT APPLICABLE</i>
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Key Considerations 1: An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

Physical delivery: Not applicable

Key Considerations2: An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

Not applicable

Principle 11: Central securities depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimize and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilized or dematerialized form for their transfer by book entry.

<i>Assessment of Observation of Principle 11</i>	NOT APPLICABLE
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Key Consideration 1: A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorized creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

- Safeguarding the rights of securities issuers and holders: Not applicable
- Prevention of the unauthorized creation or deletion of securities: Not applicable
- Periodic reconciliation of securities issues: Not applicable

Key Consideration 2: A CSD should prohibit overdrafts and debit balances in securities accounts.

Not applicable

Key Consideration 3: A CSD should maintain securities in an immobilized or dematerialized form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilize or dematerialize securities.

Not applicable

Key Consideration 4: A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

Not applicable

Key Consideration 5: A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.

Not applicable

Key Consideration 6: A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

Not applicable

Principle 12: Exchange-of-value settlement systems

If an FMI settles transaction that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

<i>Assessment of Observation of Principle 12</i>	<i>OBSERVED</i>
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***Key Consideration1:** An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.*

USD/INR settlement (Forex Segment) is on PvP basis. CLS settlement is on PvP basis at CLS Bank. In all other segments, settlements are on DvP basis.

In the case of securities segment, CCIL has an SGL and CSGL account at the RBI and sends the consolidated list of securities settlements and funds payout instructions to the RBI. These two files are processed simultaneously.

Finality of settlement of obligations is simultaneous. Thus, Principal Risk is eliminated.

In clearing segments, CCIL does not rely on PvP settlement of any other FMI.

Principle 13: Participant-default rules and procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

<i>Assessment of Observation of Principle 13</i>	<i>OBSERVED</i>
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Key Consideration1: *An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.*

Participant default rules and procedures

CCIL bye-laws describe the rules pertaining to default handling and the procedures (Chapter XII). The Bye-laws also specifically mention that the provisions of a particular market segment are detailed in CCIL regulations for the specific market-segment (ChapterV). Accordingly, regulations for each of the market-segment, has a chapter “Shortage and Default”.

Effective 1st Feb’21, auction based model has been introduced for handling default handling in Rupee Derivatives and forex forwards segments.

Changes to normal settlement practices may also include close out of trades due for settlement on subsequent days. Following a default, no new trade is accepted for novation by CCIL, post declaration of default.CCIL deals only with direct members. No special provision exists so far for distinguishing positions and collaterals in respect of proprietary and client transactions.

Member contributed Default Fund and CCIL’s contributions from Settlement Reserve Fund (referred to as ‘Skin in the Game (SIG)’), together constitute prefunded default handling resources.

Default Fund corpus refers to the contribution required to be made by all members for each of the clearing segments.

Individual Members’ Default Fund contribution shall be based on 3 components:

- a. Average outstanding gross trade volume in the previous six months with a weightage of 50%.
- b. Average Initial Margin requirement in the previous six months with a weightage of 25%.
- c. Highest Stress Loss on account of the member in the previous six months with a weightage of 25%.

The corpus of each Default Fund, which is revised at the end of each month, will be determined on the basis of daily Credit Stress Test results as follows:

- 1) For each stress scenario, CCIL will determine the sum of –
Cash Segment:
 - highest stress loss on account of a member and its affiliates and,
Derivative Segment:
 - highest stress loss on account of a member and its affiliates and,
 - second highest stress loss on account of a member and its affiliates.
- 2) The size of Default Fund will be based on the highest such sum in the preceding six months, along with the stress losses on account of five weak entities on the same day and the same scenario that had the highest such sum of stress losses.
- 3) In case such revision results in a reduction in the corpus of the Default Fund to an amount which is less than 85% of the corpus prevailing at the time of the revision, then the revised corpus shall be restricted to 85% of the prevailing default fund corpus.

Additionally, in the event, the sum of the highest stress loss on account of a member and its affiliates and the second highest stress loss on account of a member and its affiliates on any stress test scenario exceeds 100% of prefunded default handling resources, additional contributions towards default fund are called from the participants, to the extent by which such sum exceeds 100% of prefunded default handling resources. This call for additional contributions will be made on the day stress test results indicate a breach of resources.

The minimum contribution required to be made by a participant towards Default Fund is INR 1million per segment for cash products and INR 10 million for derivative products i.e. rupee derivatives and forex forward segments. The only exception is for the rupee derivative trades benchmarked to the MIFOR where a minimum contribution of INR 1million is required.

Members are required to maintain a minimum of 5% of their default fund requirements in the form of cash and the remaining contribution in the form of eligible Government Securities.

CCIL's skin in the game for each segment is set at 25 % of the default contribution but not less than the highest individual member contribution for the respective segment. The total skin in the game across all segments is capped at the balance in the Settlement Reserve Fund.

CCIL's skin in the game is split into 2 tranches.

- Tranche 1 constitutes 60% of CCIL's skin in the game (i.e.15% of the Default Fund contribution of the clearing members in each segment). This is to be utilized immediately after the defaulting member's contribution to the Default Fund.

- Tranche 2 constitutes 40% of CCIL's skin in the game (i.e. 10% of the Default Fund contribution of the clearing members in each segment). This is to be utilized after the non-defaulting members contribution to the default fund is used up.

In the event of a default, the sequence of appropriation of pre-assigned resources for each clearing segment, known as the default waterfall, is followed to meet the losses. Once a clearing member is declared as a defaulter in any segment, the participant is deemed to have defaulted in all other segments, thus declared a defaulter across segments to contain the risk. The steps followed for adjusting residual shortfall in the default waterfall are:

- The defaulter's margins including surplus in other segments
- The defaulter's contribution to Default Fund including surplus in other segments
- Then Tranche 1 of CCIL skin in the game.
- Next, any residual shortage is allocated to Default Fund contributions of the surviving clearing participants.
- Next step is to utilize tranche 2 of CCIL skin in the game.

Provisions have been created in respective clearing segments' Regulations to make replenishment calls from the non-defaulting participants to the extent of DF utilization and also in CCIL bye-laws (Ch. IX.7). Further additional contribution can be called for from the non-defaulting members if the resources i.e. DF and CCIL's skin in the game are inadequate to meet the loss

In the Forex Forwards segment and in the Rupee Derivatives segment where default handling is by way an auction, CCIL has established Default Management Committees (DMC) comprising representatives nominated by selected members of the segment for advising / assisting the Clearing Corporation in administration / management/ handling of default by a member.

The Default Management Committee shall advise and assist the Clearing Corporation on various aspects of default management process, primarily in the areas of:

- a) Risk neutralization of Defaulter's Portfolio
- b) Creating buckets out of the Defaulter hedged/ un-hedged Portfolio, as the case may be
- c) Setting reserve price for Auction of Portfolio Buckets
- d) Assisting in carrying out market sale/ Auction of Portfolio Buckets as required
- e) Assisting in allocation of position/ trades
- f) Any other incidental matter(s) in connection with the above as may be brought before the Default Management Committee by the Clearing Corporation.

Provisions pertaining to the constitution of the DMC, including rights and obligations of the Default Management Committee have been prescribed in the Regulations.

Use of financial resources

Member margins and contributions to segment wise Default Fund are either in Govt. Securities or in Rupee funds. CCIL's Settlement Reserve Fund (SRF) is also kept in bank deposits with early termination option and in government of India Treasury Bills. This ensures quick availability of resources.

Default fund is in place in all clearing segments as mentioned above. In the event of Default Fund (DF) being used to meet loss on account of a default, provisions have been created in respective business segments Regulations to make replenishment calls from the non-defaulting participants to the extent of DF utilization. Further additional contribution can be called for from the non-defaulting members if the resources i.e. Default Fund and CCIL's skin in the game are inadequate to meet the loss.

As regards replenishment of CCP's own resources following a default, Board approved Policy is in place for transfer of funds from General Reserve to Settlement Reserve Fund to meet any shortfall. Provision was also made to opt for rights issue as well with general body approval.

Failure to comply with additional contribution to Default Fund, would render a participant as a defaulter and lead to non-acceptance of future trades.

Key Consideration 2: An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

The Default Handling Policy/Procedure is in place for each segment with roles and responsibilities clearly delineated. CCIL has so far carried out 11 table top exercises (which includes 6 half-yearly drills; frequency increased to half-yearly from July'20) involving participants to test the default handling procedure to ensure better preparedness for handling any default.

All available means (i.e. letter, mail, fax etc.) can be used to communicate in a timely manner to all relevant stakeholders, including regulators, supervisors, and overseers.

Default handling procedures for various segments are reviewed yearly by the Board Committee on Risk Management.

Key Consideration 3: An FMI should publicly disclose key aspects of its default rules and procedures.

CCIL bye-laws and rules and the regulations of each segment are publicly available. In case of any material changes in the policies and procedures, amendments are made to the Bye Laws Rules and Regulation with approval from RBI. CCIL Bye-laws and market-segment regulations describe the default handling procedures covering the following areas:

- The circumstances in which a default can be declared
- How can default be communicated and who takes the decision; and
- The scope of actions that can be taken including the usage of financial resources of the participant in default to cover its obligations to CCIL and other participants

CCIL bye-laws, rules and regulations do not explicitly distinguish between a participant's proprietary and customer trades and accordingly it does not also distinguish between the positions and assets of the participant's proprietary trades and those on account of its customers trades except for Securities (Outright/market repo and tri-party repo) where Clearing Member structure and tiered participation is in place w.e.f.2nd March'20..

***Key Consideration 4:** An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.*

CCIL has also carried out 11 table top exercises involving participants (6 half-yearly (since July'20)) to ensure better preparedness for handling any default. Test results were shared with the Board, Risk Committee and the regulator.

In default handling (table-top exercise), it is assumed that the member with highest funds payable obligation across segments defaults in funds and securities deliverable obligation.

Principle 14: Segregation and portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant’s customers and the collateral provided to the CCP with respect to those positions.

<i>Assessment of Observation of Principle 14</i>	<i>OBSERVED</i>
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Key Consideration 1: A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant’s customers’ positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.

Protection from participant default

Tiered Membership structure, segregation of collaterals and Clearing Member structure has been introduced in:

- 1) The Securities Segment (market repo outright and tri Party Repo) effective 2nd Mar 2020.
- 2) Rupee Derivatives segment – effective 02nd November’20
- 3) Forex Forwards segment – effective 1st February’21

Now the clients ‘collaterals are clearly identifiable. As per the model, the clients ‘collaterals are segregated through two different account structures:

- Individually Segregated Account
- Legally Segregated Operationally Comingled (LSOC)

In the event of a default of a clearing member, positions and collateral of the clients is clearly segregated and available for porting. .

Customer protection from participant and fellow customer default

Clearing member structure allows clients to have segregated collateral accounts thereby offering protection to the client’s collateral in the event of default by participant and fellow customer(s).

Legal basis

Payment and Settlement Systems provides the legal basis which recognizes collateral placed with CCP as insolvency remote. This supports CCP’s arrangements to protect and transfer the positions and collateral of a participant’s customers.

All the clearing members registered with CCIL are governed by the CSGL Guidelines issued by the Central Bank of the country, i.e., Reserve Bank of India . The portability arrangements are subjected to Indian Law and Jurisdiction.

Key Consideration 2: *A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.*

Client trades and clearing member trades are margined separately and there is no offset provided between the positions.

The account structure used by CCIL:

- Individually Segregated Account – Fully segregated at each client level based on request of the clients
- Legally Segregated Operationally Comingled (LSOC) – Provides for segregation and operational flexibility

The collateral covers initial margin, volatility margin, concentration margin and marked to market margins.

The Clearing Member shall in respect of its Constituents, deposit with CCIL margin in the form of cash and/ or eligible securities. The Clearing Member shall also ensure that such margin deposited by it on behalf of a Constituent or a group of Constituents shall at all times be at least equal to the total margin obligation of such Constituent or group of Constituents.

A clearing Member who deposited margin for a group of constituents shall report the value of the margin allocated by it for each of the Constituents. Where such value of margin reported as allocated by the clearing member to any constituent exceed the actual margin obligation computed for such Constituent, CCIL shall block such excess amount from the margin available by the Clearing Member.

Margins are netted for individual client trades but no netting is allowed between the trades of fellow clients and / or with clearing members

Key Consideration 3: *A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred*

Positions are and collateral are clearly segregated and are available for porting on request of the clients

Clients have to provide their choice of back-up Clearing members. Porting of positions and collateral to another participant is based on the choice of the client

Key Consideration 4: *A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.*

CCIL provides all such information through its Bye-laws, Rules and Regulations published on the website. Roles and Responsibilities are clearly stated in Bye Laws Rules and Regulations. There is no scope for ambiguity with respect to the provisions contained therein in regard to segregation and portability of positions and collateral.

Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

<i>Assessment of Observation of Principle 15</i>	<i>OBSERVED</i>
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Key Consideration1: An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

CCIL risk management framework includes “strategic risk” as one of the risks. The “strategic risk” encompasses wrong execution of business strategy and wrong business strategy.

CCIL in order to identify, monitor and manage business risks focuses on the following initiatives:

(a) Risk of an unexpected downturn in business volumes:

Initiatives:

- CCIL's Management conducts a detailed analysis of each of the Business Operations unit on quarterly basis and presents the same to the Board for its review. Any changes in the business volumes, revenues, operating environment, regulatory aspects, systems and other factors affecting each of the Business Operations Unit are monitored through this process.
- CCIL maintains net assets funded by equity at a much higher level than what is prescribed under PFMI and this will help tide over periods of low business volumes and low profitability.

(b) Risk of Competition in core business area, Risk of occurrence of external market events with adverse systemic consequences and Risk of changes in regulatory requirement that may adversely impact CCIL or its participants:

CCIL's services, products and client composition may have to undergo significant changes in case of change in regulatory requirements and/or overall regulatory landscape.

Initiatives:

- The Board of CCIL oversees and regularly reviews all the business strategies and initiatives, CCIL's responses to the regulatory developments, business continuity planning matters,

pricing of the services, large items of expenditure and all other significant matters relating to CCIL's business.

- CCIL has set up a dedicated research desk, which monitors and analyses the developments in the international and domestic markets. This helps in providing inputs for assessment of 'Strategic' risk to the Management.
- The Management of CCIL closely tracks the developments in financial markets from the perspective of product enhancements and keeping the organization competitive.

(c) *Risk of disruptive changes in technology*: CCIL faces risk of disruptive new technology exposing its systems and infrastructure to faster or extraordinary obsolescence.

Initiatives:

- CCIL Management regularly evaluates technological changes taking place in the Company's areas of business. Company's software, hardware, network and other systems are continuously enhanced. A Committee of the Board having technical experts also as its members oversees technical aspects relating to IT infrastructure applications and IT policies of the Company.

(d) Risk of unexpectedly large operating expenses materializing and occurrence of Operational risk events including cyber risks:

Initiatives:

- CCIL maintains a disciplined approach to financial planning and management (includes annual expenditure budgeting, income projection process), through which a comprehensive review of the financial position is undertaken. These projections are compared with actual performance on quarterly basis and variances are analyzed in detail.
- CCIL tracks its key financial performance and financial position through Quarterly and Annual financial performance review which are based on the interim financial statements and Audited annual financial statements. A detailed analysis of the financial performance is presented to the Audit Committee and the Board for its review.

CCIL maintains Liquid Net Assets Funded by Equity at much higher levels than what is prescribed by 'Principles for Financial Market Infrastructures'. In addition to Liquid Net Assets Funded by Equity. CCIL also maintains significant amount as Contingency Reserve appropriated out of its profits, to meet non-default losses and losses on account of operational risk events.

- CCIL has appointed Independent Auditors for a comprehensive Internal and Operations Audit and Concurrent Audit. CCIL has also put in place a number of internal financial controls for ensuring orderly and efficient conduct of its business which are verified by the Independent Auditors on regular basis for their adequacy and operational effectiveness. These measures

along with External Statutory Audit and Systems Audit helps in managing the 'Operational Risk.'

- CCIL has put in place an extensive Cyber Security framework and Cyber Crisis Management plan and has been implementing various tools and technologies and improving its processes to mitigate cyber risk.

Key Consideration 2: *An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.*

CCIL periodically looks at liquid net assets funded by equity as multiple of monthly operating expenses i.e. expenses required by CCIL to continue its operations and services as going concern. CCIL's net assets funded by equity as on 31 March 2023 was equivalent to 58 months of operating expenses, as against the PFMI requirement of minimum six months of operating expenses necessary to continue its operations and services as a going concern.

Key Consideration 3: *An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.*

Recovery or orderly wind-down plan:

An approach towards application of various recovery tools at the end of waterfall such as cash calls, forced allocation and tear up of defaulter's portfolio has been made live since 1st Feb 2021.

Further, in order to meet losses that could arise out of non-default events such as failure of banks where investments are made, settlement bank failure, and operational risk events etc., a Contingency Reserve Fund (CRF) has been created with a corpus of INR 3,021 million with effect from 31 Mar 2017. The balance available on 31 Mar 2023 is INR 9610 million.

Resources:

CCIL maintains liquid assets funded by equity to cover potential general business losses so that it can continue operations and services uninterrupted. CCIL's net assets funded by equity as on 31 March 2023 was equivalent to 58 months of operating expenses, as against the PFMI requirement of minimum six months of operating expenses necessary to continue its operations and services as a going concern.

Key Consideration 4: *Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.*

Resources designated to cover business risks and losses are separated from resources designated to cover the default of a member.

Settlement Reserve Fund balances are to be used to meet the default of a member. These balances are kept separately in liquid instruments such as bank deposits and Treasury Bills.

The minimum capital/equity for CCPs has not been prescribed.

Funds are kept in the name of CCIL itself. In case of securities deposited as collateral by the participant, the balances are kept in CSGL A/c with Reserve Bank of India (Central Bank of India) where CCIL's beneficial ownership is clearly recognized. In addition to the rights available to it through its Bye-laws, Rules and Regulations, CCIL also takes Power of Attorney from the members to ensure CCIL's right to appropriate such securities, if needed.

Key Consideration 5: *An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.*

A Board approved plan is in place for raising of resources in the event the equity capital falls below the amount needed in terms of Principle 15 of the PFMI guidelines. It provides for transfer of funds from the General Reserves and Surplus to the Settlement Reserve Fund, subject to approval of shareholders of the Company, in case of any depletion due to its use for the purpose of meeting any event of loss as approved. If the balance in Capital, General Reserves and Surplus falls below the minimum required amount equivalent to at least six months' operating expenses as required under the Principles, the Company would initiate the process to raise additional capital through a Rights Issue.

The Board reviews overall financial position of the Company on a quarterly basis which also includes review of additional capital requirement.

Principle 16: Custody and investment risks

An FMI should safeguard its own and its participants' assets and minimize the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

<i>Assessment of Observation of Principle 16</i>	OBSERVED
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Key Consideration 1: An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

The entities with which CCIL places its own funds and participant assets are:

- a. Securities received as collaterals or towards margin in the non-forex segments are kept with RBI.
- b. Liquid net assets funded by equity and reserves are invested in fixed deposits of less than ~~12~~ 13 months maturity with banks in India and in government treasury bills or held in savings or current account with settlement bank.
- c. INR funds received towards participants' margin contributions are invested in deposits with Banks and in government securities / treasury bills.
- d. USD funds are invested in US T-bills –USD funds received as pre-funding are kept in deposits with highly rated banks including settlement banks subject to the limits stipulated for such investment in Investment Policy

Custodian entities dealt with are either the RBI or regulated entities in the respective jurisdictions. All these entities are governed by legal provisions and local regulations with regard to accounting practices, safekeeping procedures and internal controls applicable to respective countries. CCIL has put in place a process to review the standing of the banks on on-going basis through its investment policy which has a detailed framework to assess investment related risks.

Key Consideration 2: An FMI should have prompt access to its assets and the assets provided by participants, when required.

Assets in cash are held in bank deposits or accounts in the name of CCIL. In case of securities, the balances in proprietary account are kept with the RBI PDO in its own SGL account. RBI rules regarding SGL clearly recognize the beneficial ownership of SGL account holders. In addition to the rights available to it through BRR, CCIL has the provision of securing a power of attorney from the participants to ensure CCIL's right to appropriate such securities, if needed.

Funds and Securities available as collaterals are in effective custody of CCIL and can be used promptly in the event of a participant default

Key Consideration 3: *An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.*

USD Settlement banks keep USD T-Bills in a custodial arrangement in a segregated fashion without commingling them with their assets. Hence, these are not considered exposures on the settlement banks. INR securities are maintained with the Reserve Bank of India and hence do not represent a credit exposure.

Key Consideration 4: *An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.*

Investment strategy

Investment Policy stipulates the norms for investment to ensure that the credit risk and market risk on investments is minimized. The policy stipulates the criteria for instruments and entities eligible for making investments. Investment Policy is vetted by the Committee of Directors on Risk Management (CODRM) and approved by the Board of Directors. In terms of the Investment Policy, the Investments are only in bank deposits, govt. securities etc. which are liquid instruments. Investment Policy is shared with the regulator and the synopsis of the same is shared with the participants. In case of bank deposits, investments are made only with highly rated and well capitalized banks, subject to ceilings/limits set for individual banks.

There is a process to track exposure on banks on account of investments made. Further, a quarterly analysis of investment portfolio is reviewed by the Board Risk Management Committee.

Risk characteristics of investments

Investments in Government Securities are in T-bills only, hence there is minimum price risk in respect of investments. Investment Policy prescribes limits for its investments with each eligible entity. CCIL does not invest in any of the securities issued by its participants. Investments are in the bank deposits with banks which happen to be its participants. CCIL has put in place counterparty exposure limits for all such deposits and balances lying with various banks.

Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfillment of the FMI's obligations, including in the event of a wide-scale or major disruption.

<i>Assessment of Observation of Principle 17</i>	<i>OBSERVED</i>
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Key Consideration 1: An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Identification of operational risk:

Process is in place for tracking any disruption in system. Tracking of other operational risks is also in place. The source is divided into IT related and non- IT related. All possible risks are analyzed and appropriate steps taken to address issues considered as potential risk.

IT process failure is identified as one of the critical failure points. Technical Approval Committee (TAC) and Committee of Directors on Risk Management (CODRM) oversee the Incident Management Process which covers failure of IT related processes as well.

Management of operational risk:

The process to monitor and manage the identified operational risks is documented in note 'Approach towards Operational Risk Management'. Risk Register and Operational Loss Database has been integrated into Operational Risk Management (ORM) Framework. Operation manuals for all activities are in place to ensure that guidance is available for running the systems efficiently.

Policies, processes and controls:

Tracking and monitoring of disruption events are in place. The positions are compared with various relevant standards. The policies, processes, controls are implemented as per the framework of ISO 27001 which takes into consideration relevant standards. Human Resources Development is a key activity looked after by a separate department which through its recruitment and training policies takes care of all manpower needs of CCIL. Fraud prevention is taken care of through pre-employment verification and through extensive use of maker-checker principle.

Change management process is implemented in consultation with all stakeholders.

Key Consideration 2: *An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.*

Roles, responsibilities and framework:

All operational risk events are reviewed by the CODRM on a half yearly basis. Roles and responsibilities for specific processes are assigned to staff as per the approved organization structure. There is an Information Security Management Forum, chaired by the MD and comprised of officials of relevant departments. This forum meets quarterly to review observance and effectiveness of information security policies and procedures. The operational risk management framework was approved by Board level Risk Committee which was taken note of by the Board.

Operational Risk events are reported to CODRM half yearly. Disruption incidents are reported to TAC quarterly in its periodic meetings. BCP Manual, Information Security policies are reviewed by TAC and Board annually

Review, audit and testing:

Operational processes and deficiencies are regularly reviewed through operational audit carried out by independent auditors and their reports are reviewed by Audit Committee of the Board.

Business Continuity related activities are subject to operations audit carried out by external auditors. These technical arrangements and executions are also subject to review by System Auditors.

Key Consideration 3: *An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.*

BCP document covers this aspect. Through tracking of disruption events and their causes these objectives ensure a high degree of security and operational reliability.

BCP document is reviewed once in a year at the Board level and also submitted to Regulators.

Reliability objectives are integrated into its operational risk-management framework to a great extent as far as customer facing activities are concerned.

Audit process covers BCP (Business Continuity Planning) areas and there are periodic drills to assess effectiveness of the BCP processes.

Key Consideration 4: *An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.*

Scalable capacity:

IT capabilities and capacity utilizations are periodically reviewed. This is a monthly process.

Operational capacity is neared or exceeded:

No such situation where operational capacity is reached or exceeded was observed.

Key Consideration 5: *An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.*

Physical security:

Vulnerabilities are reviewed as part of BCP process and any shortcoming observed is plugged. Physical security related aspects are well controlled and subject to Information Security Management System (ISMS) audit process. ISMS controls are in place.

Information security:

CCIL's policies and processes, including change management and project management policies and processes, for addressing the plausible sources of information security vulnerabilities and threats are kept in special focus while carrying out any change involving IT system.

CCIL's policies, processes, controls, and testing take into consideration relevant international, national, and industry-level standards for information security. CCIL is an ISO 27001 Company since 2006.

FMI's change-management and project-management policies and processes ensure that changes and major projects do not affect the information security of the system:

This critical aspect is given due importance before making any change. External assistance is also taken to assess any vulnerability.

Key Consideration 6: *An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.*

Objectives of business continuity plan:

FMI's business continuity plan reflects objectives, policies and procedures that allow for the rapid recovery and timely resumption of critical operations following a wide-scale or major disruption. The objective and processes are clearly laid down in the Business Continuity Plan of CCIL.

Design of business continuity plan:

Recovery within 2 hours will be possible under almost all circumstances – improvements under consideration to cover these exception situations as well.

BCP processes are clearly laid out in the BCP plan and the plan also ensures that the extent of data loss is minimal. The contingency plan as designed will ensure that the status of all transactions can be identified in a timely manner.

Steering Committee involving Managing Director and Head of Depts. is in place. Approach regarding communication to all stake holders is listed out in the Plan.

Secondary site:

Considering the robustness of the recovery process, manual, paper-based procedures or other alternative arrangements to allow the processing of time-critical transactions have not been considered.

CCIL presently has a secondary operations site in Mumbai and also a Disaster Recovery site away from Mumbai. IT support staff is available at all locations. Officials with ability to run business processes have been placed at both the in-city locations and at the DR site location as well.

Review and testing:

BCP related documents are twice in a year and tested through quarterly drills.

Participants, service providers etc. are involved / participating in almost all drills. There is no linked FMI.

Key Consideration 7: An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

Risks to the FMI's own operations:

All processes including settlement related transactions are monitored on a regular basis. In respect of risks from participants, CCIL monitors any development relating to its clearing participants that may have the potential to adversely impact their functioning. For Service and utility providers, fall back arrangements are in place.

IT Services are considered critical for CCIL operations. Software development is through team deployed by software vendors who are based in CCIL locations to ensure better control and to identify and address any potential risks upfront. Moreover, the database and server management etc. is done by in-house personnel.

Risks posed to other FMIs:

CCIL has adequate back-ups to guard against any disruption in its services.

CCIL is part of RBI group on Crisis Management monitoring system-wide vulnerabilities. Business Continuity related exercises are conducted by involving other stakeholders.

Principle 18: Access and participation requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

<i>Assessment of Observation of Principle 18</i>	<i>OBSERVED</i>
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Key Consideration 1: An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

Participation criteria and requirements

The market-segments in which CCIL operates are regulated by the RBI. Only entities eligible to operate in the specific market segments can seek participation in CCIL. The CCIL membership is granted on a market-segment basis. CCIL Bye-Laws provides for a high-level framework (Chapter IV) for membership and this is further elaborated in the CCIL Rules (Chapter IV.2) and the operating rules for specific market-segments.

In general, the participants need to submit an application providing details of their financials, IT, operational, risk management and human resources capabilities. Only if CCIL is satisfied with the adherence to the eligibility criteria, membership is granted to the applicant. Policies for accessing of CCIL's clearing & settlement segments are clearly included in the Regulations of each segment and are made available through CCIL's website as well.

Membership to CCIL-TR is driven by RBI directives permitting entities to undertake Derivative transactions and the requirement to report the same to CCIL-TR. The CCIL-TR rules and the Membership application form specify the process of seeking membership to CCIL-TR and terms and conditions that bind members

This information is in public domain for many years and no inconsistencies have been highlighted so far

Access to Clearing & Settlement Services

Access related requirements for Clearing and Settlement services ensure that there is no denial of access other than on risk consideration or regulatory restrictions.

Access to trade repositories

Entities including banks, primary dealers and others that are required to report transactions concluded by them in OTC derivative instruments to the TR do so on the basis of a mandate by the RBI. Further, entities investing in the primary or secondary market of CPs/CDs or participating in the Repo market for Corporate Bonds/CPs/CDs are also required to take the membership of CCIL TR Access to TR is provided to all entities that are mandated to report.

The onboarding documentation is uniform across all members. All the members are direct members and report their Interbank and Client trades to CCIL-TR in the case of OTC derivatives. In the case of Specified Instruments, all investors have to become direct members and report trades directly to CCIL-TR

Access to TR services is as per the reporting requirements of RBI and the CCIL TR Rules which are made available on the CCIL website. RBI directives clearly state the eligibility criteria for each participant/instrument. Life cycle processing in case of Interbank USD-INR Forwards and Interbank INR IRS is undertaken. Aggregated TR data is placed on CCIL website. However, eligible trades reported for the purpose of settlement by the CCP are copied to CCIL-TR to avoid dual reporting by the members. Similarly trades concluded on trading platforms that are linked to CCIL's settlement platforms flow into CCIL-TR if the member has agreed for such direct flow. The access to TR reporting shall be provided to third party entities (including Electronic Trading Platforms (ETP)), in case such a requirement arises under any law/ regulation.

Further, trades reported and matched on FTRAC are sent to the Clearing Corporations of Stock Exchanges based on directions given by the RBI .Access to TR is provided to all entities that are mandated to report

As of now, there is no interconnectivity with other external FMIs and/or service providers.

Key Consideration 2: *An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavor to set requirements that have the least-restrictive impact on access that circumstances permit.*

Justification and rationale of participation criteria

Participation requirements are adequately tailored to ensure participation of all eligible entities. Participation requirements are reviewed on periodic basis. For trade repository services, the eligibility criterion to undertake transactions in each product is clearly specified by RBI. Since the reporting is mandated by RBI, any transactions undertaken by these entities have to be reported to the Trade Reporting platform. Access requirements criteria to Trade Repository factor such requirements accordingly

Access criteria are different for different segments. It depends on the conditions required to be fulfilled for trading/dealing in the respective market and /or the stipulated requirement to settle such trades (like for Forex Settlement only authorized dealers can be participant).

Least restrictive access

All entities allowed to operate in a particular market-segment are eligible for membership, subject to their satisfying technical, operational, risk management and human resources capabilities. CCIL offers alternative arrangements for entities like non-banks which are eligible to participate in a market-segment but do not have access to the RTGS and the communication infrastructure INFINET.

Membership criteria is reviewed periodically and as and when situation in the market requires revision in access criteria

Trade Repository

Participation requirements are adequately tailored to ensure participation of all the eligible entities.

For trade repository services, the eligibility criterion to undertake transactions in each product is clearly specified by RBI. Since the reporting is mandated by RBI, any transactions undertaken by these entities have to be reported to the Trade Reporting platform. Access requirement criteria to Trade Repository factor such requirements accordingly. All eligible members have been given access to CCIL-TR.

Disclosure of criteria:

Participation criteria and restrictions are available publicly through CCIL website.

Key Consideration 3: *An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.*

Monitoring compliance

Monitoring of compliance with participation requirements is through a process of annual review. At the time of such review, latest financial data and information is used to assess the adherence to the eligibility criteria. Processes are in place to track any deterioration of risk profile.

Entities assigned with CPRA Grades of CCIL7 & CCIL8 by the external rating agency or which show a significant deterioration of financial parameters as per CCIL's internal credit rating model are classified as "High Risk". Such entities are required to submit their updated financials to CCIL for review every quarter. Moreover, CCIL also has the provision to step up initial margin, impose caps on exposure limits in various clearing segments or reduce Single Order Limits (SOL) for trading platforms for entities which show substantial deterioration in their financial health.

Suspension and orderly exit:

Participants are required to report any major change in their status to CCIL.

For any existing participant which does not fulfill eligibility criteria, already accepted positions are frozen and no new positions are accepted. Such members are usually required to move out of all segments. A procedure for managing the suspension and orderly exit of a participant is mentioned in CCIL Bye-laws.

In case of suspension of a participant or declaration of such participant as defaulter, all other clearing and settlement participants are duly notified.

Procedures for managing the suspension and orderly exit of a participant are mentioned in CCIL Bye-laws which are available on CCIL website.

For TRs

Monitoring of compliance with participation requirements is through a process of annual review. At the time of such review, latest financial data and information is used to assess the adherence to the eligibility criteria. Specific processes are described in the Rules for exit of a member from TR services. Participants are required to report any major change in their status to CCIL.

A member shall cease to be a member by:

- a. expulsion in accordance with provisions contained in CCIL-TR Rules after a reasonable notice in writing to the member and under advice from the Regulator

- b. voluntary or compulsory winding up of the member

- c. failing to adhere to any of the membership conditions /criteria to which it has been admitted as a member after a reasonable notice in writing to the member and under advice from the regulator

Principle 19: Tiered participation arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

<i>Assessment of Observation of the Principle</i>	<i>OBSERVED</i>
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Key Consideration 1: An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

Tiered participation arrangements:

Tiered Membership structure, segregation of collaterals and Clearing Member structure has been introduced in:

The Securities Segment. (Outright, Market Repo and Tri Party Repo). Effective 2nd March'20.

Rupee Derivatives segment – with effect from 02nd Nov'20

Forex forwards segment-with effect from 01st February'21

Clearing Members submit Constituent's Trades to CCIL. Such submission of Constituent Trades shall be made, only after the Clearing Member has, to its satisfaction, verified the eligibility of such Constituent and completed all necessary formalities/ requirements (including but not limited to any KYC requirements) under applicable law. Any ongoing compliance arising therefrom shall be the sole responsibility of the Clearing Member and CCIL shall in no manner be responsible for the same.

CCIL may for its records require submission of various documentation by the Clearing member in respect of the Constituent(s) at the time of initial grant of access and on an ongoing basis

Risks to the FMI

The transactions of the indirect participants in the Government securities segment (outright, market repo and Tri party Repo) are identified through specific member IDs allocated to indirect participants. CCIL, hence, is able to monitor the trades of the constituents of the direct member. As mentioned earlier, settlement of such transactions is the responsibility of the direct members.

There is clear segregation of positions. Trades are margined separately and collaterals maintained separately. Thus there are no material risks arising from the tiered participation arrangements

As mentioned above, no tiered participation exists in other segments.

Key Consideration 2: *An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.*

The extent of dependencies monitored on a daily basis and the clearing member is intimated about the same.

As mentioned above, in the cases of client transactions margins are collected separately and can be clearly identifiable from the respective clearing member's margins. No offsets are provided between client positions and participant positions.

Key Consideration 3: *An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.*

Processes are in place to identify the activities of such indirect participants and of the direct participants through whom they access the system.

Rules and responsibilities are clearly defined in the Bye Laws Rules and Regulations. There is no scope for ambiguity with respect to the provisions contained therein in regard to segregation and portability of positions and collateral.

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Key Consideration 4: *An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.*

CCIL's Bye Laws Rules and Regulations are reviewed periodically whenever there is any significant change in the structure or process flow of a particular product.

CCIL explicitly recognizes tiered participation only in Government securities market-segment. CCIL has a daily monitoring process for the transactions and margin positions of the constituents. However, Clearing members are solely responsible for the margin and settlement obligations arising out of clients. In other market-segments, there is no tiered participation.

Principle 20: FMI links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

<i>Assessment of Observation of the Principle</i>	OBSERVED
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Key considerations 1: Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

CCIL's risk management framework recognizes the risks from the other FMI links. FMI links are established with highly regulated entities having sound legal basis and risk management practices.

The CCIL's CCP service has FMI links as under:

- i. with the RBI RTGS for the settlement of the funds leg in DVP and PVP mode
- ii. with the RBI PDO for the securities settlement leg in DVP mode and as a custodian for CCIL's collateral holdings and its own assets.
- iii. With National Securities Depository Limited (NSDL) and Central Depository Services (India) Limited (CDSL) for Securities Settlement of demat trades of retail investors

RTGS and PDO are run by the Central Bank of the Country, i.e., RBI. Other FMIs are systemically important Central Securities Depositories (CSD) of the country and are well regulated by SEBI.

CCIL framework recognizes the risks from these links and the same are closely monitored for early warning and appropriate actions are taken.

Key consideration 2: A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

The links referred to in the previous paragraphs are established in India. The FMI links with the RBI RTGS and RBI PDO have a well-founded legal basis arising from the PSS Act. The two CSD's are FMIs regulated by SEBI under the Depositories Act, 1996 and Regulations framed by SEBI there under.

These FMI's are systemically important and are well regulated. NSDL and CDSL are subjected to observance of PFMI Principles. However, the settlement of demat trades of retail investors happen at RBI where both these depositories are having CSGL accounts. Thus link arrangements with these two depositories do not pose any additional risk to CCIL

Key consideration 3: *Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.*

Not applicable

Key consideration 4: *Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.*

Not applicable

Key consideration 5: *An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.*

Not applicable

Key consideration 6: *An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.*

Not applicable

Key consideration 7: *Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.*

Linked CCP default

Not applicable as no link exists with another FMI

Key consideration 8: *Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfill its obligations to its own participants at any time.*

Not applicable

Key consideration 9: *A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.*

There are no such linkages with other FMIs and hence the principle above is not applicable. Monthly review of scalability is carried out.

Principle 21: Efficiency and effectiveness

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

<i>Assessment of Observation of the Principle</i>	<i>OBSERVED</i>
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***Key Consideration 1:** An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choose of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.*

CCIL provides its CCP and PS services to market-segments that are regulated by the RBI. CCIL has progressively introduced new products and services to the market in line with the evolving regulatory framework for these market segments.

Tiered Membership structure, segregation of collaterals and Clearing Member structure has been introduced in:

the Securities Segment. (Outright, Market Repo and Tri Party Repo). effective 2nd March'20.

Rupee Derivatives segment – with effect from 02nd Nov'20

Forex forwards segment-with effect from 01st February'21

Participants are benefitted as:

- It ensures clear segregation of client positions and collateral.
- It protects them from fellow customer risk and the failure of the clearing participant.
- It ensures participation to a wider range of entities who cannot access CCIL other wise

Periodic interactions with User Groups and at individual level ensure that the products developed/ enhanced meet the requirements of the participants. CCIL also keeps track of global changes and requirements through its various global CCP network (CCIL is a member of CCP 12- International group of CCPs) interactions.

CCIL has progressively enhanced its ancillary services like introducing a comprehensive risk management dashboard for its members, providing ability to simulate the impact of a new trade on margin requirement and introduction of risk management features like What if Analysis. CCIL is providing historical time series data to its members through the IRIS dashboard.

CCIL has allowed participants alternative connection options like web-based access instead of INFINET and settlement bank options instead of RTGS settlement, to cater to specific requirements of some segment of members.

Key Consideration 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

CCIL's goals and objectives are to provide efficient risk mitigated Clearing, settlement and Trade Repository related services.

Feedback from participants during individual interactions and through User Group meetings are used to measure extent of achievement.

Key Consideration 3: An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

CCIL reviews its efficiency and effectiveness through tracking of quality of services through User group meetings. Participants are categorized into groups like primary dealers, foreign banks, state-owned banks, non-bank entities etc. User group meetings are held with participants from each of these categories. User Group meetings are held in such a manner that a participant gets an opportunity to meet CCIL officials at least once in a year.

Principle 22: Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

<i>Assessment of Observation of the Principle</i>	<i>OBSERVED</i>
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Key Consideration 1. An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

Communication procedures

CCIL uses message-based communication procedures to interact with participants and other connected parties.

IBM TCP-IP is used as the standard messaging layer for exchanging data with RBI.

Secure channel SSL is used for data file exchange with settlement banks and participants.

CCIL uses the SWIFT for its cross-border operations.

Communication standards

CCIL uses proprietary message structures between participants and other connected parties. Some of the message structures exchanged with settlement banks are based on the SWIFT standard.

CCIL uses the SWIFT message standard for its cross-border operations.

(Secure channel SSL is used for data file exchange with participants.)

Principle 23: Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

<i>Assessment of Observation of the Principle</i>	OBSERVED
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Key Consideration 1: *An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.*

Rules and procedures:

Bye-laws, Rules and Regulations and notifications are published on CCIL website. Feedback from participants and other stake-holders provide basis for assessing the level of clarity of the Rules and key procedures. Periodic internal review is also carried out. Issues like Default Handling etc. are included in detail. The CCIL-TR Rules govern the relationship between members and CCIL-TR and the same is available on the CCIL website.

These rules and procedures are in public domain for years and apart from CCIL's internal reviews, new members joining CCIL's clearing also examine and found those to be comprehensive.

Disclosure:

All possible eventualities have been covered in the Rules & Regulations of CCIL.

Any change in rules and procedures require prior approval of its regulators, Reserve Bank of India and these are required to be notified to all participants at least 30 days in advance before implementation. CCIL's Bye laws, Rules and Regulations pertaining to different segments are available in CCIL website. Hard copies of these are also made available to the Clearing Participants.

Key Consideration 2: *An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.*

Regulations for each segment describe these processes. These details are disclosed to participants, regulators and other stake-holders through Fact book, notifications, Regulations, etc. These are also broadly available to public on the CCIL website.

Areas where discretions can be exercised are listed out in the respective segment regulations. Processes followed to change rules are listed in CCIL Bye-laws, Rules & Regulations.

Description of participants 'rights and obligations are detailed in Membership documents, CCIL Bye-laws, Rules and Regulations and notifications.

Key Consideration 3: *An FMI should provide all necessary and appropriate documentation and training to facilitate participants 'understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.*

FMI documentation and training for its Participants are through various interactions including by providing written clarifications.

Interactions with the participant's user groups evidence this position.

Training programs are organized for participants so that they are fully aware of the processes followed by CCIL and are in a position to reassess the risk they take by availing the services of CCIL.

Key consideration 4: *An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.*

Pricing information is publicly available. These are made available through public notification. Any change is required to be notified at least 30 days in advance. For effecting any major change, User Group inputs are taken before seeking regulatory approval.

Comparison with services offered by other CCP is not possible as no other CCP provides similar service in India.

CCIL also publishes the fee structure for its TR services. The fees are comparable with similar services offered by TRs in other countries. Any change in the structure is required to be notified at least 30 days in advance. The fee structure for CCIL-TR has been levied in consultation with the market participants and RBI and the same is made available on the CCIL website.

Key consideration 5: *An FMI should complete regularly and disclose publicly responses to the CPSS- IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.*

Self-assessment on CPMI-IOSCO Disclosure Framework is part of this principle which is updated once in a year or after any material change. Qualitative disclosures are also updated and published on yearly basis while quantitative disclosures are published on quarterly basis. The disclosures are available on the CCIL website.

Daily trade volume, settlement data, CCIL's annual financials etc. are publicly available through CCIL website.

Any change to the process or any proposal to carry out any change to any existing process is disclosed to the public. These are made available on CCIL website (www.ccilindia.com). Disclosures are in English.

Principle 24: Disclosure of market data by trade repositories

A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

<i>Assessment of Observation of the Principle</i>	OBSERVED
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***Key Consideration 1:** A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.*

Data relating to trades in the market, with details on number of trades, volumes, high, low and weighted average rates etc. are made available publicly through CCIL website for products in which such data dissemination has been approved by RBI. Additional details are shared with the Regulator at periodical intervals and on an ad hoc basis. Interbank data is also published in CCIL'S monthly publication "Rakshitra". Feedback is taken from the market participants regarding their expectations on data dissemination and the demands made by various stakeholders are kept in mind while deciding on data disseminated.

***Key Consideration 2:** A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their respective regulatory mandates and legal responsibilities.*

Structured information requirement received from the Regulator are met through periodical submission of data. Adhoc information is also provided as and when required. Online Information about the data submitted by members is provided to the regulator through the CORE Platform.

TR strictly follows the processes approved by the Regulator.

***Key Consideration 3:** A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analyzed.*

Reporting to CCIL-TR entails reporting of the original transactions as well as subsequent lifecycle events. Online status of the data so reported is made available to members through the CORE Platform. Pre-structured reports are also made available to the members at EOD each day

Life cycle processing, including settlement services is in place for certain products like INR Interest Rate Swaps, USD-INR Forwards and Credit Default Swaps. For other products, accuracy of information is ensured through i) built in validations for all fields; ii) requirement of matching all economic data reported by both counterparties; iii) daily reports to members for reconciliation

Strict quality control ensures that the data remains accurate. Historical disseminated data and historical data published in Rakshitra are made available in the respective archival sections on the CCIL website.
