

**CPMI - IOSCO Principles for Financial Market Infrastructures: Disclosure Framework and Assessment  
Methodology**

**Cámara de Riesgo Central de Contraparte de Colombia S.A. - CRCC S.A. Self-assessment**

**June 2020**

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**Declaring Institution:** Cámara de Riesgo Central de Contraparte de Colombia S.A. - CRCC S.A. (hereinafter CRCC).

**Jurisdictions in which the FMI operates:** Colombia.

**Authorities regulating, supervising or overseeing the IMF:** The authorities in charge of regulating, supervising or overseeing CRCC are the Financial Superintendence of Colombia (SFC), the Bank of the Republic (hereinafter the Central Bank) and the Regulatory Projection and Financial Regulation Studies Unit - URF, attached to the Ministry of Finance and Public Credit.

**Date of the Disclosure:** June, 2020.

**This disclosure can also be found at:** <http://www.camaraderiesgo.com/>

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## **1. EXECUTIVE SUMMARY**

Central Counterparties (CCPs) are financial market infrastructures (FMI) that play a significant role in the market by interposing themselves as counterparties in the operations they accept for clearing and settlement, guaranteeing the financial performance of both parties. As such, CCPs are placed in the post-trade scenario and receive operations from various trading venues and from the over-the-counter market. For the acceptance and fulfilment of the operations, these entities have a robust operational and risk framework and are linked to securities settlement systems, payment systems and central securities depositories for the provision of collateral and for the final settlement of transactions. As such, the Colombian stock market is made up of a series of FMI whose purpose is to serve as a forum for negotiation and price formation, to allow the registration of transactions traded on the over-the-counter (OTC) market, to clear and settle, to note down and transfer high-value payments.

In the case of CRCC, the interposition mechanism chosen is novation, in such a way that the original trade, when accepted by the CCP, is extinguished and two new transactions are created, one between one of the counterparties and the CCP, and the other between the other counterparty and the CCP. For the acceptance of transactions CRCC has established arrangements with the Colombian Stock Exchange (Bolsa de Valores de Colombia S.A. - BVC S.A.), Derivex S.A., Set-Icap FX S.A., Tradition Colombia S.A. and the Central Bank. The transactions that it clears and settles as a central counterparty are the following: a) exchange-traded (standardized) derivatives with underlying assets such as securities, exchange rate (TRM) and electricity, traded and recorded on the BVC S.A. and on Derivex S.A.; b) over the counter derivatives (OTC) with underlying assets such as the TRM and the Bank Reference Indicator (IBR) traded or registered on Set-Icap FX S.A., Tradition Colombia S.A. and on the Central Bank's Trading Venue for the creation of the IBR; c) securities lending operations<sup>1</sup> traded on the BVC S.A. and on the Electronic Trading System (SEN) managed by the Central Bank; and, d) repurchase agreements or repo operations<sup>2</sup> on equity securities traded in the BVCS.A.

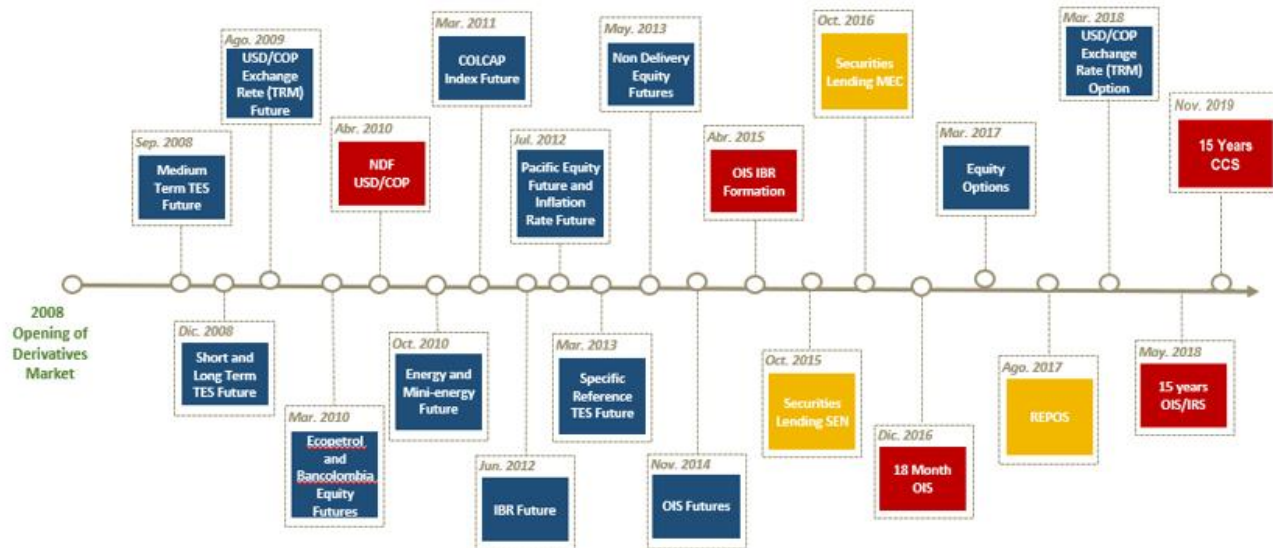
CRCC was recognized as a CCP by the Financial Superintendence of Colombia (SFC) through Resolution 0923 of June 12, 2008. In effect, SFC granted CRCC the operating license to provide clearing and settlement services as a central counterparty for transactions, under the terms described by Article 15 of Law 964 of 2005 (Securities Market Law) and by Decree 2893 of 2007 (subsequently incorporated in Decree 2555 of 2010, by means of which the rules on the financial, insurance and securities market sectors were collected and reissued). That same year, through Resolution 0908 of June 10, 2008, SFC approved the CRCC Rulebook, based on which CRCC issued the Consolidated Circular, the legal basis on which the entity is based.

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<sup>1</sup> Transactions in which one party (the "Transferor") transfers ownership of securities to the other party (the "Acquirer") in exchange for payment of a sum of money (the "Initial Amount") and in which the Acquirer at the same time, undertakes to transfer to the Transferor securities of the same kind and characteristics in exchange for payment of a sum of money (the "Final Amount") on the same date or later previously agreed upon. (Article 2.36.3.1.2. of Decree 2555 of 2010).

<sup>2</sup> Those operations in which a party (the "Transferor"), transfers ownership of securities to the other (the "Acquirer") in exchange for payment of a sum of money (the "Initial Amount") and in which the Acquirer at the same time, undertakes to transfer to the Transferor securities of the same kind and characteristics in exchange for payment of a sum of money ("Final Amount") on the same date or later previously agreed upon. (Article 2.36.3.1.1. of Decree 2555 of 2010).

CRCC initially served as a central counterparty in the clearing and settlement of the exchange traded derivatives negotiated in BVC S.A. Notwithstanding the above, to be recognized as the main risk manager in the Colombian Securities Market, CRCC has significantly expanded its portfolio, which includes, in addition to standardized and non-standardized derivative (OTC) transactions, the clearing and settlement of other fixed income and equity securities transactions, as described in the following diagram:

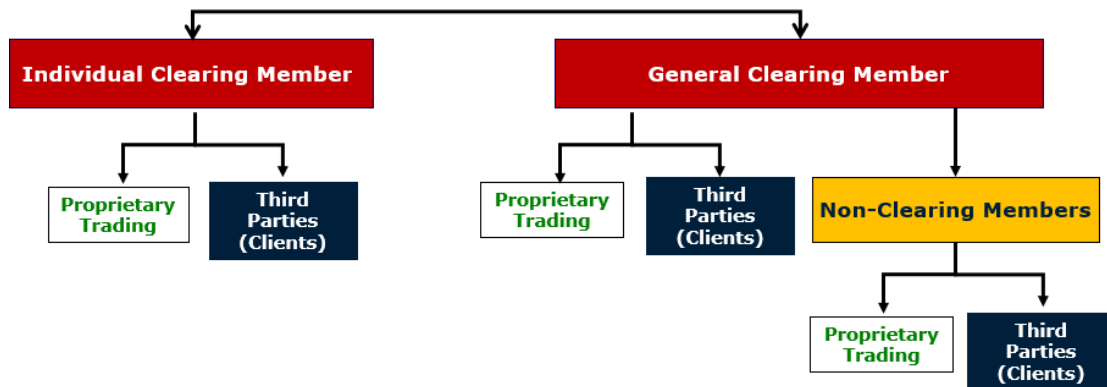


Accordingly, CRCC has Four (4) Segments in which the transactions for clearing and settlement are grouped:

- Financial Derivatives Segment, which groups the operations on Futures, Options, Forwards and OIS.
- Fixed Income Segment, which includes Securities Lending operations on national or foreign fixed income securities negotiated on the BVCS.A. or on the trading system administered by the Central Bank.
- Equity Segment comprised by the repurchase agreements or repo transactions on shares traded on the BVC S.A. Moreover, in this Segment other operations on equity securities traded on the BVC are grouped.
- Swaps Segment which includes OTC i) Interest Rate fixed vs. floating swaps with the IBR in its different tenors (OIS, 1m, 3m and 6m) as underlying and ii) Cross Currency Swaps USD 3m Libor vs IBR overnight index.

The entities entitled to participate as Members which implies direct access to the CRCC, are those entities that have been previously admitted in any membership category. CRCC has established the following Membership categories: 1) General Clearing Member, 2) Individual Clearing Member and 3) Non-Clearing Member. Members may participate on their own account or on behalf of Non-Clearing Members or clients (Third Parties). Under this participation structure, the Clearing Member is held responsible for the performance of the obligations arising from the accepted transactions when the client or the Non-Clearing Member fails to comply with them.

The participation structure in CRCC is detailed below:



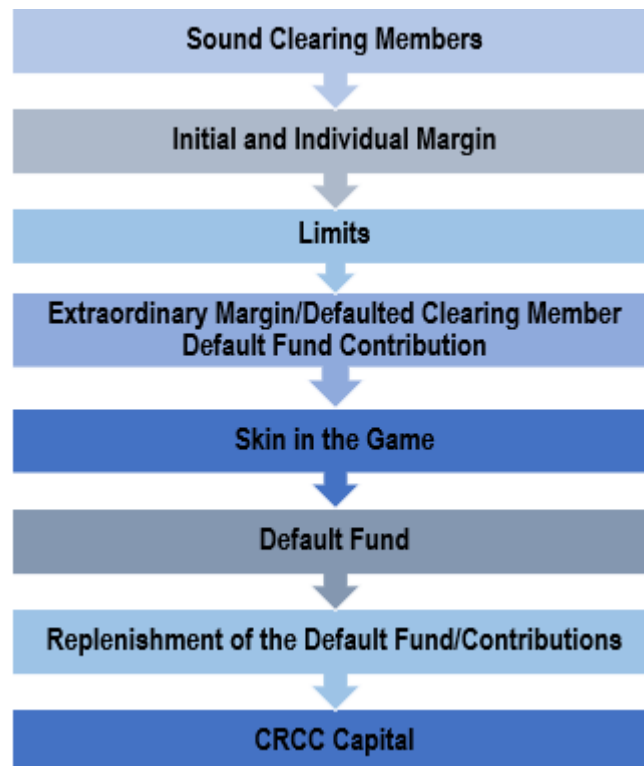
The access and participation requirements established by CRCC for each of the membership categories are equal for all the Segments, although for some Segments certain specifications must be accredited, considering its characteristics. In general terms, the particular requirements are related to capital requirements that must be accredited by the Clearing Members, and to the minimum credit scores required.

CRCC keeps a record of the accepted operations through accounts in each Segment. The account structure is as follows:

- Daily Accounts which are single accounts for each Segment in which the operations traded by a Member are recorded prior to the assignment to the final accounts.
- Final Accounts, on the other hand, are the accounts for each Segment in which a Member definitively register the operations for settlement. Final accounts, therefore, are classified into:
  - Proprietary Account, held by a Member, in which its proprietary transactions are recorded.
  - Identified Third-Party Accounts, held by an identified Third-Party and in which the corresponding Member records the transactions traded on its behalf. These accounts are individual segregated accounts (ISA).
  - Unidentified Third-Party Accounts, which are held by a Member to record transactions traded on behalf of Unidentified Third Parties. These accounts allow the registration of open positions of several persons under a single account. Unidentified third-party accounts that correspond to omnibus accounts are not currently implemented by CRCC.
  - Residual accounts are those in which all the transactions that were not assigned to a Final Account by a Member at the end of the registration period are automatically recorded according to the segments to which they correspond.

As a CCP, CRCC manages credit risk, liquidity risk, legal risk, operational risk and systemic risk (among others detailed below) through a clear and well-founded legal basis, an appropriate corporate governance structure

and a solid and comprehensive risk management framework. CRCC's risk management framework has a series of safeguards designed to mitigate the risks to which it is exposed. Among these safeguards the strength of its Members, its limits and guarantee scheme, the skin in the game allocated to each segment, the independent Collective Guarantee Funds for each segment and the replenishments and assets of CRCC stands out. CRCC's risk management framework is integrated as follows:



## **2. SUMMARY OF MAJOR CHANGES SINCE THE LAST UPDATE OF THE DISCLOSURE**

This version of the self assessment is an update up to June 2020 to include the following changes undertaken since the first publication of the self-assessment in march 2018:

- A new segment was launched in which OTC IR swaps and Cross Currency swaps are centrally cleared.
- Adjustment to the methodologies to calculate the risk parameters were anti-procyclical elements were introduced.
- USD is included as part of the realm of assets that can be posted as collateral.
- A document filed up before the Chamber of Commerce to register the corporate control of the bvc (Colombia Securities Exchange) over CRCC S.A..

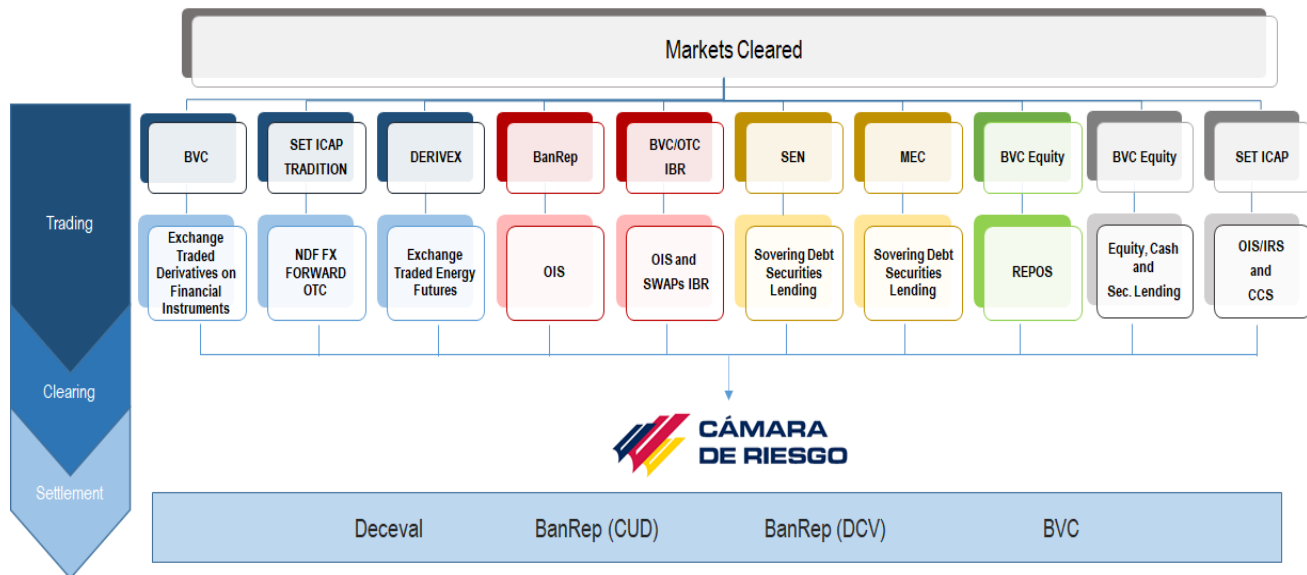
## **3. GENERAL BACKGROUND ON CRCC**

### **A. General Description and Markets Served**

CRCC is a LLC corporation subject to oversight by the Financial Superintendence of Colombia, whose corporate objective is to provide clearing services as a central counterparty, with the purpose of reducing or eliminating the risks of the obligations arising from the accepted operations. In pursuance of its corporate purpose, CRCC

can provide clearing and settlement services for a broad kind of operations including spot operations, derivatives, delivery and non-delivery forwards, repos, carousel, temporary securities transfer, short selling, securities lending, traded or registered on a stock exchange, trading system, over-the-counter markets or any Trading Mechanism.

Based on the foregoing, CRCC provides its clearing and settlement services as a central counterparty in the derivatives market, in the money market and in the Colombian fixed income market, as shown below:



The derivatives market in which CRCC provides its services comprises the standardized derivatives market (exchange traded derivatives) administered by the BVC S.A. and by Derivex S.A. (the latter in respect of standardized energy derivatives) and the non-standardized derivatives market (OTC), traded or registered on the Set-FX electronic foreign exchange market managed by Set-Icap FX S.A. and Tradition Colombia S.A., as well as those negotiated in the trading mechanism administered by the Central Bank.

The growth of the operations accepted by CRCC in the derivatives market in the last year has been approximately 20% on the other hand, the open position on these products corresponds to approximately \$34.7 trillion pesos as of November 2017, within which 72% corresponds to the non-standardized derivatives.

With respect to the fixed income market, CRCC interposes as a central counterparty for the Securities Lending transactions traded in the Electronic Trading System - SEN managed by the Central Bank, and of the operations traded or registered in the Colombian Electronic Market - MEC, managed by the BVC S.A. (the latter only for proprietary trades). The open position on these operations corresponds to approximately \$7.1 trillion pesos as of November 2017, representing approximately 16.7% of the total open position administered by CRCC.



Finally, since August 2017, CRCC has accepted repurchase agreements (repos) on equity market securities, which are traded on the trading system administered by the Bolsa de Valores de Colombia S.A. This product represents 1.87% of the open position managed by CRCC, corresponding to approximately \$796 billion pesos as of November 2017.

Now, for the purposes of the services, functions and activities performed by CRCC and the methodologies for calculating the Collateral requirements CRCC was segmented based on the principles of non-pollution and cross default. Those principles entail that: (i) the default of a Member in a specific Segment does not directly affect Members in different Segments; and (ii) the default of a Member in a given Segment results in the default of that Member in all Segments in which it participates.

In this sense, CRCC has established the following four Segments through which it develops its activities:

- Derivatives segment, which includes transactions of the derivatives market. This segment groups Futures, Options, Forwards and OIS transactions.
- Fixed Income Segment, in which fixed income market transactions are grouped. This includes Securities Lending operations traded on the SEN and proprietary trade Securities Lending operations negotiated or registered in MEC.
- Equity segment through which CRCC novates money market operations, referring specifically to repurchase agreements or repo operations on equity market securities.
- Swaps Segment which includes OTC i) Interest Rate fixed vs. floating swaps with the IBR in its different tenors (OIS, 1m, 3m and 6m) as underlying and ii) Cross Currency Swaps USD 3m Libor vs IBR overnight index.

The Segments of CRCC become a fundamental pillar of its risk model, considering that the safety net adopted by CRCC is replicated in each of the Segments, without prejudice to the fact that some of the safeguards that belong to that safety net are applied across all Segments.

Even though the participation requirements are common to all the Segments, except for certain particularities relating to the capital requirements to be accredited or the minimum risk rating required, the Members shall only act in the Segment or Segments in which they so decide, and in the same membership category or different ones for each of them. Consequently, a Member may be a General Clearing Member in a given Segment and an Individual Clearing Member, a Non-Clearing Member or a Third Party in another Segment, but in no case, may it act in two ways as a Member in the same Segment.

Within this membership structure, CRCC has implemented an account structure to record accepted transactions, consisting of daily accounts, final accounts and residual accounts. The daily account is a single account for each Segment in which the operations traded by a Member, prior to the assignment to the final accounts, are recorded.

The final accounts, on the other hand, are the accounts for each Segment in which a Member definitively registers the operations for settlement. Final accounts, therefore, are classified into:

- Proprietary Account, held by a Member, in which its proprietary transactions are recorded.
- Identified Third-Party Accounts, held by an identified Third-Party and in which the corresponding Member records the transactions traded on its behalf. These accounts are individual segregated accounts (ISA).
- Unidentified Third-Party Accounts, which are held by a Member to record transactions traded on behalf of Unidentified Third Parties. These accounts allow the registration of open positions of several persons

under a single account. Unidentified third-party accounts that correspond to omnibus accounts are not currently implemented by CRCC.

- Residual accounts are those in which all the transactions that were not assigned to a Final Account by a Member at the end of the registration period are automatically recorded according to the segments to which they correspond.

Finally, the residual accounts are those in which all the transactions that were not assigned to a Final Account by a Member at the end of the registration period are automatically recorded according to the segments to which they correspond.

Collateral, on the other hand, is transversal to all the Segments of CRCC. Even though of the Initial Margin is to cover the risk of the open position of each account, for each Segment, and that the purpose of the Extraordinary Margin is to cover the risk of CRCC in extraordinary situations (volatility of the markets in which Transactions Susceptible to Acceptance are carried out, because they are open positions that CRCC deems to be high risk, or open positions for sale with risk of default in the Delivery Settlement), the cross default principle allows CRCC to have such guarantees at its disposal in the event of default by a Member in any Segment. Individual Margin is also transversal and is intended to cover the risk of CRCC in relation to the Clearing Members, which must be deposited prior to the acceptance of the first transaction by CRCC in each Segment.

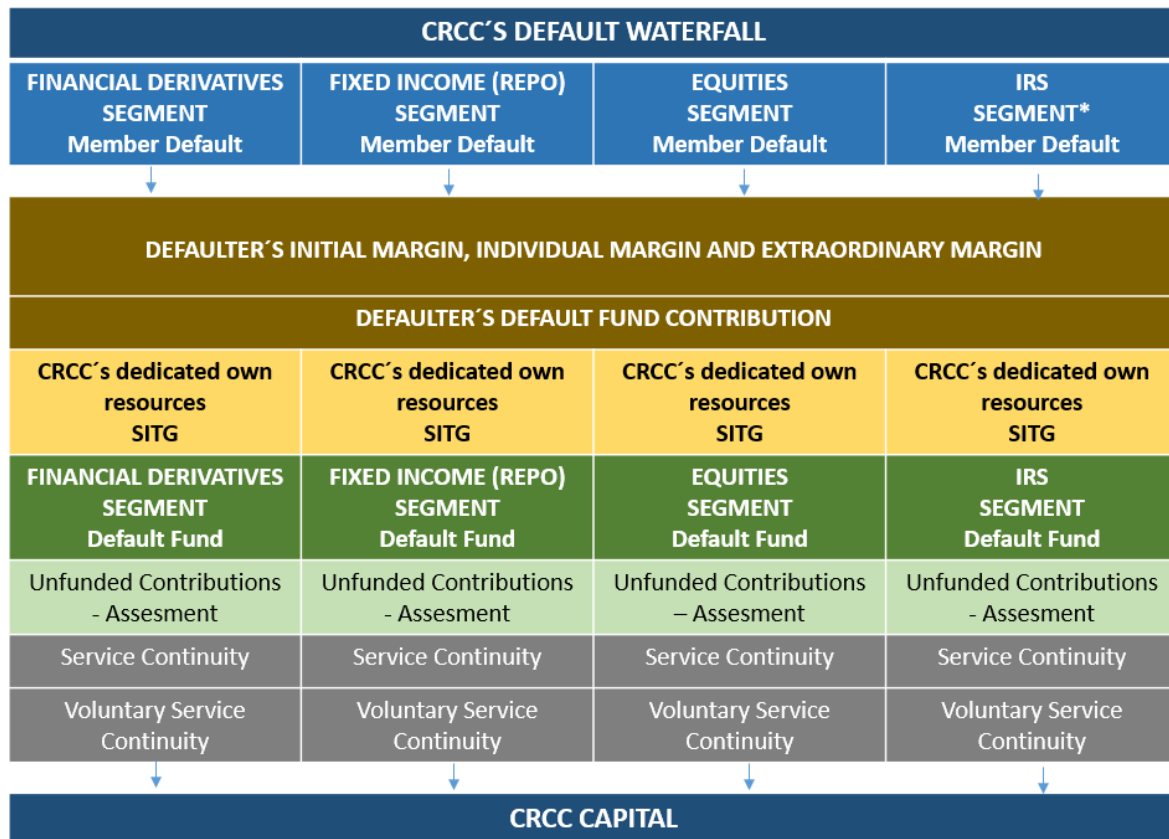
Regarding the Skin in the Game (Dedicated Own Resources), CRCC will allocate a minimum amount of its capital for each Segment, which will cover the default of a Clearing Member if the collateral provided by the defaulted Member is not enough to cover the default. The total amount allocated corresponds to 25% of the minimum capital requirement for the constitution of a central counterparty which is divided into each of the Segments in proportion to the size of the Default Fund. Hence, the Skin in the Game is independent for each of CRCC 's Segments.

Like the Skin in the Game, the Default Fund, its replenishments, and the Service Continuity Contributions are independent for each Segment. Contributions to the Default Fund shall be made jointly and severally by the Clearing Members and shall be used as a loss mutualization mechanism if the collateral of the defaulted Member, and the other resources indicated above, are insufficient to cover the unpaid balance of that Member. The minimum amount that each Clearing Member must contribute is calculated based on its participation in the clearing and settlement in each Segment. Likewise, if the Fund is to be executed, the amount used shall be charged proportionally to the Clearing Members based on the contributions of each of them, in the last period of updating or replenishment of the Fund.

Service Continuity Contributions, in turn, are intended to cover possible debit balances arising from a default which are not covered by the aforementioned resources. This contribution must be made by the Clearing Members participating in the Segment in which the default occurred.

Another relevant aspect related to CRCC Segments is the margin offsets. Within each Segment, CRCC performs margin offsets between different maturities, considering the differential between the price spreads in each combination of maturities and between certain underlying assets, based on the correlation between them.

For more detail, the following are the safety rings that comprises the Risk Model adopted by CRCC and their order of execution ("default waterfall"):



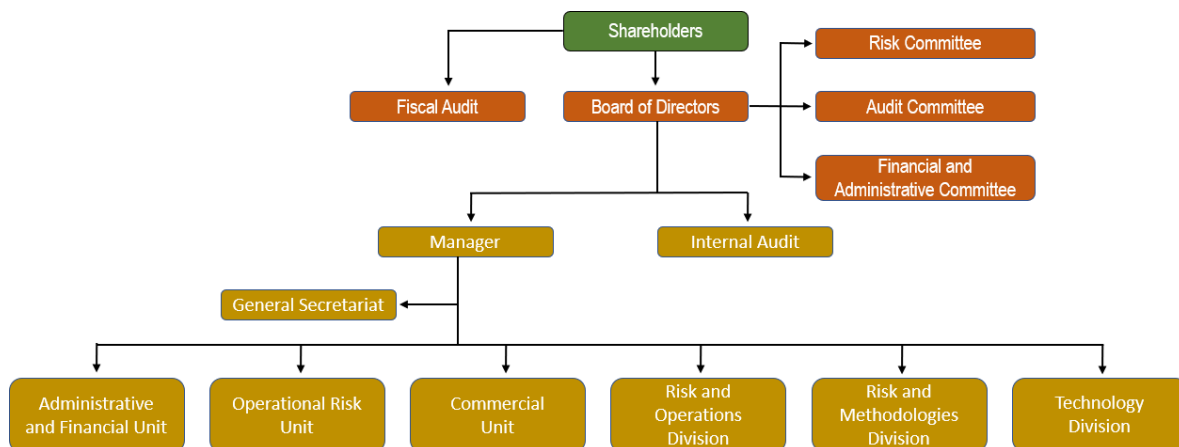
## **B. General Organization of CRCC S.A.**

The organizational structure of CRCC through which the Board of Directors and Senior Management operate is established in the Bylaws, the Code of Corporate Governance, Code of Ethics and Conduct and the Regulations of the various corporate bodies, the basis of which is expressly defined in the Code of Commerce, Securities Market Law (Law 964 of 2005), Decree 2555 of 2010 and the Basic Legal Circular issued by the Financial Superintendence of Colombia. Given that, the corporate governance structure is grounded on a sound legal basis.

The Bylaws and the Corporate Governance Code establish that CRCC shall have the following governing bodies that shall exercise management, administrative and control functions:

- The General Shareholders' Meeting, composed by all the Shareholders of CRCC.
- The Board of Directors, made up of fifteen (15) members, of which six (6) are independent
- Risk Committee, composed of five (5) members of which at least two (2) must be members of the Board of Directors of the company, who are independent. The members of the Risk Committee are appointed by the Board of Directors of the Company.
- Audit Committee, made up of three (3) members of the Board of Directors, appointed by the Board of Directors, of which at least two (2) must be independent. Its members are elected by the Board of Directors of the entity.
- Administrative and Financial Committee, composed of five (5) members of the Board of Directors of the Company.
- Internal Auditor.
- Fiscal Auditor.

The Bylaws regulate the good governance mechanisms of CRCC's Senior Management, establishing the functions of the Manager, among which stand out his or her responsibility to comply with and ensure timely compliance with legal requirements or requirements relating to the operation and activities of CRCC, as well as the orders or instructions issued by the General Assembly and the Board of Directors. The governance and management structure of the CRCC are detailed below:



### **C. Legal and regulatory framework**

The legal framework through which CRCC is regulated is composed by the Securities Market Law, the Decree 2555 of 2010 and the External Resolution No. 12, 2008 of the Board of Directors of the Central Bank, as well as its internal regulations, which develop and complement these regulations, made up of the Rulebook, the Consolidated Circular of CRCC and its Operating Instructions. In addition to these documents, the Bylaws, the Corporate Governance Code, the Code of Ethics and Conduct and the Regulations of the General Shareholders' Meeting, Board of Directors, Audit Committee and Risk Committee regulate the corporate governance of the entity.

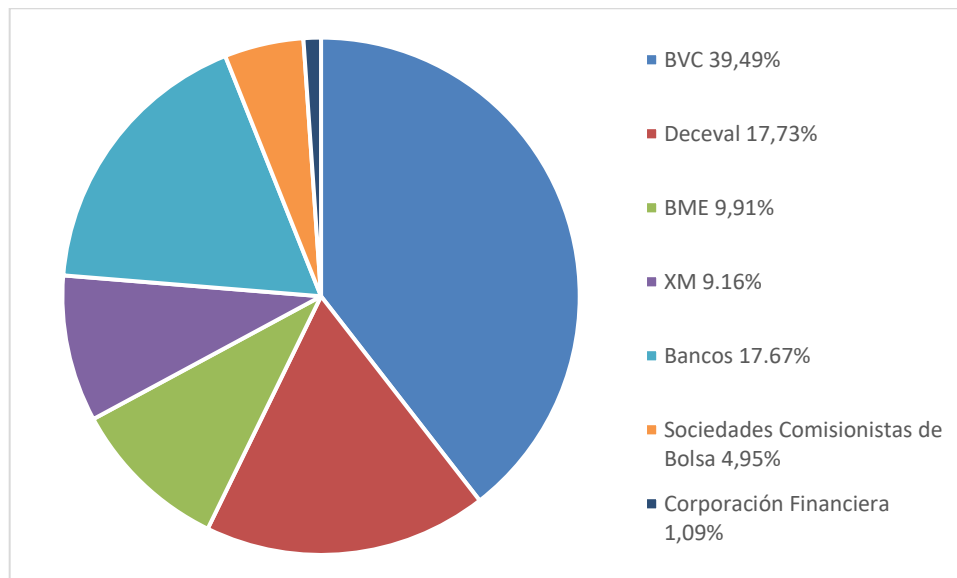
The above-mentioned regulatory framework supports each of the relevant aspects of CRCC's activities as follows:

- Certainty of the legal effects of the interposition mechanism through which CRCC becomes the buyer of every seller and seller of every buyer which, in the case of CRCC, is novation: Article 15 of Law 964 of 2005 recognizes that entities constituted as central counterparties and authorized by the supervisory authority of the securities market (Financial Superintendence of Colombia) may intervene as counterparties in the operations they accept. Likewise, Colombian law establishes the irrevocability of its interposition, in accordance with the mechanism determined by the central counterparty in its Operating Regulations.
- Netting: CRCC establishes obligations for the transfer of assets and funds of Members, based on multilateral mechanisms that incorporate the net value of such obligations. (Article 2.6.1. of CRCC 's Rulebook). This is based on Article 17 of Law 964 of 2005, which states that the obligations that the central counterparty has with its reciprocal debtors and creditors are extinguished by offsetting up to the corresponding amount.
- Application of the finality principle from the moment of acceptance of the transactions and final settlement: In this regard, Law 964 of 2005, Decree 2555 of 2009 and Law 1116 of 2006 (Insolvency Law) provide that orders for the transfer of funds or securities derived from securities transactions, as well as any act that must be carried out to comply with them, shall be final, irrevocable, and enforceable against third parties, as from the moment such orders have been accepted by the clearing and settlement system.
- Rights and obligations of the Members of CRCC: The Rulebook establishes the admission requirements, membership categories, rights and obligations and the minimum content of the Agreements subscribed between CRCC and its Members. This Rulebook, as well as its amendments, must be authorized by SFC, which guarantees that these rights and obligations are aligned with the Colombian legal system and that they are fully enforceable.
- Effectiveness of the collateral, collateral protection, preference, method of enforcement: Articles 11 and 18 of Law 964 of 2005 enshrine the collateral protection principle, according to which collateral pledged on behalf of a participant to a clearing and settlement system (and in particular to a Central Counterparty) may not be claimed, seized, retained or subject to other similar precautionary measure, or measures arising from the application of bankruptcy rules or from any take over, liquidation procedure or restructuring agreement.
- Interoperability: Article 2.13.1.1.3. of Decree 2555 of 2010 provides that central counterparties must guarantee access to any client to their platform and ensure interoperability between the agents or parties involved in the value chain, including securities trading.
- Default procedures: The Rulebook regulates the effects of a declaration of a default, the measures to be adopted for its management, including the close-out of the defaulting party's open positions and the liquidation of collateral. The Regulation also establishes the order in which the collateral and other resources are to be liquidated in the event of default. The Regulation also sets out the consequences of a default and the obligation of the defaulting party to pay all costs and expenses arising from the management of such default.

Law 964 of 2005 establishes which entities can be shareholders of a central counterparty and the maximum proprietary percentage they can hold on the equity of a CCP. In this regard, it is indicated that no person may be the beneficial owner of several shares representing more than ten per cent (10%) of the equity of a central counterparty. Notwithstanding the foregoing, the Congress of the Republic provided that the National Government may indicate the cases in which a person may have a participation that exceeds the previous limit.

Based on the legal mandate, article 2.13.1.1.3 of Decree 2555 of 2010, as amended by Decree 032 of 2015, establishes the limits on shareholdings according to the type of entity, and establishes that the Financial Market Infrastructures may hold up to 100% of the shareholdings of a central counterparty risk chamber.

In accordance with the foregoing, the shareholding in CRCC as of June 31, 2020 is as follows:



It should be noted that the shareholding composition is mainly divided into three types of entities: Financial Market Infrastructures, Banks and Brokerage Firms.

In accordance with Article 260 of the Colombian Code of Commerce, a company will be subordinated or controlled when its decision-making power is submitted to the will of one or more natural or legal persons who will be its controllers, whether directly (where the company will receive the name of an affiliate) or through the intervention of subordinates (where the company will receive the name of a subsidiary). In addition to the above, the Article 261 establishes three (3) situations that will imply an assumption of subordination, in which it stands out the situation where a company holds, directly or indirectly through its subordinate companies, more than 50% of the issued and outstanding shares of another company.

Accordingly, in February 2020, BVC informed the increase of its participation in the CRCC up to 55.98%, as a consequence of the acquisitions made to several shareholders of the CRCC. Such acquisitions were made after obtaining the respective authorization from the Financial Superintendence of Colombia. In accordance with the Colombian legislation, in March 2020, BVC filed up the corporate control situation before the Chamber of Commerce and became the parent company of the CRCC.

#### **D. Design of the System and Activities of CRCC S.A.**

CRCC manages all its activities through the technological platform SMART, SwapManager and the Portal Web. Those systems allow it to reliably manage the operational processes that it must carry out as the central counterparty of the Colombian stock market. Each of these processes is described below in a sequential timeline:



- Opening: The operation of CRCC begins simultaneously with the opening of the trading and/or registration systems or any other trading mechanism authorized by CRCC, which send the transactions that can be accepted by the CRCC for clearing and settlement. As soon as market operators match or record their transactions they are electronically transmitted to the CRCC system for acceptance once the previous risk parameters are checked. Once they are accepted, through the novation mechanism, the CRCC becomes the substituted counterparty to both sides of the operation, becoming the sole principal to both buyer and seller.
- Acceptance of transactions: The CRCC shall evaluate and verify each transaction in accordance with the specific characteristics of each Segment, for compliance of the following requirements and risk controls:
  - That the parties are (active) Members of CRCC.
  - That the trading Members have not met the limits and have the required Collateral.
  - That the Transactions Susceptible to Acceptance comply with the volume filters established by CRCC.

Once it is determined that the transactions received comply with the requirements and risk controls established in CRCC's Rulebook and in the Consolidated Circular, they will be accepted for clearing and settlement by CRCC.

- Operations management: Accepted Operations may be identified and managed in CRCC System from their acceptance, and in accordance with the conditions established for each Segment in the Rulebook and in the Consolidated Circular. The management services performed by the CRCC are Assignment, Operations Transfer, Position Transfer and Give Up.
- Collateral Management: This process includes the provision of cash collateral, securities collateral, financial safeguards (Standby Letters of Credit), the release of collateral and the replacement of collateral, the valuation of collateral pledged, and the investment of collateral provided in cash by Members of CRCC that have so requested.

Calculation of the Margin Calls are carried out at the level of each final account under the structure of each Member, in accordance with the conditions established for each segment in which the Member participates. This procedure consists of defining the collateral value required to cover the risks identified by CRCC related to the open position in each account.

The types of Margin required by CRCC S.A. are:

- **Individual Margin**: The purpose of this Margin is to cover the risk of the CRCC in relation to Clearing Members. Therefore, the Clearing Members must deposit a minimum guaranty prior to the acceptance of the first transaction by the CRCC.
- **Initial Margin**: The purpose of this Margin is to cover the risk of the position of each Final Account under the structure of a Member for each Segment. It consists of a Variable Margin relating to Open Positions, which is required of all Members and Third Parties with Open Positions registered in their accounts.
- **Extraordinary Margin**: The purpose of this margin is to cover the risk of CRCC in extraordinary situations. It is calculated by CRCC S.A. and requested from the Members and Third Parties due to exceptional circumstances relating to the volatility of the markets in which Transactions Susceptible of being Accepted are carried out, either because they are Open Positions that the CRCC deems to be high risk or because they are Open Positions for sale with a risk of Non-Compliance.

- Default Fund: CRCC has a Collective Guarantee, through a Fund composed of contributions from Clearing Members, in proportion to their risk exposures in the Segments in which they participate. The minimum total amount for the Default Fund in each Segment consists of the sum of the different minimum contributions of the Clearing Members, according to their participation in the clearing and settlement.

The collateral must be pledged in the assets that CRCC deems to be acceptable:

- Cash in Colombian pesos (legal currency).
- Cash in US dollars
- Public debt securities issued by the Republic of Colombia - TES.
- Highly liquid shares that belong to the COLCAP Index if they are the underlying asset of the transaction (not applicable for the Collective Guarantee Fund).

In the case of securities (TES and Shares), CRCC establishes stable and reasonably conservative haircuts that reduce the need for pro-cyclical adjustments. For the calculation of the haircuts the CRCC includes a liquidity and a concentration factor that recognizes the time it may take the CRCC to sell them in the market (MPOR). In addition, the haircuts established by CRCC for securities eligible by the Central Bank for liquidity operations are, at least, those required by the Central Bank, considering that CRCC has access to the Central Bank's discount window. For the US dollars posted as collateral the CRCC established as haircut the risk parameter as for the products it clears where the US dollar is its underlying.

CRCC values the Collateral daily, in accordance with current regulations on the valuation of investments at market prices, with the prices provided by the official CRCC price provider, authorized and supervised by the Financial Superintendence of Colombia.

- Clearing and Settlement: CRCC, in accordance with the type of settlement defined for each product, performs the clearing and settlement of the obligations arising from the transactions accepted during the trading acceptance session, plus the costs associated with their management and the adjustment of collateral necessary to strengthen the security of the risk-management framework that allows CRCC to act as a central counterparty.

Transactions accepted by CRCC are settled by daily settlement and/or settlement at the value date. Daily settlement involves the settlement of the amount of the payment commitments between CRCC and its Members daily, from the acceptance of the transaction to its settlement at maturity, based on the profit and loss reported by each position with respect to the previous day's price ("mark to market"). Settlement at the value date, on the other hand, implies the settlement of the open position at its value date. For the latter type of settlement, CRCC, to maintain acceptable levels of risk exposure under its risk policies, makes an adjustment through the request or release of collateral, for which it considers daily gains and losses against the initial price of the transaction.

In addition, the value date Settlement may be carried out by means of net cash settlement, which consists of the cash transfer of the difference between the price agreed in the transaction and the settlement price at value date, or by means of physical delivery, according to which the underlying asset must be delivered in exchange for the agreed price.

The Settlement Type is defined for each of the products that the CRCC clears and settles in each of the Segments.



#### 4. PRINCIPLE-NY-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.**

##### *Summary narrative*

The Financial Superintendence of Colombia - SFC (the entity in charge of the supervision, oversight and control of financial institutions in Colombia), by means of Resolution 0923 of June 12, 2008, granted CRCC the operating permit (Certificate of Authorization) to provide clearing and settlement services as a central counterparty of transactions, under the terms described in Article 15 of Law 964 of 2005 (Colombian Securities Market Law) and Decree 2893 of December of 2005.

Likewise, through Resolution 0908 of June 10, 2008, the SFC's Market Risk and Integrity Oversight Office approved the Operating Regulations of CRCC.

CRCC as a central counterparty authorized by SFC strictly complies with the provisions of the Securities Market Law (Law 964) and Decree 2555 of 2010. In this sense, the activities it carries out as a central counterparty are framed within these rules, based on which it issued its own Rulebook, that must be authorized by the SFC prior to its entry into force, and complemented by means of Circulars summarized in the Consolidated Circular. It also has Operational Instructions.

In addition to the foregoing, CRCC must inform the SFC of the characteristics of the asset, along with the risk management and operational mechanisms that will be used for its clearing and settlement, prior to issuing the authorization of the assets on which the transactions susceptible to acceptance may be carried out. Based on such procedure, CRCC interposes itself as a central counterparty in transactions that belong to the following segments: (i) financial derivatives segment; (ii) fixed income segment; (iii) equities segment; and (iv) Swaps Segment.

On the other hand, CRCC is also regulated by the Central Bank as the highest exchange and monetary authority in Colombia and as the entity in charge of controlling systemic risk, and by the URF, an entity whose purpose is to prepare regulations for the exercise of regulatory power in exchange, monetary and credit matters, and powers of regulation and intervention on financial, stock exchange, insurance and any other activity related to management, use and investment of the resources collected from the public, for their subsequent expedition by the National Government.

The Central Bank, in its role as the highest exchange authority, is responsible for the regulation of foreign exchange trading and registration systems, their derivatives and their operators, as well as of the foreign exchange clearing and settlement systems or their derivatives, and their operators. In this regard, by means of External Resolution No. 12, 2008, further developed by *Circular Reglamentaria Externa DODM – 316 de 2009* authorizes CRCC to perform the clearing and settlement, as central counterparty, of the exchange rate futures, exchange rate forward, exchange rate options and cross currency swaps, and it provides that the contracts to be cleared and settled through CRCC must be denominated in foreign currencies and settled in Colombian legal currency, and the counterparties CRCC may face in respect of such transactions. On this last point, it notes that the foreign exchange market intermediaries (IMC) authorized to carry out derivative operations, according to External Resolution No. 1, of 2018, are the entities entitled to operate as Clearing Members on the CRCC and that the entities supervised by the SFC that do not have the status of IMC may act as Non-Clearing Members in the clearing and settlement of the aforementioned foreign exchange derivative transactions.

In addition, article 8 of the External Resolution No. 12 of 2008, developed through External Regulatory Circular Letter DODM-316 of 2009, establishes that the modifications to the Rulebook and the Circulars and Instructions issued in connection with the aforementioned operations, or that affect their execution, must be previously reported to the Central Bank.

On the other hand, the Central Bank grants CRCC the status of Placement Agent for Open Market Operations (OMAS) allowing it to access the liquidity resources of the Central Bank through the Liquidity Operations for the Normal Operation of the Payment System, through Repo Intraday Operations.

In conclusion, the regulatory framework under which the rules, procedures and contracts of CRCC are established and developed represents a well-founded, transparent and enforceable legal basis that provides legal certainty to CRCC and to the market in general.

<b>Key Consideration 1</b>	<b>The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.</b>
Description	<p><i>Material aspects and relevant jurisdictions</i></p> <p><b>Q.1.1.1 : What are the material aspects of the FMI's activities that require a high degree of legal certainty (for example, rights and interests in financial instruments; settlement finality; netting; interoperability; immobilization and dematerialization of securities; arrangements for DvP, PVP or DvD; collateral arrangements (including margin arrangements); and default procedures)?</b></p> <p>The material aspects of the activities of CRCC that require a high degree of legal certainty are the following:</p> <ul style="list-style-type: none"> <li>a) Certainty of the legal effects of the interposition mechanism through which CRCC becomes the buyer to every seller and seller to every buyer, which is novation.</li> <li>b) Netting.</li> <li>c) Application of the finality principle in the acceptance of transactions and settlement finality.</li> <li>d) Rights and obligations of the CRCC Members.</li> <li>e) Effectiveness of guarantees, collateral protection principle, preference, and liquidation process.</li> <li>f) Interoperability.</li> <li>g) Default procedures.</li> </ul> <p><b>Q.1.1.2 : What are the relevant jurisdictions for each material aspect of the FMI's activities?</b></p> <p>The relevant jurisdiction for all the material aspects is the Colombian jurisdiction, considering that CRCC only performs its activities in Colombia. In this sense, Colombian law permits CRCC to have a clear, enforceable and complete legal basis, providing certainty with respect to each of these aspects.</p> <p><i>Legal basis for each material aspect</i></p> <p><b>Q.1.1.3 : How does the FMI ensure that its legal basis (that is, the legal framework and the FMI's rules, procedures and contracts) provides a high degree of legal certainty for each material aspect of the FMI's activities in all relevant jurisdictions?</b></p> <p>The legal basis of CRCC offers a high degree of legal certainty in every important aspect of its activities under the Colombian jurisdiction.</p>

- a) For an FMI that is a CCP, how does the CCP ensure that its legal basis enables it to act as a CCP, including the legal basis for novation, open offer or another similar legal device? Does the CCP state whether novation, open offer or another similar legal device can be revoked or modified? If yes, in which circumstances?**

The Colombian Securities Market Law, Law 964 of 2005, in Articles 15 to 18, regulates the constitution of central counterparties and establishes their own special regime. The National Government regulated central counterparties by means of a decree, which includes specific rules for such entities and for the activities developed by them. This rule is now incorporated into Decree 2555 of 2010, in Book 13 of Part 2.

According to Article 15 of the Law 964 of 2005, the purpose of CCPs is to reduce or eliminate the risks of default on the obligations arising from the transactions they accept to clear and settle. The same rule establishes that to comply with the foregoing purpose, the central counterparties should interpose themselves between the original parties in the transaction, irrevocably assuming the role of reciprocal creditors and debtors of the rights and obligations arising from transactions that have been previously accepted for clearing and settlement in accordance with the provisions of the regulations authorized by SFC.

Consequently, Colombian law recognizes that only entities that are constituted as central counterparties and are authorized by the securities market supervisory authority (formerly the Securities Superintendence, now the Financial Superintendence of Colombia) may act as such and intervene as counterparties in transactions they accept. Likewise, Colombian law establishes the irrevocability of its interposition, in accordance with the mechanism determined by the central counterparty in its Rulebook.

Article 2.13.1.1.7 of Decree 2555 of 2010 states that CRCC shall adopt regulations containing, among other elements, the transactions where it shall establish itself as the reciprocal creditor and debtor of the rights and obligations of the counterparties, as well as the mechanism it shall use to interpose itself between such counterparties.

In development of this rule, the CRCC's Rulebook defines in its Article 2.3.3. novation as the interposition mechanism, indicating that the rights and obligations deriving from the operations it accepts shall be automatically understood as novated, thereby giving rise to new rights and obligations of and vis-à-vis CRCC and extinguishing those that existed until then between the original parties of the operation.

Finally, it is worth mentioning that novation has express legal consecration in the Colombian Civil Code.

In conclusion, Colombian law provides certainty about the legal effects of novation as the interposition mechanism through which CRCC becomes the buyer of every seller and seller of every buyer.

- b) For an FMI that has a netting arrangement, how does the FMI ensure that its legal basis supports the enforceability of that arrangement?**

CRCC establishes asset and fund transfer obligations for Members, based on multilateral mechanisms that incorporate the net value of such obligations. (Article 2.6.1. of CRCC 's Rulebook).

This is based on Article 17 of Law 964 of 2005, which states that the obligations held by CCPs with their reciprocal debtors and creditors are extinguished by offset to the corresponding amount.

**c) Where settlement finality occurs in an FMI, how does the FMI ensure that its legal basis supports the finality of transactions, including those of an insolvent participant? Does the legal basis for the external settlement mechanisms the FMI uses, such as funds transfer or securities transfer systems, also support this finality?**

Article 10 of the Colombian Securities Market Law, establishes the finality principle. In this regard, the article indicates that transfer orders of funds or securities derived from securities transactions, as well as any other act that must be carried out to comply with them, shall be final, irrevocable and enforceable against third parties from the moment of acceptance of such orders in the clearing and settlement system.

Likewise, paragraph 2 of Article 15 of the Securities Market Law provides that the provisions of Article 10, above, shall apply to transactions that are cleared and settled by central counterparties.

In this context, once a transfer order has been accepted by the clearing and settlement system, the securities and the respective funds may not be subject to judicial or administrative proceedings aimed at prohibiting, suspending or otherwise limiting payments to be made through that system.

Article 2.13.1.1.11. of Decree 2555 of 2010 extends the application of the finality principle to transactions accepted by a central counterparty in its role as counterparty, establishing that this principle applies from the moment in which the transactions are accepted by CRCC and applies to all the acts necessary for their compliance, even if they are carried out through other clearing and settlement system administrators or agents, central securities depositories and payment systems, without this implying the effective execution of the respective transfer orders for them.

Likewise, Law 1116 of 2006 (Bankruptcy Law) determines that the bankruptcy judge may order the necessary measures to protect the custody and return of the debtor's assets, for which purpose he may revoke the acts and contracts that harm the creditors, with the express exception of transactions on securities or other rights of a negotiable nature that have received a transfer order accepted by the clearing and settlement systems of the Securities Market Law.

Based on the above, the internal regulation of CRCC clearly indicates the scope of such a principle. Article 2.3.5 of CRCC's Rulebook states that the administrators or agents of Clearing and Settlement systems, securities deposits and payment systems that CRCC must use to perform or complete the Settlement of Accepted Transactions are obliged to receive the respective Transfer Orders sent by the CRCC, the Members or participants to continue Settlement process, even when the Member or Third Party has been subject of a judicial, administrative or other precautionary measures. The Consolidated Circular of the entity, on the other hand, establishes that in the Agreements to Clear and Settle through the CRCC, Transactions between Members, or between Members and their Third Parties, it must be stated that the parties know and accept the finality principle established in the legal provisions in force and in the Operating Regulations of CRCC.

**Other aspects:**

**Rights and Obligations of CRCC Members**

The Rulebook establishes the admission requirements, type of membership, rights and obligations, and minimum content of the Conventions to be concluded between CRCC and its Members and between the different types of Members and Third Parties (clients).

The approval of the Regulations, as well as its modifications and additions, is responsibility of the CRCC Board of Directors. Moreover, they must be authorized by the Financial Superintendence of Colombia prior to their entry into force, procedure that constitutes a legality control that ensures that the rights and obligations of Members have a solid legal basis and are enforceable under Colombian law.

### **Effectiveness of the Collateral, collateral protection, preference and liquidation process**

The Colombian Securities Law, on the one hand, establishes in article 11 the collateral protection principle that consists on the protection for guarantees delivered on behalf of a participant to a clearing and settlement system. This principle is applicable to transactions that are cleared and settled by central counterparties as indicated in the same Law. On the other hand, Article 18 provides that the assets and rights pledged as collateral in favor of a central counterparty may not be subject to claim, seizure, attachment, withholding or other similar precautionary measure, or of measures derived from the application bankruptcy rules or from takeover, liquidation or restructuring agreements. Such guarantees shall be settled in accordance with the regulations of the central counterparties without the need for any legal proceedings.

Based on the foregoing, Chapter Seven of Title Two of CRCC 's Rulebook establishes the obligation to provide collateral, the eligible collateral, the mechanisms for pledging the collateral in securities and cash, criteria for the investment of collateral, types of collateral, valuation of collateral, substitution and replacement procedures for of such collateral and the terms for its pledging. Subsequently, chapter Eight of the same Title establishes the order of enforcement of the safeguards in the event of default.

In addition, the Consolidated Circular of CRCC determines the procedures for the calculation and management of guarantees.

### **Interoperability**

Numeral 3 of paragraph 2 of article 2.13.1.1.3 of Decree 2555 of 2010 states that central counterparties must guarantee any client access to their platform and ensure interoperability between the agents or parties involved in the value chain, including securities trading. Likewise, it establishes that such agents or parties involved in the value chain must guarantee free access to the central counterparty, regardless of their shareholding composition.

Central Counterparties may not establish discriminatory practices regardless of the trading system in which they operate.

Moreover, article 2.6.4. of CRCC Rulebook defines the entities needed for the settlement of the operations, namely, the Central Bank, centralized securities deposits, general deposit warehouses, administrators of the commercial exchange systems of the wholesale electricity market and other authorized entities, in accordance with their own regulations.

### **Default Procedures**

The rules governing the events and the procedures to be followed in the event of default by a Member or a Third Party are set out in Chapter Eight of Title Two of the Rulebook of CRCC.

The Rulebook regulates the effects of a declaration of default, the measures to be adopted for its management, including the power to close-out open positions of the defaulting party and to liquidate the guarantees provided. The

	Regulation also establishes the order in which the Collateral and other safeguards are to be enforced in the event of a default. The Regulation sets out the consequences of a default and the obligation of the defaulting party to pay all the costs and expenses arising from the management of such default.
<b>Key Consideration 2</b>	<b>An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.</b>
Description	<p><b>Q.1.2.1 : How has the FMI demonstrated that its rules, procedures and contracts are clear and understandable?</b></p> <p>CRCC has demonstrated that its rules, procedures and contracts are clear and understandable, as they are developed in strict compliance with the Colombian legal framework. Furthermore, no Member of the CRCC has expressed its disagreement with the standards applicable to CRCC, nor has it given a different interpretation of the correct understanding of the standards of the CRCC. Members accept and comply with the procedures of CRCC as provided in its rules.</p> <p><b>Q.1.2.2 : How does the FMI ensure that its rules, procedures and contracts are consistent with relevant laws and regulations (for example, through legal opinions or analyses)? Have any inconsistencies been identified and remedied? Are the FMI's rules, procedures and contracts reviewed or assessed by external authorities or entities?</b></p> <p>CRCC ensures that its rules, procedures and contracts are consistent with relevant laws and regulations in several ways. In principle, its legal area carries out a detailed analysis of the rules, procedures and contracts to determine that they are aligned to the current legal framework. When considered necessary, CRCC has contracted external lawyers to provide independent advice on the consistency of proposed amendments to the rules, procedures and contracts of CRCC within the Colombian regulatory framework.</p> <p>In addition, Article 2.13.1.1.7. of Decree 2555 of 2010 indicates the minimum content that the Rulebook of CRCC must have, which requires authorization from the SFC prior to its entry into force even for its subsequent modifications. That procedure guarantees that such provisions, once issued, respect the current regulatory framework.</p> <p><b>Q.1.2.3 : Do the FMI's rules, procedures and contracts have to be approved before coming into effect? If so, by whom and how?</b></p> <p>The Rulebook, and its modifications and additions must be approved by the Financial Superintendence of Colombia - SFC prior to their entry into force. In this regard, it should be noted that the Regulation establishes the minimum content of the agreements to be subscribed between CRCC and its participants, between its participants, and between them and third parties, thus ensuring that such agreements are consistent with the current regulatory framework.</p> <p>Moreover, the modifications and additions to the Rulebook of CRCC, as well as the Circulars and Instructions issued by CRCC related directly or indirectly to the eligible operations and risk mitigation mechanisms, must be previously informed to the Central Bank in compliance with the provisions of External Resolution No. 12, Article 9, of the Board of Directors of the Central Bank developed through External Regulatory Circular DODM - 316 of 2009. The Central Bank may, at any time, request CRCC to make such amendments to its rules as it may deem appropriate when it considers that their application would affect the normal functioning of the payment system. To date, no such requests have been received from the Central Bank.</p>



	In addition, the characteristics of the assets, along with the risk management and operational infrastructure mechanisms that will be used by CRCC for clearing and settlement, must be disclosed to the SFC in advance.
<b>Key Consideration 3</b>	<b>An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.</b>
Description	<p><b>Q.1.3.1: How does the FMI articulate the legal basis for its activities to relevant authorities, participants and, where relevant, participants' customers?</b></p> <p>The legal basis for the activities of CRCC is made public through its website: <a href="http://www.camaraderiesgo.com">http://www.camaraderiesgo.com</a>.</p> <p>The proposals for reforming the Rulebook are published for comments and suggestions from Members, prior to their approval by the Board of Directors of CRCC and their authorization by the SFC, through the Regulatory Bulletins, which may be consulted through the following link on CRCC website: <a href="http://www.camaraderiesgo.com/regulacion/boletines-normativos/">http://www.camaraderiesgo.com/regulacion/boletines-normativos/</a>.</p> <p>In addition, CRCC communicates the legal basis of its activities to the SFC through the Rulebook authorization process and to the Central Bank, the highest exchange and monetary authority in Colombia, through an information procedure prior to the entry into force of its regulations.</p>
<b>Key Consideration 4</b>	<b>An FMI should have rules, procedures, and contracts that 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.</b>
Description	<p><i>Enforceability of rules, procedures and contracts</i></p> <p><b>Q.1.4.1: How does the FMI achieve a high level of confidence that the rules, procedures and contracts related to its operations are enforceable in all relevant jurisdictions identified in key consideration 1 (for example, through legal opinions and analyses)?</b></p> <p>CRCC has a high degree of confidence that the rules, procedures and contracts related to its operations are enforceable in Colombia, as they are developed in strict compliance with current legal provisions.</p> <p>In consideration of the above, CRCC has a legal area in charge of reviewing the legal feasibility of its rules, procedures and the transactions it accepts for clearing and settlement. In addition, if deemed appropriate, it will hire external lawyers to give their external and independent opinion on the coherence between the rules, procedures and contracts of CRCC and the Colombian regulatory framework.</p> <p>In addition, the Rulebook authorization procedure guarantees, as explained above, that the minimum content of the agreement to be signed between CRCC and its Members respects the regulatory framework in force in Colombia.</p> <p>However, in relation to accepted transactions, the Colombian Securities Market Law enshrines the finality principle that implies that such transactions are firm, irrevocable, enforceable and effective against third parties, and the collateral protection principle which entails that collateral posted on behalf of a participant in a clearing and settlement system may be applied to the settlement of secured obligations, even in the event of the grantor being subject to insolvency proceedings.</p>

	<p>The bankruptcy law, in this regard, recognizes the finality principle by establishing the irrevocability of transactions in securities or other rights of negotiable nature that have received a transfer order accepted by a clearing and settlement system (Law 1116 of 2006, Article 5, numeral 2, literal a.).</p> <p><i>Degree of certainty for rules and procedures</i></p> <p><b>Q.1.4.2 : How does the FMI achieve a high degree of certainty that its rules, procedures and contracts will not be voided, reversed or subject to stays? Are there any circumstances in which an FMI's actions under its rules, procedures or contracts could be voided, reversed or subject to stays? If so, what are those circumstances?</b></p> <p>The rules of CRCC are established in its Rulebook, which minimum content is established in Decree 2555 of 2010. Additionally, the Rulebook and its amendments are submitted for prior approval, to the Financial Superintendence of Colombia, which guarantees a high degree of confidence that the rules, procedures and minimum clauses of the agreements to be subscribed between CRCC and its participants will not be invalidated, reversed or suspended.</p> <p>In addition, under the Colombian Securities Market Law, orders for transfer of funds and securities derived from securities transactions, as well as the collateral pledged to guarantee its performance, may not be subject of judicial or administrative measures aimed at prohibiting, suspending or limiting compliance.</p> <p><b>Q.1.4.3 : Has a court in any relevant jurisdiction ever held any of the FMI's relevant activities or arrangements under its rules and procedures to be unenforceable?</b></p> <p>There is no precedent for a decision of a court or administrative authority that has disregarded the enforceability of the rules, procedures and contracts of CRCC.</p>
<b>Key Consideration 5</b>	<b>An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.</b>
Description	<p><b>Q.1.5.1: If the FMI is conducting business in multiple jurisdictions, how does the FMI identify and analyze any potential conflict-of-laws issues? When uncertainty exists regarding the enforceability of an FMI's choice of law in relevant jurisdictions, has the FMI obtained an independent legal analysis of potential conflict-of-laws issues? What potential conflict-of-laws issues has the FMI identified and analyzed? How has the FMI addressed any potential conflict-of- laws issues?</b></p> <p>CRCC only operates in Colombia and, therefore, is subject solely to Colombian jurisdiction.</p>
<b>DETAILED ASSESSMENT OF OBSERVANCE OF THE PRINCIPLE</b>	
<b>PRINCIPLE 1: LEGAL BASIS</b>	
<b>key Consideration 1:</b>	
<b>The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.</b>	



The activities carried out by CRCC S.A. are based on a solid legal basis, which consists of the legal framework, rules, procedures and contracts of CRCC S.A.

The rules, procedures and contracts of CRCC S.A. are consistent with the legal framework and, therefore, provide a high degree of legal certainty.

**Key Consideration 2:**

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

Rules, procedures and contracts of CRCC S.A. are clear, understandable and consistent with the Colombian law.

The rules of CRCC S.A. have been established in the Rulebook, which minimum content is indicated in Decree 2555 of 2010. The Regulations and their modifications are submitted for prior approval, to the Financial Superintendence of Colombia.

The Consolidated Circular regulates the procedures and minimum content of contracts for each of the legal relationships between CRCC S.A. and its participants.

**Key Consideration 3:**

***An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.***

The legal basis for the activities of CRCC S.A. has been communicated to the relevant authorities and participants in a clear and comprehensible manner.

**Key Consideration 4:**

***An FMI should have rules, procedures, and contracts that 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.***

The legal basis recognizes the enforceability of collateral and the irrevocability of the acts by which such collateral was posted to the CRCC even in the event of insolvency of a Member.

The finality and collateral protection principles determined in Articles 10 and 11 of Law 964 of 2005 (Securities Market Law) are applicable to transactions that the central counterparties clear and settle, in accordance with the provisions of Article 15, paragraph 2 of the same Law.

**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.***

CRCC S.A. only operates in Colombia.

### KEY CONCLUSIONS FOR PRINCIPLE 1

CRCC has a well-founded legal basis, which provides certainty in the important aspects of its activities (rights and obligations of CRCC members, firmness of operations, netting, interoperability, collateral mechanisms and non-compliance procedures). Likewise, its rules, procedures and contracts are clear and understandable, and consistent with Colombian regulations.

In this way, CRCC ensures that these rules, procedures and contracts are fully enforceable and provide sufficient assurance to its members and the market in general, that they will not be invalidated, reversed or suspended. This certainty is the mechanism through which the risk to which the CRCC and its Members are exposed is adequately managed.

### ASSESSMENT OF PRINCIPLE 1

Principle 1 referred to Legal Basis is **OBSERVED** by CRCC.

### 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.**

#### Summary narrative

CRCC is a corporation subject to inspection and oversight by the Financial Superintendence of Colombia, whose corporate purpose is to provide clearing services as a central counterparty, thereby reducing or eliminating the risks of the obligations arising from them. To this end, CRCC has a solid regulatory basis (see Principle 1: Legal Basis) which includes clear and transparent governance mechanisms, aimed at the safety and efficiency of CRCC and, and the stability of the financial system.

The regulatory basis for establishing the governance arrangements of CRCC is the Securities Market Law and Decree 2555 of 2010, as well as its internal regulations, which develop and complement these regulations, including the Bylaws, the Corporate Governance Code, the Code of Ethics and Conduct and the Regulations of the General Shareholders' Assembly, the Board of Directors, the Audit Committee and the Risk Committee.

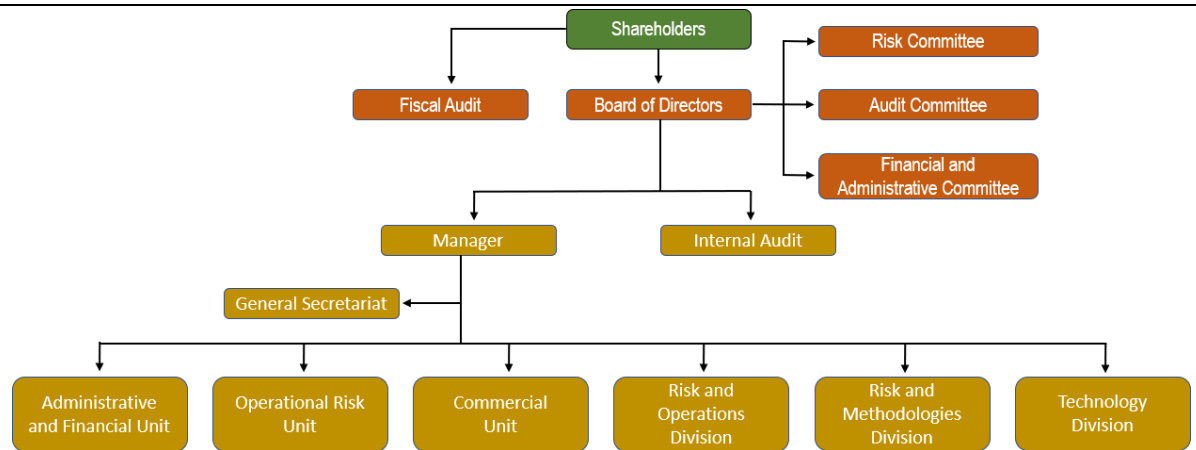
Based on this solid regulatory framework, CRCC guarantees that it has documented governance arrangements that clearly establish and describe the functions, responsibilities and lines of accountability of the different management bodies, which are the General Shareholders' Assembly, the Board of Directors and its Committees, CRCC's Senior Management and the Internal Audit area.

In addition, the corporate governance structure allows for main decisions adopted by the different governing bodies of CRCC to involve the perspectives of its Members, the market in general, and individuals. In consideration of the transparency that the market must have, CRCC communicates its decisions to its shareholders, authorities, Members and the public, as appropriate.

<b>Key Consideration 1</b>	<b>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.</b>
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Description	<p><b>Q.2.1.1: What are the FMI's objectives, and are they clearly identified? How does the FMI assess its performance in meeting its objectives?</b></p> <p>The objectives of CRCC are clearly identified. The corporate purpose of CRCC, as set out in Article 4 of the Bylaws, is to provide clearing services as a central counterparty in transactions, to reduce or eliminate the risks of default of the obligations arising therefrom. To this end, CRCC has adopted an operational and risk model that allows it to comply with this corporate purpose with high efficiency and security standards, contributing to the development of the Colombian capital market.</p> <p>In view of the foregoing, CRCC will carry out its functions based on the following principles established in the Corporate Governance Code:</p> <ul style="list-style-type: none"> <li>- Provide adequate return on investment to shareholders.</li> <li>- Be chosen by market participants as their counterparty.</li> <li>- Achieve adequate mitigation of counterparty risk by complying with international standards for central counterparties.</li> <li>- Ensure operational efficiency to attend all market participants in an integrated manner.</li> <li>- Contribute to the development of the Colombian capital market.</li> </ul> <p>The Board of Directors of CRCC conducts a strategic planning exercise through which it periodically clearly establishes its strategic objectives.</p> <p>To ensure that its objectives are met, CRCC has two evaluation methods. The first one is an annual performance plan, called the Performance Management System (PMS), through which the performance of each CRCC employee is evaluated quarterly against predefined individual and collective objectives. The second, is an external market participant survey, which determines their level of satisfaction with the activities carried out by CRCC in fulfilment of its corporate purpose.</p> <p><b>Q.2.1.2: How do the FMI's objectives place a high priority on safety and efficiency? How do the FMI's objectives explicitly support financial stability and other relevant public interest considerations?</b></p> <p>The objectives of CRCC place a high priority on safety and efficiency through the adoption of a sound risk and operational model, supported by a secure technological infrastructure, to ensure the provision of the clearing service as a central counterparty, to reduce or eliminate the risks of default of the previously accepted transactions.</p> <p>These strategic objectives contribute to the safety and efficiency of CRCC by strengthening its organizational structure, aligning its technological infrastructure and consolidating its risk model. Likewise, financial objectives are established pursuing the economic stability of the organization.</p> <p>Considering that the main purpose of CRCC is to mitigate the risk of default of accepted operations, it supports the financial stability of the system by contributing to the development of the Colombian capital market, which is a public interest objective.</p>
Key Consideration 2	<p><b>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.</b></p>

Description	<p><i>Governance arrangements</i></p> <p><b>Q.2.2.1 : What are the governance arrangements under which the FMI's board of directors (or equivalent) and management operate? What are the lines of responsibility and accountability within the FMI? How and where are these arrangements documented?</b></p> <p>The governance arrangements through which the Board of Directors and Senior Management of CRCC operate are established in the Bylaws, the Corporate Governance Code, the Code of Ethics and Conduct and the Regulations of the various corporate bodies, the basis of which is expressly defined in the Code of Commerce, the Securities Market Law (Law 964 of 2005), Decree 2555 of 2010 and the Basic Legal Circular issued by the Financial Superintendence of Colombia, in such manner that the governance arrangements have a well-founded legal basis.</p> <p>The Bylaws and the Corporate Governance Code define that the structure and governance of CRCC shall include the following bodies which exercise management, administrative and control functions, as appropriate:</p> <ul style="list-style-type: none"> <li>- General Shareholders' Assembly.</li> <li>- Board of Directors and Committees.</li> <li>- Manager and Legal Representatives.</li> <li>- Internal Auditor.</li> <li>- Fiscal Auditor.</li> </ul> <p>In development of the above rules, the different operating regulations of the administrative bodies establish, in greater detail, the governance arrangements through which the Board of Directors and the Corporate Committees operate, in aspects such as their purpose, the way in which they should be integrated, the skills that their members should have, the way in which they should be elected, their duties and the development of their meetings, deliberation and voting.</p> <p>The Bylaws, for their part, regulate the governance mechanisms of CRCC's Senior Management. In accordance with the Bylaws, the Board of Directors is responsible for electing the Manager. The Bylaws establish the functions of the Manager, within which the Manager's responsibility for timely compliance and enforcement with legal requirements or requirements relating to the operation and activities of CRCC, as well as the orders or instructions given by the General Assembly and the Board of Directors, are highlighted.</p> <p>The lines of responsibility and accountability between CRCC's management bodies are clearly established in the rules that make up the legal basis of CRCC. Accountability and lines of responsibility are evidenced in CRCC's organizational chart below:</p>
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**Q.2.2.2 : For central bank-operated systems, how do governance arrangements address any possible or perceived conflicts of interest? To what extent do governance arrangements allow for a separation of the operator and oversight functions?**

Not Applicable.

**Q.2.2.3 : How does the FMI provide accountability to owners, participants and other relevant stakeholders?**

CRCC is accountable to its owners, participants and other stakeholders through reports submitted to the General Shareholders' Assembly, messages sent through its information systems, newsletters published on its website and reports periodically submitted to the relevant authorities.

In accordance with Colombian law and CRCC's Bylaws, Management and the Board of Directors must submit to the General Shareholders' Assembly, the following reports at least annually:

- Annual management report.
- Report on the development of corporate governance arrangements
- Report on the main risks to which the company is exposed.

Likewise, along with the Audit Committee, they must present to the shareholders a report on the functioning of the internal control system and the work of the Audit Committee. It is the responsibility of the Assembly to approve the financial statements of CRCC at the end of the financial year.

Prior to the ordinary meeting of the General Shareholders Assembly, shareholders may exercise their right to inspect the information of CRCC.

Public interest information may be consulted on CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

In addition, the CRCC as an organization subject to the oversight of the Superintendence of Finance of Colombia, is required to report information on its activities, corporate governance and financial performance.

*Disclosure of governance arrangements*

	<p><b>Q.2.2.4: How are the governance arrangements disclosed to owners, relevant authorities, participants and, at a more general level, the public?</b></p> <p>The governance arrangements of CRCC are duly published on the entity's website.</p> <p>The Rulebook, Circular and Operating Instructions are published on the CRCC website: <a href="http://www.camaraderiesgo.com/regulacion/regulacion-camara/">http://www.camaraderiesgo.com/regulacion/regulacion-camara/</a>. Amendments to the Rulebook or the Circular will be duly disclosed to the relevant authorities, according to the means established by them, their members, and the public, through the Regulatory Bulletins, which may be found in the following link on the CRCC website: <a href="http://www.camaraderiesgo.com/regulacion/boletines-normativos/">http://www.camaraderiesgo.com/regulacion/boletines-normativos/</a>.</p> <p>However, the different rules governing the functioning of the corporate governance of CRCC, including the Bylaws, the Corporate Governance Code, the Code of Ethics and Conduct, the Regulations of the General Shareholders' Assembly, the Operating Regulations of the Board of Directors, the Regulations of the Audit Committee and the Regulations of the Risk Committee, may be found in the following link on the CRCC website: <a href="http://www.camaraderiesgo.com/normas/">http://www.camaraderiesgo.com/normas/</a>.</p>
<b>Key Consideration 3</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Roles and responsibilities of the board</i></p> <p><b>Q.2.3.1 : What are the roles and responsibilities of the FMI's board of directors (or equivalent), and are they clearly specified?</b></p> <p>The roles and responsibilities of the Board of Directors are clearly established in the Bylaws (Article 53), in the Corporate Governance Code, in the Rulebook and in the Circular of CRCC.</p> <p>Among these functions are those relating to the free appointment and removal of the Company's legal representatives; the creation and appointment of committees to prepare or enforce the measures corresponding to the Company in relation to the operations and services provided for in the corporate purpose; the study, approval and amendment of the Operating Regulations of CRCC; the periodic evaluation of the activity of executives, based on compliance with the goals and indicators established in the Company's annual plan; and the adoption, modification and amendment of the Corporate Governance Code, and the establishment of fees for the services rendered by the Organization, as well as their increase approval or modifications, among others.</p> <p><b>Q.2.3.2 : What are the board's procedures for its functioning, including procedures to identify, address and manage member conflicts of interest? How are these procedures documented, and to whom are they disclosed? How frequently are they reviewed?</b></p> <p>The procedures for the functioning of the Board of Directors are set out in the Bylaws, the Corporate Governance Code and its Operating Regulations, which are published on the CRCC website. These documents regulate, among others, the object and duties of the Board, its functions, the way in which it must be integrated and the skills that its members must fulfil, the procedures concerning the meetings of the Board of Directors, its deliberation and voting,</p>

election and functions of the President, Vice President and Secretary of the Board of Directors, disclosure of the decisions adopted by the Board of Directors and the way in which its performance must be evaluated.

However, article 90 of the Bylaws establishes the procedure of identification and management of conflicts of interest, in which the members of the Board of Directors, the company's senior management or its employees may be involved. In this regard, if any of the above-mentioned persons at the time of deciding, find themselves in a situation of conflict of interest, they must abstain from participating in the decision making and must inform their superior or the General Shareholders' Assembly and the Board of Directors, depending on whether they are an employee or a director, respectively.

**Q.2.3.3 : Describe the board committees that have been established to facilitate the functioning of the board. What are the roles, responsibilities and composition of such committees?**

By express provision of article 2.13.1.1.1.5. of Decree 2555 of 2010, the central counterparties, in addition to the corporate bodies that, in accordance with mercantile regulations are required for such entities, must have a Risk Committee and an Audit Committee established by the Board of Directors. In view of the above, CRCC has such committees and, additionally, an Administrative and Financial Committee created by the Board of Directors of the Company.

The Risk Committee is a collegiate body integrated by five (5) members, appointed by the Board of Directors, of which, at least two (2), must be independent members of the Board of Directors. The purpose of this Committee, as defined in the Bylaws, is to evaluate the risk policies, mechanisms and procedures implemented by the Company, and to recommend any measures or adjustments that may be required. For such purposes, the Risk Committee, among others, has the following functions:

- Prepare and submit the CRCC's risk management policies to the Board of Directors for consideration.
- Define and adopt the model, mechanisms and procedures for risk management, to which the operations accepted by the CRCC and the operations that are cleared and settled through it are exposed, as well as the assurance system, including financial resources, funds and in general the financial safeguards necessary for the control and protection of the risks.
- Establish mechanisms for monitoring, measuring and controlling the risks of the operations accepted by the CRCC and the operations that are cleared and settled through it. The risk control will be carried out in relation to the position of the counterparties, as well as in relation to the company;
- Establish the mechanisms that allow the company to anticipate and mitigate the default risks;
- Establish clear and transparent risk management policies and mechanisms if one or more counterparties fail to comply with their obligations or a bankruptcy, intervention, takeover, dissolution or liquidation of a counterparty occurs;
- Determine the form and methodology to constitute the different funds of the safeguard system, establishing the type and percentage of the resources that integrate them, as well as the criteria for the administration of said resources;
- Periodically submit reports on risk management to the Board of Directors, to enable it to exercise control over risk management and monitor the company's exposure. At least one annual report. In any event, the Board of Directors may, at any time, request extraordinary reports from the Committee on risk management and on any market situation.
- Establish its own procedural Guidelines.
- Propose modifications to the regulations of the CRCC to the Board of Directors;
- Appoint the Chairman of the Risk Committee from among its members;



- Appoint the Secretary of the Risk Committee;
- Exercise such other functions as may be provided by law, bylaws or regulations.

Likewise, in accordance with CRCC's Rulebook, the Risk Committee is responsible for:

- Issuing a preliminary concept to the Board of Directors to establish the Segments.
- Issuing a preliminary concept to the Board of Directors regarding the application for admission of organizations aspiring to become Members of CRCC.
- Limiting the use of eligible guarantees and authorize eligible guarantees, other than those laid down in CRCC's Rulebook.
- Increasing the requirements of the general policies or investment criteria of the collateral, established in the CRCC'S Rulebook.
- Establishing the minimum amount of Default Fund for each segment.
- Establishing the calculation method, update periodicity, and minimum amount, if any, of the Default Fund to be contributed by each Clearing Member for each segment.
- Issuing a preliminary concept to the Board of Directors, to allocate a minimum amount of the equity as Specific Own Resources for each Segment.

The Audit Committee is comprised of three (3) members of the Board of Directors appointed by the Board of Directors, of which at least two (2) members must be independent. The purpose of this committee is to verify that the internal control system of CRCC is functioning effectively and that the audit functions are being performed. Based on the foregoing, the activities that this Committee will carry out to fulfil its functions are:

- Contribute to the definition of the general Rulebook and structure of the internal control system, as well as monitoring and evaluating its effectiveness.
- Supervise the functions and activities of the internal and external audit to determine its independence, in relation to the functions it audits and verify that the scope of its work satisfies the control needs of the Organization.
- Evaluate the audit reports presented by the company's internal auditors and verify that their suggestions and recommendations have been complied with or, if not, verify the reasons why they were not complied with.
- Review and approve, when appropriate, the documents and plans related to money laundering prevention and control, in accordance with the provisions of the current legislation.
- Evaluate the work plans, reports and follow up on the recommendations presented by the fiscal auditor, the external auditor, if any, and the internal auditor.
- Evaluate the company's business continuity plan.
- Establish procedures for hiring, remunerating and removing the external auditor, if any.
- Examine the company's draft financial statements and year-end financial statements.
- Submit to the Board of Directors such special reports, proposals or recommendations as it may deem appropriate, in relation to matters within the Committee's competence.
- Others delegated by the Board of Directors.

The Corporate Governance Code establishes that the Audit Committee acts as a support body for the management of the Board of Directors regarding the good governance of CRCC, the administration of the processes of the Board of Directors, and the evaluation of the performance of the Board of Directors and its members. In this regard, the Audit Committee has the following functions concerning the governance arrangements of the Company:

- Ensure effective compliance of the policies, rules and practices of good corporate governance, as well as compliance of the Code of Ethics and Conduct.



- Verify annually the fulfilment of the meeting calendar of the Board of Directors and the Committees of the Company.
- Study the remuneration policies of the members of the Board of Directors and the Committees.
- Ensure that documentation is sent with the invitation to the respective meetings to allow the members of the Board of Directors and Committees to make informed decisions.
- Propose modifications to the Corporate Governance Code of the Board of Directors.
- Submit such recommendations to the Board of Directors, as it deems appropriate, in relation to its functions about the good governance of the Company.
- Verify that the Company's Risk Committee monitors the levels of risk exposure, its implications and the measures adopted to control or mitigate it. In the performance of this function, the Audit Committee may request the Risk Committee to provide any reports it deems appropriate.
- Interpret the powers granted to the different Committees of the Company and, case of doubt, to determine their competence.
- Others delegated by the Board of Directors.

The Administrative and Financial Committee, on the other hand, is a collegiate body, integrated by 5 members of the Board of Directors of the Company, whose purpose is to support the Board of Directors in its administrative and financial functions. For such purposes, its functions are:

- The study of new business and investment opportunities for the Company
- Evaluate the company's investments and their development and evolution.
- Study the draft budget of the Organization and submit it to the Board of Directors for consideration.
- Define policies, parameters, counterparties, eligible investments and investment limits per issuer, counterparty and financial asset for the CRCC's portfolio.
- Analyze and recommend the rates of the products and services of CRCC to the Board of Directors.
- Verify and study the general qualities required by the Bylaws to be a member of the Board of Directors and the special conditions to be an independent member of this body, among others.

#### *Review of performance*

#### **Q.2.3.4: What are the procedures established to review the performance of the board as a whole and the performance of the individual board members?**

In accordance with the provisions of article 3.3.4 of the Corporate Governance Code, the Board of Directors of the Company shall be evaluated annually by means of an individual and a collective self-assessment, in order to establish the levels of efficiency and effectiveness in the performance of duties and functions, the achievement of the objectives of said body, the observance by its members of the principles and responsibilities established for them and the identification of improvement measures.

Through the application of this methodology, the individual participation of each member of the Board of Directors is examined, as well as the performance of the Board of Directors and the relevance, depth and frequency with which the different topics should be dealt with in the Board of Directors.

The evaluations are analyzed by the Audit Committee, which presents the results to the Board of Directors along with any recommendations that may apply.

	<p>The Secretary of the Board and the Secretary of each of the Committees submits an annual report on the activities of the Board of Directors and its Committees to the Audit Committee, indicating the number of meetings held, quorum, attendance, compliance with the agendas for each meeting and the agendas, communication of minutes and documentation corresponding to each session, and the recording of the minutes in the relevant books.</p> <p>In addition, the Audit Committee prepares a report on the management evaluation of the Board of Directors, its Committees and its members, which is submitted to the General Shareholders' Assembly on an annual basis.</p>
<b>Key Consideration 4</b>	<b>The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).</b>
Description	<p><b>Q.2.4.1 : To what extent does the FMI's board have the appropriate skills and incentives to fulfil its multiple roles? How does the FMI ensure that this is the case?</b></p> <p>Article 50 of CRCC Bylaws, especially the first and second paragraphs, determine the general qualities of the members of the Board of Directors. Among these qualities are good moral, social and commercial reputation and work experience, which implies an experience of not less than five (5) years of independent professional practice in areas related to the securities or financial market, economy, engineering or law, or having held senior management positions in public entities related to the financial system or the public securities market.</p> <p>Such requirements, along with those contained in article 50 of CRCC 's Bylaws, must be accredited by the candidates prior to their election by the General Shareholders' Assembly, under the terms established by article 3.2.1 of CRCC's Corporate Governance Code.</p> <p>Additionally, both the Board of Directors and the Legal Representatives of CRCC must take office before the Superintendence of Finance of Colombia. The procedure for their appointment before this entity implies, additionally, that they comply with the suitability requirements established by the Superintendence itself.</p> <p><b>Q.2.4.2 : What incentives does the FMI provide to board members so that it can attract and retain members of the board with appropriate skills? How do these incentives reflect the long-term achievement of the FMI's objectives?</b></p> <p>CRCC offers the members of the Board of Directors a remuneration for their attendance at the meetings of said corporate body, as provided for in article 3.3.3 of the Corporate Governance Code, which shall be established, as provided for in article 35 of the Bylaws of the General Shareholders' Assembly.</p> <p>In addition, the members of the various Committees of CRCC (who are also members of the Board of Directors) are entitled to receive a fee as remuneration for attending the respective meeting. These fees are fixed by the General Shareholders' Assembly and may not, under any circumstances, exceed those established for the members of the Board of Directors.</p> <p><b>Q.2.4.3 : Does the board include non-executive or independent board members? If so, how many?</b></p> <p>Article 2.13.1.1.4 of Decree 2555 of 2010, referring to the integration of the Board of Directors of the CRCC, indicates that at least forty (40) percent of the members of the Board of Directors of CRCC must be independent. Based on the foregoing, Article 50 of CRCC Bylaws establishes that the Board of Directors shall be composed of fifteen (15) members, six (6) of whom shall be independent.</p>

	<p>In addition, Decree 2555 of 2010 establishes that if a person has the status of beneficial owner of several shares of CRCC representing a higher percentage than 50% of the share capital, in addition to the percentage of independent members, 20% of the members of the Board of Directors must be representatives of the Clearing Members.</p> <p><b>Q.2.4.4 : If the board includes independent board members, how does the FMI define an independent board member? Does the FMI disclose which board member(s) it regards as independent?</b></p> <p>The third paragraph of article 50 of the Bylaws provides that an independent member shall be a person who is not in any of the situations contemplated in article 2.13.1.1.1.4. of Decree 2555 of 2010 (previously article 4 of Decree 2893 of 2007). Therefore, independent means a person who is not:</p> <ul style="list-style-type: none"> <li>- An officer of CRCC, any of its affiliates, subsidiaries or controlling shareholders, or has had such status in the immediately preceding year.</li> <li>- Shareholders who direct or control most of the voting rights of CRCC or who determine the majority composition of the administrative, management or control bodies.</li> <li>- An officer, director or shareholder who owns more than five (5) percent of the interest in any of the counterparties of CRCC, its affiliates, subsidiaries or controlling shareholders, or who had such status in the preceding year.</li> <li>- Member or employee of associations or companies that provide advisory or consultancy services to CRCC or to companies belonging to the same economic group.</li> <li>- An officer or director of a foundation, association or organization that receives significant donations from CRCC.</li> <li>- Administrator of an organization when a legal representative of CRCC participates in the Board of Directors.</li> <li>- Person who receives any remuneration from CRCC, other than member fees for the Board of Directors or Committees.</li> <li>- Spouse, permanent companion or relative up to the second degree of consanguinity, first of affinity or first civil of any of the persons mentioned above.</li> </ul>
<b>Key Consideration 5</b>	<b>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.</b>
Description	<p><i>Roles and responsibilities of management</i></p> <p><b>Q.2.5.1 : What are the roles and responsibilities of management, and are they clearly specified?</b></p> <p>The functions and responsibilities of the senior management of CRCC are headed by its Manager and two alternates, appointed by the Board of Directors, who will replace it when the Manager is absent temporarily or permanently.</p> <p>The functions of the Manager and his alternates are established in article 74 of CRCC 's Bylaws, among which the following stand out:</p> <ul style="list-style-type: none"> <li>- Representation of the company before shareholders, third parties and authorities.</li> <li>- Celebration and execution of all the acts or operations included within the main corporate purpose of the company.</li> <li>- Celebration and execution of all acts or operations other than those of the main corporate purpose, which amount does not exceed one thousand (1000) minimum monthly legal wages in force in Colombia.</li> </ul>

- Appoint and remove employees of the company whose appointment or removal does not correspond to the Board of Directors.
- Present the financial statements to the Board of Directors and provide it with such reports as it may request in relation to the company and its activities.
- Comply and ensure timely compliance with legal requirements or requirements related to the operation and activities of the company.

They must also ensure the good governance of CRCC, under the terms of article 5.1 of CRCC 's Governance Arrangements, to comply with and enforce it and to submit a report on its execution to the General Shareholders' Assembly and the Board of Directors.

**Q.2.5.2 : How are the roles and objectives of management set and evaluated?**

The senior management of CRCC is evaluated annually based on the objectives set for both CRCC and its own individual management.

On the other hand, the Manager must carry out a self-assessment of his management, based on compliance with the objectives and indicators established in CRCC's strategic plan, which will be analyzed by the Board of Directors (article 5.2. of the Governance Arrangements).

*Experience, skills and integrity*

**Q.2.5.3 : To what extent does the FMI's management have the appropriate experience, mix of skills and the integrity necessary for the operation and risk management of the FMI? How does the FMI ensure that this is the case?**

The Manager of the company shall be elected by the Board of Directors for two (2) year periods, although the Board of Directors may freely remove him/her at any time or re-elect him/her freely. The term of the Manager shall be understood to be protracted to expiration unless the Board of Directors makes a new election or appointment. Additionally, the legal representation of CRCC is subject to appointment at the Superintendence of Finance of Colombia, which analyses his/her suitability and experience prior to authorization of appointment

In addition, the Manager must perform a self-assessment of his management, based on compliance with the objectives and indicators established in CRCC's strategic plan, which will be analyzed by the Board of Directors.

The other members of the senior management, on the other hand, are freely appointed by the Manager of CRCC, in view of their knowledge and experience in accordance with the profile of the position developed by the Administrative and Financial Management of the Company and may be freely removed by the same.

**Q.2.5.4 : What is the process to remove management if necessary?**

In accordance with the provisions established by the Bylaws and other rules related to the good governance of CRCC, the Manager and his/her alternates shall be removed by the Board of Directors. The other members of the senior management, who are not of free appointment and removal by the Board of Directors, may be removed by decision of the Manager.

<b>Key Consideration 6</b>	<p>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.</p>
<b>Description</b>	<p><i>Risk management framework</i></p> <p><b>Q.2.6.1 : What is the risk management framework that has been established by the board? How is it documented?</b></p> <p>The risk management framework of CRCC is documented in the Rulebook, Circular and the Risk Model Technical Documents, in compliance with the regulatory provisions contained in Decree 2555 of 2010.</p> <p>Although it is the Board of Directors that defines the risk management framework and risk management policies of CRCC, previously submitted to it by the Risk Committee, it is this second body, pursuant to Article 63 of the Bylaws, that defines and adopts the model and mechanisms and procedures for risk management for the operations accepted by CRCC, the Margin system necessary for the control and protection of risks, the mechanisms for monitoring, measuring and controlling the risks of operations accepted by CRCC and clear and transparent mechanisms in the event that one or more of the counterparties fails to comply with its obligations.</p> <p><b>Q.2.6.2 : How does this framework address the FMI's risk tolerance policy, assign responsibilities and accountability for risk decisions (such as limits on risk exposures), and address decision-making in crises and emergencies?</b></p> <p>The Board of Directors defines the risk tolerance level of CRCC, which corresponds to 99.5% for the determination of the Initial Margin and has defined the methodology for setting the amount of the Default Fund. Similarly, the risk management framework assigns clear responsibilities and lines of accountability for proper risk management, including in crisis or emergency situations</p> <p>All modifications to the risk model are identified by the Risk and Operations and Risk and Methodology Areas and are submitted for consideration and approval by the Risk Committee, which in turn must submit periodic risk management reports to the Board of Directors to enable it to control risk management and monitor the company's exposure.</p> <p>In the event of a crisis or emergency, decisions on the risk management framework will continue to be taken by the bodies responsible for their approval or modification. For this reason, the Bylaws and Guidelines of the Board of Directors and its Committees contain procedures for calling extraordinary meetings when the situation requires it so.</p> <p><b>Q.2.6.3 : What is the process for determining, endorsing and reviewing the risk management framework?</b></p> <p>The risk management framework is defined by the Board of Directors, based on the risk management policies and other risk management reports submitted to it by the Risk Committee. Without prejudice to this attribution, the Risk Committee has the following functions with respect to the risk model:</p> <p>The purpose of this Committee, as defined in the Governance Arrangements, is to evaluate the risk policies, mechanisms and procedures implemented by the Company and to recommend any measures or adjustments that may be required. For such purposes, the Risk Committee, among others, is responsible for preparing and submitting risk management policies to the Board of Directors, defining and adopting the risk management model and the Margin</p>

system, monitoring, measuring and controlling the risk of the operations accepted by CRCC S.A., establishing risk management policies and periodically submitting reports to the Board of Directors so that the Board of Directors can control risk management and monitor the company's exposure.

Likewise, the risk model and its parameters are subject to periodic evaluations under the terms established by the Rulebook and the Circular of CRCC. The results of these assessments are presented to the Risk Committee.

*Authority and independence of risk management and audit functions*

**Q.2.6.4 : What are the roles, responsibilities, authority, reporting lines and resources of the risk management and audit functions?**

CRCC has an Internal Auditor who, in addition to fulfilling the objectives of the Internal Control System, is responsible for providing the senior management of the organization with information on reasonable assurance that all operational, financial, administrative and IT processes are operating in a way that minimizes the possibility of fraud, error or inefficient practices. It is an independent and objective activity that gives CRCC assurance on the capability of its operations in different areas and is therefore, directly accountable to the Board of Directors.

Likewise, CRCC by provision of article 2.13.1.1.1.5. of Decree 2555 of 2010 has an Audit Committee composed of three (3) members of the Board of Directors, of which, at least two (2), must be independent, thus guaranteeing their independence from the company and its Members.

The purpose of this committee is to verify the effectiveness of the internal control system of CRCC, as well as the fulfilment of the audit functions. Based on the foregoing, the activities that this Committee carries out to accomplish its functions are, among others, the definition of the general guidelines and internal control structure, and its monitoring and evaluation, supervision and evaluation of the functions and activities of the internal and external audits, in order to determine their independence and suitability to satisfy the control needs of the Organization, and evaluation of the business continuity plan. The Audit Committee is also responsible for verifying that the Company's Risk Committee monitors the levels of risk exposure, their implications and the measures adopted to control or mitigate them. In the performance of this function, the Audit Committee may request the Risk Committee to provide any reports it deems appropriate.

**Q.2.6.5 : How does the board ensure that there is adequate governance surrounding the adoption and use of risk management models? How are these models and the related methodologies validated?**

The effectiveness and suitability of the risk model adopted by CRCC, as well as its modifications, is guaranteed by the following periodic tests:

- Daily back test of the fluctuation parameters. Results are reported on a weekly basis.
- Daily clean back-testing of P&G results of positions at the incumbent account level versus the required Position Guarantees. Results are reported in a weekly report.
- Review of correlations between assets on a quarterly basis.
- Periodic comprehensive review of risk parameters and extreme but plausible scenarios annually.
- Daily stress test of the Default Fund verifying that the financial resources funded cover the two Members with the greatest exposure to CRCC S.A.



<b>Key Consideration 7</b>	<b>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.</b>
Description	<p><i>Identification and consideration of stakeholder interests</i></p> <p><b>Q.2.7.1 : How does the FMI identify and take account of the interests of the FMI's participants and other relevant stakeholders in its decision-making in relation to its design, rules, overall strategy and major decisions?</b></p> <p>The CRCC aims for the active participation of the different actors for the implementation of functional models that are coherent with the needs of the Colombian market. For these purposes, potential participants are involved in the different phases of the development of the functional models of each of the Assets that CRCC settles and clears and their execution, which include the validation of the model, an enlistment and training plan and a testing phase, where members simulate the operation that the new Asset entails.</p> <p>Likewise, prior to the issuance of any modification to the Rulebook, the proposal is published in the Normative Bulletin through the CRCC website so that participants may present their opinions and comments, for a term of five (5) business days, prior to its approval by the Board of Directors, and its submission for the respective procedure in the Superintendence of Finance of Colombia.</p> <p><b>Q.2.7.2 : How does the board consider the views of direct and indirect participants and other relevant stakeholders on these decisions; for example, are participants included on the risk management committee, on user committees such as a default management group or through a public consultation? How are conflicts of interest between stakeholders and the FMI identified, and how are they addressed?</b></p> <p>Officials and/or legal representatives of Members (participants) of CRCC participate in the Board of Directors and its committees. Regarding these characteristic, the decisions taken by the Board or its Committees adequately involve the perspectives of the various participants in CRCC.</p> <p>The comments made by the Members of CRCC on the published regulatory proposals are analyzed by the Board of Directors prior to the approval of the internal regulation.</p> <p>Conflicts of interest that may arise between the interested parties and CRCC are adequately identified and managed through the procedure established in article 90 of the Bylaws.</p> <p><i>Disclosure</i></p> <p><b>Q.2.7.3 : To what extent does the FMI disclose major decisions made by the board to relevant stakeholders and, where appropriate, the public?</b></p> <p>Any modification adopted by the Board of Directors or its Committees that affects or may affect the participants of CRCC in any way, are informed to them and to the public through the website of the Organization through the Policy or Information Bulletins that may be consulted through the following links:</p> <ul style="list-style-type: none"> <li>- Normative Bulletins: <a href="http://www.camaraderiesgo.com.co/es/regulacion/boletinesnormativos">http://www.camaraderiesgo.com.co/es/regulacion/boletinesnormativos</a></li> <li>- Newsletters: <a href="http://www.camaraderiesgo.com/es/regulacion/boletinesinformativos">http://www.camaraderiesgo.com/es/regulacion/boletinesinformativos</a></li> </ul>

## DETAILED ASSESSMENT OF OBSERVANCE OF THE PRINCIPLE

### **Principle 2: Governance**

#### **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.***

The corporate purpose of CRCC S.A. is to provide clearing services as a central counterparty in transactions, to reduce or eliminate the risks of default with the obligations arising therefrom. To this end, it adopted an operating and risk model that allows CRCC S.A. to meet its objectives with high efficiency and safety standards, contributing to the development of the Colombian capital market.

The Board of Directors has established the strategic objectives for the Company, which are regularly monitored.

#### **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.***

The CRCC has governance arrangements that generate clear responsibilities and lines of accountability. The Securities Act and Decree 2555 of 2010 establish a few governance aspects, such as the creation of the Board of Directors with the participation of independent members and the creation of at least two committees, the Risk Committee and the Audit Committee with the participation of independent members. CRCC has a Corporate Governance Code that complements the other CRCC regulations (Bylaws, Code of Ethics and Conduct, Regulations of the different bodies). Governance Arrangements incorporate the rules for nomination and election of members of the Board of Directors. The Governance Arrangements are published on the Chamber's website.

Key functions such as risk management and internal audit have enough independence.

#### **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.***

The Bylaws clearly set out the functions of the Board of Directors. The procedure to be followed in the event of conflict of interest is provided for in the Bylaws and the Governance Arrangements.

#### **Key Consideration 4:**

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

Decree 2555 of 2010, with respect to the composition of the Board of Directors of a central counterparty risk clearing house establishes: i) if a shareholder owns more than 50% of the central counterparty risk chamber, at least 40% of the Board of Directors must be made up of



independent members and 20% of the Clearing Members (participants) of the central counterparty, or ii) if not, 40% of the Board of Directors of CRCC must be composed of independent members.

In accordance with the provisions of the Governance Arrangements, the Board of Directors and its Committees are evaluated annually by means of an individual and a collective self-assessment, to establish the levels of efficiency and effectiveness in the fulfilment of their duties and functions, the achievement of the objectives of said bodies, observance by their members, of the principles and responsibilities established for them, and to identify improvement measures.

CRCC has 3 Committees: Risk Committee, Audit Committee and Administrative and Financial Committee

**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.***

CRCC defined the profile and manual of functions for each of the senior management positions, which are reviewed periodically so that the persons designated to exercise them have the appropriate experience, skills and integrity necessary for the responsibilities they must assume.

**Key Consideration 6:**

***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.***

The Board of Directors is responsible for studying and approving the risk management policies of CRCC S.A., which must be submitted for its consideration by the Company's Risk Committee, as well as for monitoring the Company's risk management. The responsibilities and lines of accountability are clear in the rules of CRCC S.A. The Board of Directors defined its risk tolerance policy through the definitions of the limits granted to members.

The applicable rules, Decree 2555 of 2010, require that CCPs have at least two committees. Among them, a risk committee, therefore, CRCC S.A. has a Risk Committee composed of 5 members of which at least 2 are independent. The Committee submits risk policies to the Board of Directors for consideration.

**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.***

The decisions adopted by the Board of Directors that involve changes in policies or procedures regulated in the Guidelines or in the Single Circular are duly published through Regulatory Bulletins on the Company's website.

#### **KEY CONCLUSIONS FOR PRINCIPLE 2:**

CRCC is a corporation subject to inspection and oversight by the Superintendence of Finance of Colombia, whose corporate purpose is to provide clearing services as a central counterparty for operations. To this end, CRCC has a solid regulatory basis, through which it establishes the governance arrangements of CRCC, formed by the Securities Act, Decree 2555 of 2010 and its internal regulations, which develop and complement these normative provisions.

Based on this solid regulatory framework, CRCC ensures that it has documented governance arrangements that clearly establish and describe the roles, responsibilities and lines of accountability of the different management bodies.

In consideration of the transparency that the market must have, the main decisions adopted by the different administrative bodies of CRCC involve the perspectives of its Members, the market in general and independent persons of CRCC and are communicated to its shareholders, authorities, Members and the public as it deems appropriate.

#### **ASSESSMENT OF PRINCIPLE 2:**

Principle 2 referred to Governance is **OBSERVED** by the CRCC.

#### **PRINCIPLE 3: COMPREHENSIVE RISK MANAGEMENT FRAMEWORK**

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

##### *Summary narrative*

CRCC as a Central Counterparty (CCP) authorized by the Financial Superintendence of Colombia, in accordance with the provisions of the Law 964 of 2005 and Decree 2555 of 2010, has a risk system which includes:

- Comprehensive risk management model
- Risk policies.
- Risk procedures.
- A technological risk management system licensed to CRCC by the companies of the Grupo de Bolsas y Mercados Españoles (BME), which allows the CCP to identify, measure and manage risks on real time basis.

CRCC has a comprehensive risk management model to manage: i) the risks associated with the development of the main objective of CRCC, i.e. clearing and settlement as central counterparty for the transactions accepted and ii) the risks that CRCC generates to its participants.

CRCC has a comprehensive risk management framework in place that sets out the following:

- Policies, procedures and controls that allow CRCC to identify, measure, monitor and manage the risks it assumes as a central counterparty, which are approved and periodically reviewed/evaluated by pre-established and clear corporate governance bodies. These rules are disseminated to market participants through the Rulebook and the Circular on the website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).

- Management of the CRCC risk model through the technological risk management system, which focuses on the monitoring and measurement of exposures to participants at the account level and aggregated at the Clearing Member level, for credit, market and intraday concentration risks (real time for positions and every 5 minutes for risk calculations) and at the end of the day.
- Aligned incentives through the different policies adopted and safeguards established such as: i) the calculation of risk at the account level, ii) the creation of a Default Fund by the Clearing Members, which purpose is to cover any possible losses that may arise from the default of a Clearing Member and which are not covered by the margin pledged by that Member as Initial margin or of any other type, and iii) to allocate part of the equity of the CRCC, known as the Skin-In-The-Game (SITG) as specific assets to cover losses prior to the use of the default fund.
- Periodic assessment by the Audit and Risk Committees, which report to the Board of Directors, on the risks including the risks arising from their interdependence with other FMI.
- For each of the entities with which it interacts, there are bilateral agreements in which the obligations of the two infrastructures are established, as well as service agreements, and the procedures and protocols to resolve: incidents/contingencies, halts, default processes, contingency mechanisms and service continuity in the event of an operational risk event.
- Discern scenarios that could potentially prevent CRCC from providing its most important activities and services, such as: i) operational risk events and ii) counterparty risk, which is measured, monitored and managed in real time to keep it under control.
- Finally, CRCC has clear and effective procedures established in its Rulebook to manage the processes of default by one or more of its Members. The rules stipulate the steps for closing positions, the order and sequencing in which margin and other financial resources available to CRCC may be used to protect the integrity of the market it clears and of the non-defaulting clearing members by mitigating the losses that may arise.
- Article 8 of the Articles of association of CRCC establishes, as a recovery mechanism, the obligation for shareholders to subscribe shares when, by a legal rule or an order of a competent authority, there is a mandatory raise of capital.

<b>Key consideration 1:</b>	<b>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.</b>
<i>Description</i>	<p><i>Risks that arise in or are borne by the FMI</i></p> <p><b>Q.3.1.1: What types of risk arise in or are borne by the FMI?</b></p> <p>The risks of the main activity of the CRCC, i.e. central counterparty clearing and settlement, are:</p> <ol style="list-style-type: none"> <li>1. Systemic Risk.</li> <li>2. Legal Risk.</li> <li>3. Credit risk: replacement cost risk + market risk generated by potential future exposure + concentration risk.</li> <li>4. Liquidity Risk.</li> <li>5. Operational Risk.</li> <li>6. General Business Risk.</li> <li>7. Investment Risk.</li> </ol> <p>The risks that the CRCC poses to its participants are:</p> <ol style="list-style-type: none"> <li>1. Systemic Risk.</li> <li>2. Legal Risk.</li> <li>3. Credit risk generated by exposure to CRCC.</li> <li>4. Liquidity Risk.</li> </ol>

5. Operational Risk.
6. General Business Risk.
7. Investment Risk.
8. Model Risk.
9. Credit risk generated to the Clearing Members by: i) solidarity contributions through the Collective Guarantee Fund, ii) replacements of said contributions; and iii) obligatory/voluntary contributions for the continuity of the service.

*Risk management policies, procedures and systems*

**Q.3.1.2: What are the FMI's policies, procedures and controls to help identify, measure, monitor and manage the risks that arise in or are borne by the FMI?**

CRCC, as an authorized CCP overseen by the SFC, has a comprehensive risk management framework in which policies, procedures and controls have been established to enable the CRCC to identify, measure, monitor and manage the risks it assumes as a clearing and settlement system.

As established by the corporate governance of the CRCC, the procedures, methodologies, parameters and risk controls are approved by the Risk Committee, which meets monthly. Notwithstanding, extraordinary meetings can be scheduled in cases that, due to their urgency, require timely decisions to avoid or control any risk that may affect CRCC. Risk policies are recommended by the Risk Committee and approved by the Board of Directors.

The risk management policies are set out in the CRCC Rulebook, the Circular and Risk Model. Changes to the Rulebook have the following four phases: i) Senior Management prepares the proposals for change or amendment, ii) the proposals for change or amendment are published for comments from the Members, iii) the Board of Directors reviews the comments of the Members and approves the proposal for modification and addition to the Regulations and iv) the Superintendence of Finance of Colombia authorizes the changes or amendments of the Regulations (for more information, see Principle 2: Good Governance).

In the aforementioned rules, in the technical document of the risk model, in the Articles of Association, in the Corporate Governance Code and in the regulations of the different corporate bodies, the persons responsible for risk management at CRCC, the bodies responsible for making decisions, identifying risks, reviewing procedures and/or controls, as well as approving risk parameters, methodology and model are established.

CRCC has defined that the Chief Operating Officer is responsible for the day-to-day monitoring of risk and the administration of the operational model regarding credit, market, concentration and liquidity risk, and the Chief Risk Officer is responsible for designing risk methodologies, proposing risk parameters and for the day-to-day supervision of the risk management model. The Risk Committee reviews the risk parameters, methodologies, controls and procedures, the performance of the safeguards (including verifying of compliance with the requirements for maintaining Clearing Member status), the adequacy of the margin requested, the back-testing and periodic stress tests, and the adequacy of the Guaranty Fund's resources.

Changes to controls, procedures, methodologies and parameters are approved by the Risk Committee while risk policies are reviewed and recommended by the Risk Committee for approval by the Board of Directors. The Risk Committee also approves the operational risk methodologies and is where the events related to operational risk are presented, analyzed, and the corresponding action plan developed. The Audit Committee analyses the incidents found in relation to cybersecurity, information security and the business continuity plan.

The main mechanisms in place at CRCC designed to control risk are as follows:

- Intraday and daily valuation at market prices of the positions at the individual account level.
- Requested Initial Margin is calculated with at least 99.5% confidence at two tails, reasonably conservative and stable. The parameters must be calculated using a time window of at least 1 year that must contain at least a crisis period.
- CRCC has implemented concentration margin on large positions. This add-on margin increases the settlement period and thus the required requested margin for these positions strengthening the safeguards and disincentivizing the behavior to accumulate large positions.
- There are individual collateral pledged at the Member level for each of the Segments, which may be required for various reasons as i) to cover any decline in the Member's credit levels, ii) to cover intraday mark-to-market, iii) to provide additional coverage to the default Fund under stress conditions, iv) to make up for the shortage of margin if the calculated risk exceeds the risk limits granted and v) to cover part of the replacement cost generated by the intraday moves (mark-to-market intraday).
- Extraordinary margin, intraday margin calls are required if 75% of the Initial margin is exceeded due to intraday market moves. For sale positions on contracts with delivery, the CCP can request extraordinary margin, which must be posted on the same asset to be delivered. For the Swaps Segment, extraordinary margin due to will be requested when 50% of the IM for the any generic Swap (1y, 2y, 5y, 10y or 15y) is consumed by the move on rates observed in the market.
- Everyday risk under stress will be assessed by running multiple scenarios based on historic and hypothetical moves to determine if the funded financial resources cover the default of the 2 members and its subsidiaries with the highest exposure. If there is a shortfall, additional Individual guarantees will be requested from the 2 largest Members into the default fund, on a pro rata basis.
- The financial condition of Clearing Members is checked monthly along with an early warning system based upon market indicators.
- During the day and at the end of the day, the collateral posted is compared against the margin required to validate it is sufficient to cover the calculated risk. The collateral is valued daily at market prices and is subject to stable and reasonable haircuts, considering their estimated settlement period. The haircut applied shall be at least the haircut required by the Central Bank as CRCC has access to the Central Bank's liquidity facility.
- Daily backtesting with weekly reporting is performed to verify the coverage of the requested margin, the validity of the risk parameters and the risk model.
- The liquid resources available to CRCC are verified to be sufficient to cover the average settlements of the largest Member. To meet its liquidity obligations, CRCC has its cash, liquid securities, access to overdraft facilities, access to the Central Bank's discount window and access to collateral deposited in cash at CRCC in the event of delay/default.
- There is a business continuity and contingency plan with periodic testing of CRCC 's infrastructure, which is monitored by the Audit Committee, which is made up of three (3) members of the Board of Directors, of which at least two (2) members must be independent members.
- There are risk methodologies approved by the Risk Committee for the calculation of risk parameters and effective and efficient procedures defined for the Members to pledge guarantees to the CRCC. For securities, these are immobilized under the name of the CRCC in the securities deposits and in the case of cash they are credited to CRCC account solely for the purpose to hold collateral at the Central Bank.
- There are defined procedures for managing a default which clearly specify the sequence in which the financial resources held by the CRCC are executed. The default procedure was tested in practice in 2012 after a General Clearing Member's defaulted and the CRCC managed the process. Starting in 2018, annual fire drills will begin. (for more information see Principle 13).

- New regulation drafts are reviewed daily by the legal area and by the Senior Management. There is an Internal Audit, which depends on the Board of Directors, that reviews the compliance of the procedures adopted by the CRCC.

**Q.3.1.3 : What risk management systems are used by the FMI to help identify, measure, monitor and manage its range of risks?**

The risk management systems used by CRCC, are MEFF S/MART and SwapManager, both systems are licensed by companies that are part of the BME Group of which BME CLEARING - CCP based in Spain -belongs. The systems focus on the monitoring and measurement of exposures to Members at the individual account level and aggregates credit, market and intraday concentration risks at the Member level. Calculations are done in real time for positions and every 5 minutes for risk calculations, Final calculations are done at the end of the day.

The system currently comprises the following main integrated modules:

- Limits: every five minutes it calculates, with real position and prices, the exposure for each individual account and for Clearing Member's accounts, the results are aggregated at the Clearing Member level to determine the consumption of the Intraday Risk Limits and Margin Call Limits granted to Clearing Members by the Board of Directors of CRCC. In addition, it allows real-time risk simulations, simulating changes in parameters and/or positions.
- SGG (Collateral Management System): contains the record of all the collateral posted. It values the securities daily at market prices with the prices received from Precia Proveedor de Precios para Valoración S.A. (official market price supplier of CRCC) and applies the haircuts.
- CyL: This module collects the risk data from Limits and SGG, compares them with the margin deposited in the SGG module and calculates at the end of day cycle, the required margin in cash before 8:00 a.m. the next business day. Debits/credits from the multilateral net cash settlement are made through automatic debit directly to the Central Bank's accounts. The Clearinghouse system provides the information on the cash requirements, through CRCC stations, both at the individual account level and at Member level, during the intraday and at the end of the day.
- Supervisor: calculates and manages the risk derived from the received and accepted operations at an Individual account level. This module values the positions, calculates the required margin through H-VaR and ES algorithms, calculates de coupon payments, variation margin, price alignment and the information provided to the clearing members.

The CRCC system provides information to the Members throughout the day, through the SMART system terminals, the Web Portal and SFTP connection. The members have access to information on transactions, positions valued at official prices and risk parameters, so that they can keep track of their required margin, posted collateral, risk matrices for different scenarios, variation margin pending, profit and loss settlement, premium settlement for options. This information is delivered at the individual account level and aggregated at the Member level. Additionally, at the end of day, the applications provide Members with the consumption of their risk limits, the risk of the worst-case stress test scenario and the inventory of the customer accounts managed.

All CRCC information complies with detailed procedures for the proper management of change control, project execution and an information security management system that is aligned with good practices and with the rules established by the SFC.

**Q.3.1.4 : How do these systems provide the capacity to aggregate exposures across the FMI and, where appropriate, other relevant parties, such as the FMI's participants and their customers?**

The risk is aggregated at the Clearing Member level in all the risk management modules of CRCC and can be broken down to the level of individual account or Member's position. The cash settlement is aggregated by Clearing Member,



so a single net debit or credit transaction is executed in the multilateral settlement process of the next session before 8:00 a.m.

CRCC provides information to its Members through standardized communication channels. The channels through which it interacts with Members are the SMART system terminals, the SFTP server and the web portal. In the terminals the information is provided through text files and FIX protocol. The SFTP hosts the public and private files in CSV of fpml formats. The Web Portal is a web-based mechanism that allows the user to query information on transactions, open positions, guarantees and transaction simulators through a browser to facilitate the control and daily operations of Members.

*Review of risk management policies, procedures and systems*

**Q.3.1.5: What is the process for developing, approving and maintaining risk management policies, procedures and systems?**

The development and changes to the risk management system and risk management policies are reviewed and recommended to the Board of Directors of CRCC by the Risk Committee. The Board of Directors is the body that approves any developments or changes to the risk management system. The procedures or changes in them are presented by Senior Management to the Risk Committee, which has the power to approve the new procedures or changes.

Changes in policies or to the risk management system are included in the Rulebook, when appropriate, after approval by the Board of Directors of CRCC and the SFC. Changes in procedures are included in CRCC Circular which is issued by the Manager. The Central Bank is informed of the contents of the circulars in advance. Updates on the size of the Default Funds, eligible sovereign debt TES securities and applicable haircuts calculated based on approved methodologies are communicated to Members through Newsletters.

New products are reviewed by the Risk Committee and approved by the Board of Directors. Subsequently, its characteristics and risk management and operational mechanisms are presented to the SFC to comply with the non-objection procedure established in the Operating Regulations. In the case of standardized exchange products, regulations from the Central Bank are required.

Each time a new functionality is implemented in the system or a new version of the system is installed, a project work scheme is developed in which technical, functional and risk tests are carried out on the functionality or the new version in different environments before it gets released in the production environment: The test are carried out to verify all the interrelations of the system and its modules work well.

**Q .3.1.6: How does the FMI assess the effectiveness of risk management policies, procedures and systems?**

The effectiveness of CRCC 's risk management system is assessed on a daily, weekly, monthly and monthly basis through the following main activities:

Daily activities:

1. Backtesting of parameters and the margin model to ensure that a 99.5% confidence level is attained.
2. Stress test of the Default Fund for each of the Segments, to confirm that the funded financial resources across the safeguards are sufficient to cover the joint default of the two largest Members and its subsidiaries, if this is not met, Margins are requested from the two Members with the largest exposure in the following day's net multilateral settlement.



	<ol style="list-style-type: none"> <li>3. Senior Management receives a daily report with: market volume, open positions per underlying, Margin Required, Collateral Deposited, Stress Test of the Collective Guarantee Fund, compliance with CRCC policies and revenue.</li> <li>4. The COO verifies that the intraday and end-of-day settlements/information is sent correctly and on time to Members. In addition, it keeps statistics of closing hours after the end of day cycle is completed.</li> </ol> <p>Weekly activities:</p> <ol style="list-style-type: none"> <li>1. Senior Management receives a report on the outcome backtesting of the Parameter and Risk Model so that it can make quick and appropriate decisions regarding the risk management system or convene a Risk Committee or Board of Directors meeting.</li> </ol> <p>Monthly Activities:</p> <ol style="list-style-type: none"> <li>1. Report is presented to the Board of Directors and the Risk Committee with the following information: i) quantitative analysis of the Members, ii) open positions per underlying, iii) results of Backtesting, iv) results of the stress test of the Default Fund, v) early warnings of the Clearing Members and vi) Deposited Collateral, Required Margin, concentration by type and underlying of the Deposited Collateral.</li> <li>2. Evolution of the amount of CRCC cash settlements of the largest Members by the size of their daily settlements.</li> <li>3. Statistical report on the time of operational closing of the clearing and settlement system.</li> </ol> <p>Activities with a periodicity greater than monthly and at maximum yearly:</p> <ol style="list-style-type: none"> <li>1. Review of risk methodologies, criteria and procedures.</li> <li>2. Review of the Operational Risk Management System - SARO.</li> <li>3. External validations by the Tax Auditor of the risk management systems applied to it. The tax auditor checks whether the systems are properly implemented and working properly. Validation is carried out on an annual basis.</li> <li>4. Yearly third-party validation of parameters and risk model from 2016 onwards. This review is conducted in addition to the Internal Audit reviews.</li> </ol> <p><b>Q.3.1.7: How frequently are the risk management policies, procedures and systems reviewed and updated by the FMI? How do these reviews take into account fluctuation in risk intensity, changing environments and market practices?</b></p> <p>CRCC reviews the criteria and procedures on a yearly basis. An independent validation was carried out in 2016. (for more information see Q.3.1.6.)</p> <p>The legal area is constantly reviewing changes in the regulatory environment while market practices are reviewed by the CRO and the COO. Based on this analysis, the risk management system is assessed and the required changes in the system are submitted for consideration to the corresponding governance bodies to be reviewed.</p> <p>CRCC uses statistical techniques such as backtesting analysis to detect changes in asset price risk behavior in timely manner so timely decisions can be adopted in the event of a substantial change in volatility and/or anomalies of market behavior. Likewise, the methodologies for calculating the parameters consider the market's historical behavior.</p>
<p><b>Key consideration 2</b></p>	<p><b>An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.</b></p>

Description	<p><b>Q321 : What information does the FMI provide to its participants and, where relevant, their customers to enable them to manage and contain the risks they pose to the FMI?</b></p> <p>CRCC provides participants with the following information to manage and contain intraday and end-of-day risks:</p> <ul style="list-style-type: none"> <li>- Calculation of risk according to the methodology defined by CRCC, which is defined in the Circular at the Individual account level and at the aggregate level.</li> <li>- Information on transactions, trade management, positions, prices, risk parameters, risk matrices for different scenarios, collateral requirements, margin calls, posted collateral, profit and loss settlements and premium settlements for options at individual account (customers) and aggregate level.</li> <li>- Default Fund stress test.</li> <li>- Consumption of Intraday and Margin Call Risk Limits.</li> <li>- In the case of a Margin Call, Extraordinary margin at the Member level and disaggregated information at the individual account level.</li> <li>- Detailed information on margin requested, parameters, operational sessions, procedures, which are listed in CRCC Circular on the website.</li> <li>- The Circular, the Regulatory and Information Bulletins and the Rulebook are available on the CCP's website at the following address: <a href="http://www.camaraderiesgo.com/regulacion/regulacion-camara/">http://www.camaraderiesgo.com/regulacion/regulacion-camara/</a></li> </ul> <p><b>Q322 : What incentives does the FMI provide for participants and, where relevant, their customers to monitor and manage the risks they pose to the FMI?</b></p> <p>The main incentive participants must actively monitor and manage of their own portfolio and those of their customers is that, the greater the risk exposure of a Member, the more collateral the clearinghouse will require. Notably, when the Margin Call Limit is exceeded, Extraordinary margin, which than proportional to the increase in risk, is requested. Likewise, the implementation of the Default Fund, through which the losses of the defaulting Clearing Member are covered with the financial resources from the non-default Members, is a clear incentive for all involved parties which align them with the interests of CRCC in protecting the risk management system of Clearinghouse. In addition, CRCC is exposed to losses in an event of default through the so-called "Skin in the Game", which implies that prior to using any of the financial resources of the non-defaulting Members, the CRCC allocates from its assets a value equivalent to 25% of the minimum regulatory capital required by the regulation, to cover the losses from the Member in default. The CRCC is incentivized to protect its SITG and thus aligned with an effective management of CRCC 's risk management system.</p> <p><b>Q323 : How does the FMI design its policies and systems so that they are effective in allowing their participants and, where relevant, their customers to manage and contain their risks?</b></p> <p>In order to ensure that Members effectively control their own and their customer's exposures, CRCC provides its Members with all information, both intraday and at the end of the day, related to transactions, positions, variation margins, settlement, collateral required and posted, disaggregated at the individual and aggregated at the Member account level, so that the Member can control each of its customers and its own positions.</p>
Key consideration 3	<p><b>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.</b></p>

Description	<p><i>Material risks</i></p> <p><b>Q.3.3.1: How does the FMI identify the material risks that it bears from and poses to other entities as a result of interdependencies? What material risks has the FMI identified?</b></p> <p>In accordance with the Rulebook, article 1.2.1, CRCC enters into agreements with stock exchanges and with entities that administer systems or other trading mechanisms in which transactions are negotiated or registered that may be accepted for central counterparty clearing and settlement. It has also agreements with clearing and settlement systems, payment systems and centralized securities depositories. These agreements establish the relations and interactions between the systems, the conditions under which they must be interconnected and the responsibility of each party.</p> <p>Similarly, Article 2.6.4 of the rulebook states that the settlement of accepted transactions is carried out through the Central Bank and centralized securities deposits. The settlement is governed by the regulations of the entities and they shall be responsible for any errors or omissions they may make when performing of their duties.</p> <p>The risks that have been identified in the interoperability between CRCC and other systems, being these entities supervised by SFC, are mainly focused on operational risk aspects, such as: (i) failures, delays or errors in the delivery of information by the parties, on operations, on the status of the Members and on the hours of operation. In relation to such failures, the parties establish contingency mechanisms to be used to avoid affecting market participants. The agreements also establish the responsibility of each of the parties, a responsibility that is in line with the main purpose under which each entity has been authorized by SFC.</p> <p>As they are entities overviewed by SFC, they have contingency and business continuity plans that detail the procedures to minimize the impacts of the risks identified within the critical processes and in accordance with the RTO (Recovery Time Objective) established. The response and recovery procedures contained in the business continuity plan cover the physical, technological and operational infrastructure components.</p> <p>In addition to the provisions of the continuity plan, the following policies are established to mitigate the risks that have been identified:</p> <ul style="list-style-type: none"> <li>- Back-ups and redundancy of technological infrastructure and human resources.</li> <li>- agreements with clear and explicit obligations and responsibilities, as well as established operational work-flows for the activities in which they are interconnected and the technological standards, communication protocols, used between the FMI for the exchange of information and resolution of incidents.</li> <li>- Tests between infrastructures and Members when implementing adjustments to systems, processes or products.</li> </ul> <p>To mitigate the risks of inaccurate information submitted by another system, CRCC performs the following procedures daily: Validation that the market prices used by the system are those published by the official price vendor. CRCC reconciles the collateral deposited against the inventory in the central securities deposits (DVC and DECEVAL) and the cash required by the CUD. For repo operations on government securities traded through SEN system, that the operations received by CRCC system are the same as those sent by the SEN. For Cash Lending operations, the operations received by CRCC system are compared to those sent by the BVC to verify they match.</p> <p><b>Q.3.3.2: What risk management tools are used by the FMI to address the risks arising from interdependencies with other entities?</b></p>
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The Statutes of CRCC establish that the Audit Committee is responsible for supervising the continuity and contingency plan of the entity. Therefore, CRCC has a strong internal audit function whose results are presented to the Audit Committee, which is composed of members of the Board of Directors who provide an independent assessment of the effectiveness of CRCC's risk management and control processes. For specialized technological issues, third-party audit services are contracted to verify the effectiveness of the controls available to the technological infrastructure.

CRCC has a real-time business monitoring system. This system measures the performance of the operation and its processes through tools such as BSM (Business Service Management) and Spotlight to respond promptly to any adverse event and that automatically generate service availability indicators. CRCC makes a constant effort to automate processes as much as possible. Controls and checklists are in place to mitigate operational risks.

The effectiveness of the controls is reviewed by Senior Management and the Internal Auditor, and the results are presented to the Audit Committee on a quarterly basis. Operational risk incidents, their diagnosis and action plans are presented to the Risk Committee monthly. Operational risks and their controls are reviewed annually, a process in which new risks are identified, existing controls are improved, and new controls are incorporated. For a new product or service, operational risks are identified, and controls are established.

#### *Risk management tools*

#### **Q.3.3.3 : What risk management tools are used by the FMI to address the risks arising from interdependencies with other entities?**

RCC controls its exposure to risks due to its interdependence with other entities entering into agreements establishing the obligations and activities of each of the infrastructures, operations, communication protocols, hours, service levels, procedures for resolving incidents/contingencies, in the event of an operational risk event. Additionally, there are functional and technological annexes in which specific procedures are established with a high level of detail and technological communication protocols are specified. It has been established that changes in any infrastructure must be comprehensively tested before being put into production (between infrastructures and with Members) to ensure the proper functioning of the service to the market.

In Colombia, a working group that includes the SFC, has been created to deal with market crisis management. CRCC is part of this market crisis management group in which critical infrastructure providers participate with the objective of jointly establishing the crisis management protocol for events that represent risks of great magnitude which could become systemic. On its end, CRCC has defined a continuity plan that is monitored by the Audit Committee, which establishes the mechanisms for offering its services without interruption.

CRCC is not interdependent with others CCPs.

#### **Q.3.3.4 : How does the FMI assess the effectiveness of these risk management tools? How does the FMI review the risk management tools it uses to address these risks? How frequently is this review conducted?**

CRCC has management indicators on service availability to the market through which it measures how long the service has been up, the latter due to operational or infrastructure incidents.

At its quarterly meetings, the Audit Committee reviews the indicators of availability of the service provided to Members and the Risk Committee analyses operating risk events monthly, verifying the diagnosis of each incident, the controls and the action plan to reduce the frequency of the incident. This action plan may include new controls or procedures

	<p>which may even modify the operating or technological agreements signed with the entities with which it is interdependent.</p> <p>CRCC has the following online indicators to constantly check the effectiveness of risk management tools:</p> <ul style="list-style-type: none"> <li>- Service availability (up-time).</li> <li>- Capacity that verifies the availability of the servers in terms of memory, disk and processor to meet the demand of the entity</li> <li>- Service indicator based on incidents and requests reported to the help desk closed on set timeframes.</li> <li>- System opening and closing indicators.</li> <li>- Reconciliation of operations and collateral to identify deviations</li> <li>- A service indicator that is measured through a member satisfaction survey of the services provided by CRCC.</li> </ul>
<b>Key consideration 4</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Scenarios that may prevent an FMI from providing critical operations and services</i></p> <p><b>Q.3.4.1: How does the FMI identify scenarios that may potentially prevent the FMI from providing its critical operations and services? What scenarios have been identified as a result of these processes?</b></p> <p>CRCC is a CCP authorized to operate as such by the SFC, therefore it has procedures to identify the risks to which it is exposed in the development of its corporate purpose and which may have an impact on its income, expenses and/or equity of the entity.</p> <p>CRCC has developed a Business Impact Analysis (BIA), in which the economic impact on income, expenses and/or capital due to: (i) the suspension or inactivity as a result of an incident or failure that affects business continuity; (ii) insufficient resources in the safeguards (available financial resources) to cover losses from the default of one or more Members; (iii) the occurrence of a general catastrophe. In the BIA, the types of risk and their sources are classified by their level of impact and probability of occurrence of affecting the activities of CRCC.</p> <p>Identified scenarios that would prevent CRCC from continuing to provide its services to market participants:</p> <ul style="list-style-type: none"> <li>- CRCC has a business continuity and contingency plan, which establishes failure and recovery scenarios as part of its continuity policies. CRCC has redundancy eliminating single points of failure. The plan identifies the critical functionalities, operations and resources; backups, support levels or redundant mechanisms have been designed, specifying the procedures to be followed to return to normal operation. To ensure that the continuity and contingency plan is effective and efficient, tests are regularly carried out to verify that the controls defined are effective and efficient to guarantee the continuity of service. More details about the business continuity plan can be found at the following link: <a href="http://www.camaraderiesgo.com/saro">http://www.camaraderiesgo.com/saro</a></li> <li>- As mentioned in C:3.3.1, the CCCC has links with other FMIs, with which agreements have been established to determine reciprocal obligations, service levels, procedures and contingency and continuity mechanisms in the event of an operational risk event. These agreements, among other things, regulate the obligations of each party</li> </ul>

and the coordinated procedures/protocols to be implemented to achieve early recovery of essential activities. The continuity and contingency plan and the BIA are reviewed and audited annually, and the results are presented to the Audit Committee

The effectiveness of these procedures is verified annually as part of internal and external audits. Refer to principles 17 and 20 for more information.

- Liquidity: Credit exposure to its Members is measured on the intraday and at the end of the day to establish the liquidity needs of the Members in D+1: i) the daily multilateral net settlement takes place each morning before 8:30 a.m., through debits and credits at the CUD system of the Central Bank and ii) for repos and repos during the defined session. To resolve the delay events in the daily settlement, CRCC has the following alternatives: i) lines of credit/overdraft with banking institutions, ii) the option of using the cash posted as collateral constituted by the participating Members of the Clearinghouse, iii) market operations with available securities (Repos), iv) access to the Central Bank's discount window as an agent for placing OMAs (ACOs) and v) cash resources and/or the Clearinghouse own securities.
- Stress scenarios have been defined in which the liquidity needs of the two Members with the largest exposure are established at the end of the day, see Principle 7.
- Insufficient margin and financial resources (all safeguards) to cover the default of one or more Members. In the event of a default by one or more Members, CRCC has established a clear and orderly procedure in its Rulebook to manage the defaults and increase its resilience and be able to recover. The default management waterfall is detailed in Q.4.7.1.
- This risk is mitigated by CRCC as follows: i) for CRCC 's own resources there is a very conservative investment policy approved by the Board of Directors, in which capital protection is given priority over profitability (short-term securities issued by the Republic of Colombia (TES) and savings accounts in AAA rated entities) and ii) the investment policy of the cash collateral of the Members has been approved by the Board of Directors of CRCC and included in its Regulations and has therefore been approved by the SFC. With the cash received as collateral, only overnight investments guaranteed by TES securities are made.
- Losses due to poor management of the entity: CRCC has an Administrative and Financial Committee made up of members of the Board of Directors, which monitors bimonthly: i) the results of the company, financial indicators, compliance with the income, expenditure and investment budget, ii) investment portfolio, iii) progress of projects for the development of new business lines, iv) net liquid assets, and v) development of the commercial area. The regulation has established a minimum capital requirement for CRCC and the Board of Directors has defined a policy for establishing the minimum net liquid assets.

**Q.3.4.2 : How do these scenarios take into account both independent and related risks to which the FMI is exposed?**

The scenarios set out in C:3.4.1 state, but not exhaustively, that the independent and related risks to which CRCC is exposed require a legal framework and regulation in place that allows the overseer to have a set of legal procedures and powers at its disposal with sufficient freedom to stop the CCP from deteriorating and contain contagion to the rest of the financial system.

*Recovery or orderly liquidation plans*

**Q.3.4.3 : What plans does the FMI have for its recovery or orderly wind-down?**



	<p>CRCC S.A. has clear and transparent procedures established in its Rulebook, which have been approved by the Superintendence of Finance of Colombia, regulating:</p> <ul style="list-style-type: none"> <li>- Procedure for the transfer of open positions of clients of a defaulting Member to another Member of CRCC.</li> <li>- Procedure for closing positions in the market or through voluntary and/or mandatory auctions.</li> <li>- Procedure in which it is established how losses are absorbed.</li> <li>- Procedure in which the financial resources funded are replenished, such as the replenishment process of the Default Fund.</li> <li>- Procedure for requesting Mandatory and Voluntary Contributions.</li> <li>- Obtain liquidity through overdraft facilities granted by banking institutions, obtain liquidity from the Central Bank and the power to use the cash collateral provided by Members, in Colombian pesos or US dollars, in the event of a default.</li> <li>- Infidelity and financial risks insurance policy.</li> <li>- In addition to the foregoing, the Company's Articles of Association establish a capitalization obligation for shareholders, Article 8, according to which shareholders are required to subscribe shares in proportion to their interest in the equity stake, when by a legal rule or the order of a competent authority there is a capitalization of the company.</li> </ul> <p>Currently, Colombian legislation establishes an intervention process for entities subject to inspection and oversight by SFC, through a takeover to manage or liquidate the entity. There is no specific recovery or resolution procedure for the FMIs in general or for the CCP. However, as the supervisory authority for financial institutions and the securities market, its expertise should enable it to intervene and take such action as it deems appropriate to manage (recover) or liquidate a CCP.</p> <p><b>Q.3.4.4 : How do the FMI's key recovery or orderly wind-down strategies enable the FMI to continue to provide critical operations and services?</b></p> <p>See answer to question Q.3.4.3.</p> <p><b>Q.3.4.5 : How are the plans for the FMI's recovery and orderly wind-down reviewed and updated? How frequently are the plans reviewed and updated?</b></p> <p>See answer to question Q.3.4.3.</p>
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#### DETAILED ASSESSMENT OF OBSERVANCE OF THE PRINCIPLE

##### **Principle 3: Comprehensive Risk Management Framework**

##### **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***

CRCC is a central counterparty authorized by the SFC and is subject to its inspection and oversight. It has defined a comprehensive risk management framework in which policies, procedures and controls have been established to enable CRCC to identify, measure, monitor and manage the risks it assumes as a central counterparty clearing and settlement entity.



The corporate governance of CRCC has clearly established the levels of approval of policies, products and procedures of the entity's risk model (Risk Committee, Audit Committee, Administrative and Financial Committee and Board of Directors), which are made available to Members through the Rulebook, Circulars and Bulletins published on the website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).

CRCC has several mechanisms and tools that allow it to measure, control and monitor the risks it faces and provides its Members with detailed and secure information so that they can control their own risks and those of their third parties through a robust technological platform. CRCC has implemented the following control mechanisms: i) daily valuation at market prices for margin requirements to mitigate the replacement cost, ii) requests initial margin, iii) Individual margin, iii) Extraordinary margin, iv) stress tests the Default Fund, to ensure that sufficient resources are available to manage the default of the two largest Members and its subsidiaries for each Segment, (vii) procedures and methodologies to validate the adequacy of parameters and risk model, (viii) calculation of concentration risk and (ix) operational risk management system, (x) business continuity plan and (xi) CRCC recovery plan.

The effectiveness of the policies, procedures and parameters is reviewed periodically by the corporate governance bodies and bodies of CRCC.

### **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.***

CRCC publishes on its website its Rulebook and Circular, which contain the procedures, rules and risk models applicable to the clearing and settlement of transactions. If a Member has doubts or questions, there is a help desk at the Operations and Risk Assistant Manager's Office and training sessions are also scheduled to resolve questions/issues on site.

The calculation of the requested margin is based on the risk at the individual account and is aggregated at the Clearing Member level, which encourages both the member and its customers to manage and control the risk of their account structure. The CRCC provides information to its Members, in the intraday and at the end of the day, so that they can control its customers and their own risks.

The implementation of the Default Fund, through which the losses of a defaulting Member are shared among the non-defaulting Members in the Segment, is a clear incentive that aligns all participants with the interests of CRCC in protecting the risk management system. In addition, CRCC is committed to the system with the "Skin in the Game", which puts the Clearinghouse own resources at risk to cover losses due to a default before the collateral of the non-defaulting members can be used. The CRCC allocates from its assets a value equivalent to 25% of the minimum regulatory capital required by the regulation, to cover possible losses in the event of a default. This aligns the incentive of the Clearing house to effectively manage the Risk Model.

### **Key Consideration 3**

***An IMF should regularly review the significant risks to which it is exposed by other entities and which it represents for other entities (such as other IMFs, settlement banks, liquidity providers and service providers) because of their interdependencies and should develop appropriate risk management tools to address these risks.***

CRCC conducts a periodic evaluation through the Audit Committee and the Risk Committee, which report to the Board of Directors, of the risks, including the risks arising from its interdependence with other FMIs, such as trading systems and/or registries, securities deposits and payment systems. For each of the entities with which it interacts, agreements are signed establishing the obligations of the infrastructures, service levels, procedures and contingency and continuity mechanisms in the event of an operational risk event.

The risks that have been identified in the interoperability between CRCC and other systems, being the managers of the latter entities supervised by SFC, are mainly focused on operational risk aspects, such as: (i) failures, delays or errors in the delivery of information by the parties, on operations, on the status of the Members and on the schedules of the sessions. In relation to such failures, the parties establish contingency mechanisms to be used to avoid affecting market participants. The agreements also establish the responsibility of each of the parties, a responsibility that is in line with the main purpose of the agreement, which is carried out with the authorization of SFC.

For specialized technological issues, external and independent audit services are contracted to verify the effectiveness of the controls available to the technological infrastructure.

#### **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.**

CRCC has identified several scenarios that could potentially prevent it from providing its most important activities and services: i) technical failures of its internal systems, ii) failures of its communication channels, iii) failures of the infrastructures with which it is interconnected, iv) insufficient guarantees to cover the default of one or more of its Members, v) illiquidity problems to meet the needs arising from the default of its Members, (vi) Inadequacy of collateral and own resources (available financial resources) to cover the default of one or more Members, (vi) Losses on investments of their own resources and of cash received as collateral from their Members and (vii) losses due to mismanagement of the entity. CRCC measures, monitors and manages these risks to keep them under control, has agreements that regulate its operations and mitigate risks in interaction with other IMFs, has a business continuity plan, has low-risk conservative investment policies, is constantly calculating the risk of its Members and validating the collateral deposited by them. Finally, it has clear and transparent procedures established in its Rulebook for the management of default by one or more of its Members, which clearly stipulate the procedure for closing positions, the order in which margin is to be used and the payment of debit balances. CRCC has defined a recovery plan in its Statutes.

#### **KEY CONCLUSIONS FOR PRINCIPLE 3:**

CRCC is a central counterparty authorized by the Superintendence of Finance of Colombia and is subject to its inspection and oversight. As such, CRCC has a comprehensive risk management framework in place that sets out the following:

- Policies, procedures and controls that allow CRCC to identify, measure, monitor and manage the risks it assumes as a central counterparty clearing and settlement entity, approved and periodically reviewed/evaluated by pre-established and clear corporate governance bodies. These rules are disseminated to market participants through the Rulebook and the Circular on the website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).
- CRCC risk model is managed through the technological risk management system, which focuses on the monitoring and measurement of exposures to participants at the individual and aggregated at the Clearing Member level. The system measures credit, market and concentration risk during the intraday and at the end-of-day.
- Aligned incentives through the risk management framework such as: i) the calculation of risk at the individual account level, ii) Default Fund with contributions by the participant Clearing Members, the purpose of which is to cover any possible losses that may arise from the default of a Clearing Member and which are not covered by the margin requested to that member, and iii) to allocate part of the assets of CRCC to cover possible losses prior to the use of the contributions of the Clearing Members to the Default Fund.
- Periodic evaluation through the Audit Committee and the Risk Committee, which report to the Board of Directors on the risks, including the risks arising from their interdependence with other FMI.

- For each of the entities with which it interacts, there are bilateral agreements in which the obligations of the two infrastructures are established, as well as service agreements, procedures and protocols for resolving incidents/contingencies, suspension, management of default processes, contingency mechanisms and continuity in the event of an operational risk event.
- Identifying scenarios that could potentially prevent you from providing the most important activities and services, such as: i) operational risk events and ii) counterparty risk, which you measure, monitor and manage to keep them under control.
- Finally, it has clear and transparent procedures established in its Rulebook to manage defaults by one or more of its Members, which clearly stipulate the procedure for closing positions, the order of the use of the financial resources available and other resources to comply with its obligations.
- Article 8 of the Articles of Association of CRCC establishes as a recovery mechanism the obligation for shareholders to subscribe for shares when, by a legal rule or an order of a competent authority, there is a capitalization of the Company.

### **ASSESSMENT OF PRINCIPLE 3**

Principle 3 referred to the Comprehensive Risk Management Framework is **OBSERVED** by CRCC.

### **Principle 4: Credit Risk**

**An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain enough 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 largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources enough to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.**

#### *Summary narrative*

- CRCC has a solid comprehensive risk management framework to manage credit exposures to its participants and the credit risks arising from its payment, clearing and settlement processes, which has several stages of consultation, management and decision-making in the different corporate bodies that make up the Corporate Governance of the Entity.
- CRCC has identified as the main source of credit risk the credit exposure which is composed of the current exposure and the potential future exposure, and which is recalculated, measured and monitored through the technology systems every 5 minutes. CRCC controls and mitigates credit exposure through different tools such as: i) the requirement of guarantees to cover credit exposure in different scenarios; ii) the limits established on the regulatory capital requirement of the Clearing Member that are granted to such Members to limit the intraday credit and liquidity risk and, iii) the definition of clear and transparent settlement procedures in which CRCC mitigates the principal risk among others.
- CRCC has a standard risk profile and operates only in Colombia.
- CRCC covers its credit exposure to each Clearing Member with 99.5% confidence through the requirement of Initial and Variation Margin. These requirements cover both the current exposure of the position (margin variation for products with daily settlement and margin variation pending for instruments with settlement at maturity only) and the potential future exposure. The level of confidence in the coverage of CRCC increases if additional pre-financed financial resources such as contributions to the Default Fund, Individual Guarantees and Extraordinary Guarantees are also included.

- CRCC regularly determines and tests the adequacy of its available pre-funded financial resources to cover the default of the two (2) members and its subsidiaries with the greatest credit exposure under extreme but credible market conditions by conducting daily stress tests. The risk management model (parameters, assumptions and scenarios) is periodically validated through different types of tests which are communicated to senior management daily and to the Risk Committee and the Board of Directors monthly. In addition, a comprehensive assessment of the risk model and methodologies of CRCC is available through the Risk Committee once a year.
- CRCC performs the stress test of the Default Fund considering a wide range of stress scenarios which are based on the worst historical and extreme but plausible price movements.
- CRCC has established in its Rulebook, approved by the Superintendence of Finance of Colombia and in its Circular, explicit rules and procedures that fully address any credit loss it may incur because of a single or collective default among its participants with respect to their obligations with CRCC.

<b>Key Consideration 1</b>	<b>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.</b>
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**Q.4.1.1 : What is the FMI's framework for managing credit exposures, including current and potential future exposures, to its participants and arising from its payment, clearing and settlement processes?**

CRCC has a comprehensive risk management framework defined to manage credit exposure (current exposure / replacement cost + future potential exposure) of its participants, which framework has: (i) several stages of consultation, management and decision through the different corporate bodies that make up the Corporate Governance of the Entity: Board of Directors, Risk Committee and Senior Management and (ii) a risk management system that includes: daily multilateral net settlement, intraday and daily variation margin requirements, daily stress test of the Default Fund, intraday (every 5 minutes) controls of assigned limits and their respective risk consumption, risk management systems (Limits, SGG, CyL, Swaps Supervisor) and a set of policies, rules, regulations and procedures through which credit exposure is managed. Documents with the details can be found on its website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co)

For further details of the comprehensive risk management framework see Principle 3 responses.

**Q.4.1.2 : How frequently is the framework reviewed to reflect the changing environment, market practices and new products?**

The legal and risk areas are constantly reviewing changes in the regulatory environment and market practices, respectively, that may have an impact on the credit exposure faced by the CRCC. Based on these analyses, the implications for the risk management system and the changes required in the system are identified and must be submitted to the corresponding instances of Corporate Governance for consideration.

CRCC uses statistical techniques such as daily backtesting analysis to detect changes in asset price risk behavior in a timely manner and takes action in the event of a substantial change in volatility and/or market behavior. Likewise, the methodologies for calculating the parameters include the historical behavior of the environment.

The approval process for new products involves the identification, analysis and mitigation of new risks. Each new product must be analyzed by the Risk Committee and approved by the Board of Directors based on the analysis conducted by Senior Management. The new products must go through an authorization procedure by the SFC, in accordance with Article 1.3.3. of the Rulebook. In this regard, CRCC must inform the SFC of the characteristics of the

	<p>product, together with the risk management mechanisms and the operating infrastructure it will use for its clearing and settlement.</p> <p>The internal audit area of CRCC carries out an evaluation and review of the procedures used to determine the criteria applied, as well as the systems used. An external evaluation of the Risk Model was conducted in 2016. Since 2018 an annual evaluation of the risk model has been carried out by an external consultant firm with expertise in quantitative models who supports the internal audit area work.</p>
<b>Key Consideration 2</b>	<p><b>An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.</b></p>
	<p><b>Q.4.2.1 : How does the FMI identify sources of credit risk? What are the sources of credit risk that the FMI has identified?</b></p> <p>The sources of credit risk are identified by the Senior Management and the Risk Committee. View responses to Principles 2 and 3 for more detail.</p> <p>CRCC has identified as the main source of credit risk the Credit Exposure that arises from the open positions of the participants, which is the result of adding: (i) Current Exposure (Replacement Cost) plus (ii) Potential Future Exposure.</p> <ul style="list-style-type: none"> <li>- The Current Exposure is the result of valuing the positions at market prices. This risk is mitigated by settling the mark to market daily for instruments with daily settlement or through margin calls for products with settlement at maturity. For swaps variation margin is exchanged in cash on a daily basis.</li> <li>- The Potential Future Exposure is determined as the maximum expected loss at a given confidence over a specified period. This risk is mitigated by requesting margin to the Clearing Members.</li> </ul> <p>Another potential source of credit risk arises from the investment of cash deposited as collateral by Members. In the case of CRCC, the credit risk has been mitigated by making these investments in 1-day repo backed by government securities with stable and reasonable haircuts considering their estimated liquidation period. A limit of maximum 5% of the total collateral posted can be deposited in commercial banks. The CRCC can invest the US dollars in commercial banks with a rating that is equal or greater than the rating for the country of Colombia, See Principles 3 and 5 for further details.</p> <p><b>Q.4.2.2 : How does the FMI measure and monitor credit exposures? How frequently does and how frequently can the FMI recalculate these exposures? How timely is the information?</b></p> <p>CRCC measures and monitors credit exposure with each Clearing Member every five (5) minutes through the Limits module of its system (see answer Q.3.1.3 for more detail).</p> <p>CRCC recalculates the Credit Exposure (Current Exposure plus Future Potential Exposure) for each of the accounts and aggregates these calculations at the Member level every five (5) minutes, however, CRCC has the technological capability to run the calculations on a less frequent basis.</p> <p>CRCC updates the intraday risk consumption based on the current position and the prices received in real time and compares the result with the Intraday Risk Limit (LRI), requesting collateral in the intraday when the LRI reaches 90%.</p> <p>Credit Exposure is measured every five (5) minutes and with intraday market prices.</p>



	<p><b>Q.4.2.3: What tools does the FMI use to control identified sources of credit risk (for example, offering an RTGS or DvP settlement mechanism, limiting net debits or intraday credit, establishing concentration limits, or marking positions to market on a daily or intraday basis)? How does the FMI measure the effectiveness of these tools?</b></p> <p>CRCC uses the following tools to mitigate the sources of credit risk: i) Intraday and daily valuation of the positions for settlement or margin requirements that eliminate Current Exposure or replacement cost; ii) Initial Margin; iii) Intraday Risk Limit (LRI, defines the largest exposure that CRCC assumes with a Member in the intraday (every 5 minutes), calculated as maximum 1% of each Clearing Member's equity); iv) Margin Call Limit (calculated as maximum 8% of the equity of each Clearing Member, mitigates liquidity risk as it reduces exposure for each Member in the event that the market move exceeds 75% of the defined fluctuation and a Margin Call is triggered); v) Daily stress tests of the Default Fund; vi) Requirement of additional margin for large positions/concentration; vii) Daily cash settlements through the Central Bank's high-value payment system (CUD), a single transaction is made in the CUD system by account, after netting out the receivables and payables calculated for each Member's accounts; viii) DvP in the operations involving the exchange of securities for the Fixed Income and Equity Segment; and for the Derivatives Segment CRCC carries out the exchange of securities and cash without incurring capital risk.</p> <p>To limit intraday credit risk, CRCC has established Trading Limits which, as a risk control tool, in addition to the constant monitoring of the change in the prices of the contracts, clears and settles. The first of these is the Intraday Risk Limit (IRL), which represents the maximum overnight risk that a Clearing Member's new positions can generate for transactions that have not been collateralized since their acceptance. The second is the Margin Call Limit (LMC) which is established to reduce the maximum amount generated by a call for Extraordinary margin to a Clearing Member. This limit means that the call for Extraordinary margin may not exceed the assigned limit which is set as a percentage of the entity's equity.</p> <p>In addition, the Clearing house has a Delivery Obligation Limit (LOLE) to control the delivery for open positions with physical delivery by comparing them to the daily trading volume as maturity of the contract approaches.</p> <p>To check the effectiveness of the tools, the time taken by the system to perform the calculations, the availability of the prices, positions and valuation of collateral posted, as well as the outputs of the system are constantly being checked.</p>
<b>Key Consideration 3</b>	<p><b>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.</b></p>
Description	Not applicable.
<b>Key Consideration 4</b>	<p><b>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</b></p>

	<p>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.</p>
Description	<p><i>Coverage of current and potential future exposures to each participant</i></p> <p><b>Q.4.4.1: How does the CCP cover its current and potential future exposures to each participant fully with a high degree of confidence? What is the composition of the CCP's financial resources used to cover its current and potential future exposures? How accessible are these financial resources?</b></p> <p>Daily, the CRCC requests the margin at the account level. The margin requested includes the variation margin for the contracts that are settled-to-market and for the ones collateralized-to-market. The initial margin is calculated at a 99.5% confidence level.</p> <p>CRCC requests the following financial resources to cover its current and potential future exposures:</p> <ol style="list-style-type: none"> <li>1. Initial Margin: is intended to cover the risk of each individual segregated account for each Segment. It is calculated to cover the risk of the Open Positions taken on the market, required for all Members and Third Parties (customers) with Open Positions registered in their accounts.</li> <li>2. Individual Guarantees: are intended to cover the risk of CRCC in relation to the Clearing Members, which must be constituted by the Clearing Members in the following cases: <ul style="list-style-type: none"> <li>- Prior to the acceptance of the first transaction by CRCC, the amount is determined for each type of Clearing Member and Segment.</li> <li>- If a Clearing Member, at the end of the session, has Intraday Risk Limit consumption and/or exceeds the Margin Call Limit, CRCC will make an adjustment for the value of said excess consumption, as Individual Guarantees which must be constituted in cash during the Daily Settlement process of the following day.</li> <li>- When the equity of the Clearing Member decreases to a level, no lower than ten percent (10%) below the minimum required regulatory capital set by the Clearinghouse, the amount of the Individual Guarantee required shall correspond to the difference between the minimum regulatory capital required by CRCC and the regulatory capital of the Member.</li> <li>- If any of the Clearing Members of CRCC does not have enough collateral posted to cover the risk under stress test, CRCC shall request such Members to provide an additional Individual Guarantee to cover this deficit.</li> </ul> </li> <li>1. Extraordinary Guarantees: These are intended to cover the Clearinghouse risk in extraordinary situations, which must be constituted by the Members and customers in the following cases: <ul style="list-style-type: none"> <li>- Market volatilities: price variation of more than 75% of the fluctuation parameter defined for each product, an Extraordinary Margin Call is executed to mitigate the overnight credit risk of CRCC due to the variation margin or replacement cost that may be incurred until the following day on the net multilateral settlement, the maximum time account holders have to cover the replacement cost of the positions.</li> <li>- Open Positions that CRCC deems to be high risk or Open Positions for sale with risk of default in products with Delivery at Settlement.</li> </ul> </li> <li>2. Skin-in-the-game (Junior equity tranche): CRCC's equity tranche equivalent to 25% of the minimum capital required by law for a Central Counterparty/ Clearinghouse entity. These resources will be allocated proportionally for each Segment depending on the amount or size of the Default Funds calculated for the current quarter. These resources</li> </ol>



shall cover the losses that arise because of a default of a Clearing Member if all the Guarantees provided by that Member are not sufficient. The Skin-in-the-game will be used before using any of the financial resources the survivor Clearing Members have allocated to the default fund and may only be used up to the amount allocated for the Segment in which the default occurred.

3. **Default Funds:** the purpose of Default Funds is to cover any losses that may arise from the default of a Clearing Member and that are not covered by the Initial Margin, Extraordinary Guarantees, Individual Guarantees and Contributions to the Default Funds by the Clearing Member in default, as well as the Skin-in-the-game. Default Funds are constituted for each Segment as the sum of the contributions of the Clearing Members, calculated on a prorated base based on the risk under stress in the respective Segment. The procedures for use and resetting are described in Q.4.7.1 and Q.4.7.2.  
The size of the Default, Fund for each Segment, is determined as the sum of the daily average quarterly exposure of the first and second Clearing Members and its subsidiaries with the greatest exposure within the Segment. This value will be distributed among all the Clearing Members participating in the Segment in proportion to their average daily risk on a quarterly basis.
4. **Contributions for service continuity:** their purpose is to cover the possible losses that may arise from the default of a Clearing Member, for the service continuity in each Segment and which are not covered by the Position Guarantees, Extraordinary Guarantees, Individual Guarantees, Specific Equity, and the contributions to the Default Funds. Service continuity contributions may be mandatory and voluntary.

The funded financial resources available to CRCC are immediately accessible and can be deposited in: i) cash, ii) sovereign debt securities of the Republic of Colombia, which are easily convertible into cash and their value is discounted with a haircut calculated from the liquidity of each asset and (iii) shares that belong to a stock market index, that is to say, highly liquid, whose value is discounted with a haircut calculated from the liquidity of each asset. Access to unfunded financial resources is provided for in CRCC Rules of Procedure. For further details see Principle 5.

The list of assets that may be accepted as collateral is defined in the Rulebook. However, the Risk Committee may limit the use of the assets eligible as collateral and may authorize eligible collateral other than that specified in the Rulebook.

**Q.4.4.2 : To what extent do these financial resources cover the CCP's current and potential future exposures fully with a high degree of confidence? How frequently does the CCP evaluate the sufficiency of these financial resources?**

The required margin covers Current Exposures and Future Potential Exposures at a 99.5% confidence level. This high degree of confidence is increased if the resources of the Default Fund are taken into consideration.

Every day, at the close of each session, CRCC carries out the stress test of the Default Fund to assess the adequacy of these financial resources. If it is determined that they are insufficient to cover the simultaneous defaults of the two members with the largest credit exposure, CRCC requests Individual Guarantees from the Clearing Members responsible for the excess credit exposure. See Q.4.4.4.4.

*Risk profile and systemic importance in multiple jurisdictions*

**Q.4.4.3 : Do any of the CCP's activities have a more-complex risk profile (such as clearing financial instruments that are characterized by discrete jump-to-default price changes or that are highly correlated with potential participant defaults)? Is the CCP systemically important in multiple jurisdictions?**

Products cleared and settled by CRCC are standard and not strongly correlated with the default of any Member, except for some standardized derivatives and cash lending on equity securities whose underlying asset are shares issued by Members of CRCC. CRCC does not accept as eligible collateral securities with credit content other than those issued by the Republic of Colombia.

CRCC is not connected to any other CCP and is therefore, not systemically relevant in multiple jurisdictions.

*Additional financial resources*

**Q.4.4.4 : What additional financial resources does the CCP maintain to cover a wide range of potential stress scenarios that include, but are not limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure in extreme but plausible market conditions?**

CRCC ensures the adequacy of financial resources in the event of default by conducting daily stress tests. At the end of the session, it calculates the risk under stress scenarios for all the Clearing Members and its subsidiaries participating in each Segment, then this Risk is compared against the total Individual Guarantees and, if there are any, Extraordinary Guarantees posted by each Member, and the Default Fund of the Segment in which the Member participates. Finally, if the risk under stress exceeds the total of the collateral deposited, CRCC makes an adjustment for the difference demanding the collateral that should be posted as Individual Guarantees from the corresponding Members, which will be effective in the settlement session on the following business day to guarantee that it has sufficient funded financial resources to cover the default of the two (2) Clearing Members and its subsidiaries with the largest exposure.

In addition, in the event of a default in a Segment, which requires the use, in whole or in part, of the respective Default Fund, the maximum contribution of the surviving Clearing Members shall be equal to two (2) times their contribution to the Default Fund of the Segment. Such obligation shall be maintained for a period of ninety calendar days beginning on the day of the declaration of default. At the end of this period, the Clearing Members must update their contributions to the Default Fund to the value corresponding to them, considering the new amount of the Default Fund.

**Q.4.4.5 : If the CCP is involved in activities with a more-complex risk profile or is systemically important in multiple jurisdictions, to what extent do the additional financial resources cover, at minimum, the default of the two participants and their affiliates that would create the largest credit exposure in the CCP under extreme but plausible market conditions?**

CRCC does not engage in activities with a more complex risk profile, it currently only compensates and liquidates plain vanilla products such as Futures, Forward, Options, Repos and Securities Cash Lending, and it is not systemically relevant in multiple jurisdictions. In any event, CRCC calculates both the Default Fund and the additional financial resources required to cover at least the default of the two (2) Clearing Members with the greatest aggregate credit exposure to CRCC under extreme but plausible market conditions.

**Q.4.4.6 : How frequently does the CCP evaluate the sufficiency of its additional resources?**

CRCC evaluates the adequacy of the Default Fund and the Individual Guarantees through daily stress tests of the Default Fund.

*Supporting rationale and governance arrangements*

	<p><b>Q.4.4.7 : How does the CCP document the supporting rationale regarding its holdings of total financial resources?</b></p> <p>A daily report is created and distributed by the Risk and Operations team, in which the total financial resources are compared against the margin to determine if the resources are adequate to cover the replacement costs and the potential future exposure. The report is presented to the Risk Committee and the Board of directors, monthly</p> <p><b>Q.4.4.8 : What governance arrangements are in place relating to the amount of total financial resources at the CCP?</b></p> <p>The Rulebook, which is approved by the SFC, and the Circulars of CRCC establish the procedures for the calculation of the amount of financial resources the CRCC requires, including IM. Changes to the Rulebook and Circulars must be approved by the corresponding Corporate Governance bodies. For more information see Principle 2.</p>
<b>Key Consideration 5</b>	<p><b>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 participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.</b></p>
<b>Description</b>	<p><i>Stress testing</i></p> <p><b>Q.4.5.1: How does the CCP determine and stress-test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions? How frequently does the CCP stress-test its financial resources?</b></p> <p>CRCC determines and contrasts daily the adequacy of its total funded financial resources: (i) in the case of a default of any Clearing Member and (ii) in the case of the joint default of the two (2) Clearing Members with the greatest exposure to CRCC. The Operations and Risk Department carries out a stress test of the Default Fund for each segment in extreme but plausible scenarios approved by the Risk Committee, which are published in CRCC Circular at <a href="http://www.camaraderiesgo.com.co">www.camaraderiesgo.com.co</a>. The stress test verifies that the funded financial resources cover the credit exposure that arises from the simultaneous or sequential default of the two (2) Clearing Members with the largest credit exposure. If financial resources are insufficient to cover this event, CRCC will require Individual Guarantees from the appropriate Member(s) on the next day's daily settlement by 8:30 a.m.</p> <p>In addition, CRCC conducts reverse stress tests on a quarterly basis to determine the number of Clearing Members in default or the move of risk parameters before exhausting all the financial resources available to cure losses for CRCC.</p>

CRCC checks the adequacy of its financial resources daily and as of January 2018, the analysis was supplemented by quarterly reverse stress tests.

**Q.4.5.2 : How are stress test results communicated to appropriate decision-makers at the CCP? How are these results used to evaluate the adequacy of and adjust the CCP's total financial resources?**

The results of the stress tests of the Default Fund are reported daily to senior management and monthly to the Risk Committee and the Board of Directors.

See answer Q.4.5.1.

*Review and validation*

**Q.4.5.3 : How frequently does the CCP assess the effectiveness and appropriateness of stress test assumptions and parameters? How does the CCP's stress test programme take into account various conditions, such as a sudden and significant increase in position and price volatility, position concentration, change in market liquidity, and model risk including shift of parameters?**

The frequency with which the effectiveness and appropriateness of the hypotheses and parameters used are evaluated is weekly. The Risks and Methodologies Department carries out a daily backtesting with a weekly report, in which the parameters and hypotheses defined by CRCC. Backtest results are evaluated and reviewed monthly by the Risk Committee and the Board of Directors of the entity.

Stress scenarios include a range of scenarios characterized by a series of extreme but plausible market conditions, include price volatilities at historical highs, changes in price determinants and curves, and consider multiple defaults. The scenarios are designed to break down correlations between assets that have historical relationships and correlate those assets that do not usually move together.

**Q.4.5.4 : How does the CCP validate its risk management model? How frequently does it perform this validation? Who carries this out?**

The risk management model is validated internally by the Risks and Methodologies team and monthly by the Risk Committee of CRCC through the following tests:

1. Weekly backtest of the fluctuation parameters used.
2. Weekly clean backtest of the P/L results of the positions at the account level versus the required margin.
3. Review of correlations between assets on a quarterly basis.
4. Periodic comprehensive review of risk parameters and extreme but plausible scenarios annually.
5. Daily stress test of the Default Fund to verify that the financial resources funded cover at least the two participants (Members) with the greatest potential exposure to CRCC S.A.
6. An external validation was contracted in 2016. Since 2018, validations by an independent firm have been carried out on an annual basis.

See answer immediately above.

<b>Key Consideration 6</b>	<p>In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' 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.</p>
<b>Description</b>	<p><b>Q.4.6.1: In conducting stress testing, what scenarios does the CCP consider? What analysis supports the use of these particular scenarios? Do the scenarios 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?</b></p> <p>The scenarios considered for the stress test of the Default Fund are based on the maximum historical movements of each underlying asset and, additionally, for products whose underlying asset are equities, hypothetical scenarios based on extreme price movements that are not derived from historical data but are statistically plausible.</p> <p>CRCC defined generalized price movement scenarios that break down the historical correlations that exist between the different underlying assets and create correlations between historically uncorrelated assets.</p> <p>For each of the scenarios in each Segment, the losses under stress are calculated, choosing for each Member the worst scenario, the one with the greatest loss, in accordance with the procedure established in the CRCC Circular.</p> <p>CRCC develops scenarios based on the historical information available for each underlying and, additionally, for assets with equity as underlying, complements the scenarios using the Peaks-Over-Threshold (POT) methodology, based on extreme value theory.</p> <p>The scenarios developed include price volatilities at historical highs and changes in correlations between underlying assets, changes in the correlations along interest rate term structure and simultaneous pressures in the different markets that CRCC clears and settles.</p>
<b>Key Consideration 7</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Allocation of credit losses</i></p> <p><b>Q.4.7.1: How do the FMI's rules and procedures explicitly address 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? How do the FMI's rules and procedures address the allocation of uncovered credit losses and in what order, including the repayment of any funds an FMI may borrow from liquidity providers?</b></p> <p>CRCC has stipulated in its Rulebook, which is approved by the SFC, the sequence in which funded and unfunded financial resources must be used to exhaust credit losses of an individual or collective default of its participants.</p>

Order for the Execution of Collateral and Other financial resources in the event of Default (Article 2.8.8. of the Rulebook):

1. Member or Identified Third Party's Initial Margin.
2. Individual Guarantees for each Segment and, if any, the Extraordinary Guarantees constituted by the Defaulting Clearing Member.
3. The contributions of the Defaulting Clearing Member to the Default Fund for the Segment in which the default occurred and, if not sufficient, any other collateral that the Clearing Member may have posted in favor of the Clearinghouse, and if any, the contributions of the Defaulting Clearing Member to the Default Funds of the other Segments.
4. If, after executing the safeguards on the previous point, there are remaining losses, the Skin-in -the-game contribution by the clearinghouse for the Segment still applies to cure losses.
5. If after using the Specific Own Resources of the Clearinghouse, there is remaining losses, the clearinghouse will access the remaining resources of the Default Fund corresponding to the Segment where said losses exists, that is, it shall use the contributions to the Default Fund of the surviving Clearing Members participating in the respective Segment.
6. If, having complied with the foregoing, there are remaining losses, the Clearinghouse shall require the Clearing Members to replenish Default Fund, in accordance with the provisions of the Circular, and shall immediately execute the new assessment to replenish. The clearinghouse limits these assessments to replenish the fund to two times the Member's original contribution to the Default Fund.
7. If, having complied with the foregoing, there are remaining losses, the Clearinghouse may demand a mandatory Contribution for the continuity of the service of the Segment where the debit balance exists. The obligatory Contribution for the continuity of service must be contributed by the non-defaulting Clearing Members participating in the respective Segment, and its amount shall not exceed the value of the original contribution to the Default Fund that corresponded to such Clearing Members, without including the contributions for its replenishment. The compulsory contribution for the continuity of service is additional to the contributions to the Default Fund that must be maintained by the Clearing Members. The Clearinghouse will immediately execute the obligatory Contributions for the continuity of the service until the losses are cured.
8. If after using the obligatory Contribution for the continuity of the service, as established in the previous point, there are still remaining losses, the Clearinghouse may request voluntary Contributions for the continuity of the service of the Segment, to the Clearing Members of the Segment where said losses exists, without the right to a refund by the Clearinghouse, without prejudice to the fact that the refund of the Voluntary Contribution for the continuity of the service may be claimed by any means from the Clearing Member in Default.
9. If, having complied with the foregoing, there are remaining losses to be paid by the Defaulting Clearing Member, the Clearinghouse shall assume the losses not covered by the rest of its equity.

In the established order of execution, we have funded financial resources of 1-5 and unfunded resources of 6-8.

CRCC establishes in its Rulebook and Circular the rules and procedures for the application for and use of non-pre-financed financial resources as set forth in the immediately preceding response in paragraphs 6-8.

If, once the funded and unfunded financial resources have been used in accordance with the foregoing (item 9), there is still a remaining loss payable by the Defaulting Clearing Member, CRCC shall assume the losses not covered with its own equity, in accordance with the provisions of Law 964 of 2005, the Colombian Securities Law, Article 18 which establishes that the assets of CRCC are to be used to cover default losses.

*Replenishment of financial resources*



**Q.4.7.2: What are the FMI's rules and procedures on the replenishment of the financial resources that are exhausted during a stress event?**

CRCC establishes in its Rulebook and Circulars the rules and procedures for the replenishment of financial resources:

- In the event of high market volatility and in the absence of a default, CRCC replenishes the financial resources in the intraday through a Margin Call.
- In the event that the Default Fund has to be used totally or partially, in the terms established in the Rulebook and Circulars: i) the amount used shall be charged proportionally to the Clearing Members, based on the amount of the contributions of each of them in the last update or replacement period and for each Segment, ii) the Clearing Members shall be obliged to replenish their contributions and make such additional contributions to the Default Fund as the Risk Committee of the Clearinghouse may determine for each Segment, by the procedures, within the time limits and within the limits determined in CRCC Circular and iii) in any case, the period for the constitution and replenishment of the contributions to the Default Fund shall be a maximum of five (5) business days.

The procedure for replenishing the Default Fund for each segment established in the regulations of CRCC is as follows (article 1.6.2.13. of CRCC Circular):

In the event of a Default by a Clearing Member that causes the Default Fund of a Segment to be used in whole or in part under the terms established in Article 2.8.8. of the Rulebook of CRCC and the provisions of the Circular, the participating Clearing Members shall be obliged to replenish their contributions and make additional contributions to the Fund in accordance with the following procedure:

1. If the part of the Default Fund that has been used is equal to a partial or total value of the contribution of the Defaulting Clearing Member, this value must be replenished in proportion to the contribution of the other Clearing Members in the last update or replenishment period within 5 working days of the request for replenishment.
2. In the event that the part of the amount of the Default Fund that has been used is greater than the contribution of the Defaulting Clearing Member, the difference shall be charged proportionally to the Clearing Members on the basis of their contribution to the Fund in the latest updating or replacement period and such Members shall be required to replenish at least this amount within 5 working days from the date of the request for replacement.
3. The Clearing Member who fails to make the contribution within the above-mentioned period shall incur a Delay Event.
4. The maximum assessment that the other Clearing Members will be obliged to replenish will be equal to two (2) times their contribution to the Segment's Default Fund before the Default is declared. Such contribution shall be held for a period of ninety (90) calendar days beginning on the day of the declaration of default. At the end of this period, the Clearing Members must update their contributions to the Default Fund for the value corresponding to them, considering the new amount of the Default Fund.
5. If a Clearing Member requests to withdraw from a Segment, it must submit a withdrawal request in accordance with the provisions for each Segment in the Circular. Once this has been done, CRCC shall return the contribution it had made to the Default Fund and the amount equivalent to the returned contribution shall be replenished proportionally by the other Clearing Members participating in the respective Segment in accordance with the contributions of said Members for the last period of updating or replacement. If during the period between the request for withdrawal and the close-out of the positions of a Clearing Member in the Segment, a Default occurs, the Clearinghouse may use the contribution of the Clearing Member, but the Clearing Member will not be obliged to replenish the fund if it has closed its Position within five (5) business days following the assessment to replenish.



	<p>6. In the event that, for one time, an amount over 50% of the Default Fund must be drawn down or in any percentage more than once in a period of three (3) consecutive months, in addition to the replenishment by the Clearing Members of the Default fund, and at least for a period of three (3) months, the initial margin required from the Clearing Members of the Segment shall be computed with the stress parameters and the Skin-in -the-game will be doubled for the Segment in which the Default occurred.</p>
<p align="center"><b>DETAILED ASSESSMENT OF OBSERVANCE OF THE PRINCIPLE</b></p>	
<p><b>PRINCIPLE 4: CREDIT RISK</b></p>	
<p><b>Key Consideration 1:</b></p> <p><b><i>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.</i></b></p> <p>CRCC has a solid comprehensive risk management framework to manage credit exposures to its participants and the credit risks arising from its payment, clearing and settlement processes, which has several stages of consultation, management and decision-making in the different corporate bodies that make up the Corporate Governance of the Entity. CRCC has technological systems that allow it to measure, control and mitigate its intraday Credit Exposure (every 5 minutes) through policies, rules and procedures established in the Rulebook and in CRCC's Circular.</p> <p>The comprehensive risk management framework is constantly being developed to identify and include changes in the legal and market environment.</p>	
<p><b>Key Consideration 2:</b></p> <p><b><i>An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.</i></b></p> <p>CRCC has identified, as the main source of credit risk, the Credit Exposure that is composed of the Current and Future Exposure, which is recalculated, measured and monitored through technological systems every 5 minutes. CRCC controls and mitigates the risks through different tools such as, among others, (i) the requirement of guarantees to cover the Credit Exposure in different scenarios; (ii) the limits established on the technical equity of the Clearing Member that are granted to said Members to limit the intraday credit and liquidity risk and, (iii) the definition of clear and transparent settlement procedures in which CRCC mitigates the principal risk.</p>	
<p><b>Key Consideration 3:</b></p> <p><b><i>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.</i></b></p> <p>NOT APLICABLE</p>	

**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.***

CRCC has a standard risk profile and operates only in Colombia.

CRCC covers its Credit Exposure with each Clearing Member with a 99.5% confidence through the requirement of Initial Margin, these Position Guarantees cover both the Current Exposure of the position (margin variation for products with daily settlement and margin variation pending for instruments with settlement at maturity) and the Future Potential Exposure. The level of confidence in the coverage of CRCC increases as additional funded financial resources, such as contributions to the Default Fund, Individual Guarantees and Extraordinary Guarantees are accounted for. Daily stress tests have been designed to ensure that these funded financial resources are enough to cover the default of the two (2) Members with the highest Credit Exposure in extreme but plausible scenarios. The stress tests will be supplemented including the subsidiaries of the two (2) largest Members as of January 2018.

In addition, CRCC has established in its Rulebook and Circular the rules, procedures and order of execution, use and replenishment of funded and unfunded resources in the event of a Member's default.

**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 participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.***

CRCC regularly determines and tests the adequacy of its available funded financial resources to cover the default of the two (2) members and its subsidiaries with the highest Credit Exposure in extreme but credible market conditions by conducting daily stress tests. The risk management model (parameters, assumptions and scenarios) is periodically validated through different types of tests which are evaluated and communicated to

senior management daily and to the Risk Committee and the Board of Directors monthly. In addition, a comprehensive assessment of the risk model and methodologies of CRCC by the Risk Committee is available once a year.

**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 defaulters' 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.***

CRCC performs stress tests considering a wide range of stress scenarios which are based on the worst historical and extreme but plausible price movements. The design of these scenarios involves the breaking down of correlations between historically correlated assets and creating correlations between assets that are historically unrelated. Losses under stress situations are calculated by choosing, for each member, the scenario in which the greatest loss occurs and then comparing it with the guarantees deposited or required.

**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.***

CRCC has established in its Rulebook, which is approved by the SFC and in its Circular, explicit rules and procedures that fully address any credit losses it may incur because of a single or collective default among its participants with respect to any of its obligations under CRCC. These rules and procedures address: i) how potential credit losses that have not been covered are allocated, ii) return of contributions to the Default Fund, iii) replenishment of the resources of the Default Fund and iv) request for Mandatory and Voluntary Contributions.

**KEY CONCLUSIONS FOR PRINCIPLE 4:**

- CRCC has a solid comprehensive risk management framework to manage the credit exposures of its participants and the credit risks arising from their payment, clearing and settlement processes, with the participation of different corporate decision-making, management and consulting bodies in accordance with the Corporate Governance of the Entity.
- CRCC has identified as the main source of credit risk the Credit Exposure that is composed of the Current Exposure and the Future Potential Exposure, which is recalculated, measured and monitored through technological systems every 5 minutes. CRCC controls and mitigates credit exposure through different tools such as, among others, (i) the requirement of margin to cover the Credit Exposure in different scenarios; (ii) the limits established on the technical equity of the Clearing Member that are granted to such Members to limit the risk of intraday credit and liquidity and, (iii) the definition of clear and transparent settlement procedures in which CRCC mitigates the principal risk.
- CRCC has a standard risk profile and operates only in Colombia.
- CRCC covers its Credit Exposure with each Clearing Member with a 99.5% confidence through the requirement of Initial Margin, these Guarantees per Position cover both the Current Exposure of the position (margin variation for products with daily settlement and margin variation pending for instruments with settlement at maturity only for which it has been defined that there's no daily exchange of cash) and the Future Potential Exposure. The level of confidence in the coverage of CRCC increases if additional funded financial resources such as contributions to the Default Fund, Individual Guarantees and Extraordinary Guarantees are also included.
- CRCC regularly determines and tests the adequacy of its available funded financial resources to cover the default of the two (2) members and its subsidiaries with the largest Credit Exposure in extreme but credible market conditions by conducting daily stress tests. The risk

management model (parameters, assumptions and scenarios) is periodically validated through different types of tests which are evaluated and communicated to senior management daily and to the Risk Committee and the Board of Directors monthly. In addition, a comprehensive assessment of the risk model and methodologies of CRCC is available through the Risk Committee once a year.

- CRCC performs stress tests considering a wide range of stress scenarios which are based on the worst historical and extreme but plausible price movements.
- CRCC has established in its Rulebook, approved by the SFC and in its Circular explicit rules and procedures that fully address any credit losses it may incur because of a single or collective default among its participants with respect to their obligations to CRCC.

#### **ASSESSMENT OF PRINCIPLE 4:**

Principle 4 referred to Credit Risk is **OBSERVED** by CRCC.

#### **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.**

##### *Summary narrative*

CRCC has a solid and efficient collateral management system, using conservative criteria for the admission of collateral, which consider liquidity, credit, market and concentration risk.

In this regard, Article 2.7.2 of the Rulebook establishes that the following assets or safeguards may be admitted as Collateral:

1. Legal currency or currencies.
2. Public debt securities of the Nation that are in a Central Securities Depository in Colombia.
3. Equities belonging to a stock exchange index or underlying a derivative.
4. Standardized fixed-income securities rated A (single A) or higher and in the absence of such a rating, the issuer must have a rating equal to or higher than the above.
5. The following financial safeguards are designed to expand the Intraday Risk Limits and Margin Call:
  - a. Bank Guarantee.
  - b. Standby Letter of Credit or Line of Credit.
  - c. Loan Limits.
6. Collateral funds whose creation is authorized by the CCP.

It also empowers the Risk Committee of CRCC to limit the use of the collateral described above and to authorize others.

To manage its own credit exposure or that of its participants, CRCC only accepts as collateral the following assets in its portfolio of eligible assets: i) cash in Colombian pesos (legal currency), ii) US dollars, iii) TES public debt securities issued by the Republic of Colombia and iv) highly liquid equities belonging to the COLCAP Index. In the case of securities (TES and Shares), CRCC establishes stable, reasonably conservative haircuts that reduce the need for pro-cyclical adjustments, incorporating a liquidity and concentration factor that recognizes the time it may take CRCC to execute collateral in the market. It is important to note that CRCC has access to the Central Bank's intraday financing, so the haircuts established for the securities accepted by CRCC are at least the haircuts required by the Central Bank to receive these securities as collateral in its liquidity operations.

CRCC values the collateral daily in accordance with current regulations on the valuation of investments at market prices with the prices provided by the official CRCC price provider authorized and supervised by the SFC the financial regulator.

CRCC 's policy is to discourage the high concentration of collateral received through the haircuts calculation methodology, in which the concentration factor is considered, and the greater the concentration of the collateral provided by its Members on a given asset, haircut is higher.

CRCC monitors the concentration of assets monthly, through the Risk Committee, considering the market volume traded in the assets received as collateral.

CRCC has a margin management system capable of allowing, the daily calculation and execution of margin calls in a timely manner, as well as the management of margin call disputes and the presentation of accurate information on initial margin and variation margin levels at the account level. CRCC 's collateral management system also has advanced functionality to incorporate the ability to make timely deposits, withdrawals, replacements and settlements of collateral. CRCC has allocated enough resources to its collateral management system to ensure that it has an adequate level of operational performance, efficiency and effectiveness.

The system used by CRCC is interconnected with the official price provider to make the valuation at market prices of its collateral and is connected to the centralized securities deposits (collateral in securities) and the Central Bank (cash collateral in pesos), correspondent bank (cash collateral in US dollars) so that Members can directly provide collateral to CRCC efficiently. The system allows the collateral to be fully identified at the individual account level, i.e. the Member's collateral and the collateral of each individual customer can be identified. At the end of each session the collateral information for each individual account (isin nominal, gross value, applied haircut, net value) is sent to Members through the automatic mechanisms defined by CRCC once they have been valued with the prices given by the official price provider of CRCC.

<b>Key Consideration 1</b>	<b>An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.</b>
Description	<p><b>Q.5.1.1 : How does the FMI determine whether a specific asset can be accepted as collateral, including collateral that will be accepted on an exceptional basis? How does the FMI determine what qualifies as an exceptional basis? How frequently does the FMI adjust these determinations? How frequently does the FMI accept collateral on an exceptional basis, and does it place limits on its acceptance of such collateral?</b></p> <p>CRCC determines that an asset is eligible as collateral to cover the credit exposures of its Members if it has the following characteristics:</p> <ul style="list-style-type: none"> <li>- High liquidity,</li> <li>- Low level of credit risk and,</li> <li>- Low level of market risk once the haircuts have been applied to mitigate this risk.</li> </ul> <p>CRCC S.A. accepts the following assets from its portfolio of eligible assets as collateral:</p> <ul style="list-style-type: none"> <li>- Cash in COP (Colombian pesos legal currency)</li> <li>- Cash in USD (US dollars)</li> <li>- Public debt securities issued by the Government of the Republic of Colombia - TES.</li> <li>- High liquidity equities that are part of the COLCAP Index</li> </ul> <p>CRCC has no defined criteria for determining which circumstances are considered exceptional and therefore, does not accept different assets as collateral.</p>

	<p>CRCC adjusts the collateral acceptance methodologies on an annual basis. However, if there are significant changes in the assets accepted that cast doubt on the existing determination, senior management will immediately consider amending the relevant Circulars, subject to the approval of the Risk Committee.</p> <p><b>Q512 : How does the FMI monitor the collateral that is posted so that the collateral meets the applicable acceptance criteria?</b></p> <p>CRCC monitors the collaterals provided so that they meet the acceptance criteria by setting the eligible collateral in the Collateral Management System (SGG Module), which allows Members to provide collateral only on eligible assets by eliminating the possibility that different collateral may be provided. Additionally, whenever there are changes in the assets, the inventory is reviewed daily, and a request is made to replace the corresponding asset.</p> <p><b>Q513 : How does the FMI identify and mitigate possible specific wrong-way risk – for example, by limiting the collateral it accepts (including collateral concentration limits)?</b></p> <p>CRCC currently mitigates the specific risk wrong-way risk as follows: i) not accepting securities issued by a Member of CRCC, except for certain equities that are part of the Colcap index and are the subject or underlying asset of transactions accepted by CRCC and ii) all equities received as Initial Margin including those issued by a Member of CRCC are limited to 30% of the average daily trading volume per segment.</p>
<b>Key Consideration 2</b>	<b>An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.</b>
<b>Description</b>	<p><i>Valuation practices</i></p> <p><b>Q.5.2.1 : How frequently does the FMI mark its collateral to market, and does it do so at least daily?</b></p> <p>CRCC values its collateral at least daily at market prices in accordance with current investment valuation regulations. The price source used by the CRCC to value the assets received as collateral is PRECIA Proveedor de Precios para Valoración S.A., official provider of valuation prices authorized and supervised by the SFC.</p> <p>Yes, at least every day at the end of the daily close.</p> <p><b>Q.5.2.2 : To what extent is the FMI authorized to exercise discretion in valuing assets when market prices do not represent their true value?</b></p> <p>CRCC does not have discretion in the valuation of the collateral constituted, bearing in mind that the regulations in force establish that it must value them using the prices given by an authorized official supplier of prices and supervised by the SFC.</p> <p>The valuation methodologies used by the price provider are submitted to the consideration of market participants and approved by the SFC.</p> <p><i>Haircutting practices</i></p> <p><b>Q.5.2.3 : How does the FMI determine haircuts?</b></p>



	<p>CRCC determines the discounts/cuts/haircuts on a monthly basis, based on the haircuts calculation methodology approved by the Risk Committee, which takes into account the liquidity, the settlement period of the collateral provided and the concentration levels of the collateral in the two Members with the greatest exposure to the CRCC on each asset received as collateral with respect to the average daily market volume of that asset.</p> <p>CRCC's haircuts calculation methodology is based on historically high levels of volatility of the assets analyzed, considers a historical time window with at least 1 year of history and at least one stress period within this window, resulting in stable, reasonably conservative and enough haircuts to cover the most recent period of crisis that has occurred in the market. Likewise, the securities received as collateral incorporate a liquidity factor that reflects the impact that the degree of illiquidity they may have on the price of the assets may have. The calculation methodology is not affected by recent reporting cycles. For the collateral posted in US dollars the haircut would be the same as the risk parameter applied to all assets whose underlying is the official dollar price calculated by the Colombian regulators – TRM.</p> <p>In addition to the internal haircuts model, CRCC has established that the minimum haircuts required is the highest value between (i) the haircuts calculated using the CRCC methodology that incorporates volatility and liquidity factors and (ii) the haircuts established for the same asset by the Central Bank in the case of securities that the Central Bank receives as collateral, in order for the CRCC to have the necessary assets to make its access to the Central Bank's discount window effective.</p> <p><b>Q.5.2.4 : How does the FMI test the sufficiency of haircuts and validate its haircut procedures, including with respect to the potential decline in the assets' value in stressed market conditions involving the liquidation of collateral? How frequently does the FMI complete this test?</b></p> <p>As mentioned in Q.5.2.3., the CRCC's haircuts calculation methodology is based on historically high levels of volatility of assets received as collateral. The CRCC performs back testing analyses on established haircuts to statistically check their adequacy.</p> <p>The CRCC checks that haircuts are enough on a weekly basis and updates them on a monthly basis. Additionally, the methodology for calculating and checking the sufficiency of haircuts is reviewed annually by the Risk Committee.</p>
<b>Key Consideration 3</b>	<p><b>In order to reduce the need for procyclical 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.</b></p>
<b>Description</b>	<p><b>Q.5.3.1: How does the FMI identify and evaluate the potential procyclicality of its haircut calibrations? How does the FMI consider reducing the need for procyclical adjustments – for example, by incorporating periods of stressed market conditions during the calibration of haircuts?</b></p> <p>CRCC limits procyclicality considering for the calculation of cuts a historical time window with at least 1 year of history and at least one stress period within this window, to the variations calculated with the defined time window are added to the minus 25% of the calculated parameter, as a safety margin and in no case may it be less than the calculation with a 10-year window or the entire history available in the absence of a 10-year window. Therefore, they are stable and reasonably conservative, which limits the need to implement pro-cyclical changes that promote instability.</p> <p>CRCC identifies and evaluates possible procyclicality globally in the short and long term through indicators and daily Back- Testing tests with weekly reports that identify the outputs in this way and calibrates the cuts again so that they are stable and reasonably conservative.</p> <p>The CRCC reduces the need for pro-cyclical adjustments, taking into account that the defined haircuts calculation methodology is based on historically high levels of volatility of the assets received as collateral, considering a historical time window of at least 1 year of history and at least one period of stress within this window, to the variations calculated with the defined time window, at least 25% of the calculated parameter is added as a safety margin and in no case may</p>



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	<p>it be less than the calculation with a 10-year window or the entire history available in the absence of a 10-year window, which is why they are stable and reasonably conservative, which limits the need to implement pro-cyclical changes that promote instability. This results in stable haircuts that are reasonably conservative and sufficient to cover the most recent period of crisis that has occurred in the market.</p>
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	<p>See Q.5.2.3. to complement</p>
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<b>Key Consideration 4</b>	<b>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.</b>
Description	<p><b>Q.5.4.1 : What are the FMI's policies for identifying and avoiding concentrated holdings of certain assets in order to limit potential adverse price effects at liquidation? What factors (for example, adverse price effects or market conditions) are considered when determining these policies?</b></p> <p>CRCC has defined in its policies that the methodology for calculating its haircuts must incorporate mitigation of concentration risk and has established in its methodology for calculating the haircuts that the greater the concentration of these collaterals received on a given asset in its two Members with greater exposure, the greater the haircut requested is, the greater the haircut requested may reach levels of up to 100%; therefore, the methodology developed discourages the concentration on certain assets received as collateral.</p> <p>CRCC also monitors the concentration of equities received as collateral, limiting the maximum Initial Margin that may be constituted. The limit allowed corresponds to 30% of the daily average of the value traded in the spot market of the equity, applicable by segment. The calculation of the limit will be faced with the sum of the equities constituted as Initial Margin of the entire structure of Accounts of a Member in a Segment.</p> <p>The policies are designed to cover potential liquidity risk, which would make it difficult to sell certain assets within the stipulated time frame, even more so if the open position to be liquidated were large; in addition, they are designed to cover a strong fall in asset prices, which could mean that the cash received from the sale of the assets would be insufficient to meet the obligations of CRCC.</p> <p><b>Q.5.4.2 : How does the FMI review and evaluate concentration policies and practices to determine their adequacy? How frequently does the FMI review and evaluate these policies and practices?</b></p> <p>CRCC reviews the concentration of collateral with respect to the daily trading volume of each type of asset and thus adjusts haircuts if necessary.</p> <p>The Risk Committee of CRCC reviews the results of the application of the haircut methodology monthly, and it annually evaluates the policies and methodologies defined for this calculation.</p>
<b>Key Consideration 5</b>	<b>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.</b>
Description	<p><b>Q.5.5.1 : What are the legal, operational, market and other risks that the FMI faces by accepting cross-border collateral? How does the FMI mitigate these risks?</b></p> <p>CRCC accepts collateral in US dollars in cash and has established: i) US dollars can be invested as deposits in foreign commercial banks whose rating is equal or greater than the rating of the Colombian government and ii) a limit of maximum 5% of the collateral posted.</p> <p><b>Q.5.5.2 : How does the FMI ensure that cross-border collateral can be used in a timely manner?</b></p> <p>CRCC at any given time can execute the collateral as it is deposited under an account under its name.</p>

<b>Key Consideration 6</b>	<b>An FMI should use a collateral management system that is well- designed and operationally flexible.</b>
Description	<p><i>Collateral management system design</i></p> <p><b>Q.5.6.1 : What are the primary features of the FMI's collateral management system?</b></p> <p>CRCC has a collateral management system in place to enable the calculation and execution of margin calls in a timely manner daily, and to provide accurate information on initial and variation margin levels. CRCC 's collateral management system also has advanced functionality to incorporate the possibility of timely deposit, withdrawal, substitution, and liquidation of collateral. CRCC has allocated enough resources to its collateral management system to ensure that it has an adequate level of operational performance, efficiency and effectiveness.</p> <p>The system used by CRCC is interconnected with the official price provider to make the valuation at market prices of its collateral daily and is connected with the central securities depositories (collateral in securities) and with the Central Bank (collateral in cash) and with the correspondent bank (cash collateral in US dollars) so that Members can efficiently deposit or request the withdrawal of collateral from CRCC. The system allows collateral to be fully identified at the individual account level, i.e. at the Member level and at the customer level. At the end of each session the collateral information (isin, nominal, gross value, applied haircut/haicut, net value) for each account is sent to Members through the mechanisms defined by CRCC once the CCP have been valued with the prices given by the official price provider of CRCC.</p> <p><b>Q.5.6.2 : How and to what extent does the FMI track the reuse of collateral and its rights to the collateral provided?</b></p> <p>CRCC does not re-use collateral provided by its Members.</p> <p><i>Operational flexibility</i></p> <p><b>Q.5.6.3 : How and to what extent does the FMI's collateral management system accommodate changes in the ongoing monitoring and management of collateral?</b></p> <p>CRCC performs at least two checks per day, reconciling cash and securities balances in the collateral management system (SGG) against the central securities depositories and the central bank (CUD) and the correspondent bank (cash collateral in US dollars).</p> <p>If any automation is needed, the Chief Operating Officer performs functional requirements to be developed by the Chief Technology Officer or by the software service provider. In addition, the software service provider delivers annually a new version of the system that incorporates new functionalities that improve the performance and efficiency of the processes.</p> <p><b>Q.5.6.4 : To what extent is the collateral management system staffed to ensure smooth operations even during times of market stress?</b></p> <p>CRCC has a qualified and experienced team in charge of supervising the entire collateral management, guaranteeing the correct operational functioning even in situations of market tension.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>PRINCIPLE 5: COLLATERAL</b>	

**Key Consideration 1:**

***An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.***

Currently, CRCC only accepts as cash collateral in Colombian pesos, cash collateral in US dollars, TES public debt securities issued by the Republic of Colombia and highly liquid equities that belong to the COLCAP Index. In the case of securities (TES and Shares), it establishes haircuts in which calculation incorporates a liquidity factor that recognizes the time it may take CRCC to execute the collateral in the market. Considering that CRCC has access to the Central Bank's intraday financing, the haircuts established for securities accepted by CRCC are at least the haircuts established by the Central Bank for the acceptance of such securities as collateral for liquidity transactions.

**Key Consideration 2:**

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

CRCC S.A. values collateral daily, in accordance with current legislation on investment valuation. Concerning haircuts to be applied, CRCC S.A. calculates them periodically, for which the defined calculation methodology takes into account the liquidity, the settlement period of the collateral provided and the concentration levels of the collateral in the two Members with the greatest exposure of CRCC S.A. For the collateral posted in US dollars the haircut would be the same as the risk parameter applied to all assets whose underlying is the official dollar price calculated by the Colombian regulators – TRM.

In addition to the internal haircuts model, CRCC S.A. has established that the haircut required is the highest value between: i) the haircut calculated in accordance with the methodology adopted by CRCC S.A. that incorporates volatility and liquidity factors and ii) the haircut established for the same asset by the Central Bank for the securities it receives as collateral.

**Key Consideration 3:**

***In order to reduce the need for procyclical 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.***

CRCC's haircuts calculation methodology is based on historically high levels of volatility of the assets under review, considering a historical time window with at least 1 year of history and at least one period of stress within this window, resulting in stable, reasonably conservative and sufficient haircuts to cover the most recent period of crisis that has occurred in the market. Likewise, the securities received as collateral incorporate a liquidity factor that reflects the impact that the degree of illiquidity they may have on the price of the assets may have. The calculation methodology is not affected by recent reporting cycles.

**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.***

CRCC has concentration limits for equities received as collateral. Likewise, CRCC has defined in its policies that the methodology for calculating the haircuts must incorporate concentration risk mitigation measures and has established that the greater the concentration of the collateral provided in a given asset by its two Members with greater exposure, the greater the haircut requested is, the greater the haircut may reach levels of up to 100%; therefore, the methodology developed discourages the concentration in certain assets received as collateral.

**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.***

CRCC accepts collateral in US dollars in cash and has established: i) US dollars can be deposited in foreign commercial banks whose rating is equal or greater than the rating of the Colombian government and ii) a limit of maximum 5% of the collateral posted. In addition the collateral can be immediately executed as it is deposited in an account under the name of the CRCC.

**Key Consideration 6:**

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

CRCC has a collateral management system in place that allows for the timely calculation and execution of margin calls on a daily basis and the provision of accurate information on initial and variation margin levels. The collateral management system of CRCC also has an advanced functionality to incorporate the possibility of deposit, withdrawal, substitution, and liquidation of collateral at the appropriate time. CRCC has allocated enough resources to its collateral management system to ensure that it has an adequate level of operational performance, efficiency and effectiveness, enabling CRCC professionals to monitor the entire process more effectively and efficiently.

The system used by CRCC is interconnected with the official price provider to make the valuation at market prices of its collateral and relates to the central securities depositories (securities collateral) and with the Central Bank (cash collateral in pesos) and the correspondent bank (cash collateral in US dollars) so that Members can efficiently deposit or withdrawal of collateral from CRCC. The system allows collateral to be fully identified at the individual account level, i.e. the collateral of each Member and the collateral of each customer can be identified. At the end of each session, the collateral information (isin, nominal, gross value, applied haircut/haircut, net value) for each account is sent to Members through the mechanisms defined by CRCC once they have been valued with the prices given by the official price provider of CRCC.

**MAIN CONCLUSIONS FOR PRINCIPLE 5:**

- CRCC has a collateral management system and uses conservative criteria for the admission of collateral, which consider liquidity, credit and concentration risk:
- Accepts highly liquid assets as collateral
- Conservative, stable haircuts are established that reduce the need for pro-cyclical adjustments.
- Collateral are valued at market prices with the prices provided by an official price supplier authorized and supervised by the SFC, the financial regulator.
- CRCC 's policy is to discourage the high concentration of collateral received through the haircut methodology.
- CRCC monitors the concentration of assets monthly through its Risk Committee, considering the market volume traded in the assets received as collateral.

CRCC has a collateral management system capable of allowing, on a daily basis, the calculation and execution of margin calls in a timely manner, the system used by CRCC is interconnected with the official price provider to make the market price valuation of its collateral and is connected to the central securities depositories (securities collateral) and the Central Bank (cash collateral in pesos) and the correspondent bank (cash collateral in US dollars) so that Members can efficiently provide collateral to CRCC. The system allows the collateral to be fully identified at the individualized segregation account level, i.e. the Member's collateral and the collateral of each customer can be identified individually. At the end of each session the collateral information (isin, nominal, gross value, applied haircut, net value) for each account is sent to Members through the mechanisms defined by CRCC once they have been valued with the prices given by the official price provider of CRCC.

**EVALUATION OF PRINCIPLE 5:**



Principle 5 referred to Collateral is **OBSERVED** by CRCC.

## Principle 6: Margin

**An CCP should cover its participants' credit exposures for all products through an effective margin system that is risk-based and regularly reviewed**

### *Summary narrative*

- CRCC adopted the MEFFCOM2 margin model developed by BME Clearing, which is tailored to the risks and specific characteristics of each segment. For the swaps segment the model applied is historical VaR (H-VaR) and Expected Shortfall (ES)
- CRCC has contracted an official supplier for prices for valuation, which allows it to have a reliable and timely source of prices for valuation authorized and monitored by the SFC, having access to intraday and end-of-day information to properly value positions and collateral.
- CRCC has a margin model, which allows the maximum margin required to be calculated using multiple scenarios, offset risks within assets in a defined group, and offset risk between different groups that are sufficiently correlated within the same Segment. The risk parameters are set with minimum 99.5% confidence levels to two tails and a position closing period (MPOR) of 2 days for financial derivatives, repos and cash lending on equity securities, and 5 days for interest rate swaps. To mitigate the risk of concentration, the IM is increased according for big positions in relation to the market volume.
- The margins have been calculated with a time window of at least 1 year, including at least one stress period, a buffer of 25% is added and a floor is established using a 10-year window when there is data available. The buffer addition and the 10-year floor so they are stable and reasonably conservative and limits the need to implement pro-cyclical changes that foster instability. All of which is in line with the European regulation on the matter.
- CRCC values the positions at market prices and covers the replacement cost, eliminating the accumulation of exposures. In addition, CRCC calculates the intraday risk every 5 minutes and updates the required collateral.
- CRCC has enough authority and operational capacity to calculate both initial and variation intraday margin calls and to make margin calls to recover enough margin level in situations of extreme volatility or when required by CRCC.
- CRCC only considers reducing the margins required across different assets if the correlations between these similar assets are stable, even in periods of stress, and confirms the robustness of its methodologies by performing periodic backtesting analysis of all its parameters and the results of the variation margins of the portfolios versus the required collateral.
- CRCC analyses and monitors the performance of its model and margin coverage. These results are presented monthly to the Risk Committee.
- CRCC reviews and validates the backtesting and sensitivity results monthly in CRCC Risk Committee. CRCC also conducts an annual review of its general risk system, including its collateral models and methodologies. This review aims to carry out a methodical review of the entire system and all methodologies to verify whether it is functioning properly and whether there is room for improvement. The results are presented to the Risk Committee.
- The Risk Committee approves the risk parameters and evaluates the performance of the margin model and the parameters defined on a monthly basis, and reviews whether it meets the risk coverage objectives and its consistency with market developments. The committee also recommends policies to the Board of Directors which approves the risk policies.
- All the Circulars regulating the collateral system are available to the public on the CRCC website and have been compiled into a single document called the Circular.

<b>Key consideration 1</b>	<b>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.</b>
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Description	<p><i>Description of margin methodology</i></p> <p><b>Q.6.1.1 : What is the general framework of the CCP's margin system, particularly with respect to current and potential future exposures? If the CCP does not use a margining system, what risk management measures does it take to mitigate its risks? To what extent do these measures deliver equivalent outcomes?</b></p> <p>CRCC requires daily margin calls (Initial Margin) at the individual account level to cover the Credit Exposure of each of the accounts.</p> <p>Credit Exposure = Replacement Cost (Mark to Market) + Future Potential Exposure.</p> <ul style="list-style-type: none"> <li>- The Replacement Cost is the result of calculating the market value of the position. It is settled daily for the assets defined with daily settlement (Futures, long term Swaps and NDF FXFW) which is cleared and settled by CRCC and for the products defined with settlement only at maturity (short term Swaps, repos on fixed-income securities and repos on equity securities) the Replacement Cost is added to the Initial Margin daily required to the Members.</li> <li>- The Future Potential Exposure is calculated intraday, and at the end of the day on open positions, covering the potential variation in market prices from the time it is calculated to a defined period necessary to close the position in the market.</li> </ul> <p>CRCC uses a margin system, therefore, questions concerning the use of a different system do not apply to CRCC.</p> <p><b>Q.6.1.2 : Is the margin methodology documented?</b></p> <p>The margin methodology is documented and available to all market participants on the CRCC website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>, as well as in Circulars and Operational Handbooks. Some parameters may be consulted in Newsletters on the website.</p> <p><b>Q.6.1.3 : To what extent is the detail of the CCP's margin methodology made available to participants for use in their individual risk management efforts??</b></p> <p>The CRCC margin methodology is available to participants in the Circulars and Handbooks that are available to the public on the CRCC website. In addition, summary information on the margin process is available on the CRCC website at <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>.</p> <p>Some parameters of the Risk Model can be consulted in the Newsletters on the website.</p> <p><i>Credit exposures</i></p> <p><b>Q.6.1.4 : What are the determinants of the credit exposures of the CCP, concerning the attributes of each product, portfolio and market it serves?</b></p> <p>CRCC has adopted methodologies to establish the factors of CCP's credit exposures. These are the risk parameters of cleared and settled products, which consider the characteristics of each product and each market:</p> <ul style="list-style-type: none"> <li>- The criteria used for Futures, NDF FXFW and Options are: i) price fluctuations of the asset and the underlying based on minimum a 1-year time window which must include at least one stress period, this result is the compared to the calculation over a 10 year window that establishes a floor ii) 2-day position closing period,</li> </ul>
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iii) volatility fluctuation (for options only), iv) market liquidity in which the position can be closed, v) bid/offer spread risk and vi) interest rate risk.

- The criteria used for repo operations on public debt securities and interest rate swaps with: i) fluctuation of the interest rate of the relevant part of the curve based on a 1-year time window, which must include at least one stress period, , this result is the compared to the calculation over a 10 year window that establishes a floor ii) 2-day position closing period for repo operations and 5 days for short term swaps, iii) bid/offer spread risk and iv) liquidity.
- The criteria for cash lending on equity securities: i) price fluctuations of the asset and the underlying based on a 1-year time window which must include at least one stress period this result is the compared to the calculation over a 10 year window that establishes a floor ii) closing period of the 2-day position, iii) liquidity of the market in which the position can be closed, iv) bid/offer spread risk, v) liquidity of the asset and vi) interest rate risk.
- The methodology for the long term swaps employed by the CRCC is H-VaR with a 99.5% confidence level or an ES with a 99.75% confidence level where historic returns are modified by using EWMA on the variance that allows for i) timely reaction in the volatility of the interest rate market ii) account for the values on the tail of the returns distribution. The reaction period is 5 day for house accounts and 7 days for client accounts. The segment has also the series for the FX markets which makes it possible to calculate the risk associated to cross currency swaps.

**Q.6.1.5 : To what extent are the CCP's margin requirements proportionate to the risks and particular attributes of each product, portfolio and market served?**

CRCC adjusts the margin criteria and fluctuation parameters to the individual characteristics of each of the products in the Financial Derivatives, Fixed Income, Equity Segments and swaps.

*Operational components*

**Q.6.1.6 : How does the CCP address the risk of a participant payment failure that would cause a shortage of required margin to the participant's position?**

CRCC has assigned an Intraday Risk Limit - IRL to each Clearing Member to prevent them from having an excessive risk in relation to their financial capacity, this IRL limit defines the obligation/maximum amount that a Member may be exposed to with CRCC during a trading session.

The Intraday Risk Limit - LRI, has been established as one percent (1%) of the regulatory capital of each Clearing Member plus the amount of the Individual Collateral and the Extraordinary Collateral, plus the amount guaranteed by the Standby Letters of Credit issued in favor of CRCC for the extension of the Intraday Risk Limit – LRI, in the case of the Issuing Party of the Standby Letter of Credit.

CRCC calculates the Intraday Risk every five (5) minutes for the positions of all individual accounts of CRCC and adds the Intraday Risk at the Clearing Member level. In the event that the Intraday Risk gets over 90% of the Intraday Risk Limit - LRI assigned, the Member must provide the necessary collateral to re-establish the LRI with CRCC within the hour. If the limit is exceeded more than 4 times in a month, the Member must increase its LRI limit by constituting individual collateral, in the amount corresponding to the maximum value exceeded. This new limit will be maintained for a period of three months, after which the Member may release the value of the additional collateral.

**Q.6.1.7 : How does the CCP enforce timelines for margin collections and payments? If the CCP has participants from different time zones, how does the CCP address issues posed by differences in local funding markets and operating hours of relevant payment and settlement systems?**

CRCC strictly establishes and requires compliance with the deadlines to post collateral. The terms and times are fully defined and published in the CCP Circular at [www.camaraderiesgo.com](http://www.camaraderiesgo.com), as follows: i) Once the trading session has started, before 8:30 a.m. CRCC automatically debits the amount of the net multilateral settlement for the Initial Margin from the cash deposit account of the Clearing Member at the Central Bank, Option premiums and settlements corresponding to

	<p>the replacement cost of the assets that are settled daily at the level of the Clearing Member and ii) Requests Initial Margin in the event of exceeding the Intraday Limit or requests posting of Extraordinary Collateral in the event of high volatility in the market prices during the day, for which the Member has one (1) hour to provide such Collateral to CRCC.</p> <p>CRCC has automatic interfaces with the Central Securities Depositories (Securities Collateral), the Central Bank and correspondent bank (Cash collateral), which makes the process efficient with Members and mitigates operational risk. CRCC has no Members in different time zones</p>
<b>Key consideration 2</b>	<b>A CCP should have a reliable source of timely price data for its margin system. An CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.</b>
<b>Description</b>	<p><i>Sources of price data</i></p> <p><b>Q621 : What are the sources of price data for the CCP's margin model? What data does the CCP use to determine initial margin?</b></p> <p>CRCC uses several price sources to calculate margins: i) Precia Proveedor de Precios para Valoración S.A. is the official market price provider chosen by CRCC, an authorized entity and subject to the inspection and surveillance of the SFC, ii) Bloomberg and iii) SETFX, a currency trading and/or registration system, administered by Set Icap Fx S.A., entity authorized and subject to the inspection and surveillance of the SFC.</p> <p>CRCC determines initial margin using historical market prices within a time window of at least 1 year, which must include at least one stress period.</p> <p><b>Q622 : How does the CCP determine that the price data it uses for its margin system is timely and reliable, including prices provided by a third party?</b></p> <p>CRCC uses an official source of market prices for margin calculation. This source corresponds to an entity with exclusive corporate purpose, previously authorized, and whose development is subject to the supervision of the SFC. This information is compared to that provided by external price sources such as Bloomberg and certain negotiation and/or registration systems.</p> <p><i>Estimation of Prices</i></p> <p><b>Q623 : When prices are not readily available or reliable, how does the CCP estimate prices to calculate margin requirements?</b></p> <p>CRCC estimates theoretical prices when these are not available or reliable, using standard market price calculation models.</p> <ul style="list-style-type: none"> <li>- In the case of standardized derivatives: i) the dividends are inferred based on history, ii) theoretical futures prices from the underlying price and the money market rate, iii) theoretical option premium prices using the Black and Scholes formula and volatilities are calculated theoretically from the underlying price in the absence of information.</li> <li>- For derivatives on electricity a theoretical price is determined</li> <li>- For interest rate products, zero coupon curves are used for the valuation of the underlying price from the most commonly source of prices used by the market.</li> </ul>

	<ul style="list-style-type: none"> <li>- For products with equity underlying, it is possible to infer the market fluctuation of a new asset compared to similar shares of a proxy sector and a safety factor defined by the Risk Committee (expert opinion) for each asset that is added.</li> </ul> <p><b>Q.6.2.4 : How does the CCP validate models used to estimate prices or margin requirements when price data are not readily available or reliable? How does the CCP ensure the independence of the validation process?</b></p> <p>The official price provider for CRCC is an entity controlled by the SFC, whose exclusive and main purpose is to develop and apply valuation methodologies, which makes the prices used by CRCC reliable. The valuation process is independent insofar as it is an entity independent from CRCC, with its own corporate governance and systems for applying the defined calculation methodologies.</p>
<b>Key consideration 3</b>	<p><b>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 subportfolio 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, procyclical changes.</b></p>
<b>Description</b>	<p><i>Initial Margin Model</i></p> <p><b>Q.6.3.1: What is the design of the CCP's initial margin model? Describe the model in detail, including the method used to determine potential future exposure. What is the level of coverage of the initial margin model?</b></p> <p>CRCC adopted the MEFFCOM2 and SwapManager margin model developed by BME Clearing, the technology provider of CRCC 's core system, which is an internationally accepted, proven, robust and conservative model.</p> <p>MEFFCOM2 for the Financial Derivatives, Fixed Income and Equity Segments. It is a SPAN based model, which is considered an industry standard for CCPs, which allows to:</p> <ul style="list-style-type: none"> <li>- Calculate the maximum required margin using multiple scenarios, CRCC has it parameterized in 22 scenarios, considering that it clears and settles futures and options and can combine both changes in the price of the underlying as well as changes in volatility,</li> <li>- Allow for risk reduction within assets that belong to the same matrix</li> <li>- Allow for risk reduction within assets that are sufficiently correlated.</li> </ul> <p>The model is fully documented in CRCC Circulars, which are published at <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>.</p>

CRCC has defined the coverage level of the initial margin model ensuring a 99.5% confidence level, the margins are calculated in a time window of at least 1 year and that should include a crisis period.

For the swaps segment where interest rate and cross currency swaps up to 15 years on the IBR are settled and cleared the CRCC uses SwapManager, the system licensed by BME Clearing, which uses H-VaR and Expected shortfall methodologies based on the observed returns to calculate the initial margin requested.

The Initial Margin is calculated as the biggest number between H-VaR at 99.5% confidence level and Expected Shortfall at 99.75% confidence level.

- i. Historical Value at Risk (H-VaR)
  - Calculates historical returns based on historic zero coupon curves
  - Value the portfolio for every historical point
  - Determine the loss at a 99.5% confidence level
- ii. Expected Shortfall (ES)
  - Calculates historical returns based on historic zero coupon curves
  - Calculate EWMA volatility and adjust the historical returns by scaling the volatility with the current measure.
  - Value the portfolio for every historical point
  - Average the losses above the 99.75% confidence level

Once the maximum between H-VaR and ES is determined and add-on for liquidity and concentration is added to the result. The model is fully documented in CRCC Circulars, which are published at [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

#### **Q.6.3.2 : What are the assumptions of the margin model?**

- The risk is calculated, at the account level.
- Assets that are not correlated or with correlations that are not strong and stable enough do not offset risk between each other.
- Assets from different types of underlying asset do not offset each other, regardless of their level of correlation.
- Correlated assets could offset each other, subject to the characteristics of the asset and/or segment.
- Account for possible changes in prices and volatility of options.
- Stable and conservative fluctuation parameters should be used.
- The risk exposure is estimated as the worst case obtained from the simulated scenarios. See answer 6.3.1.

#### **Q.6.3.3 : How does the CCP estimate the key parameters and inputs of the margin model (such as the liquidation horizon and confidence interval)?**

The Board of Directors of CRCC has defined that the initial margins are estimated with a confidence interval of 99.5% by looking at the two tails of the distribution. For the swaps segment the confidence level is 99.5% for the H-VaR and 99.75% for the ES

CRCC uses a conservative closing period for positions, which allows for a closing that does not have a significant impact on prices:

Two (2) days for all products except OIS IBR (IBR overnight SWAP Index) and IRS products.  
Five (5) days for OIS IBR (IBR overnight SWAP Index), IRS and CCS.

The defined closing period is the interval between the last margin call and the closing of positions after a participant's default.



To avoid concentration and liquidity risk, the concept of large positions has been implemented across all Segments, which establishes that when the size of a position at the individual account level is n-times greater than the average volume traded, an additional exposure is considered and, therefore, the closing period of the position is increased depending on the segment and asset.

The increase in the position closing period proportionally increases the required Initial margin.

*Closeout and sample periods*

**Q.6.3.4 : How does the CCP determine an appropriate closeout period for each product? In particular, how does the CCP account for potentially increased liquidation times during stressed market conditions? What factors are considered in this analysis (for example, market liquidity, impact of a participant's default on prevailing market conditions, adverse effects of position concentration, and the CCP's hedging capability)?**

See answer 6.3.3.

The strategy for closing the risk of a market position includes: i) closing the position in the transaction market, ii) closing the position in the OTC market and iii) hedging the open position, which allows the risk to be mitigated in the event of a default by a Clearing Member within 2 days to 5 days, depending on the product as determined in the previous consideration. Once the risk has been mitigated, the position is transferred to the compliant Members through a voluntary and/or mandatory auction scheme.

CRCC requests additional collateral when the Clearing Member exceeds the Margin Call Limit and when concentration of positions is identified in light of the current market volume. In these cases the risk parameter is increased thus adding to the collateral held by the CCP and the resources available to manage a default thus the MPOR is extended.

The extension of the closing periods of a position is carried out in accordance with the parameters explained in the previous point.

CRCC considers the same periods for closing a position in the initial margins and the Individual Collateral required by the stress test of the Default Fund.

**Q635 : How does the CCP determine an appropriate sample period for historical data used in the margin model? What factors are considered (for example, reflection of new, current or past volatilities, or use of simulated data for new products without much history)?**

CRCC calculates historical volatility based on a time window of at least 1 year of historical data that includes at least one market price crisis for each parameter. The margins correspond to those set at a 99.5% confidence level, a buffer of 25% is added and a floor is established using a 10-year window when there is data available.

The data used by CRCC to calculate historical volatility captures a full range of market conditions, including periods of crisis/stress. Crisis/stress periods are those periods in which the EWMA volatility is over 1.5x the mean historic volatility.

CRCC considers current and historical volatilities.

CRCC estimates volatilities based on theoretical and/or underlying prices, when these are not available or reliable, using standard models. In addition, similar asset volatilities are available. The Risk Committee may increase the margins calculated based on an additional safety factor.

**Q636 : How does the CCP consider the trade-off between prompt liquidation and adverse price effects?**

See answer 6.3.3.

*Procyclicality and specific wrong-way risk*

	<p><b>Q637 : How does the CCP address procyclicality in the margin methodology? In particular, does the CCP adopt margin requirements that, to the extent practical and prudent, limit the need for destabilizing procyclical changes?</b></p> <p>The volatility calculation methodology is based on historically high levels of volatility of the assets under study and includes at least one period of stress within the historical data window analyzed, resulting in reasonably conservative and stable margin requirements that decrease procyclicality and are enough to cover the latest stress period observed. The CRCC has embedded into its methodologies anti procyclicality elements such as adding a 25% buffer and establishing a floor with a 10-year window.</p> <p>CRCC modifies its margins only based on prudent criteria, subject to approval by the Risk Committee. However, it may increase them immediately if a backtesting analysis determines that the parameters do not meet the appropriate confidence level defined by the CRCC Board of Directors, the increase is subsequently reported to the Risk Committee</p>
	<p><b>Q.6.3.8: How does the CCP identify and mitigate specific wrong-way risk?</b></p> <p>CRCC does not accept as collateral securities issued by the holder of the position or by the Clearing Member, except for certain shares that are part of the Colcap index and are the object or underlying asset of transactions accepted by CRCC, and, for , the shares received as collateral per position, it has established a maximum limit of 30% of the average daily volume traded, per segment.</p>
<b>Key consideration 4</b>	<p><b>An CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. An CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.</b></p>



**CÁMARA DE RIESGO**  
CENTRAL DE CONTRAPARTE DE COLOMBIA

Description	<p><b>Q.6.4.1 : What is the design of the CCP's variation margin model? Describe the model in detail, including the method used to measure current exposure, frequency of mark-to-market and schedule of margin collection, and intraday margin call capabilities.</b></p> <p>Variation margins (the Replacement Cost) are the result of calculating the market value of the position, using prices provided by an authorized official price provider and monitored by the SFC. Variation margin is settled daily, for the assets, that are cleared and settled by CRCC, defined with daily settlement (futures, options and non-delivery forward peso - dollar (NDF FXFW). For the products defined with settlement only at maturity (short term swaps in the derivatives segment, repo transactions(SFT) in fixed-income securities and repos on equities), The Replacement Cost is adjusted for collateral, i.e. it is added to the Initial Margin, which is requested daily. For the long-term swaps, its variation margin is exchanged in cash on a daily basis.</p> <p>CRCC calculates the intraday risk every 5 minutes and, based on this calculation, it updates the margin requirements, based on the current positions and the last known prices (closing price or last price marked). CRCC monitors the consumption of intraday risk every 5 minutes and in the event that the collateral provided does not cover the new margin requirement and the Intraday Risk Limit has been exceeded, CRCC issues a margin call during the day, for which the Clearing Member will have one (1) hour to make such post; if the required margin is reduced by closing positions or a change in price, the excess collateral will be available for release upon request of the Clearing Member, i.e. this release does not operate automatically.</p> <p>The Replacement Cost (variation margin) is calculated daily at the end of each trading session and is also monitored intraday every 5 minutes.</p> <p>For more information see Q.6.1.6.</p> <p><b>Q.6.4.2 : Does the CCP have the authority and operational capacity to make and complete intraday margin calls for initial and variation margin?</b></p> <p>CRCC has enough authority and operational capacity to calculate in the intraday both initial and variation margin and at the Member level or at the individual account level. It also has the operational and legal capacity to make margin calls through the day, to either one or all members in cases considered of high risk, with the aim to establish a sufficient margin level in a situation of extreme volatility.</p>
Key consideration 5	<b>In calculating margin requirements, an 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</b>

	<p><b>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.</b></p>
Description	<p><i>Portfolio margining</i></p> <p><b>Q.6.5.1 : Does the CCP allow offsets or reductions in required margin across products that it clears or between products that it or another CCP clear? If so, is the risk of one product significantly and reliably correlated with the risk of the other product? How does the CCP offset or reduce required margin?</b></p> <p>CRCC allows for margin offsets between products that are sufficiently correlated, of the same type of underlying and within the same Segment. The correlation is established with a confidence of 99.5% (i.e., the correlation chosen is the lowest with a confidence of 99.5%).</p> <p>CRCC can only offset for risks in products that are sufficiently correlated (correlations greater than 30%) and that have been verified to be stable over time. Equity asset offsets are obtained with the 0.5 percentile of the historical moving window correlation of 252 data points. For TES, the correlation matrix corresponding to the 0.5 percentile was taken, using a scalar transformation of each matrix to preserve the economic scenario of the yield curve. This identifies a time stable offset parameter. The Board of Directors has established that only assets with similar risks will be correlated as a qualitative criterion.</p> <p><b>Q.6.5.2 : How does the CCP identify and measure its potential future exposure at the product and portfolio level? How does the CCP's portfolio margining methodology account for offsets or reductions in required margin across products that it clears?</b></p> <p>CRCC applies an inter commodity spread to the correlated assets and the net margin per portfolio or individual account is obtained.</p> <p>Please see answer 6.5.1.</p> <p><i>Cross-margining</i></p> <p><b>How have the CCPs harmonized their approaches to risk management? What legal and operational arrangements govern cross-margining arrangements between two or more CCPs?</b></p> <p>Not applicable. CRCC does not currently have cross margin agreements with other CCPs.</p> <p><i>Robustness of the methodologies</i></p> <p><b>Q.6.5.4 : How does the CCP confirm the robustness of its portfolio and cross-margining methodologies? How does the CCP's methodology account for the degree of price dependency, and its stability in stressed market conditions?</b></p> <p>CRCC only considers reducing the margins required for inter commodity spread if the correlations between these similar assets are stable, even in times of stress.</p> <p>CRCC confirms the robustness of its methodologies by carrying out periodic backtesting analyses of all its parameters and the results of the variation margins of the portfolios against the required collateral.</p> <p>Please view answer to 6.5.1.</p>

<b>Key Consideration 6</b>	<p><b>Key consideration 6: An 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. An 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, an CCP should consider 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.</b></p>
<b>Description</b>	<p><i>Back testing and sensitivity analysis</i></p> <p><b>Q.6.6.1 : Describe in detail the back testing methodologies and model performance, including both target confidence level and the result of overall margin coverage. How does such testing address portfolio effects within and across asset classes within the CCP and cross-margining programmes with other CCPs? How frequently is the back testing conducted?</b></p> <p>CRCC performs daily backtesting, with a weekly report to Senior Management, to determine the adequacy of the margins and collateral required by the margination model. This review is done to determine whether the Initial Margin for each individual segregated account is enough to cover the losses of the respective account during the close-out period defined. If the backtesting results show that the parameters or the model do not comply with the defined confidence level, the parameters are immediately updated. These results are presented monthly to the Risk Committee. CRCC S.A. regularly checks the adequacy of its financial resources, as a risk management policy, through the following tests:</p> <ol style="list-style-type: none"> <li>1. Daily backtesting with weekly report of the fluctuation parameters used.</li> <li>2. Clean weekly backtesting of the P&amp;G results of the positions at the T+n day individual account level (where n is the number of days defined to close the position) against the Collateral per Position required on D-day considering the period defined to close the position.</li> <li>3. Review of correlations between assets on a quarterly basis.</li> <li>4. Periodic comprehensive review of risk parameters and extreme but plausible scenarios annually.</li> </ol> <p>CRCC has defined a confidence level of 99.5%, see answer to Q.6.3.3.</p> <p>CRCC performs backtesting at the individual account level including the full portfolio of the Clearing Member in which it compares the collateral required on day T against the P&amp;G generated on day T + n (where n is the defined position closing period).</p> <p>CRCC does not currently have cross-margin agreements with others CCP's</p> <p>Backtesting is carried out daily with weekly reporting to senior management.</p> <p><b>Q.6.6.2: Describe in detail the sensitivity analysis of the model performance and the overall coverage of the CCP's initial margin methodology. Does the analysis cover a wide range of parameters, assumptions, historical</b></p>

	<p><b>and hypothetical market conditions and positions of participants, including stress conditions? How often is the test performed?</b></p> <p>CRCC conducts sensitivity analyses at the individual account level on all portfolios and identifies the Members with the greatest exposure to each risk factor; risks are aggregated at the Member level. The sensitivity analysis includes stress conditions in the defined parameters.</p> <p>The sensitivity analysis is performed monthly.</p> <p><i>Margin model performance</i></p> <p><b>Q.6.6.3 shortcomings of the margin model based on backtesting and sensitivity analysis?</b></p> <p>No deficiencies have been identified.</p> <p><b>Q.6.6.4: What actions would the CCP take if the model did not perform as expected??</b></p> <p>If the model does not perform adequately, CRCC would immediately review the reasons for this situation, review the parameters/model, and submit any modifications to the Risk Committee and the Board of Directors for approval.</p> <p><b>Q.6.6.5: How does the CCP disclose the results of its backtesting and sensitivity analysis?</b></p> <p>The backtesting results are reported weekly to CRCC's Senior Management, and monthly to the Risk Committee.</p>
<b>Key consideration 7</b>	<b>A CCP should regularly review and validate its margin system.</b>
<b>Description</b>	<p><b>Q.6.7.1 : How does the CCP regularly review and validate its margin system including its theoretical and empirical properties? How frequently is this done?</b></p> <p>CRCC reviews and validates the backtesting and sensitivity results at Risk Committee meetings. The risk model is reviewed annually by the Chief Risk Officer and the results are presented to the Risk Committee.</p> <p>CRCC modifies its margins based on prudential criteria with the prior approval of the Risk Committee. Notwithstanding the foregoing, if a backtesting analysis, determines that they do not comply with the appropriate level of confidence defined by the Board of Directors of CRCC, they may immediately increase them, and report said increase to the Risk Committee later.</p> <p>CRCC also conducts an annual review of its general risk system, including its margin models and methodologies. Its purpose is to carry out a methodical review of the entire system and all methodologies to verify whether it is functioning properly and whether there is room for improvement.</p> <p><b>Q.6.7.2 : How does the CCP incorporate material revisions and adjustments of the margin methodology, including parameters, into its governance arrangements?</b></p> <p>In accordance with the Corporate Governance of CRCC, the Risk Committee is responsible for approving the parameters of the risk model, reviewing the performance of the margin, collateral and defined parameters. It also</p>



	<p>reviews monthly, if it meets the risk coverage objectives set and its consistency with the needs of the markets. Likewise, the Risk Committee recommends the adoption of risk management policies to the Board of Directors, the body in charge of approving such risk policies.</p> <p><b>Q.6.7.3: How and to whom does the CCP disclose both the method and the results of this review and validation?</b></p> <p>CRCC communicates the results of this review process to the Risk Committee and the Board of Directors.</p>
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## DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE

### **Principle 6: Margins**

***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.***

#### **Key consideration 1:**

***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.***

CRCC adopted the MEFFCOM2 margin model developed by BME Clearing, a Spanish central counterparty that provides the main CRCC system, which is appropriate to the risks and specific characteristics of each Segment established at CRCC. For the Swaps Segment a new system was set-up to manage the risk which is based on H-VaR and ES. The system is derived from Swapmanager system licensed by BME Clearing.

#### **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.***

CRCC clears and settles not complex standard products (plain vanilla), It only clears and settles the following products: Swaps, Futures, Forward, Options, Repos on fixed-income securities and Cash lending on equity securities. It has a reliable and timely source of prices, used for valuation purposes, authorized and monitored by the SFC. It has access to reliable intraday and end-of-day information to properly value positions and collateral.

#### **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 subportfolio 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, procyclical changes.***

CRCC has adopted the MEFFCOM2 and Swapmanager margin models developed by BME Clearing, which allows to determine the margin required to be calculated by using multiple scenarios, offset risks between assets with the same underlying and to offset risk between different assets only if they are sufficiently correlated and their correlations are stable through time, even in stress periods.

The margin model has been developed to cover the Credit Exposure with minimum confidence levels of 99.5% by looking at both tails and a closing period of 2 days for financial derivatives, fixed income repos and cash lending on equity securities and 5 days for swaps. To mitigate the risk of concentration, the request for initial margin is increased when a large position is identified.

The margins have been calculated with a time window of at least 1 year, including at least one stress period, so they are stable and reasonably conservative, which limits the need to implement pro-cyclical changes that foster instability.

**Key consideration 4:**

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

Variation margin is settled daily, for the assets, that are cleared and settled by CRCC, defined with daily. For the products defined with settlement only on maturity the Replacement Cost is reduced by adjusting the required collateral, i.e. it is added to the Initial Margin, which is requested daily. Additionally, CRCC calculates the intraday risk every 5 minutes and updates the required collateral according to the open positions and the last known prices (closing price - last price).

CRCC has enough authority and operational capacity to calculate both initial and variation intraday margin requirements, aggregated at the Member level and at the individual account level. Likewise, CRCC has the operational and legal capacity to make margin calls in the intraday market, either for a single Member or generally to all Members, in cases considered of high risk, with the aim of recovering enough margin level in a situation of extreme volatility.

**Key consideration 5:**

***In calculating margin requirements, an 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.***

CRCC has adopted the MEFFCOM2 and Swapmanager margin models developed by BME Clearing, which allows to determine the margin required to be calculated by using multiple scenarios, to offset risks between assets with the same underlying and to offset between different assets that are sufficiently correlated.

CRCC only considers reducing the margins required for collateral if the correlations between these similar assets are stable, even in periods of stress. It confirms the robustness of its methodologies by performing periodic backtesting analyses of all its parameters and the results of the variation margins of the portfolios against the required margin.

**Key consideration 6:**

***An CCP should analyze and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. An 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, an CCP should consider 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.***

CRCC analyses and monitors the performance of its model and margin coverage through daily backtesting, with a weekly report to senior management. Through these tests, it determines the adequacy of the margins and collateral required by the margin model, performs sensitivity analyses at the individual account level on all portfolios and identifies the Members with the greatest exposure to each risk factor (risks are aggregated at the Member level). The sensitivity analysis includes stress conditions in the defined parameters. These results are presented monthly to the Risk Committee.

The margin models and methodologies are reviewed annually.

**Key consideration 7:**

***A CCP should regularly review and validate its margin system.***

CRCC reviews and validates backtesting and sensitivity results monthly at CRCC Risk Committee meetings. CRCC also conducts an annual review of its general risk system, including its margin models and methodologies. The purpose of this, is to undertake methodical review of the entire system and all methodologies to verify whether it is functioning properly and if it requires improvement. The results are presented to the Risk Committee.

In accordance with the Corporate Governance of CRCC, the Risk Committee is responsible for approving the parameters of the risk model and reviewing the performance of the margin model, the margin model and the parameters defined monthly. The Risk Committee reviews whether they comply with the risk coverage objectives established and verifies their consistency with the needs of the markets, recommending the adoption of risk policies to the Board of Directors, the body responsible for approving such risk policies.

**KEY CONCLUSIONS FOR PRINCIPLE 6:**

- CRCC adopted the margin model, MEFFCOM2 and Swapmanager, developed by BME Clearing, the Spanish central counterparty, which provides the main CRCC system, and is appropriate to the risks and specific characteristics of each segment established by CRCC.
- CRCC has contracted an official price provider, an entity authorized to operate by the SFC. Therefore, it has a reliable and timely source of valuation prices, having access to intraday and end-of-day information to properly value positions and margin.
- CRCC margin model allows the maximum margin required to be calculated using multiple scenarios, offsetting risks between assets on the same underlying segment and offsetting between different assets that are sufficiently correlated, defining the parameters with minimum confidence levels of 99.5% at two tails and with a closing period of 2 days for financial derivatives, fixed income repos and cash lending on equity securities, and 5 days for swaps. To mitigate the risk of concentration and liquidity, the application for Initial Margin is increased for large positions.
- The margins have been calculated with a time window of at least 1 year, including at least one stress period, so they are stable and reasonably conservative, which limits the need to implement pro-cyclical changes that foster instability.
- CRCC evaluates positions at market prices and covers the replacement cost, eliminating the accumulation of exposures. In addition, CRCC calculates the intraday risk every 5 minutes and updates the required margin.
- CRCC has enough authority and operational capacity to calculate both initial margin and intraday variation margin requirements and to make margin calls to recover a sufficient margin level in situations of extreme volatility or when required by CRCC.

- CRCC only considers reducing the margins required for inter commodity spread if the correlations between these similar assets are stable, even in periods of stress, and confirms the robustness of its methodologies by performing periodic backtesting analyses of all its parameters and the results of the variation margins of the portfolios against the required margin.
- CRCC analyses and monitors the performance of its model and margin coverage. These results are presented monthly to the Risk Committee.
- CRCC reviews and validates the backtesting and sensitivity results monthly in the CRCC Risk Committee. CRCC S.A. also carries out an annual review of its general risk system, including its margin models and methodologies. The aim of this review is to carry out a methodical review of the entire system and all its methodologies to verify whether it is functioning properly or if there is room for improvement. The results are presented to the Risk Committee.
- The Risk Committee approves the parameters of the risk model and reviews the performance of the margin model and the parameters defined monthly, as well as whether these models and parameters meet the risk coverage objectives set and whether they are consistent with market needs. In addition, it recommends the adoption of risk policies to the Board of Directors, the body in charge of their approval.

#### **ASSESSMENT OF PRINCIPLE 6:**

Principle 6 referred to Margins is **OBSERVED** by CRCC.

#### **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.**

##### *Summary narrative*

CRCC has a solid risk management framework that allows it to properly manage liquidity risks by validating the status of its liquid resources, and possible liquidity needs through tests conducted in normal and stress market scenarios. Through these tests, CRCC has identified its liquidity needs and the sources of liquidity risk, to determine the liquid resources available for mitigation, including access to the Central Bank's intraday financing.

CRCC adopted the same MEFFCOM2 and Swapmanager risk models developed by BME Clearing, the Spanish central counterparty and provider of the CRCC core system, which has a risk management module called Limits, which allows it to estimate the liquidity needs for intraday (every 5 minutes) and end-of-day. Through this module, CRCC verifies that the need for liquidity does not exceed the Intraday Risk Limit assigned by the Board of Directors to each Clearing Member (1% of the capital requirements of each Member). Likewise, the model has another module for collateral management, called SGG, through which CRCC can verify the adequacy of cash collateral and/or intraday securities (every 5 minutes).

To mitigate liquidity risk, CRCC makes all its settlements and cash collateral requirements with cash deposited at the Central Bank in Colombian legal currency (COP).

The main mechanisms of CRCC to access reliable/available liquid resources are: (i) transitional access to cash collateral at CRCC; (ii) access to liquid resources of CRCC; (iii) access to the primary government securities dealers managed by the Central Bank - Sistema Electrónico de Negociación – SEN (T+0 settlement system). This access allows CRCC to settle both collaterals provided in government debt securities,

in the event of a defaulting Member, and the assets of CRCC invested in such government debt securities, and (iv) access to the Central Bank intraday financing.

The suitability of these resources is reviewed through daily liquidity stress tests conducted by CRCC. The result of the liquidity stress test is compared with the cash available from CRCC and its clearing Members, and with highly liquid securities such as sovereign bonds - TES, which should be enough to cover the credit exposures of the two members that generate the greatest risk for CRCC. The results of the liquidity stress tests and the stress scenarios used are reviewed daily by Senior management and monthly by the Risk Committee.

The Rulebook and the Circular contain procedures designed to ensure that CRCC maintains enough pre-financed resources to cover the credit exposures to the two members and its affiliates that generate the greatest risk for CRCC under extreme but plausible market conditions.

Likewise, the rules for the achievement of liquid resources is documented.

<b>Key Consideration 1</b>	<b>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.</b>
Description	<p><b>Q.7.1.1: What is the FMI's framework for managing its liquidity risks, in all relevant currencies, from its participants, settlement banks, nostro agents, custodian banks, liquidity providers and other entities?</b></p> <p>CRCC has a solid risk management framework, which allows it to adequately manage the liquidity risks it faces, both in scenarios involving normal situations such as daily multilateral net settlement before 8:30 a.m., and in stress situations where the default process of up to two Clearing Members must be managed.</p> <p>CRCC is only exposed to liquidity risk in Colombian pesos (COP), because currently, it only operates in Colombian jurisdiction and because the clearing and settlement it makes in the performance of its functions is done in the Colombian legal currency, Colombian Peso (COP). Additionally, the cash resources used by CRCC are managed through the Central Bank's deposit accounts - CUD system.</p> <p>The following liquid resources are available to CRCC:</p> <ul style="list-style-type: none"> <li>- Cash collateral in Colombian pesos deposited by Members to cover their obligations to CRCC.</li> <li>- Cash collateral in US dollars deposited by Members to cover their obligations to CRCC.</li> <li>- Capital of CRCC: i) a portion of the capital of CRCC is held in cash in accounts at commercial banks with AAA rating and ii) the rest of the capital of CRCC is invested in government debt securities issued by the Republic of Colombia -TES of high liquidity and low market risk, which can be used to obtain liquidity from the Central Bank or from market participants.</li> <li>- CRCC has access to the primary government securities dealers of the Ministerio de Hacienda (SEN), market maker program, the country's most liquid public debt market, through which it can easily sell the TES securities received as collateral.</li> <li>- CRCC has access to the Central Bank's intraday financing (intraday and overnight collateralized liquidity) through which it can obtain liquidity using collateral provided by Members in stressful events such as a defaulting Members of CRCC. Historically, more than 90% of the collateral provided at CRCC are securities eligible for access to liquidity support from the Central Bank.</li> <li>- Uncommitted lines of credit with commercial banks.</li> </ul> <p>In addition, CRCC carries out annual liquidity risk management tests, which are exercises to validate the effectiveness of liquidity mechanisms such as uncommitted liquidity facilities with commercial banks and access to the Central Bank's</p>

	<p>intraday financing. In this regard, CRCC requests the disbursement of cash during sessions where liquidity needs could be generated, so that CRCC can ensure that it has the liquid resources to meet payment obligations under normal or exceptional market circumstances.</p> <p><b>Q.7.1.2 : What are the nature and size of the FMI's liquidity needs, and the associated sources of liquidity risks, that arise in the FMI in all relevant currencies?</b></p> <p>The nature and size of the liquidity needs of CRCC correspond to:</p> <ul style="list-style-type: none"> <li>- Liquidity needs in multilateral net settlement sessions: (i) Failure of a Member to deliver cash corresponding to variation margins and/or option premiums at the time established by CRCC; (ii) Failure of a Member to pay cash corresponding to the daily settlement (mark to market of open positions) at the time established by CRCC. In this event, it is the responsibility of CRCC, in its role as counterparty, to deliver the same cash value to the Member entitled to receive for having obtained a positive difference in the daily settlement; and ii) Failure of the Member in default to provide Initial Margin, an event that generates a credit risk to CRCC rather than a liquidity risk.</li> <li>- Liquidity needs during settlement sessions at maturity due to non-payment of settlement by a Member: in this event, CRCC incurs in liquidity risk, considering that the largest portion of the collateral portfolio is made up of securities, specifically TES. Notwithstanding the foregoing, TES (Government Debt) are highly liquid securities in respect of which CRCC applies a reasonably conservative and stable haircut, the minimum being the haircut required by the Central Bank for its liquidity transactions. In this sense, CRCC has the equity that will allow it to access the Central Bank's intraday financing.</li> <li>- Liquidity needs during settlement sessions at maturity of outflows and returns from repos transactions in fixed income securities and repos on equity securities: Non-payment of cash by a Member in a buying position.</li> </ul> <p>CRCC clearly identifies its sources of liquidity risk and values its current and future liquidity needs daily, through stress tests incorporating extreme but plausible market conditions and the default of the two largest Members and their affiliates in each Segment.</p> <p>CRCC is only exposed to liquidity risk in Colombian pesos (COP), as it does not make settlements and payments in any other currency.</p> <p><b>Q.7.1.3 : How does the FMI take into account the potential aggregate liquidity risk presented by an individual entity and its affiliates that may play multiples roles with respect to the FMI?</b></p> <p>CRCC calculates the liquidity risk of each of its Clearing Members and its affiliates considering all the accounts in its account structure, including the accounts of its clients, its Non-Clearing Members and their clients.</p> <p>The aggregate liquidity risk of the entity and its subsidiaries began to be calculated on 2018, considering that within the structure of CRCC Members, only one (1) entity does not consolidate and represents a percentage of non-material risk for CRCC.</p>
<b>Key Consideration 2</b>	<b>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.</b>
<b>Description</b>	<b>Q.7.2.1: What operational and analytical tools does the FMI have to identify, measure and monitor settlement and funding flows?</b>



	<p>The risk model adopted by CRCC, which corresponds to the MEFFCOM2 and Swapmanager models developed by BME Clearing, has a module called Limits (operating tool) that allows it to estimate the need for intraday liquidity (every 5 minutes) and at the end of the day.</p> <p>In addition, CRCC 's Collateral Management System (SGG) monitors the status of the collateral provided on an intraday basis and allows it to consult in real time the volume of collateral provided in cash and from this volume, verify how much has been invested and who the counterparty is. In accordance with CRCC 's regulations, Members may voluntarily access a procedure for investment of cash collateral.</p> <p>For the Fixed Income and Equity Segments, the system calculates the liquidity needs at the end of the day when it generates the settlement instructions for the next day's due.</p> <p><b>Q.7.2.2: How does the FMI use those tools to identify, measure and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity?</b></p> <p>Through its Limits module, CRCC calculates the variation margin and premium amounts for the next multilateral settlement session, in order to calculate the liquidity needs of a Clearing Member intraday and at the end of the day. The variation margin is part of the consumption of the intraday risk limit, which is why it monitors permanently that members don't exceed the limit set by the Board of Directors of CRCC.</p> <p>CRCC estimates daily, the potential liquidity needs in the event of default by the two Clearing Members and its affiliates with which it has the greatest exposure under stressful conditions. In addition, CRCC calculates the risk of each Member and compares it with the liquid resources in the intraday and at the end of the day. Cash resources in Colombian pesos are not invested until the net multilateral settlement session at the CUD of the Central Bank has been completed. Resources in US dollars are not invested.</p> <p>In addition, CRCC monitors daily the level of liquid assets it holds (such as cash, securities, other assets held in custody and investments) through the use of appropriate haircuts.</p> <p>The corresponding information, as well as the analytical tools that enable Members to measure and control their liquidity risks, is provided by CRCC through the SMART system and the web portal.</p>
<b>Key Consideration 3</b>	<p><b>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.</b></p>
<b>Description</b>	<p><b>Q.7.3.1: How does the payment system or SSS determine the amount of liquid resources in all relevant currencies to effect same day settlement and, where appropriate, intraday or multiday settlement of payment obligations? What potential stress scenarios (including, but not limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions) does the payment system or SSS use to make this determination?</b></p> <p>Not applicable for CRCC.</p>

	<p><b>Q.7.3.2: What is the estimated size of the liquidity shortfall in each currency that the payment system or SSS would need to cover?</b></p> <p>Not applicable for CRCC.</p>
<b>Key Consideration 4</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Sufficient liquid resources</i></p> <p><b>Q.741 : How does the CCP determine the amount of liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments and meet other payment obligations on time? What potential stress scenarios (including, but not limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions) does the CCP use to make this determination?</b></p> <p>CRCC only provides clearing and settlement services as a central counterparty in the Colombian jurisdiction and does not make settlements in currencies other than the Colombian legal currency, Colombian peso (COP).</p> <p>The tools used by the CRCC to determine its liquidity needs are indicated in the answer Q.7.2.2.</p> <p>CRCC conducts daily stress tests considering all its Members (considering all the accounts in its account structure) using extreme but plausible scenarios, estimating the liquidity needs in an event of default of the two Members and its affiliates with the highest exposure in each Segment.</p> <p><b>Q.742 : What is the estimated size of the liquidity shortfall in each currency that would need to be covered, following 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? How frequently does the CCP estimate this?</b></p> <p>The liquidity deficit is estimated by each Clearing Member. This deficit is the result of subtracting the calculated value of the settlement charge in the worst-case scenario in all segments in which the Clearing Member participates, the value of collateral provided in cash. CRCC will be properly covered if the result of this equation is positive.</p> <p>CRCC is only exposed to liquidity risk in Colombian pesos (COP), as it does not make settlements in any other currency.</p> <p>CRCC estimates the liquidity deficit on a daily basis.</p> <p><i>Risk profile and systemic importance in multiple jurisdictions</i></p>

	<p><b>Q.7.4.3 : Do any of the CCP's activities have a more complex risk profile (such as clearing financial instruments that are characterized by discrete jump-to-default price changes or that are highly correlated with potential participant defaults)? Is the CCP systemically important in multiple jurisdictions?</b></p> <p>In general, the risk profile of CRCC is not complex, currently only clears and settles plain vanilla products such as Futures, Forward, Options, Repos on Fixed Income Securities, IR Swaps, Cross Currency Swaps (COP/USD), and Repos with equities as collateral and does not participate in different jurisdictions to the Colombian market.</p> <p><b>Q.7.4.4 : If the CCP is involved in activities with a more complex risk profile or is systemically important in multiple jurisdictions, has the CCP considered maintaining additional resources sufficient to cover a wider range of stress scenarios that would include 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?</b></p> <p>CRCC is not systematically important in multiple jurisdictions, it only participates in the Colombian market.</p>
<b>Key consideration 5</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Size and composition of qualifying liquid resources</i></p> <p><b>Q.7.5.1 : What is the size and composition of the FMI's qualifying liquid resources in each currency that is held by the FMI? In what manner and within what time frame can these liquid resources be made available to the FMI?</b></p> <p>The liquid resources available to CRCC are detailed in Q:7.1.1. Information about the size and composition of eligible liquid resources is not public and, therefore, CRCC will only disclose this information at the request of the Member to which it relates.</p> <p>Eligible liquid resources may be made available to CRCC as follows:</p> <ul style="list-style-type: none"> <li>- Cash on COP: immediately.</li> <li>- Cash on USD: Settlements and clearing must be done with COP so the CRCC would have to sell the USD in the spot markets and has applied a haircut to this liquid collateral.</li> <li>- TES securities in CRCC 's equity investment portfolio: It can obtain liquidity through: i) secondary market sales and ii) the Central Bank's intraday financing.</li> <li>- TES collateral: CRCC can cash them through their sale in the event of a Defaulting Member, CRCC and obtain T+0 liquidity through: i) secondary market sales and ii) central bank intraday financing.</li> <li>- Equity collateral: CRCC can trade them on the secondary market through the stock exchange and bring their compliance forward to T+0.</li> </ul>

	<p>CRCC, in accordance with its Rulebook, may make temporary use of cash collateral provided by Members in both COP and USD, to manage delay or default events of a Member. Cash collateral is immediately available to CRCC in the deposit account - CUD at the Central Bank in the name of CRCC. As the clearing and settlement is done in COP the USD must be sold through the spot market.</p> <p><i>Availability and coverage of qualifying liquid resources</i></p> <p><b>Q.7.5.2 : What prearranged funding arrangements has the FMI established to convert its readily available collateral and investments into cash? How has the FMI established that these arrangements would be highly reliable in extreme but plausible market conditions? Has the FMI identified any potential barriers to accessing its liquid resources?</b></p> <p>CRCC has efficient mechanisms for converting the collateral and investments into cash, see Q.7.5.1.</p> <p>CRCC verifies that the mechanisms are highly reliable in extreme but plausible market conditions and carries out periodic tests for resource attainment by activating different sources of available liquidity.</p> <p>Nowadays, CRCC has not identified potential barriers to accessing the liquid resources available to mitigate the liquidity risks to which it is exposed.</p> <p><b>Q.7.5.3 : If the FMI has access to routine credit at the central bank of issue, what is the FMI's relevant borrowing capacity for meeting its minimum liquid resource requirement in that currency?</b></p> <p>CRCC has access to the liquidity provided by the Central Bank through the repo intraday transactions, which is why its borrowing capacity is equivalent to the availability of collateral on securities held by CRCC. These are, in turn, eligible for repo intraday operations by the Central Bank. In this regard, it is important to mention that, historically, more than 90% of the collateral constituted in CRCC are securities eligible for the Central Bank to access its liquidity support.</p> <p>CRCC also has defined procedures for the use of liquid resources and carries out periodic tests on their use and achievement.</p> <p><b>Q.7.5.4 : To what extent does the size and the availability of the FMI's qualifying liquid resources cover its identified minimum liquidity resource requirement in each currency to effect settlement of payment obligations on time?</b></p> <p>The size and availability of resources available to CRCC are enough to manage the default of its two members and its affiliates posing the greatest exposure.</p> <p>CRCC only provides clearing and settlement services as a central counterparty in the Colombian jurisdiction and does not make settlements in currencies other than the Colombian legal currency, Colombian peso (COP). Thus, CRCC is only exposed to liquidity risk in Colombian pesos (COP), as it does not make settlements in any other currency.</p>
<p><b>Key consideration 6</b></p>	<p><b>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</b></p>

	<p>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.</p>
Description	<p><i>Size and composition of supplemental liquid resources</i></p> <p><b>Q.7.6.1 : What is the size and composition of any supplemental liquid resources available to the FMI?</b> Access to liquidity at the Central Bank's intraday financing could be a complementary resource; in addition to this mechanism, CRCC has no additional resources.</p> <p><i>Availability of supplemental liquid resources</i></p> <p><b>Q.7.6.2 : How and on what basis has the FMI determined that these assets are likely to be saleable or acceptable as collateral to obtain the relevant currency, even if this cannot be reliably prearranged or guaranteed in extreme market conditions?</b></p> <p>See answer Q.7.6.1.</p> <p><b>Q.7.6.3 : What proportion of these supplemental assets qualifies as potential collateral at the relevant central bank?</b></p> <p>See answer Q.7.6.1.</p> <p><b>Q.7.6.4 : In what circumstances would the FMI use its supplemental liquid resources in advance of, or in addition to, using its qualifying liquid resources?</b></p> <p>See answer Q.7.6.1.</p> <p><b>Q.7.6.5 : To what extent does the size and availability of the FMI's supplemental liquid resources, in conjunction with its qualifying liquid resources, cover the relevant liquidity needs identified through the FMI's stress test programme for determining the adequacy of its liquidity resources (see key consideration 9)?</b></p> <p>See answer Q.7.6.1.</p>
Key consideration 7	<p>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.</p>
Description	<p><i>Use of liquidity providers</i></p> <p><b>Q.7.7.1: Does the FMI use a liquidity provider to meet its minimum required qualifying liquidity resources? Who are the FMI's liquidity providers? How and on what basis has the FMI determined that each of these liquidity</b></p>

	<p><b>providers have sufficient information to understand and to manage their associated liquidity risk in each relevant currency on an ongoing basis, including in stressed conditions?</b></p> <p>Not applicable, CRCC has no agreements with liquidity providers.</p> <p><i>Reliability of liquidity providers</i></p> <p><b>Q.7.7.2 : How has the FMI determined that each of its liquidity providers has the capacity to perform on its commitment in each relevant currency on an ongoing basis?</b></p> <p>Not applicable, CRCC has no agreements with liquidity providers.</p> <p><b>Q.7.7.3 : How does the FMI take into account a liquidity provider's potential access to credit at the central bank of issue?</b></p> <p>Not applicable, CRCC has no agreements with liquidity providers.</p> <p><b>Q.7.7.4 : How does the FMI regularly test the timeliness and reliability of its procedures for accessing its liquid resources at a liquidity provider?</b></p> <p>Not applicable, CRCC has no agreements with liquidity providers.</p>
<b>Key consideration 8</b>	<p><b>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.</b></p>
<b>Description</b>	<p><b>Q.7.8.1 : To what extent does the FMI currently have, or is the FMI eligible to obtain, access to accounts, payment services and securities services at each relevant central bank that could be used to conduct its payments and settlements and to manage liquidity risks in each relevant currency?</b></p> <p>CRCC has access to accounts and payment services in the Central Bank payment system - CUD, which it uses to automatically make the debits and credits corresponding to settlements, to manage the liquidity risk to which it is exposed. In addition, CRCC has access to the Depósito Central de Valores (DCV), the central securities depository (CSD), managed by the Central Bank.</p> <p><b>Q.7.8.2 : To what extent does the FMI use each of these services at each relevant central bank to conduct its payments and settlements and to manage liquidity risks in each relevant currency?</b></p> <p>CRCC carries out all cash movements through the large-value payment system of the Central Bank- CUD.</p> <p><b>Q.7.8.3 : If the FMI employs services other than those provided by the relevant central banks, to what extent has the FMI analyzed the potential to enhance the management of liquidity risk by expanding its use of central bank services?</b></p> <p>CRCC does not use any other service to make its payments and settlements and to manage its liquidity risk other than that provided by the Central Bank.</p>



	<p><b>Q.7.8.4: What, if any, practical or other considerations to expanding its use of relevant central bank services have been identified by the FMI?</b></p> <p>CRCC has always considered that the use of central bank services is the most efficient and secure way to manage the debits and credits of the results of the clearing and settlement process. For this reason, all services concerning cash movements are carried out through the large-value payment system of the Central Bank- CUD.</p>
<b>Key consideration 9</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Stress test programme</i></p> <p><b>Q791 : How does the FMI use stress testing to determine the amount and test the sufficiency of its liquid resources in each currency? How frequently does the FMI stress-test its liquid resources?</b></p> <p>The results of the daily stress tests carried out by CRCC determine the impact on liquid resources generated by the default of each individual Member considered. Based on these results, the two members and their affiliates with the highest credit exposure to CRCC are identified and the aggregate liquidity risk they generate is compared with the available cash for CRCC to determine the adequacy of its liquid resources.</p> <p>CRCC performs stress tests on its liquid resources daily.</p> <p><b>Q792 : What is the process for reporting on an ongoing basis the results of the FMI's liquidity stress tests to appropriate decision-makers at the FMI, for the purpose of supporting their timely evaluation and adjustment of the size and composition of the FMI's liquidity resources and liquidity risk management framework?</b></p> <p>The results of the daily stress tests on the liquidity of CRCC are presented to the Risk Committee monthly and reported to Senior management in a timely manner.</p> <p><i>Stress test scenarios</i></p> <p><b>Q793 : What scenarios are used in the stress tests, and to what extent do they take into account a combination of 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?</b></p>

Scenarios used in CRCC liquidity stress tests include a combination of price volatilities at historical highs, extreme but plausible market conditions, and broken correlations. The Stress Test scenario for each Clearing Member is the worst-case scenario of the multiple daily scenarios calculated.

**Q.7.9.4 : To what extent do the scenarios and stress tests take into account the FMI's particular payment and settlement structure (for example, real-time gross or deferred net; with or without a settlement guarantee; DVP model 1, 2 or 3 for SSSs), and the liquidity risk that is borne directly by the FMI, by its participants, or both?**

The scenarios consider multilateral net settlement through the Central Bank's, large-value payment system CUD, b 8:30 a.m.

CRCC performs daily stress tests which consist of: a) taking the two Members with the greatest stressed losses in the daily close-out and; b) compare the sum of the values of item a) with the sum of the liquid resources available at CRCC, so that CRCC can manage the attainment of liquid resources upon settlement.

**Q.7.9.5 : To what extent do the scenarios and stress tests take into account the nature and size of the liquidity needs, and the associated sources of liquidity risks, that arise in the FMI to settle its payment obligations on time, including the potential that individual entities and their affiliates may play multiples roles with respect to the FMI?**

The stress tests conducted by CRCC analyze the nature and size of the liquidity requirements for the defined multilateral net settlement session considering the settlement type for all Clearing Members and the account structure for each defined Segment.

*Review and validation*

**Q.7.9.6 : How frequently does the FMI assess the effectiveness and appropriateness of stress test assumptions and parameters? How does the FMI's stress test programme take into account various conditions, such as a sudden and significant increase in position and price volatility, position concentration, change in market liquidity, and model risk including shift of parameters?**

The frequencies with which the effectiveness of the risk management system and the modifications are validated is daily, weekly, monthly and annual.

On a daily basis, the Chief Operating Officer sends a report to Chief Risk Officer and the Chief Executive Officer with the results of the stress tests, indicating whether CRCC has sufficient liquidity resources to cover its liquidity needs.

**Q.7.9.7 : How does the FMI validate its risk management model? How frequently does it perform this validation?**

CRCC carries out daily stress tests on all open positions of its members and its results are presented monthly to the Risk Committee and the Board of Directors, for review and, if appropriate, make the corresponding decisions upon these results. In addition, the tools and methodologies used to define the different scenarios are periodically evaluated to strengthen the scenario generation model and avoid the risk of the model.

On the other hand, CRCC carries out the stress test of the Default Fund daily, verifying that the pre-financed financial resources cover the two Members and their affiliates with the greatest exposure for CRCC.

	<p>As noted above, stress tests are conducted daily and are presented monthly to the Risk Committee and the Board of Directors.</p> <p><b>Q.7.9.8: Where and to what extent does the FMI document its supporting rationale for, and its governance arrangements relating to, the amount and form of its total liquid resources?</b></p> <p>The results of the daily stress tests are presented to the Risk Committee monthly. All the decisions made, and the model's justifications are documented in the respective minutes of the Risk Committee.</p>
<b>Key consideration 10</b>	<p><b>An FMI should establish explicit rules and procedures that enable the FMI to effect 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.</b></p>
<b>Description</b>	<p><i>Same Day Settlement</i></p> <p><b>Q.7.10.1 : How do the FMI's rules and procedures enable it to settle payment obligations on time following any individual or combined default among its participants?</b></p> <p>The CRCC Rulebook and its Circular indicate the procedures designed to ensure that CRCC has sufficient resources to cover the defaults of the two Members and their affiliates with the greatest exposure to risk in extreme but plausible market conditions. In addition, the rules for making the liquid resources available to CRCC effective are also documented.</p> <p><b>Q.7.10.2 : How do the FMI's rules and procedures address unforeseen and potentially uncovered liquidity shortfalls and avoid unwinding, revoking or delaying the same day settlement of payment obligations?</b></p> <p>CRCC has liquid cash resources in the Central Bank that can be used immediately in the multilateral net settlement.</p> <p><i>Replenishment of liquidity resources</i></p> <p><b>Q.7.10.3 : How do the FMI's rules and procedures allow for the replenishment of any liquidity resources employed during a stress event?</b></p> <p>CRCC has clear and transparent procedures established in its Rulebook that allow it to replenish the different liquidity resources that must be used to manage the different stress events to which it may be exposed. For these purposes, Article 2.8.8. of the Rulebook indicates the order in which collateral, and other assets are to be enforced in the event of default by any of its members, and the way financial resources are to be replenished.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 7: Liquidity risk</b>	

#### **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.***

CRCC has a robust risk management framework, which allows it to adequately manage the liquidity risks it faces, both in scenarios involving normal situations such as daily multilateral net settlement and in stress test scenarios where the default process of Clearing Members must be managed.

CRCC has identified its needs and sources of liquidity risk, as well as the liquid resources at its disposal to adequately manage liquidity risk, including access to the Central Bank's intraday financing.

In addition to the above, the cash resources used by CRCC are managed through the Central Bank's deposit accounts - CUD system.

#### **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.***

The risk model of CRCC, MEFFCOM2 and Swapmanager developed by BME Clearing, has a module called Limits, which allows it to estimate the need for intraday liquidity (every 5 minutes) and at the end of the day. Through this module, CRCC verifies that the Intraday Risk Limit assigned by the Board of Directors to each Clearing Member (1% of the Capital Requirement) is not exceeded.

In addition, CRCC's Collateral Management System (SGG) monitors the status of collateral in securities and cash on an intraday basis and allows for verification of the cash value invested, segregated per Member.

#### **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.***

Not applicable for CRCC.

#### **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.***

CRCC only provides clearing and settlement services as a central counterparty in the Colombian jurisdiction and does not make settlements in currencies other than the Colombian legal currency, Colombian peso (COP).

CRCC conducts daily stress tests considering all its Members and their affiliates (considering all the accounts in its account structure) using extreme but plausible scenarios, estimating the liquidity needs in an event of default of the two Members and their affiliates with the highest exposure for each Segment. In this way, CRCC ensures that it maintains enough liquid resources in pesos (COP) to be able to make the corresponding payments, make the necessary requests for variation margin payments and meet other payment obligations in accordance with the results of clearing and settlement within the specified time frame.

**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.***

CRCC makes all its settlements and cash collateral requirements in COP through the large-value payment system administered by the Central Bank. Also, the CRCC admits USD as collateral. Liquidity requirements are estimated and reviewed daily, during the day and at the close of the session, considering the default of the two Members with the greatest exposure to risk in normal or stressed market situations.

The main mechanisms for CRCC to access reliable/available liquid resources are: (i) transitional access to cash collateral at CRCC ; (ii) access to liquid resources of CRCC ; (iii) access to Primary government securities dealers managed by the Central Bank - Sistema Electrónico de Negociación – SEN (t+0 settlement system) to settle both guarantees on government debt securities in the event of default by a Member and the capital of CRCC invested in government debt securities; and (iv) access to the Central Bank liquidity facilities .

**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.***

CRCC has access to the Central Bank liquidity facilities.

**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.***

CRCC has no agreements with liquidity providers.

**Key consideration 8:**

***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.***

CRCC has access to accounts and payment services in the Central Bank large-value payment system - CUD, which it uses to automatically make debits and credits for settlement results, to manage the liquidity risk to which it is exposed. In addition, CRCC has access to the Depósito Central de Valores (DCV) which is the central securities depository (CSD) managed by the Central Bank.

**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.***

The results of the daily stress tests conducted by CRCC determine the impact on liquid resources of the default of each individual Member to comply. Based on these results, the two Members with the greatest credit exposure to CRCC are identified and the aggregate liquidity risk they generate is compared to the available cash to CRCC, to determine the adequacy of its liquid resources.

**Key Consideration 10:**

***An FMI should establish explicit rules and procedures that enable the FMI to effect 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.***

The CRCC Rulebook and its Circular indicate the procedures designed to ensure that CRCC has sufficient resources to cover the defaults of the two Members and their affiliates with the greatest exposure to risk in extreme but plausible market conditions. In addition, the rules for making the liquid resources available to CRCC are also documented.



Therefore, CRCC has clear and transparent procedures established in its Rulebook, which allow it to replenish the different liquidity resources that must be used to manage the different stress events to which it may be exposed.

#### KEY CONCLUSIONS FOR PRINCIPLE 7:

- CRCC has a solid risk management framework that allows it to adequately manage the liquidity risks it faces by validating the status of its liquid resources and possible liquidity needs in both normal and stress scenarios.
- CRCC has identified the potential sources of liquidity risk and the liquid resources available to it, to properly manage that risk. These include access to the Central Bank's liquidity facilities. The risk model adopted by CRCC, MEFFCOM2 and Swapmanager developed by BME Clearing, has a module called Limits, which allows it to estimate the need for intraday liquidity (every 5 minutes) and at the end of the day. Additionally, CRCC's Collateral Management System (SGG) monitors the status of collateral in securities and cash on an intraday basis, allowing for verification of the value of the cash invested, segregated per Member. CRCC makes all its settlements and cash collateral requirements through the large-value payment system administered by the Central Bank in Colombian legal currency (COP).
- The main mechanisms for CRCC to access reliable/available liquid resources are: (i) transitional access to cash collateral at CRCC; (ii) access to liquid resources of CRCC; (iii) access to the primary government securities dealers managed by the Central Bank - Sistema Electrónico de Negociación – SEN (t+0 settlement system) to settle both guarantees on government debt securities in the event of default of a Member and the capital of CRCC invested in government debt securities; and (iv) access to the Central Bank liquidity facilities. The results of the daily stress tests conducted by CRCC determine the impact on liquid resources of the default of each individual member to comply. Based on these results, the two members with the highest credit exposure to CRCC and their affiliates are identified and the aggregate liquidity risk they generate is compared with the available cash for CRCC to determine the adequacy of its liquid resources. The CRCC Rulebook and its Circular indicate the procedures designed to ensure that CRCC has sufficient resources to cover the defaults of the two Members and their affiliates with the greatest exposure to risk in extreme but plausible market conditions. In addition, the rules for making the liquid resources available to CRCC effective are also documented.

#### ASSESSMENT OF PRINCIPLE 1

Principle 7 referred to Liquidity Risk is **OBSERVED** by CRCC.

#### 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.**

##### *Summary narrative*

The legal basis of CRCC provides clarity and certainty about the final settlement of the services it provides. In this respect, transactions and orders for the transfer of funds or securities derived from transactions as well as any act which, under the terms of CRCC's Rulebook, must be carried out for compliance, are final, irrevocable, and enforceable against third parties once such transactions have been accepted by CRCC.

In this regard, Law 964 of 2005, in Articles 15 to 18, regulates the creation of central counterparties and establishes their own special regime. In accordance with the Law, the National Government established specific rules for such entities and for the activities carried out by CCPs, rules that are found in Book 13 of Part 2 of the Decree 2555 of 2010.

According to Article 15 of the Securities Market Law, the purpose of CCPs is to reduce or eliminate the risks of default on the obligations arising from the transactions accepted for clearing and settlement. Moreover, its second paragraph provides that the provisions of Articles 10 (finality principle) and 11 (collateral protection principle) of the same Law shall apply to transactions involving clearing and settlement by central counterparties, and Article 17 of the Law states that the obligations that the central counterparties have with their reciprocal debtors and creditors shall be extinguished by set-off up to the corresponding amount.

In regard with the finality principle article 10 of the Law indicates that orders for the transfer of funds or securities derived from securities transactions, as well as any act that, under the terms of the regulations of a clearing and settlement system, as well as any act that must be carried out to comply with them, shall be final, irrevocable, and enforceable against third parties, as from the moment such orders have been accepted by the clearing and settlement system.

It also adds that, once the transfer order has been accepted by the clearing and settlement system, the respective securities and funds may not be the subject of judicial or administrative measures, including precautionary measures, withholding orders or similar, as well as those derived from bankruptcy regulations, from taking possession, dissolution, liquidation or global agreements for the restructuring of debt, the purpose of which is to prohibit, suspend or in any way limit payment to be made by these means.

Finally, it states that the foregoing shall apply to transactions carried out both, in the over-the-counter market and in the securities trading systems, from the moment they have been accepted by the clearing and settlement system.

Article 2.13.1.1.1.11. of the Decree 2555 of 2010 extends the application of finality principle to transactions accepted by a central counterparty from the moment of acceptance to the moment of compliance (including clearing as an extinguishment mechanism and all acts necessary for such compliance) even in the event that the compliance is carried out through other clearing and settlement system administrators or agents, securities deposits and payment systems, without this implying any guarantee of effective compliance for them, with the respective transfer orders.

In this regard, in accordance with the rules governing the finality principle, the transactions submitted for clearing and settlement to CRCC are final from their acceptance by CRCC, which extends to all the acts necessary for compliance. The foregoing means that, as of the filing of CRCC, as counterparty and because of the novation, the transactions will be final, irrevocable, compulsory and enforceable against third parties, as will the novation itself, the transactions arising out of novation, netting, clearing and settlement, even if the latter is carried out through instructions to other settlement institutions.

Article 2.12.1.1.1.6. of Decree 2555 of 2010 indicates that when a securities clearing and settlement system, which has accepted a transfer order, requires the services of another system for the settlement of the transfer order, the latter shall be obliged to receive such order to continue the settlement process, even when the respective participant, or the person on whose behalf the participant is acting, has been subject to legal or administrative proceedings, such as orders for cessation of payments, precautionary measures, withholding, freezing or blocking of funds orders or similar situations, as well as those deriving from bankruptcy rules such as, taking possession, dissolution, liquidation or global agreements for the restructuring of debt, the purpose of which is to prohibit, suspend or in any way limit the payments to be made through this system.

In addition, the finality principle also applies to the transfer orders resulting from accepted transactions. It is appropriate to specify that the transfer orders that integrates a transaction will only be deemed to have been fulfilled with the settlement, which implies the delivery of the securities and cash, as appropriate, and that these transfers will also be final or firm, once the book entries have been made.

In this sense, CRCC grants the finality of the accepted transactions to avoid systemic risk as a consequence of the possible revocability through bankruptcy procedures. This aspect is recognized by the Colombian Bankruptcy Law, Law 1116 of 2006, in its Article 5, paragraph 2 which expressly excludes transactions on securities or other rights of a negotiable nature that have received a transfer order accepted by

a clearing and settlement system from the acts and/or contracts that may be revoked by the bankruptcy judge to reconstitute the debtor's assets.

Likewise, the finality principle is established in Article 2.3.5 of CRCC 's Rulebook.

<b>Key Consideration 1:</b>	<b>An FMI's rules and procedures should clearly define the point at which settlement is final.</b>
Description	<p><i>Point of settlement finality</i></p> <p><b>Q.8.1.1. At what point is the settlement of a payment, transfer instruction or other obligation final, meaning irrevocable and unconditional? Is the point of settlement finality defined and documented? How and to whom is this information disclosed?</b></p> <p>The finality principle applies to transactions accepted by CRCC in its role as counterparty from the moment of acceptance, which extends to all acts necessary for the fulfilment of the same. The foregoing means that, as of the interposition of the CRCC as counterparty through the novation mechanism, the transactions will be final, irrevocable, compulsory and enforceable against third parties, as well as the novation itself, the transactions arising from the novation, clearing as a mechanism for extinguishing obligations (netting) and clearing and settlement.</p> <p>In addition, the finality principle also applies to the transfer orders resulting from accepted transactions. The transfer orders that make up a transaction are fulfilled through the settlement, which involves the delivery of the securities and money, as appropriate, and these transfers are also final, once the book entries have been made.</p> <p>The moment when the settlement is considered final is legally enshrined in Article 10 of the Colombian Securities Law and in Article 2.13.1.1.1.11. of Decree 2555 of 2010.</p> <p>CRCC informs its Members through its system, that the transaction submitted for clearing and settlement has been accepted. Also, once the transaction has been settled, Members are informed through the CRCC system. This procedure is documented in Article 2.4.16. of the Rulebook which provides that CRCC shall inform its Members through accessible electronic means and/or through certain trading systems, of the following information:</p> <ol style="list-style-type: none"> <li>1. Accepted Transactions recorded in the Registration Accounts of each Member's Own Accounts, in the Accounts of Identified Third Parties and in the Accounts of Unidentified Third Parties.</li> <li>2. Daily Settlement Amount of Accepted Transactions recorded in each account.</li> <li>3. Accrued and outstanding Maturity Settlement Amounts.</li> <li>4. Daily posted Collateral and daily Margin required in relation to the Open Position of each Account.</li> <li>5. The fair exchange price of the Accepted Operations, when applicable, according to the Type of Settlement, under the provisions of Chapter XVIII - Derivative Financial Instruments and Structured Products of the Basic Accounting and Financial Circular Letter (External Circular Letter 100 of 1995) of the SFC or the rules that modify, add or replace it.</li> </ol> <p><b>Q.8.1.2. How does the FMI's legal framework and rules, including the applicable insolvency law(s), acknowledge the discharge of a payment, transfer instruction or other obligation between the FMI and its participants, or between participants?</b></p>

Paragraph 1 of Article 10 of Law 964 of 2005 establishes that once a transfer order has been accepted by the clearing and settlement system, the respective securities and funds may not be subject to Legal or administrative measures, including precautionary measures, orders of retention or similar, as well as those derived from bankruptcy rules such as taking possession, dissolution, liquidation, or global agreements for the restructuring of debt, whose purpose is to prohibit, suspend or in any way limit the payments to be made through this system. For this reason, the accepted transfer orders, the acts necessary for their fulfilment or the operations resulting therefrom, may not be challenged or cancelled.

The foregoing is fully recognized by paragraph 5 of article 5 of Law 1116 of 2006 (Bankruptcy Law), which determines that it is the power of the bankruptcy judge to order all pertinent measures aimed at protecting, safeguarding and recovering the assets that make up the debtor's assets, including the revocation of all acts and/or contracts made to the detriment of creditors, except those corresponding to transactions in securities or other rights of a negotiable nature that have received an accepted transfer order

Similarly, the Rulebook in its Articles 2.3.6. and 2.3.7. points out that from the acceptance, the funds and securities corresponding to the transactions accepted may not be the subject of legal or administrative measures including precautionary measures, withholding orders or similar, as well as those derived from bankruptcy rules, such as taking possession, dissolution, liquidation or global agreements for the restructuring of debt, the purpose of which is to prohibit, suspend or in any way limit the payments to be made through the CCP. The judge may not omit or prevent the performance of any of the accepted operations.

**Q.8.1.3. How does the FMI demonstrate that there is a high degree of legal certainty that finality will be achieved in all relevant jurisdictions (for example, by obtaining a well reasoned legal opinion)?**

CRCC only provides clearing and settlement services as a central counterparty in the Colombian jurisdiction.

Concerning the Colombian law, there is a high degree of legal certainty in the firmness of transactions, since this principle is legally established (Law 964 of 2005, articles 10 and 15 and Decree 2555 of 2010, article 2.13.1.1.11.). For further information see the explanatory summary of this Principle 8.

*Finality in the case of links*

**Q.8.1.4. How does the FMI ensure settlement finality in the case of linkages with other FMIs?**

**a) For an SSS, how is consistency of finality achieved between the SSS and, if relevant, the LVPS where the cash leg is settled?**

Not applicable to CRCC.

**b) For a CCP for cash products, what is the relation between the finality of obligations in the CCP and the finality of the settlement of the CCP claims and obligations in other systems, depending on the rules of the relevant CSD/SSS and payment system?**

Article 2.12.1.1.1.6. paragraph five of Decree 2555 of 2010 clearly and expressly establishes that, in the event that a clearing and settlement system that has accepted a transfer order and requires the services of another system (including payment systems) to carry out the settlement of the corresponding transfer order, such system shall be obliged to receive the transfer order to continue with the settlement process, even when the participant has been subject to legal

	<p>or administrative measures, such as orders for the cessation of payments, precautionary measures, freezing or blocking of funds orders or similar, as well as those deriving from bankruptcy rules, or from the taking over, dissolution, liquidation or global agreements for the restructuring of debt, aimed at prohibiting, suspending or in any way limiting the payments to be made through that system.</p> <p>Article 2.6.4. of the Rulebook indicates the entities necessary for the settlement of the transactions accepted by CRCC. In this sense, the settlement of transactions is carried out through the Central Bank, centralized securities deposits, general deposit warehouses, administrators of the commercial exchange systems of the wholesale electricity market and other entities authorized in accordance with the current regulations.</p> <p>Consequently, CRCC is linked to other financial market infrastructures to carry out the settlement of transactions. As a consequence, the second paragraph of Article 2.3.6. of the Rulebook establishes that the administrators or agents of Clearing and Settlement systems, securities deposits and payment systems that the CRCC requires to be used to perform or complete the Settlement of Accepted Transactions are obliged to receive the respective Transfer Orders sent by the CRCC, its Members or participants to continue with the Settlement process even when such Member or participant has been the subject to legal, administrative, restrictions or other precautionary measures.</p>
<b>Key Consideration 2:</b>	<p><b>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.</b></p>
Description	<p><i>Final settlement on the value date</i></p> <p><b>Q.8.2.1. Is the FMI designed to complete final settlement on the value date (or same day settlement)? How does the FMI ensure that final settlement occurs no later than the end of the intended value date?</b></p> <p>The final settlement on the value date is made through the delivery of securities or cash in accordance with the terms of CRCC 's Rulebook.</p> <p>In accordance with Article 2.6.3. of the Rulebook, on the due date of the transaction, it is the obligation of Members with a net open or gross selling position, to deliver the respective securities to CRCC through a centralized securities depository. Upon receipt of the securities, CRCC delivers the securities to the Members with open net or gross buying position entitled to receive them, on the same due date. Likewise, such Members shall deliver or receive the corresponding funds from CRCC, according to the result of their open position.</p> <p>In the case of cash settlement transactions, Members shall, at maturity, deliver to or receive from CRCC the funds corresponding to the outcome of their open position.</p> <p>In addition, Articles 2.6.8. and 2.6.9. of the same Regulations provide, on the one hand, that on the due date CRCC shall deliver to the Clearing Member the net or gross cash balance of the accounts settled by each Clearing Member and, on the other hand, at the individual account level, the securities that the member is entitled to receive by virtue of its operations. Cash settlement occurs through debits and credits to the accounts opened at the Central Bank by the Clearing Members.</p> <p>CRCC achieves formulas that ensure that all payments are made in the event of insufficient funds in any account. Settlement is final on the stipulated value date, thus avoiding any counterparty's exposure to liquidity risk.</p>

	<p><b>Q.8.2.2. Has the FMI ever experienced deferral of final settlement to the next business day that was not contemplated by its rules, procedures or contracts? If so, under what circumstances? If deferral was a result of the FMI's actions, what steps have been taken to prevent a similar situation in the future?</b></p> <p>CRCC has not experienced a deferral of final settlement since it began operations in 2008.</p> <p><i>Intraday or real-time final settlement</i></p> <p><b>Q.8.2.3. Does the FMI provide intraday or real-time final settlement? If so, how? How are participants informed of the final settlement?</b></p> <p>CRCC does not perform intraday or real-time settlements. Notwithstanding the foregoing, when a Member is marginalized during an operating session of CRCC, the Member shall provide the respective collateral on the same date.</p> <p>This is reported through the CRCC system. For more information see Q.8.1.1.</p> <p><b>Q.8.2.4. If settlement occurs through multiple-batch processing, what is the frequency of the batches and within what time frame do they operate? What happens if a participant does not have enough funds or securities at the settlement time? Are transactions entered in the next batch? If so, what is the status of those transactions and when would they become final?</b></p> <p>Settlement does not take place at CRCC using multiple batch-processing. Settlement is carried out in a single cycle.</p> <p><b>Q.8.2.5. If settlement does not occur intraday or in real time, how has the LVPS or SSS considered the introduction of either of these modalities?</b></p> <p>Not applicable to CRCC.</p>
<b>Key Consideration 3:</b>	<b>An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.</b>
Description	<p><b>Q.8.3.1. How does the FMI define the point at which unsettled payments, transfer instructions or other obligations may not be revoked by a participant? How does the FMI prohibit the unilateral revocation of accepted and unsettled payments, transfer instructions or obligations after this time?</b></p> <p>CRCC has defined the time from which payments, transfer instructions and other unliquidated obligations cannot be reversed, which is the time of acceptance of the transaction. For more information please refer to Q.8.1.1.</p> <p>The foregoing was defined based on the provisions of paragraph 1 of Article 10 of Law 964 of 2005, according to which, the transfer orders accepted, the acts necessary for their fulfilment and the operations derived from them may not be challenged, annulled or declared ineffective.</p>



	<p>Notwithstanding the foregoing, Article 2.12.1.1.6 of Decree 2555 of 2010 provides that accepted transfer orders may not be cancelled or modified by the payer unless the clearing and settlement system authorizes it for reasons such as material error, technical problems or similar.</p> <p>Based on these provisions, Articles 2.5.1. and 2.5.2. of CRCC 's Rulebook state that the transactions accepted may not be corrected or cancelled. Exceptionally, CRCC may, ex officio, or at the request of the stock exchange, the trading system or any other contracting mechanism, correct or cancel an operation due to material error, technical issues or other similar problems. When CRCC exercises this power, it must inform the SFC of this situation.</p> <p><b>Q.8.3.2. Under what circumstances can an instruction or obligation accepted by the system for settlement still be revoked (for example, queued obligations)? How can an unsettled payment or transfer instruction be revoked? Who can revoke unsettled payment or transfer instructions?</b></p> <p>No member may revoke an operation accepted by CRCC. Exceptionally, CRCC may, ex officio or at the request of the stock exchange, the trading system or any other contracting mechanism, correct or cancel an operation due to material error, technical issues or other similar problems. When CRCC exercises this power, it must inform the SFC of this situation.</p> <p><b>Q.8.3.3. Under what conditions does the FMI allow exceptions and extensions to the revocation deadline?</b></p> <p>Please refer to the answers to questions Q.8.3.2. and Q.8.3.3.</p> <p><b>Q.8.3.4. Where does the FMI define this information? How and to whom is this information disclosed?</b></p> <p>This information and the rules applicable to the correction and cancellation of operations are established in the Regulations and the Circular of CRCC, which are available for consultation by Members and the public on its website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>. Likewise, corrections and cancellations of accepted operations are reported to the SFC.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 8: Finality in settlement.</b>	
<p><b>Key Consideration 1</b></p> <p><b><i>An FMI's rules and procedures should clearly define the point at which settlement is final.</i></b></p> <p>CRCC 's regulatory framework clearly establishes that transactions and orders for the transfer of funds or securities derived from transactions, as well as any act which, under the terms of CRCC 's Rulebook, must be carried out in order to comply with them, shall be final, irrevocable, compulsory and enforceable against third parties from the moment when such transactions have been accepted by CRCC, even in events where the settlement of the transactions is carried out through other means.</p> <p><b>Key Consideration 2</b></p> <p><b><i>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.</i></b></p> <p>The transactions accepted by CRCC are settled on the value date, through the delivery of securities or cash, as appropriate, under the terms of CRCC 's Rulebook.</p>	

### 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.***

Transactions submitted to CRCC for clearing and settlement, payments, transfer instructions and other obligations not yet settled, become final as soon as they are accepted by CRCC and cannot therefore, be reversed by the participants.

Exceptionally, ex officio or at the request of the stock exchange, the trading system or any other contracting mechanism, CRCC will correct or cancel an accepted transaction for reasons such as material error, technical issues or similar.

### KEY CONCLUSIONS FOR PRINCIPLE 8

*CRCC 's regulatory framework clearly establishes that transactions and orders for the transfer of funds or securities derived from transactions shall be firm, irrevocable, compulsory and enforceable against third parties as soon as such transactions have been accepted by CRCC. This protection includes those events in which the settlement of transactions is carried out through other financial market infrastructures with which CRCC establishes a link for this purpose.*

*However, the settlement of the operations accepted by CRCC is carried out on the value date of the same, through the delivery of securities or cash, as appropriate, under the terms of CRCC 's Rulebook.*

### ASSESSMENT OF PRINCIPLE 8

Principle 8 referred to Settlement Finality is **OBSERVED** by CRCC.

### 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.**

#### Summary narrative

CRCC makes its monetary settlements on a daily basis, in money deposited in accounts opened with the Central Bank. These settlements, in turn, are only made in Colombian legal currency (Colombian pesos - COP).

Since its establishment as a central counterparty, CRCC has used only the large-value payment system administered by the Central Bank for its monetary settlements, through debits and credits to deposit accounts (CUD account - Cuenta única de depósito) held by the members of CRCC. To manage the monetary settlements of transactions accepted by CRCC for clearing and settlement, Members authorize CRCC to make automatic debits to their deposit accounts at the Central Bank. In addition to the above, through the CUD accounts CRCC is empowered to collect the margin requirements that the Members have not contributed during the hours established for their constitution.

<b>Key Consideration 1</b>	<b>An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.</b>
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<p>Description</p>	<p><b>Q.9.1.1 : How does the FMI conduct money settlements? If the FMI conducts settlement in multiple currencies, how does the FMI conduct money settlement in each currency?</b></p> <p>CRCC makes the monetary settlements for each market session in cash at the Central Bank through deposit accounts - CUD of the Colombian large-value payment system, administered by the Central Bank. For these purposes, the Rule Book, article 2.1.4. established as admission requirements to become a Member of CRCC, to have deposit accounts in the Central Bank, directly or through Paying Agents and to expressly and formally authorize CRCC to debit or credit automatically the Member's cash account in the Central Bank during its activities. Thus, each Clearing Member of CRCC must have an account with the Central Bank and have authorized its automatic debit, through which CRCC debits or credits, as appropriate, the amounts corresponding to the multilateral settlement.</p> <p>Likewise, through the CUD accounts, CRCC requests and releases in COP of the cash collateral and intraday margin calls.</p> <p>The monetary settlements, as well as the management of cash collateral, are carried out by CRCC in Colombian legal currency (Colombian pesos - COP).</p> <p><b>Q.9.1.2 : If the FMI does not settle in central bank money, why is it not used?</b></p> <p>Not applicable, CRCC makes its monetary settlements daily with money deposited in the Central Bank.</p>
<p><b>Key Consideration 2</b></p>	<p><b>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.</b></p>
<p>Description</p>	<p><b>Q.9.2.1 : If central bank money is not used, how does the FMI assess the credit and liquidity risks of the settlement asset used for money settlement?</b></p> <p>Not applicable, CRCC makes its monetary settlements on a daily basis with money deposited in the Central Bank.</p> <p><b>Q.9.2.2 : If the FMI settles in commercial bank money, how does the FMI select its settlement banks? What are the specific selection criteria the FMI uses?</b></p> <p>Not applicable, CRCC makes its monetary settlements daily with money deposited in the Central Bank. CRCC does not use commercial banks for this purpose.</p>
<p><b>Key Consideration 3</b></p>	<p><b>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.</b></p>
<p>Description</p>	<p><b>Q.9.3.1: How does the FMI monitor the settlement banks' adherence to criteria it uses for selection? For example, how does the FMI evaluate the banks' regulation, supervision, creditworthiness, capitalization, access to liquidity and operational reliability?</b></p>

	<p>Not applicable, CRCC makes its monetary settlements daily with money deposited in the Central Bank.</p> <p><b>Q.9.3.2 : How does the FMI monitor, manage and limit its credit and liquidity risks arising from the commercial settlement banks? How does the FMI monitor and manage the concentration of credit and liquidity exposures to these banks?</b></p> <p>Not applicable, CRCC makes its monetary settlements on a daily basis with money deposited in the Central Bank.</p> <p><b>Q.9.3.3 : How does the FMI assess its potential losses and liquidity pressures as well as those of its participants if there is a failure of its largest settlement bank?</b></p> <p>Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank.</p>
<b>Key consideration 4:</b>	<b>If an FMI conducts money settlement on its own books, it should minimize and strictly control its credit and liquidity risks.</b>
Description	<p><b>Q.9.4.1: If an FMI conducts money settlements on its own books, how does it minimize and strictly control its credit and liquidity risks?</b></p> <p>Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank, which is why it does not make monetary settlements on its own books.</p>
<b>Key consideration 5:</b>	<b>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.</b>
Description	<p><b>Q.9.5.1 : Do the FMI's legal agreements with its settlement banks state when transfers occur, that transfers are final when effected, and that funds received are transferable?</b></p> <p>Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank.</p> <p><b>Q.9.5.2 : Are funds received transferable by the end of the day at the latest? If not, why? Are they transferable intraday? If not, why?</b></p> <p>Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 9: Money settlements</b>	
<p><b>Key consideration 1</b></p> <p><b><i>An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.</i></b></p>	

CRCC makes its daily monetary settlements with money deposited in the Central Bank through the deposit accounts - CUD of the Colombian large-value payment system, administered and operated by the Central Bank, only in Colombian legal currency (Colombian pesos - COP).

**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.*

Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank.

**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.*

Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank.

**Key consideration 4**

*If an FMI conducts money settlement on its own books, it should minimize and strictly control its credit and liquidity risks.*

Not applicable, CRCC makes its daily monetary settlements with money deposited in the Central Bank.

**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.*

Not applicable, CRCC only performs its daily monetary settlements with money deposited in the Central Bank, therefore, it has no legal agreements with settlement banks.

**KEY CONCLUSIONS FOR PRINCIPLE 9**

CRCC makes its daily monetary settlements with money deposited in the Central Bank, only in Colombian legal currency (Colombian pesos - COP).

For this purpose, CRCC uses the deposit accounts - CUDs opened by Members in the large-value payment system administered and operated by the Central Bank, through credits and debits on the amounts resulting from the settlement processes, as well as of the amounts corresponding to the margins not contributed by the Members in the schedule established by CRCC.

## ASSESSMENT OF PRINCIPLE 9

Principle 9 referred to Money Settlement is **OBSERVED** by CRCC.

## 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.**

### Summary narrative

This principle does not apply to CRCC, because it does not deliver physical instruments or commodities, CRCC only accepts assets that are settled by delivery on securities or dematerialized debt securities in centralized securities deposits.

CRCC has clearly established its obligations on the liquidation process through delivery of these type of assets established in the Rulebook, which is approved by the SFC and in its Circular. These documents are available to the public through the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

<b>Key consideration 1</b>	<b>An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.</b>
Description	<p><b>Q.10.1.1: Which asset classes does the FMI accept for physical delivery?</b></p> <p>CRCC does not deliver physical instruments or commodities, CRCC only accepts assets that are settled by delivery on dematerialized securities or debt securities in centralized securities depositories.</p> <p>CRCC has defined delivery settlement in its Rulebook as the procedure by which compliance with the transactions accepted on the settlement date is achieved through the delivery of the asset by the seller to the buyer of the asset, in exchange for the price agreed upon during the transaction. The settlement rate is considered for cash exchanges at maturity.</p> <p>CRCC accepts the following assets with delivery settlement:</p> <ul style="list-style-type: none"> <li>- In the Financial Derivatives Segment: i) Short, medium and long term Notional Bond Futures Contracts: CRCC is responsible for delivering the underlying asset corresponding to any of the TES Public Debt Securities defined in a pool of deliverables; and ii) Futures contracts on equity settled by delivery: CRCC is responsible for delivering the underlying asset corresponding to the equity defined for each Futures Contract on equity with delivery settlement. In the Derivatives Segment, for assets defined with delivery settlement, the main risk is mitigated because CRCC has defined a process where CRCC receives the securities and cash corresponding to the obligations of Members first, and then, it delivers them, in a second phase, to meet the reciprocal rights of the corresponding Members. For further details see Principle 12.</li> <li>- In the Fixed Income Segment, the delivery of securities and cash in the settlement by delivery at maturity of the repo operations is carried out through the DVP mechanism.</li> <li>- In the Equity Segment, in repo operations on equity securities, the delivery of securities and cash in settlement by delivery at maturity is carried out through the DVP mechanism.</li> </ul>



	<p><b>Q.10.1.2 : How does the FMI define its obligations and responsibilities with respect to the delivery of physical instruments or commodities? How are these responsibilities defined and documented? To whom are these documents disclosed?</b></p> <p>CRCC does not deliver physical instruments or commodities.</p> <p>Obligations and responsibilities concerning the delivery of securities have been defined in the Rulebook and in CRCC's Circular. These documents are available to the public through the CRCC website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>.</p> <p><b>Q.10.1.3 : How does the FMI engage with its participants to ensure they have an understanding of their obligations and the procedures for effecting physical delivery?</b></p> <p>CRCC ensures that Members understand its obligations and procedures, through clear policies and procedures set out in CRCC 's Rulebook and Circular, these documents are available to the general public through the CRCC website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>.</p>
<b>Key consideration 2</b>	<p><b>An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.</b></p>
<b>Description</b>	<p><b>Q.10.2.1 : How does the FMI identify the risks and costs associated with storage and delivery of physical instruments or commodities? What risks and costs has the FMI identified?</b></p> <p>CRCC does not manage costs and risks associated with the storage and delivery of physical instruments or commodities by not accepting transactions under this classification for clearing and settlement, as their object or underlying asset.</p> <p>CRCC controls the risks of the delivery settlement process: i) by ensuring that the delivery of the dematerialized securities takes place within the timetables of the sessions defined in its Circular, (ii) by defining a Latent Delivery Obligation Limit for the Financial Derivatives Segment to mitigate the risk of concentration in the settlement process of delivery of an underlying asset; and (iii) by not taking into account day- and next-day maturity to offset risk positions in the calculation of the collateral requirement.</p> <p><b>Q.10.2.2 : What processes, procedures and controls does the FMI have to monitor and manage any identified risks and costs associated with storage and delivery of physical instruments or commodities?</b></p> <p>See answer to question Q.10.2.1.</p> <p><b>Q.10.2.3 : If an FMI can match participants for delivery and receipt, under what circumstances can it do so, and what are the associated rules and procedures? Are the legal obligations for delivery clearly expressed in the rules and associated agreements?</b></p> <p>CRCC defines in its Circular, the timetable and the sessions of the delivery settlement, the obligations, rights and procedures to be carried out for the generation of the settlement instructions that are sent both to the securities deposits and to the CUD – Cuentas de Depósito system administered by the Central Bank (real-time gross settlement system) for each of the Segments and products that it clears and settles, so that the settlement process by delivery can be managed.</p>

	<p>In the Financial Derivatives Segment and specifically for futures contracts with delivery settlement, the Circular describes the algorithm to solve the delivery process of the underlying assets, which defines the participants of the delivery, through the establishment of pairs of holders with net selling position and holders with net buying position, prioritizing the formation of pairs between holders of the same Member.</p> <p>In the Fixed Income and Equity Segments, the pairs defined by CRCC correspond to the original buyer and seller and transactions are carried out through the DVP mechanism in the centralized securities deposits.</p> <p><b>Q.10.2.4: How does the FMI monitor its participants' delivery preferences and, to the extent practicable, ensure that its participants have the necessary systems and resources to be able to fulfil their physical delivery obligations?</b></p> <p>CRCC ensures that Members have the required systems and resources for delivery, establishing in its Rulebook, the obligation to be affiliated to the Central Bank's securities deposits and CUD system– Cuentas de Depósito administered by the Central Bank (real-time gross settlement system) as a requirement for admission to membership of CRCC.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<p><b>Key Consideration 1</b></p> <p><b><i>An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.</i></b></p> <p>CRCC does not deliver physical instruments or commodities, CRCC only accepts transactions that are settled by delivery on dematerialized securities or debt securities in centralized securities depositories.</p> <p>CRCC has clearly established its obligations on the delivery settlement process for this type of operations in the Rulebook, which are approved by the SFC and in the Circular. These documents are available to the public through the CRCC website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a></p>	
<p><b>Key Consideration 2</b></p> <p><b><i>An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.</i></b></p> <p>CRCC does not manage costs and risks associated with the storage and delivery of physical instruments or commodities by not accepting transactions that have this type of asset class as their object or underlying asset for clearing and settlement.</p> <p>CRCC identifies, monitors and manages the risks of the delivery settlement process through the procedures set out in its Circular.</p>	
<p><b>KEY CONCLUSIONS FOR PRINCIPLE 10:</b></p> <p>This Principle does not apply to CRCC, because CRCC does not deliver physical instruments or commodities. CRCC only accepts transactions that have delivery settlement on securities or dematerialized debt securities in centralized securities deposits for clearing and settlement.</p>	
<p><b>ASSESSMENT OF PRINCIPLE 10</b></p> <p>Principle 10 on Physical Delivery is <b>NOT APPLICABLE</b> to CRCC.</p>	

## Principle 12: Exchange-of-value settlement systems

If an FMI settles transactions 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.

### Summary narrative

CRCC mitigates the principal risk in the settlement of linked obligations with funds and securities delivery obligations because the final settlement is DVP.

The following is a description of how CRCC S.A. carries out the settlement for each of the segments where there is exchange of securities:

CRCC is directly involved in the settlement of the following contracts or transactions, where there could be principal risk: (1) Futures contracts settled through delivery at maturity in the financial derivatives segment, (2) Repo transactions in fixed income securities, government securities TES of the Fixed Income Segment, and (3) Repo transactions in equity securities of the Equity segment.

**Financial Derivatives Segment:** For this segment and, specifically, for futures contracts with delivery of the underlying asset at maturity, CRCC notifies Members of both the amount in cash and the value (underlying asset) to be delivered, and delivers versus payment settlement using the services of the securities depositories and CUD system administered by the Central Bank (real-time gross settlement system). Therefore, CRCC is responsible for executing the settlement by means of instructions sent to the securities deposits and automatic cash debit instructions sent to the CUD system administered by the Central Bank (real-time gross settlement system).

**Fixed Income Segment:** Repo transactions in fixed income securities (government securities) recorded in this segment are settled through the Depósito Central de Valores (DCV) administered by the Central Bank, which delivers versus payment transaction.

**Equity Segment:** The repo operations (cash lending) on shares accepted in this segment are settled through the Central Securities Deposit of Colombia Deceval S.A., who executes the delivery versus payment process.

**Swaps Segment:** The Swaps are settled financially.

These transfers are final and irrevocable.

CRCC does not settle obligations in a currency other than Colombian pesos (COP).

<b>Key Consideration 1</b>	<b>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.</b>
Description	<p><b>Q.12.1.1: How do the FMI's legal, contractual, technical and risk management frameworks ensure that the final settlement of relevant financial instruments eliminates principal risk? What procedures ensure that the final settlement of one obligation occurs if and only if the final settlement of a linked obligation also occurs?</b></p> <p>CRCC performs clearing and settlement on transactions that might have principal risk, acting as a counterparty, of the transactions accepted and recorded in the accounts of the different Segments (Segments of (i) Financial Derivatives, (ii) Fixed Income and (iii) Equities). For the offset of the operations mentioned the exchange of cash for securities is carried out through the securities deposits and CUD system, administered by the Central Bank (real-time gross settlement system). In this context, DVP settlement is</p>

carried out through links between the CCP and the deposits, and the CCP and the payment system. In this way, CRCC mitigates the principal risk because the settlement of an obligation only occurs if the linked obligation is also finally settled.

The mechanisms used to settle accepted transactions are provided for in the CRCC Circular, differentiating between transactions settled in both, cash and securities by securities deposits, in which case, the rules for such deposits will apply, and transactions in which CRCC settles through the payment system for cash and through the deposit, securities, in which case CRCC only makes the exchange once it has received both payment and delivery.

In accordance with CSD regulations, as the deposit has control of both securities and cash, and they are blocked and available, transfer orders will be accepted and settled until their final transfer.

The Markets and Securities Law (article 10 - finality principle) establishes that transfer orders accepted by the clearing and settlement system, the respective securities and funds may not be subject to legal or administrative measures, including precautionary measures, withholding orders or similar, as well as those derived from bankruptcy rules. These also apply to transfers of funds through payment systems in accordance with Article 19 of the same Law.

**Q.12.1.2 : How are the linked obligations settled – on a gross basis (trade by trade) or on a net basis?**

Settlement of the related obligations is gross or net, depending on the transaction:

**Financial Derivatives Segment:** For both daily and maturity financial settlement transactions, obligations are settled in net multilateral settlement at the Clearing Member level; for maturity settlement transactions, obligations are settled as follows: (i) Cash settlement is net at the Member level and (ii) securities settlement is net at the account holder level.

**Fixed Income and Equity Segments:** The obligations of the operations of these Segments are gross transaction by transaction.

**Swaps Segments:** The obligations of the operations are financially settled and collateralized to maturity CTM. Settlement is carried out on a multilateral basis and the Clearing Member level.

**Q.12.1.3 : Is the finality of settlement of linked obligations simultaneous? If not, what is the timing of finality for both obligations?**

The final settlement of linked obligations is simultaneous. The transfer orders that make up a transaction will only be deemed to have been fulfilled upon settlement, which involves the exchange of securities and funds. Transfers (deliveries) of securities and funds are final and irrevocable after book entries and cash payments have been made. Notwithstanding the foregoing, in addition to having final settlement of transactions, Colombian law extended the application of final settlement to the transactions accepted by CRCC, not only for final settlement (final transfers) but also applicable to prior acts, with novation and netting being irrevocable, compulsory and enforceable against third parties. Therefore, the accepted operation and the acts for its fulfilment are also final.

The legal basis for the foregoing is Decree 2555 of 2010, Article 2.13.1.1.1.11. which states the following: "Extension of the principle of the irrevocability and finality. (.) The principle of the irrevocability and finality extends to transactions accepted by a CCP in its role as counterparty from the moment of acceptance and applies to all acts necessary for their fulfilment, including the clearing referred to in Article 17 of Law 964 of 2005, even if they are carried out through other clearing and settlement system administrators or agents, securities depositories and payment systems, without this implying for the administrator(s) of such system(s) that effective compliance with the respective transfer order(s) is/are ensured. (...)"

CRCC executes the settlement of related obligations depending on the transaction that it clears and settles through each segment defined as follows:

**Financial Derivatives Segment:** For this segment and for Futures with delivery of the underlying asset at maturity, CRCC performs the delivery versus payment process once the Members responsible for delivering assets to CRCC have done so. The final settlement is managed by CRCC through links to the deposits for the delivery of securities and to the payment system for cash payments. In this sense, the delivery of securities to CRCC is made through the CSD by means of delivery vs free (DVF) transactions, the purpose of which, in accordance with the deposit regulations, is given upon opening the account, and the delivery of the funds to CRCC through the system of automatic debit payments from the deposit accounts of the Clearing Members. Once CRCC receives the securities and the cash, it executes the corresponding exchange.

**Fixed Income and Equity Segments:** In these segments, centralized securities deposits execute the final settlement of repo operations and repo operations, delivery vs payment (DVP) on a gross basis operation by operation.

**Is the length of time between the blocking and final settlement of both obligations minimized?**

For the settlement of related obligations settled by CRCC such as futures with delivery of the underlying asset at maturity, CRCC minimizes the time between blocking the securities and their final delivery by making partial deliveries of the securities received by CRCC to Members that have already fulfilled part or all of their payment obligations in proportion to what they have fulfilled, until all Members meet their payment and asset delivery obligations and it is terminated.

In the case of the settlement of repo fixed income securities transactions or repo transactions in equity securities, securities deposits verify the balance of securities at the time of settlement, block the securities in the seller's account, send cash settlement instructions to the central bank's payment system and, once the cash has been received, the securities are delivered to the buyer in the deposit book entry system.

A process has been designed so that the period between the blocking of securities, the settlement of cash and the subsequent release and delivery of the blocked securities is efficient for the market and, in this period, the blocked securities are not subject to any third-party claim.

**Are blocked assets protected from a claim by a third party?**

Due to the finality principle of transfer orders, blocked securities are protected against third party Claims. Article 10 of the Markets and Securities Law provides that once a transfer order has been accepted by the clearing and settlement system, the securities and the respective funds may not be subject to legal or administrative action.

**Q.12.1.4: In the case of a CCP, does the CCP rely on the DvP or PvP services provided by another FMI, such as an SSS or payment system? If so, how would the CCP characterize the level of its reliance on such services? What contractual relationship does the CCP have with the SSS or payment system to ensure that final settlement of one obligation occurs only when the final settlement of any linked obligations occurs?**

For the settlement of obligations related to a transaction, CRCC uses the services of CSDs and the CUD system administered by the Central Bank (real-time gross settlement system), and its reliability is high. As a result, CRCC has signed service contracts and agreements with these entities. The agreements establish the relations and interactions between the systems of the respective entities, the conditions under which they are to be interconnected and the

	responsibility of each of the parties. These service agreements and contracts establish the conditions for the settlement of obligations in accordance with the procedures established in the CRCC (Circular), guaranteeing that the final settlement only takes place if the party entitled to receive has previously complied with its obligation to deliver.
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 12: Securities exchange settlement systems</b>	
<p><b>Key Consideration 1</b></p> <p><b><i>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.</i></b></p> <p>CRCC acts as a central counterparty for certain operations where principal risk might arise in the Financial Derivatives, Fixed Income and Equities segments. In all cases, settlement instructions (transfer orders) for securities exchange are executed through the delivery vs payment (DVP) mechanism, regardless of whether CRCC performs settlement via links to Colombia's CSDs (DCV and Deceval) and the payment system or through such securities deposits only.</p> <p>Depending on the transactions cleared and settled by CRCC in each of the defined Segments, the obligations may currently be settled on a net or gross basis.</p> <p>Irrespective of whether CRCC carries out the settlement process or whether it is the securities deposits or the clearing and settlement system with which it has signed an agreement, the settlement is carried out on a delivery vs payment (DVP) basis and the time periods between the blocking of the securities, the settlement of the cash and the subsequent release and delivery of the blocked securities have been designed to minimize the processing time. If the securities are subject to the obligations of an accepted transaction, they will not be the subject of third-party claims. In addition, CRCC, through agreements signed with CSD, the payment system or clearing and settlement systems, ensures that the final settlement of an obligation occurs only if final settlement also occurs, mitigating principal risk.</p>	
<p><b>KEY CONCLUSIONS FOR PRINCIPLE 12:</b></p> <p>Transactions accepted by CRCC are settled directly by CRCC through links to the payment system (delivery of cash to CRCC) and securities deposits (delivery of securities to CRCC) or through centralized securities deposits (DCV, Deceval), the mechanism for final settlement being the delivery vs payment (DVP) which mitigates principal risk.</p>	
<p><b>ASSESSMENT OF PRINCIPLE 12:</b></p> <p>Principle 12 referred to securities settlement systems is <b>OBSERVED</b> by CRCC.</p>	

<p><b>Principle 13: Participant-default rules and procedures</b></p> <p><b>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.</b></p>
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### Summary narrative

CRCC has defined rules and procedures for declaring and managing default events in Chapter Eight of Title Two of the Rulebook and in Chapter Two of Title Seven of Part I of the Circular. These documents are available to the public through the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

In the Rulebook and in the Circular, CRCC has defined: (i) default proceedings against third parties, non-clearing members and clearing members; (ii) the circumstances determining or giving rise to the default of third parties and Members, (iii) the effects of the default, (iv) the measures that may be taken in the event of default by third parties or Members, (iv) the order of enforcement of collateral and resources in the event of default and the obligation of recovery in the event of use, and (v) the lines of communication in the event of default.

The default management process is defined in CRCC 's Rulebook. Members can make comments or make suggestions on the proposed Regulations and their amendments, and then the default management process is made known to them. The Rules of Procedure are available to Members for consultation on the CRCC website: [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

CRCC managed the default of a General Clearing Member in 2012, proving that the current rules are adequate and complete to manage this event. Beginning in 2018, CRCC will conduct an annual default management drill for any of the defined Segments and test results will be reported to the CRCC Risk Committee and Board of Directors.

<b>Key Consideration 1</b>	<b>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.</b>
Description	<p><i>Participant default rules and procedures</i></p> <p><b>Q.13.1.1 : Do the FMI's rules and procedures clearly define an event of default (both a financial and an operational default of a participant) and the method for identifying a default? How are these events defined?</b></p> <p>CRCC has defined rules and procedures for declaring and managing default events in Chapter Eight of Title Two of the Rulebook and in Chapter Two of Title Seven of Part I of the Circular. These documents are available to the public through the CRCC website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>.</p> <p>CRCC has established in its Operating Rules that, to adopt the decision of declaring default of a Clearing Member, it will take into consideration whether any or all of the following circumstances have occurred with respect to the Clearing Member:</p> <ul style="list-style-type: none"> <li>- The non-constitution, adjustment, modification, extension, replacement or substitution of collateral in due time and form.</li> <li>- Non-payment of the daily settlement or the settlement at maturity.</li> <li>- Non-payment of the settlement of premiums or any other item associated with the operations and/or equities and/or segments.</li> <li>- Failure to pay the fees or any other amount due to CRCC in due time and manner.</li> <li>- The failure of the Clearing Member to constitute collateral in time and form, the non-payment of daily settlement and premiums or the non-payment in time and form of fees or any other amount due to CRCC, corresponding to the accounts of third parties or of the Non-Clearing Members of which it is a Clearing</li> </ul>

Member, regardless of whether or not the holders of such accounts have complied with this obligation towards the corresponding Member.

- The non-delivery of the corresponding equity when the operation must be settled by means of the delivery of the same.
- The initiation of bankruptcy or intervention proceedings, whatever they may be called, or of compulsory or voluntary liquidation, either in Colombian territory or in any other jurisdiction, in relation to the Clearing Member, its parent company or another company of its group with economic and financial importance within it, or the adoption by a legal or administrative authority of a universal measure, provided for by Colombian or other State legislation, for the liquidation of the Member.
- The suspension or expulsion of the Clearing Member, its parent company or another of its group with economic and financial importance within the same, from a market, an exchange, a trading system, a clearing and settlement system, a central counterparty entity or a clearing house.
- The occurrence of any other default to comply with its obligations under the Rulebook of CRCC and its regulations on the matter, which may generate a risk to the economic stability of CRCC.
- The occurrence of facts or acts, whether known or not by the Clearing Member, that jeopardize its relationship with other Members, with the deposits of securities or money and with CRCC itself. Such facts or acts may concern, for example, statements, information or records referring to national or international blocking or control lists for money laundering and financing of terrorism, in which the non-Clearing Member, its shareholders, directors or related persons may be directly or indirectly affected.
- Any other cause established in the Agreement signed between CRCC S.A and the Clearing Member.

**Q.13.1.2: How do the FMI's rules and procedures address the following key aspects of a participant default:**

**a) the actions that the FMI can take when a default is declared;**

In accordance with CRCC 's Rulebook, the declaration of default of a Clearing Member shall have the following effects:

1. The Agreement between CRCC and the Clearing Member and the Agreements between the Clearing Member and its Non-Clearing Members shall terminate immediately. Termination of the Agreement between CRCC and the Clearing Member shall result in the exclusion of the Member involved. Without prejudice to the foregoing, the Clearing Member must comply with all legal, regulatory and contractual obligations under its responsibility.
2. Once the default of a Clearing Member has been formally declared, CRCC may, to deal with the default, take any of the following actions in relation to the Clearing Member:
  - a. Immediately restrict the acceptance and registration of new transactions in its own accounts or those of its third parties in any or all the Segments in which it participates.
  - b. Execute all or part of the collateral of any kind constituted by the Clearing Member.
  - c. Carry out as many operations as are necessary to close the open positions of accepted operations registered in the accounts held by the Clearing Member, including, where applicable, the accounts of its third parties and/or Non-Clearing Members and/or their third parties. Likewise, it may enter into new transactions until the final closing of the open position of all the Segments in which it participates, or it may perform early clearing and settlement.

Additionally, for the closing of open positions of accepted transactions CRCC may:

- i. Conduct voluntary or mandatory auctions with the participation of Members. The mandatory auctions shall be open to Clearing Members who have fulfilled all their obligations and who have recorded in their own account during the six (6) months prior to the date of default operations accepted by CRCC on the same equity and segment as the operations subject to default.
  - ii. Record the necessary operations for the closing of the open positions, on a proportional basis, in the accounts of the Clearing Members that have fulfilled all their obligations and that have registered in their own accounts open positions of accepted transactions contrary to the open positions of accepted transactions of the defaulting Clearing Member. The record of transactions made by CRCC shall be binding on the Clearing Members and shall be made in direct proportion to the open positions of each of the Clearing Members executed in their own position, without exceeding such Positions.
  - iii. Record the operations necessary for the closing of the open positions, on a proportional basis, in the own accounts of the Clearing Members that have complied with all their obligations and that have recorded in their own account during the six (6) months prior to the date of default operations accepted by CRCC on the same asset and Segment of the operations subject to default. The record of transactions made by CRCC shall be binding to the Clearing Members and shall be made in direct proportion to the technical equity of each of the Clearing Members against the open positions of each of the defaulting Members which shall be closed.
  - iv. Combine any of the above measures.
- d. Impose the financial consequences that CRCC has established through the Regulations or those agreed in the Agreement between CRCC and the Clearing Member.
  - e. Carry out as many operations as necessary, including hedging operations, to reduce the risks not covered until they are closed or definitively covered by all the Segments or for the fulfilment of equity delivery obligations. As well as resorting to liquidity or equity providers.  
In the case of accepted transactions in which the underlying equity or equity covered by the accepted transaction is an equity security, CRCC may dispose of or acquire such securities on its own account or on behalf of its Members through the mechanisms permitted by the applicable regulations.
  - f. Obtain, at the expense of the Clearing Member, any professional advice or assistance that CRCC may reasonably require in connection with the management of the default, including the collection management mandate from another entity.
  - g. In the case of transactions accepted with settlement by delivery which were not delivered by the defaulting Clearing Member, CRCC shall alternately deliver the respective equity or not hold the underlying equity, by means of a Settlement for Differences due to Default to Deliver in accordance with the provisions of the Regulations, through the corresponding Clearing Members, to the account holders who are entitled to receive the equities and who have fulfilled all their obligations. The execution of the transactions by CRCC by means of a Settlement of Differences due to Default to Deliver, does not remedy the default of the Clearing Member.
  - h. CRCC may, where appropriate, in coordination with the competent authorities, take any other measure deemed necessary, even if not expressly provided for in the Regulation.

Nonetheless, for the Swaps Segment the CRCC could adopt any of the following measures:

- a. Create a Default Management Committee (DMG) which main purpose is to advise and guide the CRCC on the matters related to the handling of the default. The committee would advise on hedging strategies and the auction process.
- b. CRCC will first focus on neutralizing the risk to the extent possible, of the defaulted Member's portfolio entering into hedging positions on swaps done at current market levels that would then be registered in the clearinghouse.
- c. In hand with the DMG the CRCC will design an auction with the aim to protect as much as possible the surviving members as well as the clearinghouse from the losses that could threaten the mentioned entities.



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	<p>d. The CRCC will run an auction with the Members participating in the segment during the last 6 months. The CRCC will inform through an operational instructive the conditions for the auction to all its Members. Details like the type and format as well as time and line items to auction will be provided.</p> <p>3. All costs and expenses arising from the management of a default shall be paid to CRCC by the Clearing Member. CRCC will settle these costs and expenses once the open positions are closed.</p> <p>4. In relation to communications, information and the duty to cooperate with the competent authorities in a default situation, CRCC shall:</p>
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- a) Inform the Clearing Member, as soon as possible, of the actions taken by CRCC.
- b) Cooperate fully with the competent authorities.
- c) Cooperate in the exchange of information with any trading system, stock exchange or entity that is part of a clearing and settlement system in relation to the Clearing Member, and with any authority that has an interest.

5. In the event of a default by a Clearing Member maintaining third party accounts, CRCC will attempt to transfer the open positions of the third parties held by the Clearing Member to one or more other Member(s).

For the transfer, agreement with the Member(s) to whom the open positions are to be transferred and with the third parties whose accounts are to be transferred shall be required. CRCC shall report on the status to transfer, indicating to whom the accounts would be transferred, by any means of communication and shall then confirm this by certified mail with acknowledgement of receipt addressed to the Members and interested third parties. The letter to the third parties shall be sent to the address in the Member's records. The transfer of accounts to the new Member shall entail the transfer of the management of the corresponding collateral to such third parties. If this is not possible or market price trends make it advisable to close open positions to protect the creditworthiness of CRCC, CRCC will close the open positions registered in the account in question, using any collateral provided.

In the event of default by a General Clearing Member of Non-Clearing Members, the latter shall be obliged to sign an Agreement with another Clearing Member within a period of no more than thirty (30) calendar days from the day CRCC issues the communication.

**b) the extent of which the actions are automatic or discretionary;**

All these measures are discretionary, as provided for in the Rulebook:

Once the default of a Clearing Member has been formally declared, the Rulebook establishes that CRCC may take any of the measures listed in the immediately preceding point in relation to the Clearing Member, to handle the default.

In addition to the foregoing, the Rulebook establishes that CRCC, if applicable, in coordination with the competent authorities, may take any other measure deemed necessary, even if not expressly provided for in the Rulebook.

**c) changes to normal settlement practices;**

The default of a Member may affect regular settlement practices, for example, CRCC may be able to settle for differences due to default on delivery in relation to a specific financial instrument with delivery settlement.

**d) the management of transactions at different stages of processing;**

Chapter Eight of Title Two of the Rulebook describes how default by Members will be dealt with in detail and with legal certainty: (i) Procedure to manage a Member default, (ii) the effects of a Member's declaration of default, and (iii) an order for the collateral execution and other remedies in the default event.

**e) the expected treatment of proprietary and customer transactions and accounts;**

CRCC has established in its Rulebook the treatment for the proprietary and customer transaction accounts. See answer Q:13.1.2. subparagraph a).

**f) the probable sequencing of actions;**

The actions taken by CRCC and their sequence depend directly on the management of the default and the characteristics of the Member in default in accordance with response to Q.13.1.2 (a) and (b).

**g) the roles, obligations and responsibilities of the various parties, including non-defaulting participants; and**

CRCC has established in Chapter Eight, Title Two of its Rulebook the functions, obligations and responsibilities of the different parties, including the Members that do not incur in default and they are explained exhaustively and detailed (causes, scenarios, measures and procedures) in the Circular on the Default Chapter.

**h) the existence of other mechanisms that may be activated to contain the impact of a default?**

CRCC covers the impact of a default with the pre-financed financial resources: i) Initial Margin, Individual Collateral, contributions to the Defaulting Member's Default Fund, ii) If the impact of the default is greater, the Specific Capital Resources of CRCC ("Skin in the Game") are available and then with: iii) contributions to the Default Fund by the Defaulting Member.

Additionally, in the event that the pre-financed financial resources are not sufficient, CRCC has non-pre-financed financial resources such as: i) replenishments to the Default Fund of Clearing Members fulfilled and ii) mandatory and voluntary contributions of Members fulfilled.

If the financial resources mentioned above are not sufficient, the remainder of the capital resources of CRCC would be available.

*Use of financial resources*

**Q.13.1.3 : How do the FMI's rules and procedures allow the FMI to promptly use any financial resources that it maintains for covering losses and containing liquidity pressures arising from default, including liquidity facilities?**

CRCC has a set of rules and procedures established in its Rulebook approved by the SFC that allow it to use financial resources to manage the default process without delay.

CRCC accepts highly liquid securities as collateral and applies a reasonable and conservative haircut, CRCC has access to liquidity provision mechanism of the central bank, the cash received in collateral is held in Central Bank accounts and a portion is invested through one-day repo transactions. The assets of CRCC are invested in securities of the Republic of Colombia with a conservative market risk policy. Collateral posted in USD is kept in a commercial bank with rating equal or higher to the sovereign rating for the Republic of Colombia.

**Q.13.1.4 : How do the FMI's rules and procedures address the order in which the financial resources can be used?**



Chapter Eight of Title Two of CRCC 's Rulebook establishes the order of enforcement of collateral and other remedies in the event of default.

For closing and settling open positions, or for reimbursing the proceeds of a default, CRCC will call on collateral and other remedies in the event of default in the order indicated below:

1. Collateral per Member or Third-Party in Default Position for each Segment.
2. Individual Collateral and, if any, the Extraordinary Collateral constituted by the defaulting Clearing Member.
3. The contributions of the defaulting Clearing Member to the Default Fund for the Segment in which the defaulting Clearing Member has incurred and, if this is not sufficient, any other collateral that the defaulting Clearing Member may have provided in favor of CRCC, and if any, the contributions of the defaulting Clearing Member to the Default Funds of the other Segments in which it participates.
4. The Specific Own Resources ("Skin in the Game") of CRCC equivalent to the part specifically assigned to the Segment.
5. Contributions to the Default Fund from other Members who have fulfilled their obligations and are participating in the respective Segment.
6. Replenishment of collateral through additional contributions to the Default Fund by the Clearing Members fulfilled.
7. Mandatory contributions for the continuity of service of the Segment where the default occurred.
8. Voluntary contributions for the continuity of service of the Segment where the default occurred.
9. CRCC will assume losses not covered by the rest with its own assets.
10. Once the above has been complied with, CRCC may proceed to the cessation of activities with respect to the Segment in which the Default occurred, for which purpose it shall proceed with the clearing and early settlement and the simultaneous closing of all the open positions existing at that time in the Segment. For this purpose, the net balance of each open position shall be found, and payments shall be made as a result of the balances due or payable by third parties, Members and CRCC.

If, as a consequence of the application of the order of execution of collateral and other resources described above, any loss arises from the use of the Default Fund or from compulsory contributions for the continuity of service and even from voluntary contributions, if any, both for any Member and for CRCC, they may claim the restitution of these securities in the manner they deem most appropriate from the Member or the third party whose default caused such loss.

In this case, any recoveries that may be obtained by any Member or by CRCC shall be used to reimburse CRCC and the Members within each Segment in accordance with the procedure set out in the Circular and in the following order:

1. Voluntary Contributions;
2. Mandatory Contributions;
3. Contributions to the Members' default Fund and additional contributions;
4. The Specific Proprietary Resources of CRCC ("Skin in the Game").

The amounts recovered shall be distributed in proportion to the contributions or contributions for the continuity of the service or Specific Proprietary Resources ("Skin in the Game"). If any amount corresponding to those contributed is recovered by CRCC or by any Member, the person who recovered it shall be obliged to hand it over to CRCC for distribution in accordance with this provision.

	<p><b>Q.13.1.5: How do the FMI's rules and procedures address the replenishment of resources following a default?</b></p> <p>In the event of a default by a Clearing Member that causes the Default Fund of a Segment to be used in whole or in part under the terms established in Chapter Eight of Title Two of the Rulebook of CRCC, the Clearing Members who have complied shall be obliged to replenish their contributions and make additional contributions to the Default Fund. For further details see response to Principle 4, Q.4.7.2.</p>
<b>Key Consideration 2</b>	<p><b>An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.</b></p>
Description	<p><b>Q.13.2.1 : Does the FMI's management have internal plans that clearly delineate the roles and responsibilities for addressing a default? What are these plans?</b></p> <p>The Senior Management of CRCC, based on the Rulebook, the Circular and the practical experience obtained from the management of a Clearing Member's default, has defined the necessary procedures containing the protocols, functions and specific responsibilities for the timely management of a default.</p> <p><b>Q.13.2.2 : What type of communication procedures does the FMI have in order to reach in a timely manner all relevant stakeholders, including regulators, supervisors and overseers?</b></p> <p>CRCC has proven internal procedures and action plans for the notification of default to the legal representative of the Defaulting Member, to all Members and market participants, to trading and/or registration entities and to the competent authorities. All procedures have defined activities and responsibilities.</p> <p><b>Q.13.2.3 : How frequently are the internal plans to address a default reviewed? What is the governance arrangement around these plans?</b></p> <p>Procedures and action plans are reviewed by the Risk Committee.</p>
<b>Key Consideration 3</b>	<p><b>An FMI should publicly disclose key aspects of its default rules and procedures.</b></p>
Description	<p><b>Q.13.3.1: How are the key aspects of the FMI's participant default rules and procedures made publicly available? How do they address:</b></p> <p><b>a) the circumstances in which action may be taken;</b></p> <p>Please see answer to Q.13.1.1.</p> <p><b>b) who may take those actions;</b></p> <p>In accordance with CRCC 's Rulebook: i) the General Clearing Member is responsible for the declaration of default by its Non-Clearing Members, ii) the Member, regardless of its mode of operation, is responsible for</p>

	<p>declaring the default of its third parties and iii) CRCC is responsible for declaring the default of the Clearing Members.</p> <p><b>c) the scope of the actions which may be taken, including the treatment of both proprietary and customer positions, funds and assets;</b></p> <p>The scope of the actions that can be taken is described in response to Q.13.1.2.</p> <p><b>d) the mechanisms to address an FMI's obligations to non-defaulting participants; and</b></p> <p>The mechanisms for addressing the obligations of CRCC to its Members are described in Chapter Eight of Title Two of the Rulebook and CRCC 's Circular.</p> <p><b>e) where direct relationships exist with participants' customers, the mechanisms to help address the defaulting participant's obligations to its customers?</b></p> <p>In the event of default by a Clearing Member, CRCC shall manage the transfer of the third party's open positions under the terms indicated in response to Q.13.1.2.</p>
<b>Key consideration 4</b>	<p><b>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.</b></p>
<b>Description</b>	<p><b>Q.13.4.1: How does the FMI engage with its participants and other relevant stakeholders in the testing and review of its participant default procedures? How frequently does it conduct such tests and reviews? How are these tests results used? To what extent are the results shared with the board, risk committee and relevant authorities?</b></p> <p>The process of default management is defined in the Rulebook of CRCC, in this sense, any modification to the same implies the reform of the Regulations whose proposals for modification are published for suggestions and comments of the Members prior to their approval by the Board of Directors and authorization of SFC. Once the modification of the Regulations is approved, it is published in the CRCC website <a href="http://www.camaraderiesgo.com">www.camaraderiesgo.com</a>.</p> <p>CRCC managed the default of a General Clearing Member in 2012, demonstrating that the current rules are adequate and complete to manage this event. Beginning in 2018, CRCC conducts an annual default management drill for any of the defined Segments and the results of the tests will be reported to the Risk Committee and the entity's Board of Directors.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 13: Participant-default rules and procedures</b>	
<b>Key consideration 1</b>	
<p><b><i>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.</i></b></p>	

CRCC has defined rules and procedures for declaring and managing default events in Chapter Eight of Title Two of the Rulebook and in Chapter Two of Title Seven of Part I of the Circular. These documents are available to the public through the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

In the Rulebook and in the Circular, CRCC has defined: (i) default procedures against third parties, non-clearing members and clearing members; (ii) the circumstances determining or giving rise to the default of third parties and Members, (iii) the effects of the declaration of default, (iv) the measures that may be taken in the event of default by third parties or Members, (iv) the order of enforcement of collateral and remedies in the event of default and the obligation of recovery in the event of use, and (v) the lines of communication in the event of default.

CRCC has a set of clear and proven rules and procedures that allow it to use all financial resources for the management of default without delay and to establish how it will replenish resources after default.

#### **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 Senior Management of CRCC, based on the Rulebook, the Circular and the practical experience gained from the management of a Clearing Member's default, has defined the necessary procedures containing the protocols, functions and specific responsibilities for the timely management of a default.

#### **Key consideration 3**

***An FMI should publicly disclose key aspects of its default rules and procedures.***

CRCC disseminates the key aspects of the rules and procedures relating to the management of non-compliance through: Rulebook and Circulars incorporated in Regulatory Bulletins. All this documentation is available on CRCC website: [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

#### **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.***

The process of default management is defined in the CRCC Rulebook, in this sense, any modification to the same implies the reform of the Regulations whose proposals for modification are published for suggestions and comments of the Members prior to their approval by the Board of Directors and authorization of the SFC. Once the modification of the Regulations is approved, it is published in the newsletter on the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

CRCC managed the non-compliance of a General Clearing Member in 2012, demonstrating that the current rules are adequate and complete to manage this event. Beginning in 2018, CRCC conducts an annual default management drill for any of the defined Segments and the results of the tests will be reported to the Risk Committee and the entity's Board of Directors.

#### **KEY CONCLUSIONS FOR PRINCIPLE 13:**

CRCC has defined rules and procedures for declaring and managing default events in Chapter Eight of Title Two of the Rulebook and in Chapter Two of Title Seven of Part I of the Circular. These documents are available to the public through the CRCC website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).

In the Rulebook and in the Circular, CRCC has defined: (i) proceedings against defaulting third parties, non-clearing members and clearing members; (ii) the circumstances determining or giving rise to the default of third parties and Members, (iii) the effects of the declaration of default, (iv) the measures that may be taken in the event of default by third parties or Members, (iv) the order of enforcement of collateral and remedies in the event of default and the obligation of recovery in the event of use, and (v) the lines of communication in the event of default.

The process of default management is defined in the Rulebook of CRCC, in this sense, any modification to the same implies the reform of the Regulations whose proposals for modification are published for suggestions and comments of the Members prior to their approval by the Board of Directors and authorization of the SFC. Once the modification of the Regulations is approved, it is published in the Bulletin on the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

CRCC managed the default of a General Clearing Member in 2012 by demonstrating that the current rules are adequate and complete to manage this event. Beginning in 2018, CRCC conducts an annual default management drill for any of the defined Segments and the results of the tests will be reported to the Risk Committee and the entity's Board of Directors.

#### **ASSESSMENT OF PRINCIPLE 13:**

Principle 13 referred to participant-default rules and procedures is **OBSERVED** by CRCC.

#### **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.**

##### *Summary narrative*

CRCC has rules and procedures that allow for the segregation and portability of a Member's customer positions and the collateral given to CRCC with respect to those positions. In relation to segregation and portability the following aspects are the most relevant:

- CRCC provides its participants with a structure of segregated individual accounts that effectively protect the positions and collateral of third parties (clients) in the event of the default of a Member, including the simultaneous default of a Member and a third party, by allowing the positions and collateral deposited by Members and their third parties to be separated and therefore fully identifiable.
- The rules and procedures relating to the structure of accounts, portability and collateral protection are clearly defined in both the Rulebook and CRCC's Circular. These documents are available to the public through the website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).
- CRCC's portability and segregation mechanisms have been structured considering the following aspects: (i) allowing for the transfer of positions and collateral from one defaulting Member to another Member, (ii) authorization procedures by the Member or third party to perform the transfer, (iii) identification of risks associated with segregation and portability mechanisms, and (iv) mitigation of segregation and portability risks.
- In addition to the above, in 2012, CRCC tested the segregation and portability model to manage the default of a Member that was the object of an intervention measure, taking possession for liquidation, by the SFC. In this process, the portability of the positions and collateral of the third parties of this Member showed an optimal performance, allowing, on the one hand, to transfer mentioned positions

	<p>to other Members, which were settled according to the characteristics of the operations accepted by CRCC and, on the other hand, allowing to close those positions in respect of which the third parties did not accept their transfer to another Member of CRCC.</p> <ul style="list-style-type: none"> <li>- Although it is true that CRCC has foreseen in its regulations the possibility of offering omnibus accounts (accounts of unidentified third parties) to date, it has not made the necessary developments for its operational implementation.</li> </ul>
<p><b>Key Consideration 1:</b></p>	<p><b>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.</b></p>
<p>Description</p>	<p><i>Customer protection from participant default</i></p> <p><b>Q.14.1.1 : What segregation arrangements does the CCP have in place to effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant?</b></p> <p>The segregation mechanisms that CRCC has in place to effectively protect third-party positions and collateral are based on its account structure. In this regard, CRCC has accounts with individual segregation that allow the positions and collateral pledged by Members and third parties to be separated and fully identifiable. Third party collateral is protected on an individual basis, pledged in favor of CRCC and protected by the principle of collateral protection provided for in Article 11 of the Securities Act.</p> <p>These accounts, as provided for in CRCC 's Rulebook, are called proprietary account registration accounts, which record the proprietary account transactions carried out by a Member and identified Third Party accounts, which record the transactions carried out on behalf of that Third Party.</p> <p>In this regard, in the event of a Member's default (see Principle 13), CRCC has the legal authority and operational capacity to manage risk and ensure continuity of service through the closure of positions or the transfer of positions and corresponding collateral for each of the individual accounts in the account structure of the defaulting Member.</p> <p>CRCC 's Rulebook and Circular contain a detailed description of the account structure, transaction record, segregation of positions and collateral and the applicable procedures for managing an event of default which includes the closing of open positions or their transfer, together with their collateral, to the account structure of another Member.</p> <p><b>Q.14.1.2 : What are the CCP's portability arrangements?</b></p> <p>The portability mechanism available to CRCC is the transfer of open positions, which is legally provided for in the Rulebook (Article 2.4.14.). Operationally, CRCC transfers the open positions of the identified third parties, together with their collateral, to the other Member(s) fulfilled.</p> <p>To make the above transfer, agreement is required with the Members to whom the open positions are to be transferred and with the identified third parties whose accounts are to be transferred. As indicated above, the transfer of identified third party accounts to another Member involves the transfer of the corresponding collateral.</p> <p>Another mechanism established by CRCC to protect third parties and Non-Clearing Members from the default of a General Clearing Member to perform is the granting by CRCC of the status of Individual Clearing Member to the Non-</p>



Clearing Member for a period of thirty (30) calendar days, at the end of which the institution must accredit CRCC for having entered into a new agreement with another General Clearing Member.

**Q.14.1.3 : If the CCP serves a cash market and does not provide segregation arrangements, how does the CCP achieve protection of customers' assets? Has the CCP evaluated whether the applicable legal or regulatory framework achieves the same degree of protection and efficiency for customers that would otherwise be achieved by segregation and portability arrangements?**

Not applicable. CRCC only has a segregated account structure, therefore it has segregation and portability mechanisms so that customer assets are clearly identified at the level of identified third party accounts.

*Customer protection from participant and fellow customer default*

**Q.14.1.4 : If the CCP offers additional protection to customers to protect their positions and collateral against the concurrent default of the participant and a fellow customer, how does the CCP ensure that such protection is effective?**

As described in Q.14.1.1.1, CRCC only provides a structure of segregated individual accounts; therefore, this level of individual segregation provides protection for the positions and collateral of each individual account. The positions are registered in the system administered by CRCC and the collateral are pledged to CRCC.

This structure of segregated accounts is effective insofar as, in the event of the simultaneous default of a Member and a third party, CRCC can manage the closing of the positions of the defaulted Member using, if necessary, the collateral provided to cover those positions and close the positions of the third party, liquidating the collateral required by the latter open positions. It may also transfer the positions and collateral of the other third parties of the defaulting Member to other Members.

*Legal basis*

**Q.14.1.5 : What evidence is there that the legal basis provides a high degree of assurance that it will support the CCP's arrangements to protect and transfer the positions and collateral of a participant's customers?**

CRCC has a clear, transparent and enforceable legal basis for each of its activities, including the segregation and of the open positions registered in each of the individual segregation accounts in CRCC system and the collateral provided to support compliance with these open positions.

Article 11 of the Colombian Markets and Securities Law establishes the principle of collateral protection, which prohibits collateral delivered on behalf of a participant (own or third party) to a clearing and settlement system, affected by, or derive from, the performance of transactions or transfer orders accepted for the system, to be subject of a claim, attachment, seizure, withholding or other similar administrative or judicial action, until such transactions or transfer orders are fully complied with.

In the same sense, the Article provides that the acts by which such collateral is constituted, increased or replaced shall be irrevocable and may not be challenged, annulled or declared ineffective.

Finally, collateral provided by a participant to a clearing and settlement system may be used for the settlement of the collateralized transactions even where the provider is the subject of insolvency or settlement proceedings or of a restructuring agreement.

On the other hand, the Rulebook of CRCC, when approved by SFC, is part of the regulations of the stock market. In accordance with the Regulations, the collateral constituted by the Members and Third Parties in favor of CRCC guarantee the open positions that each holder has registered in its accounts (legal segregation), collateral that may be executed to comply with the obligations with CRCC even in the event of the opening of insolvency proceedings.

CRCC 's Regulations establish the structure of accounts, which include individual segregation accounts (accounts of identified third parties) and omnibus accounts (accounts of unidentified third parties). With respect to the latter, as indicated in the explanatory summary, they are not operationally implemented. Accordingly, for individual segregation accounts, the Regulation (Article 2.8.7.num 6) provides that in the event of default by a Clearing Member maintaining third party accounts, CRCC shall attempt to transfer the open positions of the identified third parties held by the Clearing Member to one or more other Members.

Likewise, the Regulations (article 2.4.14.) regulate the transfer of open positions at the request of a Member from one account to another or from one Member to another, in events such as:

1. Business reorganization of a Member, such as acquisition, merger or spin-off.
2. When requested by the identified third-party account holder.
3. By inheritance, donation or legal subrogation of all or part of the positions of an account from an identified third party to another.
4. At the express request of the identified third-party account holder who wishes to change members (Circular, article 1.4.2.4.).

Based on the foregoing, it is feasible to conclude that the collateral constituted in favor of CRCC to support the open positions of the account holders of each account are duly protected and segregated, therefore, in the event that the third party requests the CRCC or gives its consent to be transferred to another Member, it is feasible to proceed in accordance with CRCC since its positions are clearly identified and its collateral protected.

On the other hand, it should be noted that CRCC has empirical evidence of the high degree of security of the segregation and portability mechanisms available to it. These mechanisms were tested in the event of default by a General Clearing Member in 2012: (i) positions of the defaulting Member's own account were closed, (ii) third party positions were closed, (iii) positions and third party collateral of the defaulting Member were transferred to other Members of the CRCC, and (iv) positions and collateral of a Non-Clearing Member and their respective third parties were transferred.

**Q.14.1.6: What analysis has the CCP conducted regarding the enforceability of its customer segregation and portability arrangements, including with respect to any foreign or remote participants? In particular, which foreign laws has the CCP determined to be relevant to its ability to segregate or transfer customer positions and collateral? How have any identified issues been addressed?**

Regarding the segregation and portability mechanisms, CRCC verified their enforceability when an event of default by a General Clearing Member occurred because of the intervention of the entity by the local supervisory authority (SFC). In this process, the segregation and portability of the positions and third party collateral of that Member showed optimum performance, allowing the transfer of said positions to other Members, which were liquidated according to the characteristics of the operations accepted by CRCC and allowing the closing of those positions in respect of which the third parties did not accept their transfer to another Member of CRCC.

	On the other hand, no legal analysis has been made as to the enforceability of segregation and portability based on foreign legislation, because CRCC does not accept collateral assets governed by foreign legislation and its operation is framed in the Colombian territory, under Colombian law, which includes both current legal and regulatory regulations.
<b>Key Consideration 2:</b>	<b>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.</b>
<b>Description</b>	<p><b>Q.14.2.1 : How does the CCP segregate a participant's customers' positions and related collateral from the participant's positions and collateral? What type of account structure (individual or omnibus) does the CCP use for the positions and related collateral of participants' customers? What is the rationale for this choice?</b></p> <p>CRCC has a structure of segregated individual accounts through which it separates the positions and collateral of Members from the positions and collateral of their identified third parties. The structure of the accounts of CRCC is defined in Chapter Four of the Rulebook. For more information, please see Q.14.1.1.</p> <p>The structure of segregated individual accounts allows for: i) segregation of open positions and collateral, and ii) portability.</p> <p>The operational implementation of segregated individual accounts is justified insofar as it gives a high degree of protection to third parties insofar as the final third-party accounts are registered in CRCC system. The collateral is provided to CRCC, with identification of the holder and separation between account holders.</p> <p><b>Q.14.2.2 : If the CCP (or its custodians) holds collateral supporting customers' positions, what does this collateral cover (for example, initial margin or variation margin requirements)?</b></p> <p>Collateral deposited at the identified third-party account level cover the current credit exposure through the variation margins outstanding/variation margin, which, depending on the type of settlement, are settled at the end of the day or on the day of their maturity and the potential future exposure by means of the margin position/initial margin collateral.</p> <p><b>Q.14.2.3 : Does the CCP rely on the participant's records containing the sub-accounting for individual customers to ascertain each customer's interest? If so, how does the CCP ensure that it has access to this information? Is customer margin obtained by the CCP from its participants collected on a gross or net basis? To what extent is a customer's collateral exposed to "fellow customer risk"?</b></p> <p>Operationally CRCC has only implemented individual accounts with individualized segregation, therefore, this question is not applicable.</p>
<b>Key Consideration 3:</b>	<b>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 to one or more other participants.</b>
<b>Description</b>	<p><b>Q.14.3.1: How do the CCP's portability arrangements make it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants?</b></p> <p>The portability mechanisms adopted by CRCC allow for the secure transfer of a third party's positions and collateral from one defaulting Member to another Member as described in Q.14.1.2. and Q.14.1.5.</p>

	<p><b>Q.14.3.2: How does the CCP obtain the consent of the participant(s) to which positions and collateral are to be ported? Are the consent procedures set out in the CCP's rules, policies or procedures? If so, please describe them. If there are any exceptions, how are they disclosed?</b></p> <p>The transfer of open positions is regulated in the Rulebook (Article 2.4.14.) and in the Circular (Articles 1.4.2.4. and 1.4.2.5.) of CRCC. For this purpose, the Member requesting the transfer to CRCC must demonstrate the reason for the transfer and submit the supporting documentation to CRCC. Once CRCC verifies the conformity of the documentation, it carries out the transfer.</p> <p>In addition, the Rulebook (Articles 2.8.5. and 2.8.7.) provides that in the event of default by a Member maintaining identified third-party accounts, CRCC shall transfer to another Member or Members the open positions and collateral of the identified third-party accounts held by the Member.</p> <p>The transfer shall require agreement with the Member(s) to whom the open positions are to be transferred and with the third parties whose accounts are to be transferred. CRCC shall report on the status and intention to transfer, with an indication of the Members to whom the various accounts would be transferred, by any means of communication and shall then confirm this by registered letter with acknowledgement of receipt, addressed to the Members and to the related identified third parties. The letter to the identified third parties shall be sent to the address in the Member's records. The transfer of accounts to the new Member shall entail the transfer of the management of the collateral corresponding to such identified third parties.</p>
<p><b>Key Consideration 4:</b></p>	<p><b>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.</b></p>

<p><b>Description</b></p>	<p><b>Q.14.4.1 : How does the CCP disclose its segregation and portability arrangements? Does the disclosure include whether a participant's customers' collateral is protected on an individual or omnibus basis?</b></p> <p>CRCC has rules and procedures regarding the structure of accounts, portability and protection of individual collateral in the Rulebook: i) Chapter Four - Registration System and ii) Chapter Eight - Defaults. These documents are available to the public through the website <a href="http://www.camaraderiesgo.com.co">www.camaraderiesgo.com.co</a></p> <p>At present, CRCC only has segregated individual accounts available to Members and customers, the characteristics of which are set out in CRCC 's Rulebook and Circular. These documents can be consulted by the public through the website <a href="http://www.camaraderiesgo.com.co">www.camaraderiesgo.com.co</a>.</p> <p><b>Q.14.4.2 : Where and how are the risks, costs and uncertainties associated with the CCP's segregation and portability arrangements identified and disclosed? How does the CCP disclose any constraints (such as legal or operational) that may impair the CCP's ability to fully segregate or port a participant's customers' positions and collateral?</b></p> <p>Chapter Eight of the Rulebook describes: (i) the procedure for transferring positions and collateral of third party accounts from a defaulting Member and (ii) the procedure for establishing and allocating costs and expenses of the defaulting Member's defaulting management process, which must be borne by the defaulting Member. CRCC has complete segregation and portability, however, there is a risk of being unable to contact the client or third party to decide on whether or not to accept the transfer of its positions and collateral to another Member. This risk is mitigated by the fact that CRCC has a database of identified third parties per Member, which is updated at least annually.</p> <p>The rules and procedures related to segregation and portability mechanisms are disclosed by CRCC through the website <a href="http://www.camaraderiesgo.com.co">www.camaraderiesgo.com.co</a></p> <p>CRCC discloses through communications and operational instructions the activities necessary to manage the segregation and portability of the open positions of the account structure from one Member to another and, if applicable, the need to liquidate the positions.</p>
<p align="center"><b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b></p>	
<p><b>Principle 14: Segregation and portability</b></p>	
<p><b>Key Consideration 1</b></p> <p><b><i>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</i></b></p> <p>CRCC provides its participants with a structure of segregated individual accounts that effectively protect the positions and collateral of a third party in the event of default by a Member in all cases including simultaneous default by the Member and a third party.</p> <p>In addition, the Colombian Securities Law protects segregation and portability mechanisms to the extent that it establishes the principles of Finality and protection of the collateral applicable even in the event of the participant's insolvency.</p>	

In addition, the segregation and portability mechanisms available to CRCC to protect the positions and collateral of third parties were tested with a high degree of satisfaction in the management of a Member's default, allowing for the transfer of such positions to other Members and the closure of positions in respect of which third parties did not accept their transfer to another Member of CRCC.

#### **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.***

CRCC has a structure of segregated individual accounts (proprietary position accounts and identified third party accounts) which allows the positions and collateral provided by Members and third parties to CRCC to be fully identified and separated.

Operationally, CRCC has not implemented a structure of omnibus accounts, which is why all the accounts of its members and third parties correspond to accounts with individualized segregation.

#### **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 to one or more other participants.***

The structure of accounts adopted by the CCP is one of individual accounts, segregated at the individual account level. The contributions of collateral made by a third party are identified from the moment they are set up and only cover the risk of their own account.

For its part, the segregation and portability mechanisms available to CRCC have been structured taking into account the following aspects: i) allowing for the transfer of positions and collateral from one defaulting Member to another, ii) authorization procedures by the Member and third party to carry out the transfer, iii) identification of the risks associated with segregation and portability mechanisms, iv) mitigation of segregation and portability risks.

#### **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.***

CRCC provides the Members and the authorities with enough information on the positions and collateral of third parties constituted in favor of CRCC S.A., segregated from the positions and collateral of the Member and CRCC S.A.

CRCC S.A. discloses all the rules and procedures related to the segregation and portability mechanisms through its website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co); in addition, CRCC discloses through operational communications and instructions the activities necessary to manage the segregation and portability of the open positions of the account structure from one Member to another and, if applicable, the need to liquidate the positions.

#### **KEY CONCLUSIONS FOR PRINCIPLE 14**



- CRCC, to date, has only implemented individualized segregation accounts, therefore, it only offers its participants such an account structure that effectively protects the positions and collateral of a third party in the event of a Member's default in all cases including the simultaneous default of the Member and another third party, to the extent that it allows positions and collateral held by Members and third parties identified by the CRCC to be fully identified and separated. CRCC has also ensures that the configuration of its account structure and its segregation and portability mechanisms has a solid legal basis to support them.
- CRCC has clearly defined rules and procedures regarding the structure of accounts, portability and collateral protection in the Rulebook: i) Chapter Four - Registration System, ii) Chapter Eight - Defaults and iii) the Circular. These documents are available to the public through the website [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).
- CRCC's portability and segregation mechanisms have been structured taking into account the following aspects: (i) allowing the transfer of positions and collateral from a defaulting Member to a complying Member, (ii) authorization procedures by the Member and the third party to carry out the transfer, (iii) identification of risks associated with segregation and portability mechanisms, (iv) mitigation of segregation and portability risks.

#### **ASSESSMENT OF PRINCIPLE 14**

Principle 14 referred to segregation and portability is **OBSERVED** by CRCC.

#### **PRINCIPLE 15: GENERAL BUSINESS RISK**

**An IMF should identify, monitor and manage its overall business risk and hold sufficient net liquid assets financed through its net worth to cover possible overall business losses so that it can continue to operate and provide services as a going concern if such losses materialize. In addition, net liquid assets must be sufficient at all times to ensure an orderly recovery or cessation of their critical operations and services.**

##### *Summary narrative*

The general business risk faced by the CRCC is due to changes in its environment that affect its financial performance. Changes can decrease revenues or increase expenses having an adverse impact on the company's bottom line.

The risks identified by CRCC that affect its overall business risk are:

- Revenue concentration.
- Economic risk.
- Reputational risk.
- Operational Risk
- Regulatory risk and regulatory compliance risk.
- Technological obsolescence.

To monitor, manage and mitigate business risk, CRCC evaluates different scenarios and their impact on financial results. The Board of Directors, the Risk Committee and the Administrative and Financial Committee are the bodies in charge of monitoring capital, budget execution, financial planning and investment policies with the objective of maintaining sufficient liquid resources and equity to cover any losses to attain an orderly recovery or wind-down of its operations and services.

CRCC has sufficient equity and net liquid assets to absorb the materialization of the identified business risks. CRCC has a conservative approach for the investment of its liquid assets in COP: cash, overnight repo on government securities (TES) and a portfolio of short-term TES securities. Cash is held at commercial banks with the highest credit rating granted by a Rating Agency supervised by the SFC.	
<b>Key Consideration 1</b>	<b>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.</b>
	<p><b>Q.15.1.1: How does the FMI identify its general business risks? What general business risks has the FMI identified?</b></p> <p>CRCC has a Board of Directors, which is responsible for the strategic and organizational tasks of the entity; the Board of Directors defines the business strategy and periodically monitors the key performance indicators defined.</p> <p>General business risks are identified by: The Board of Directors, Risk Committee, Administrative and Financial Committee, the Audit Committee and Senior Management.</p> <p>The Corporate Governance of CRCC has built a comprehensive risk model in accordance with the components of COSO, therefore there are i) a controlled environment (rules and procedures), and ii) a risk assessment process. The risk assessment process involves a dynamic and interactive process to identify and analyze risks that impact the achievement of the entity's objectives, providing the basis for determining how risks should be managed, iii) risk control activities, iv) information and communication, and v) monitoring. As can be seen in the functions of the Committees that are part of the Corporate Governance of CRCC:</p> <p>The functions of the Administrative and Financial Committee are among others:</p> <ul style="list-style-type: none"> <li>- To study and follow up on new business and investment opportunities for the company presented by Senior Management and to recommend to the Board of Directors any proposals that may arise from these studies.</li> <li>- Evaluate the company's investments, their development and evolution.</li> <li>- To study the annual budget of the company and submit it to the Board of Directors for consideration. As well as evaluating the short, medium and long term financial planning of the entity, budget execution and financial indicators of the company.</li> <li>- To recommend to the Board of Directors the policies, parameters, counterparties, eligible investments and investment limits per issuer, counterparty and financial asset for the portfolio of the Clearinghouse own resources.</li> <li>- Analyze and recommend to the Board of Directors the rates, proposed by the entity's Senior Management, for the different services and products.</li> <li>- To study and make recommendations to the Board of Directors on the technological development of the Clearinghouse.</li> </ul> <p>The following are the functions of the Risk Committee, among others:</p> <ul style="list-style-type: none"> <li>- To prepare and submit the Clearinghouse risk management policies to the Board of Directors for consideration.</li> <li>- Define and adopt the model, mechanisms and procedures for risk management to which the operations accepted by CRCC and the operations that are cleared and settled through it are exposed, as well as the guarantee system, including the financial resources, the funds and in general the financial safeguards necessary for the control and protection against the identified risks.</li> </ul>

- Establish mechanisms for monitoring, measuring and controlling the risks of the operations accepted by CRCC and the operations that are cleared and settled through it. The risk control is carried out in relation to the positions of the counterparties and the company.
- Establish the mechanisms that allow the company to adequately anticipate and mitigate the risks of default of each trade.
- Establish clear risk management policies and mechanisms in the case one or more of the counterparties fails to meet its obligations or a given counterparty goes into bankruptcy, intervention, takeover, dissolution or liquidation.
- To determine the way and methodology to make up the different resources of the guarantee system, establishing the type and percentage of the funds that integrate them, as well as the criteria for the administration of said resources.
- Periodically submit reports on risk management to the Board of Directors to enable it to exercise adequate control over risk management and monitor the company's exposure. In any case, the Board of Directors may at any time request extraordinary reports from the Risk Management Committee on any particular situation that may arise.

The functions of the Audit Committee include, among others:

- Contributing to the definition of the general guidelines and structure of the internal control system, as well as monitoring and evaluating their effectiveness;
- Contributing to the definition of the general guidelines and structure of the internal control system, as well as monitoring and evaluating their effectiveness;
- Evaluate the audit reports presented by the company's internal auditors and, verify that their suggestions and recommendations have been complied with or, if not, verify the reasons why they were not complied with.
- Review and approve, when appropriate, documents and plans related to money laundering prevention and control, in accordance with the provisions of the current legislation.
- Evaluate the work plans, reports and follow up on the recommendations presented by the fiscal auditor, the external auditor, if any, and the internal auditor;
- Evaluate the company's business continuity plan;
- Establish procedures for hiring, remunerating and removing the external auditor, if any;
- To examine the company's pro forma financial statements and year-end financial statements;
- To submit to the Board of Directors ad hoc reports, proposals or recommendations as it may deem appropriate in relation to matters within the Committee's competence, and;
- The others delegated by the Board of Directors.

The risks identified and that could have an impact on the business model of CRCC are:

- Concentration of income:
  - Concentration of revenue by product: concentration of revenue on specific products.
  - Concentration of revenue per Member (client): concentration of revenue from a Member.
- Economic risk
  - Competition: i) potential impact of the entry of a company as a direct competitor and its implications in terms of market share, ii) potential impact by the preference of Members to clear and settle in a CCP in another jurisdiction or iii) that Members decide to clear and settle on a bilateral basis of OTC financial contracts, considering that clearing and settlement with central counterparty is not mandatory under Colombian regulation.
  - Macroeconomic factors: impact of lower growth scenarios in markets, the economy or a potential recession.

- Operating Risk: impact from operating events, CRCC calculates the amount for this type of risk using the Basic Indicator Method (15% of the average income for the last 3 years).
- Reputational risk: The perception and/or materialization of operational or counterparty risks arising from the operations of CRCC, as well as the gaps related to international standards that could affect the reputation of the entity and lead its Members to reduce their business volume, directly impacting revenues.
- Risk of changes in regulation: impact on the competitiveness of CRCC due to regulatory changes that increase operating expenses or that deteriorate the regulatory cost/benefit of sending transactions to a central counterparty, thereby discouraging the referral of transactions by its Members.
- Technological obsolescence: increase in expenditure due to the need for technological renewal of software or physical infrastructure at shorter intervals than budgeted (5 years).

**Q.15.1.2: How does the FMI monitor and manage its general business risks on an ongoing basis? Does the FMI's business risk assessment consider the potential effects on its cash flow and (in the case of a privately operated FMI) capital?**

Business risk is analyzed and managed based on scenario analysis using financial models that evaluate the financial performance of the different financial indicators of the entity and determine the effects under the scenarios described above and detailed below:

CRCC has an Administrative and Financial Committee which is a collegiate body made up of 5 members of the Board of Directors, whose main functions include evaluating financial planning (among the financial planning tasks are: sensitivity analysis under different short and long-term scenarios and its potential impact on the capital of the entity, budget execution, management indicators of the company and evaluation and impact of new projects).

CRCC monitors identified business risks:

- Constantly reviewing and participating in the comments submitted to the regulatory entities on internal and external regulatory developments,
- Conducting market analysis directly with our Members and the associations to which they belong.
- Conducting service satisfaction surveys to establish the level of satisfaction and reputation of CRCC in the market.
- Periodic review of income per Member and product, to identify possible impacts from any concentration.
- The Board of Directors defined a strategy of diversification in products and Members which the CRCC compensates and settles: i) standardized derivatives, ii) OTC derivatives, iii) interest rate swaps, iv) repos on public debt securities, v) cash lending over equity securities. CRCC is interconnected with different trading and/or registration systems.

The different Committees review the concentration of income per product and Member, and the different financial and/or reputational impacts that operational incidents have on CRCC as the issues related to technological obsolescence.

The effects on the business risk assessment evaluate the impacts on the entity's financial statements and cash flow. According to the risks identified Q.15.1.1. Economic, reputational and regulatory risks can reduce the company's revenues, this situation is enhanced by the concentration of revenues per product and per Member, the impact of the risk of obsolescence is not very relevant and a specific technological renewal plan is in place.

<p><b>Key Consideration 2</b></p>	<p><b>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.</b></p>
	<p><b>Q.15.2.1 : Does the FMI hold liquid net assets funded by equity so that it can continue operations and services as a going concern if it incurs general business losses?</b></p> <p>CRCC holds liquid net assets to cover the wind-down or restructuring of its activities, the Skin-in-the-Game and, its business and operational risk.</p> <p>The adequacy of these assets is reviewed at least bimonthly at the meetings of the Administrative and Financial Committee.</p> <p><b>Q.15.2.2 : How does the FMI calculate the amount of liquid net assets funded by equity to cover its general business risks? How does the FMI determine the length of time and associated operating costs of achieving a recovery or orderly wind-down of critical operations and services?</b></p> <p>CRCC has liquid net assets funded by its equity of at least the equivalent of the sum of i) Net liquid assets necessary to cover the wind-down or restructuring of its activities, ii) liquid net assets necessary to cover the Skin in the Game, iii) Net liquid assets necessary to cover business risk and iv) liquid net assets necessary to cover operating risk; which are calculated as follows:</p> <ol style="list-style-type: none"> <li>1. The liquid net assets required to cover the wind-down or restructuring of its activities are: the result of multiplying i) Gross operating expenses /12 by ii) Estimated number of months for the wind-down of activities.</li> <li>2. The liquid net assets required to cover operational and legal risks have been calculated using the Core Indicator Method in accordance with Article 103 of Directive 2006/48/EC.</li> <li>3. The Liquid net assets needed to cover business risk are calculated as the maximum impact of the following 3 scenarios: <ol style="list-style-type: none"> <li>3.1. Revenue concentration by product: the impact of a drop of 50% of the revenue of the product that contributes the most.</li> <li>3.2. Revenue concentration by Member (client): the impact of the disappearance of the two largest Members' revenue is simulated</li> <li>3.3. Minimum amount of 25% of the gross annual operating expenses</li> </ol> </li> </ol> <p>The number of months estimated for the orderly wind-down of the activities has been determined in accordance with the complexity and term of the transactions cleared and settled by CRCC S.A., which has been estimated at 6 months, taking into account: i) that the cleared and settled assets do not present financial complexities and ii) that more than 80% of the transactions have a maturity shorter than this term.</p>
<p><b>Key Consideration 3</b></p>	<p><b>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</b></p>

	<p><b>under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.</b></p>
	<p><i>Recovery or orderly wind-down plan</i></p> <p><b>Q.15.3.1 : Has the FMI developed a plan to achieve a recovery or orderly wind-down, as appropriate? If so, what does this plan take into consideration (for example, the operational, technological and legal requirements for participants to establish and move to an alternative arrangement)?</b></p> <p>CRCC has clear and transparent procedures established in its Rulebook, which have been approved by the SFC.</p> <p>The recovery or liquidation plan contemplate:</p> <ul style="list-style-type: none"> <li>- Procedure for closing positions in the market or through voluntary and/or mandatory auctions;</li> <li>- Procedure in which it is established how credit losses are absorbed;</li> <li>- Procedure that establishes how the financial funded resources are replenished,</li> <li>- Procedure for requesting Mandatory and Voluntary Contributions; and,</li> <li>- As a recovery plan, the Company's Articles of Association establish the procedure for replenishing of the equity of the CRCC S.A., in Article 8, according to which shareholders are obliged to subscribe for shares in proportion to their stake in the share capital, when by a legal rule or the order of a competent authority there is a capitalization of the company.</li> </ul> <p>Currently, Colombian legislation has not regulated a specific procedure for the recovery or resolution of a CCP, however, the Organic Statute of the Financial System (Decree 663 of 1993), Part Eleven, establishes the procedure for taking possession and liquidation (recovery or wind-down) of an entity subject to oversight of the SFC. There is no particular procedure for CCPs, other than a general procedure for all entities controlled by the SFC.</p> <p><i>Resources</i></p> <p><b>Q.15.3.2 : What amount of liquid net assets funded by equity is the FMI holding for purposes of implementing this plan? How does the FMI determine whether this amount is sufficient for such implementation? Is this amount at a minimum equal to six months of the FMI's current operating expenses?</b></p> <p>See answer Q.15.2.2</p> <p><b>Q.15.3.3 : How are the resources designated to cover business risks and losses separated from resources designated to cover participant defaults or other risks covered under the financial resources principles?</b></p> <p>See answer Q.15.2.2.</p> <p><b>Q.15.3.4 : Does the FMI include equity held under international risk-based capital standards to cover general business risks?</b></p> <p>The equity held complies with the provisions of Colombian law and international capital regulations that cover the different risks to which CRCC is exposed.</p>



<b>Key Consideration 4</b>	<b>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.</b>
	<p><b>Q.15.4.1 : What is the composition of the FMI's liquid net assets funded by equity? How will the FMI convert these assets as needed into cash at little or no loss of value in adverse market conditions?</b></p> <p>The Board of Directors of CRCC has defined the investment policy for liquid net assets in accordance with the following guidelines:</p> <ul style="list-style-type: none"> <li>- High credit quality and liquidity assets: fixed-income securities issued by the Republic of Colombia.</li> <li>- Maximum duration of 1.5 years and a maximum maturity of 3 years.</li> <li>- At least the equivalent of 3 months of working capital is held in cash in savings accounts.</li> <li>- Concentration limits are set for cash resources.</li> </ul> <p>To convert assets into cash, CRCC may perform the following operations: i) sell the securities (TES) in the market, ii) perform repo operations and iii) deliver them as collateral to access the Central Bank's discount window.</p> <p><b>Q.15.4.2 : How does the FMI regularly assess the quality and liquidity of its liquid net assets funded by equity to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions?</b></p> <p>The Administrative and Financial Committee periodically reviews the performance and liquidity of liquid net assets to ensure that they comply with established investment policies.</p>
<b>Key Consideration 5</b>	<b>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.</b>
	<p><b>Q.15.5.1 : Has the FMI developed a plan to raise additional equity? What are the main features of the FMI's plan to raise additional equity should its equity fall close to or fall below the amount needed?</b></p> <p>CRCC has a plan to raise additional capital, which is established in article 8 of its Articles of Association, which implies that shareholders are obliged to subscribe for shares in proportion to their participation in the share capital, when by a legal mandate or the order of a competent authority there is a capitalization of the company.</p> <p><b>Q.15.5.2 : How frequently is the plan to raise additional equity reviewed and updated?</b></p> <p>The additional plan is set forth in the Bylaws of CRCC and may be revised at the General Shareholders' Meeting.</p> <p><b>Q.15.5.3 : What is the role of the FMI's board (or equivalent) in reviewing and approving the FMI's plan to raise additional equity if needed?</b></p> <p>The additional plan is set forth in the Bylaws of CRCC and may be revised at the request of the General Shareholders Meeting. The Board of Directors is responsible for issuing the regulations for the issuance and placement of shares for the capitalization of CRCC.</p>

## DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE

### PRINCIPLE 15: GENERAL BUSINESS RISK

#### **Key Consideration 1:**

***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.***

CRCC has identified business risks that adversely impact income and/or expenses. This identification, monitoring and control process involves the Board of Directors, the Risk Committee and the Administrative and Financial Committee. The possible impact of the different scenarios is quantified through financial models. The Administrative and Financial Committee evaluates the financial development of the entity on a regular basis as part of its functions.

#### **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.***

CRCC has a large portion of its equity in liquid net assets, which are enough to cover risks arising from adverse conditions in which it operates.

The Financial and Administrative Committee oversees the company's long-term projections and verifies capitalization needs under different income and expense scenarios.

CRCC has liquid net assets funded by its equity of at least the equivalent of the sum of i) liquid net assets necessary to cover the wind-down or restructuring of its activities, ii) liquid net assets necessary to cover the Skin in the Game, iii) liquid net assets necessary to cover business risk and iv) liquid net assets necessary to cover operating risk.

#### **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.***

The liquid net resources of CRCC are enough to cover the capital requirements for the business risks to which it is exposed and allow it to cover its needs during a possible recovery or wind-down period. CRCC has clear procedures in its Rules of Procedure for dealing with a default.

#### **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.***

The liquid net assets available to cover the general risk of the business are held in high quality and liquid investments in accordance with the investment policy. The Administrative and Financial Committee periodically evaluates the performance, compliance with the policy and accessibility of these resources.

**KEY CONCLUSIONS FOR PRINCIPLE 15:**

- CRCC S.A. has identified and evaluated the general business risks which are monitored and managed.
- CRCC has defined as a policy to have liquid net assets funded by its equity at least equivalent to the sum of i) liquid net assets necessary to cover the wind-down or restructuring its activities, ii) liquid net assets necessary to cover the Skin in the Game, iii) liquid net assets necessary to cover business risk and iv) liquid net assets necessary to cover operating risk.
- The liquid net assets held are sufficient to continue operating for the time necessary to achieve an orderly recovery or wind-down are determined in light of the risk profile of the business and estimated time in accordance with the established rules.

**ASSESSMENT OF PRINCIPLE 15:**

Principle 15 regarding General Business Risk is **OBSERVED** by CRCC.

**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.**

*Summary narrative*

CRCC safeguards the assets of its Members and/or Third Parties in the following ways:

- Securities: Centralized Securities Depositories (DCV and DECEVAL)
- Cash in COP received as collateral at the accounts of CRCC with the Central Bank separately from its own resources.
- Cash in USD: In an account at its correspondent bank separate from its own resources.

Concerning its assets, CRCC selects the entity that manages and holds the investments for its own assets taking into account: i) that it must be supervised by SFC, ii) with the highest solvency, iii) financial capacity and iv) must have the highest credit and operational rating granted by a Securities Rating Company authorized by SFC and are carried out in instruments with minimum market, credit and liquidity risks, considering the duration, issuer (nation) and high liquidity in the market.

The assets held as collateral by CRCC are liquid, i.e. easily convertible into cash. Law 964 of 2005 established the principle of protection of collaterals constituted before a CRCC and the execution of the same in the event of default immediately without any judicial procedure.

CRCC does not use custodian banks.

The strategy of CRCC is consistent with its overall risk management strategy for its Members' and/or Third Parties' assets and its own portfolio.

CRCC publishes to its Members and to the public the investment policies and criteria for cash collateral set out in the Rulebook and the investment policies and criteria for its assets through the CRCC website: [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

<b>Key Consideration 1</b>	<b>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.</b>
<b>Description</b>	<p><b>Q.16.1.1 : If the FMI uses custodians, how does the FMI select its custodians? What are the specific selection criteria the FMI uses, including supervision and regulation of these entities? How does the FMI monitor the custodians' adherence to these criteria?</b></p> <p>CRCC mitigates custody and investment risks of: i) Member and/or Third-Party Assets and ii) CRCC Assets through internal policies, procedures and controls.</p> <p>Assets of Members and/or Third Parties:</p> <ul style="list-style-type: none"> <li>- CRCC does not use commercial banks as custodian banks. Monetary settlements are made through accounts opened with the Central Bank.</li> <li>- The securities collateral is pledged to CRCC in the centralized securities deposits constituted in Colombia (Deceval and DCV), specialized market infrastructures, and supervised by SFC.</li> <li>- The centralized securities deposits have been selected considering the entity in which the securities that CRCC receives as collateral are deposited: i) the securities issued by the Republic of Colombia are deposited in Depósito Central de Valores (DCV) administered by the Central Bank and ii) the shares that CRCC receives as collateral are deposited in DECEVAL.</li> <li>- To eliminate the credit risk that could be generated by commercial banks, the cash collateral in COP is deposited in a CRCC account in the Central Bank, an entity supervised by SFC.</li> <li>- Collateral posted in USD is deposited in a US commercial bank with a rating equal or higher to the sovereign rating of the Republic of Colombia and that also comply with the requisites established by the Federal Reserve System (Fedwire) and/or Clearing House Interbank System (CHIPS)</li> </ul> <p>CRCC Assets:</p> <ul style="list-style-type: none"> <li>- CRCC selects its depository entities for its own assets taking into account: i) the highest solvency, ii) financial capacity and iii) the highest credit and operational rating granted by a Securities Rating Company authorized by SFC. CRCC reviews the criteria defined periodically by the Financial and Administrative Committee.</li> </ul> <p><b>Q.16.1.2 : How does the FMI verify that these entities have robust accounting practices, safekeeping procedures, and internal controls that fully protect its and its participants' assets?</b></p> <p>Assets of Members and/or Third Parties:</p> <ul style="list-style-type: none"> <li>- Centralized securities deposits (DCV and DECEVAL) have high levels of solvency and financial capacity.</li> <li>- Market infrastructures with a high level of solvency, accounting practices and procedures strictly in accordance with the law and are supervised and regulated by Colombian legislation, which guarantees that custody procedures and internal controls protect the assets deposited there in an efficient and transparent manner and whose owner is fully identified.</li> <li>- In the case of monetary settlements by CRCC and collateral provided by the Members of CRCC in cash in COP, CRCC does not use commercial banks as custodian banks. CRCC manages its operations through accounts opened with the Central Bank.</li> <li>- Collateral posted in USD is deposited in a US commercial bank with a rating equal or higher to the sovereign rating of the Republic of Colombia and that also comply with the requisites established by the Federal Reserve System (Fedwire) and/or Clearing House Interbank System (CHIPS)</li> </ul> <p>Assets of CRCC:</p>

	<ul style="list-style-type: none"> <li>- CRCC periodically reviews the financial and solvency criteria defined for the entities contracted to manage the investment portfolio of its assets and for the commercial banks in which it has cash deposits. The report on the review is submitted to the Administrative and Financial Committee.</li> <li>-</li> </ul>
<b>Key Consideration 2</b>	<b>An FMI should have prompt access to its assets and the assets provided by participants, when required.</b>
Description	<p><b>Q.16.2.1 : How has the FMI established that it has a sound legal basis to support enforcement of its interest or ownership rights in assets held in custody?</b></p> <p>Law 964 of 2005 establishes the principle of protection of guarantees constituted before the CRCC and allows for their execution in the event of default without any judicial procedure.</p> <p>The collateral required and pledged to CRCC is affected for the fulfilment of the accepted operations, and for its clearing and settlement and it's an irrevocable source of payment of the acquired obligations. For this reason, CRCC, is expressly and irrevocably entitled to carry out or liquidate it at any time and in the event of simple default to comply with any of the obligations guaranteed, without there being any judicial or extrajudicial procedure or injunction related to it and without requiring authorization for it.</p> <p>The regulatory framework was tested in the event of default management by a General Clearing Member of CRCC in 2012.</p> <p><b>Q.16.2.2 : How does the FMI ensure that it has prompt access to its assets, including securities that are held with a custodian in another time zone or legal jurisdiction, in the event of participant default?</b></p> <p>CRCC can quickly access the assets held in the centralized securities depositories (DCV and DECEVAL) as the operational and technological processes for accessing and executing the securities are clearly defined in the systems of the centralized securities depositories. The access to the cash provided as collateral by the Members of CRCC is direct as it is deposited in a CRCC account with the Central Bank.</p> <p>The CRCC can access the collateral posted in USD directly in accordance with the procedures offered by its correspondent bank. However its convertibility to COP is subject to the times defined by the dealing in the spot market of the USDCOP local market.</p> <p>CRCC does not use the services of depositories in another jurisdiction or in a different time zones.</p>
<b>Key Consideration 3</b>	<b>An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.</b>
Description	<p><b>Q.16.3.1: How does the FMI evaluate and understand its exposures to its custodian banks? In managing those exposures, how does it take into account the full scope of its relationship with each custodian bank? For instance, does the FMI use multiple custodians for the safekeeping of its assets to diversify exposure to any single custodian? How does the FMI monitor concentration of risk exposures to its custodian banks?</b></p> <p>CRCC does not use custodian banks.</p> <p>CRCC Assets:</p> <ul style="list-style-type: none"> <li>- CRCC invests part of its own assets in savings accounts in banks with the highest credit ratings granted by a securities rating agency supervised by SFC.</li> </ul>

	<ul style="list-style-type: none"> <li>- In addition, CRCC has contracted an entity for the administration of its own resources which has the highest rating granted by a securities rating agency supervised by SFC.</li> <li>- The management of CRCC 's equity portfolio is carried out in accordance with the investment policy approved by the Board of Directors and the Administrative and Financial Committee, which considers factors that minimize: i) market risk, ii) liquidity, iii) concentration and credit.</li> </ul>
<b>Key consideration 4</b>	<b>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.</b>
Description	<p>Investment strategy</p> <p><b>Q.16.4.1: How does the FMI ensure that its investment strategy is consistent with its overall risk management strategy? How and to whom does the FMI disclose its investment strategy?</b></p> <p>Membership and/or Third-Party Assets:</p> <ul style="list-style-type: none"> <li>- Members of CRCC can define whether: i) CRCC invests the COP cash collateral in accordance with the policies and criteria set out in the Regulations or, ii) holds the COP cash collateral in the Central Bank account which provides no remuneration.</li> <li>- CRCC has defined in its Rulebook, conservative general policies and investment criteria for the cash collateral provided in COP by its Members, in accordance with its risk management strategy so that it can know at all times the amount of resources available to it and obtain their value quickly.</li> <li>- Investments made by CRCC must comply with the following general policies: i) Security, the investments made by CRCC must be in high credit quality Assets to minimize the credit and issuer risk to which CRCC is exposed, ii) Liquidity, the investments made by CRCC must be able to be settled with little or no loss of value, avoiding any investment in illiquid assets, iii) Volatility, the investments made by CRCC must be made in assets that minimize the possibility of loss of value due to the volatility of their price.</li> <li>- Cash collateral investments in COP must meet the following investment criteria: i) Repo operations celebrated in the counter market or in a trading system based on securities issued or collateralized by the Nation. ii) Collateral received for these investments must be constituted in securities issued or collateralized by the Nation. iii) There are stable and reasonably conservative cut-off/haircut factors, iv) the term of the transactions may not exceed seven (7) business days. v) The counterparties of the repo transactions may be: Securities intermediaries subject to inspection and oversight by SFC that have a credit risk rating granted by a risk rating agency duly authorized by SFC equal to or greater than AA+, the Nation, through the General Office of Public Credit and National Treasury of the Ministry of Finance and Public Credit, the Default Fund of Financial Institutions or the Fund for the Financing of the Agricultural Sector or, the Central Bank. vi) CRCC has a concentration limit per counterparty, a maximum percentage limit on the total cash resources received for guarantees that may be the object of investment, which will be established taking into account the mechanisms available to CRCC to access temporary liquidity in case it is required.</li> <li>- The CRCC does not invest the cash collateral in USD</li> </ul> <p>CRCC Assets:</p> <ul style="list-style-type: none"> <li>- The equity investment policy of CRCC is approved by the Board of Directors.</li> <li>- The Administrative and Financial Committee monitors and defines the investment policy and defines its parameters, counterparties, eligible investments and investment limits per issuer, per counterparty and per financial asset for the CRCC portfolio.</li> </ul>



- The current policy of CRCC allows investments in: i) Assets of high credit quality (Issuer: Republic of Colombia and savings accounts in AAA Banks) with concentration limits by type of issuer, ii) Maximum duration and maturity of securities and iii) Minimum amounts of cash assets. The limits defined with the objective of mitigating credit, market and liquidity risk, respectively.

Assets of Members and/or Third Parties:

- CRCC communicates to its Members and to the public the policies and criteria for the investment of cash collateral in COP through the Rulebook, which are approved by SFC
- The Rulebook is published on the CRCC

website: [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

CRCC Assets:

- CRCC communicates to the public the policies and criteria for investing its own assets on the CRCC website: [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

**Q.16.4.2 : How does the FMI ensure on an ongoing basis that its investments are secured by, or are claims on, high-quality obligors?**

Assets of Members and/or Third Parties:

See answer Q.16.4.1.

Assets of CRCC:

See answer Q.16.4.1.

Permanent and periodic monitoring of CRCC 's own investment portfolio.

Risk characteristics of investments

**Q.16.4.3 : How does the FMI consider its overall exposure to an obligor in choosing investments? What investments are subject to limits to avoid concentration of credit risk exposures?**

See answer Q.16.4.1.

**Q.16.4.4 : Does the FMI invest participant assets in the participants' own securities or those of its affiliates?**

No, CRCC invests the collateral constituted in cash by means through repo transactions on securities issued or guaranteed by the Nation.

**Q.16.4.5 : How does the FMI ensure that its investments allow for quick liquidation with little, if any, adverse price effect?**

CRCC has an investment policy approved by the Board of Directors. See answer Q.16.4.1.

**DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE**

## Principle 16: Custody and investment risks

### **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.***

CRCC holds the assets of its Members and/or Third Parties in the Central Securities Depositories (DCV and DECEVAL) and the cash received as collateral in COP in accounts with the Central Bank. Collateral posted in USD is deposited in a US commercial bank with a rating equal or higher to the sovereign rating of the Republic of Colombia and that also comply with the requisites established by the Federal Reserve System (Fedwire) and/or Clearing House Interbank System (CHIPS).

The central securities depositories, the DCV Central Securities Depository and DECEVAL are subject to the laws of the Republic of Colombia and are supervised by the SFC. Due to their characteristics, the entities have a solid financial structure and follow strict accounting practices and controls that protect the assets in an ideal way to mitigate any type of risk.

CRCC does not use commercial banks as custodian banks.

Concerning its assets, CRCC selects the entity that manages and holds the investments for its own assets taking into account that: i) it must be supervised by the SFC, ii) it must have the highest solvency, iii) it must have the highest financial capacity and iv) it must have the highest credit and operational rating granted by a Securities Rating Society authorized by SFC.

### **Key consideration 2:**

***An FMI should have prompt access to its assets and the assets provided by participants, when required.***

Law 964 of 2005 establishes the principle of protection of guarantees constituted before the CRCC and the execution of the same in the event of default without any legal procedure.

CRCC can quickly access the assets held in the centralized securities depositories (DCV and DECEVAL) as the operational and technological processes for access to and execution of the securities are clearly defined in the regulations of the systems of the centralized securities depositories. The access to the cash provided as collateral by the Members of CRCC in COP is direct as it is deposited in a CRCC account with the Central Bank. Access to the cash collateral in USD is made through the technology and processes established by the correspondent bank and is exchanged to COP by accessing the spot market.

### **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.***

Collateral posted in USD is deposited in a US commercial bank with a rating equal or higher to the sovereign rating of the Republic of Colombia and that also comply with the requisites established by the Federal Reserve System (Fedwire) and/or Clearing House Interbank System (CHIPS)

### **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.***

The strategy of CRCC is consistent with its overall risk management strategy: for purposes of Members' and/or Third Parties' assets: i) In regards to collateral posted in COP cash CRCC Members have the discretion to define whether: a) CRCC invests cash collateral in accordance with established policies and criteria or, b) holds cash collateral in the Central Bank account. USD cash received as collateral is not invested in accordance to the CRCC regulation and policies.

For the investment of cash collateral in COP, CRCC has defined in its Rulebook general policies and conservative investment criteria in accordance with its risk management strategy so that it can know the amount of resources available to it at all times and can quickly obtain the liquidity it requires through the execution of collateral.

In relation to the investment of its own assets: i) CRCC established an investment policy approved by the Board of Directors and ii) compliance with the policy is monitored through the Administrative and Financial Committee, the body responsible for defining policies, parameters, counterparties, eligible investments and investment limits per issuer, per counterparty and per financial asset for CRCC portfolio.

CRCC publishes to its Members and to the general public the investment policies and criteria for cash collateral set out in the Rulebook and the investment policies and criteria for its assets through the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com).

#### **KEY CONCLUSIONS FOR PRINCIPLE 16:**

CRCC holds the assets of its Members and/or Third Parties in the Central Securities Depositories (DCV and DECEVAL) and the cash received as collateral in COP in accounts with the Central Bank. USD cash is deposited in a US commercial bank

Concerning its equity, CRCC selects the entity that manages and holds the investments of its own assets taking into account that: i) it must be an entity supervised by SFC, ii) it must have the highest solvency, iii) it must have the highest financial capacity and iv) it must have the highest credit and operational rating granted by a Securities Rating Society authorized by SFC.

The assets held as collateral by CRCC are liquid assets with low credit and market risk. Law 964 of 2005 established the principle of protection of guarantees constituted before the CRCC and the execution of the same without any legal procedure.

Collateral posted in USD is deposited in a US commercial bank with a rating equal or higher to the sovereign rating of the Republic of Colombia and that also comply with the requisites established by the Federal Reserve System (Fedwire) and/or Clearing House Interbank System (CHIPS)

The strategy of CRCC is consistent with its overall risk management strategy: for purposes of Members' and/or Third parties' assets: i) CRCC Members may define whether: a) CRCC invests cash collateral in accordance with established policies and criteria or, b) holds cash collateral in the Central Bank's account.

For the investment of cash collateral in COP, CRCC has defined in its Rulebook, the general policies and conservative investment criteria in accordance with its risk management strategy so that it can know at all times the amount of resources available to it and can quickly obtain the liquidity it requires through the execution of such collateral.

In relation to the investment of its own assets: i) CRCC established an investment policy approved by the Board of Directors and ii) compliance with the policy is monitored through the Administrative and Financial Committee, the body responsible for defining policies, parameters, counterparties, eligible investments and investment limits per issuer, per counterparty and per financial asset of the CRCC portfolio.

CRCC publishes to its Members and to the public the investment policies and criteria for cash collateral set out in the Rulebook and the investment policies and criteria for its assets through the CRCC website: [www.camaraderiesgo.com.co](http://www.camaraderiesgo.com.co).

#### **ASSESSMENT OF PRINCIPLE 16:**

Principle 16 regarding Custody and Investment Risks is observed by CRCC.

## Principle 17: Operational Risk

**An FMI should identify credible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures and controls. Systems must be designed to ensure a high degree of safety and operational reliability and have adequate and versatile capacity. Business continuity management should aim at timely recovery of operations and compliance with FMI obligations, even in the event of major or large-scale disruptions.**

### *Summary narrative*

We understand Operational Risk as the possibility of loss due to deficiencies, failures or inadequacies in human resources, processes, technology, infrastructure or the occurrence of external events. This includes legal and reputational risk, as established by the SFC. CRCC, as a central counterparty, authorized by SFC, has a comprehensive operational risk management system, with clearly defined internal processes for identifying, measuring, evaluating and monitoring potential risk sources.

The main sources of operational risk for CRCC come from errors in operational processes and failures in the systems that support them. For the clearing and settlement process, some of the main sources of risk are: i) changes or updates of the versions in the internal and external systems, ii) new products, changes or updates of the existing ones, iii) significant changes in the processes, iv) changes in the risk parameters and v) management of the clearing processes.

Some of the tools or controls considered to mitigate the materialization of these risks by CRCC are: i) reconciliation of information with the other related FMIs, ii) contingency processes for connections established with other FMIs, iii) double-validation policies for the most critical processes, iv) verification of settlement information, v) continuous staff training, for better understanding and risk management, among others.

CRCC reviews and tests its systems, policies, procedures and controls with its participants through periodic audits and reports to the Audit and Risk Committees.

Based on the business continuity policy, CRCC has a Business Continuity Plan - BCP - and a Disaster Recovery Plan aimed at protecting its employees, promoting permanent operation and customer service, protecting shareholders' interests and helping the Entity to survive adverse events.

The Business Continuity Plan was structured based on the recommendations and best practices of the Disaster Recovery Institute (DRI). This plan has a minimum annual review, highlighting that tests are constantly conducted to identify opportunities for improvement.

<b>Key Consideration 1</b>	<b>An FMI should have a sound operational risk management framework that has the appropriate systems, policies, procedures and controls in place to identify, control and manage operational risks.</b>
Description	<p><i>Identification of operational risk</i></p> <p><b>Q.17.1.1: What policies and processes does the FMI use to identify plausible sources of operational risk? How do FMI processes identify plausible sources of operational risk, whether this risk comes from internal sources (e.g., system mechanisms, including human resources), from FMI participants, or from external sources?</b></p>

CRCC has an Operational Risk Management System - SARO that provides adequate and timely management of operational risks, taking it to levels accepted by the Board of Directors and the market. SARO has been approved by the Board of Directors and has objectives, policies and procedures to identify risks, evaluate controls and define action mitigation plans. In addition, both internal and external risk factors are identified in each of the processes.

CRCC has designed its policies and procedures to identify plausible sources of operational risk based on the methodology for identifying operational risks ISO\_31000:2009 and on the Basic Accounting and Financial Circular Letter, External Circular Letter 100 of 1995, Chapter XXIII, issued by the SFC. The policies and processes that CRCC uses to identify plausible risk sources are enshrined in the SARO Manual. These policies have been recommended by the Risk Committee and approved by the Board of Directors.

Among the main policies implemented the following stand out:

- Dual control policies for critical processes.
- Redundancy of communication systems, data processing centers, alternate site, negotiation systems, etc.
- Training and risk awareness for all staff members.
- Reporting of operational risk events for documentation and management.
- Periodic management reports to Management, Risk Committee, Audit Committee and Board of Directors.
- Annual evaluation of the SARO's External Audit and Internal Audit.

Based on these policies, the context of CRCC is established and operational risks (identification, measurement, control and monitoring) are assessed, considering the business objectives, stakeholders and the internal or external sources generating them.

CRCC has clearly defined procedures documented to identify, measure, control and monitor the different sources and risks that may arise in the development of CRCC 's own activities, associating each of the risks with the respective controls they mitigate and the impact or likelihood of their occurrence.

CRCC has established an Operational Risk Management framework that includes the entity's policies, practices, procedures and structure for managing operational risk. This framework defines, among other things, the procedures to be used by the operational risk unit to assess the vulnerability of the entity to the occurrence of loss events, understand its operational risk profile and take appropriate corrective measures.

Since effective risk management helps prevent future loss from operational events, CRCC not only manages the operational risk inherent in existing products, activities, processes and systems, but also that of new products, changes or updates to processes or systems prior to their launch or implementation.

CRCC has clearly defined procedures for identifying operational risks, developed by the persons in charge of the procedures with the advice of the operational risk unit, and has methodologies for evaluating the controls implemented. Each risk event (incident) is an opportunity to improve the procedure and its associated controls. The internal audit department and external auditors of the operational risk system review these procedures and controls.

**Q.17.1.2: What sources of operational risk has the FMI identified? What specific elements that may lead to failures in your operations have been identified by the FMI?**

Among the main sources of operational risk identified in CRCC are system failures (infrastructure and applications) and operational process errors that cannot be fully automated, specifically when new products are introduced, system version updates or significant process modifications.

The sources generating operational risk at CRCC are classified as internal (human resources, processes, technology and infrastructure) and external (situations caused by nature or by third parties) and the elements that can cause failures in operations in general terms, include changes and updates of new products, systems and processes.

#### *Management of operational risk*

##### **Q.17.1.3: How does the FMI monitor and manage identified operational risks? Where are these systems, policies, procedures and controls documented?**

The organizational structure of CRCC has a Non financial Risk Unit that is responsible for the entity's operational risk management system. The Non financial Risk Unit (DRnF) and the process leaders identify and manage the identified operational risks. Each identified risk must have an associated control that decreases the likelihood of occurrence or impact. These controls can be manual or automatic.

Similarly, CRCC has several environments to mitigate the operational risk of software updates or new product launches: i) test environment for its Members, ii) internal test environment for CRCC and iii) test environment for the FMI's with which it has links and has a redundant technological infrastructure designed to mitigate single points of failure, which is tested periodically.

The Operational Risk Management System (SARO) has been recommended by the Risk Committee and approved by the Board of Directors and is monitored monthly at the Risk Committee meetings to screen the evolution of the inherent and residual risk profile of CRCC, verifying that it is within the risk appetite approved by the Board of Directors.

CRCC has developed an adequate documentary level, describing the procedures of all the activities carried out for the development of its object in the Operational Risk Management System (SARO) Manual, which establishes the policies, procedures, controls and corporate governance of the system. The SARO Manual is available to all CRCC employees.

#### *Policies, processes and controls*

##### **Q.17.1.4: What policies, processes and controls designed to ensure the timely implementation of procedures are used by the FMI? To what extent do FMI systems, policies, processes and controls consider relevant international, national and sectoral standards for operational risk management?**

Among the main policies, processes and controls implemented for the implementation of the required procedures are: the dual control of the manual processes catalogued as critical, mitigation of the single points of failure for which it is available: i) redundancy in communication channels, ii) redundancy of data processing centers, iii) segregation of duties, iv) sufficiency of support staff, detailed documentation of all procedures, v) information security policies, vi) BCP, among others. The SARO Manual details the policies, roles and responsibilities of senior management, the Board of Directors, officers and control bodies (internal and external), who provide guidelines for the implementation of the standards.

CRCC reviews, audits and verifies its systems, policies, procedures and controls through:

Test environments for CRCC, interconnected systems and Members to simulate changes in new versions or products.



	<p>Operational risk events are presented to the Risk Committee monthly, including improvement actions aimed at preventing these incidents from recurring in the future.</p> <p>Internal audits covering all critical processes to identify opportunities for improvement in the development of activities, mainly in the areas of technology and operations.</p> <p>The External Audit also performs an annual evaluation verifying the entire Operational Risk Management System.</p> <p>CRCC complies with the current regulations issued by the SFC, through the Basic Accounting and Financial Circular Letter, External Accounting and Financial Circular Letter 100 of 1995, Chapter XXIII, which stipulates that, for effective operational risk management, it must have at least one system composed of policies, procedures, documentation, organizational structure, event logs, control bodies, technological platform, dissemination of information and training.</p> <p>In addition, there is a Corporate Governance Committee (Risk Committee, Audit Committee and Board of Directors) which, in addition to the Internal Audit and the External Audit, review and ensure compliance with all current regulations.</p> <p><b>Q.17.1.5 : What human resources policies does the FMI use to recruit, train and retain its skilled staff, and how do these policies mitigate the effects of high staff turnover or risk from key staff? How do the FMI's risk management and human resources policies address fraud prevention?</b></p> <p>Among the most important hiring policies are the performance of a security and background check, and the personnel strictly compliance with the established profiles (profession, experience, knowledge, etc.). CRCC relies on specialized companies for selection and evaluation process of staff, in order to hire the best and most qualified personnel. The new staff members are involved in a general introduction and on-the-job training process (mission processes) to enable them to perform their duties properly. Yearly, cross training programs are developed for all staff members and others, focused on certain teams, based on the identified needs.</p> <p>CRCC has educational assistance for various training courses and has defined that the salaries of its employees must be competitive in the labor market, for which it periodically conducts salary studies to evaluate internal and external competitiveness. CRCC offers additional non-wage benefits that generate greater welfare for employees and is permanently measuring the organizational climate of the entity within its Administrative and Financial Committee and Board of Directors. All of the above strengthens staff ownership of the organization and mitigates rotation.</p> <p>Likewise, the process of investigation, evaluation and validation of the background of future staff members has been outsourced and there is adequate segregation of duties (dual process control) that greatly mitigates the risk of internal fraud.</p> <p><b>Q.17.1.6 : How do the FMI's change management and project management policies and processes mitigate the risks that the introduction of changes and the implementation of major projects may inadvertently affect the smooth functioning of the system?</b></p> <p>Each system change project or new product has a project leader who, along with DRnF, Internal Audit and other areas involved in its development, identifies risks and proposes mitigating actions for their treatment, including internal and participant testing plans, internal and Member training, updating procedures, among other aspects.</p> <p>Prior to the launch of a new version of the system or a new product, several types of tests are conducted: i) unit/internal CRCC tests, ii) tests with the FMI with which it has a link, and iii) tests with Members. For this purpose, different test environments are available that allow CRCC, the interconnected FMIs and the Members to fully verify the correct functionality of the system when changes take place.</p>
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<b>Key Consideration 2</b>	<b>The board of an FMI should clearly define roles and responsibilities for operational risk and should support the FMI's operational risk management framework. Systems, operational policies, procedures and controls should be reviewed, audited and verified periodically and after significant changes occur.</b>
<b>Description</b>	<p><i>Roles, responsibilities and framework</i></p> <p><b>Q.17.2.1 : How has the board of directors defined the main roles and responsibilities for operational risk management?</b></p> <p>The Board of Directors, as the ultimate operational risk supervisor, establishes the principles and policies related to SARO, establishes acceptable levels of risk tolerance, and provides the necessary resources to implement and maintain effective and efficient operations. It also defines the roles and responsibilities of those involved in operational risk management.</p> <p>The Risk Committee evaluates, recommends and submits for the consideration of the Board of Directors, the policies, updates or changes to the manual, monitoring the risk profile monthly and giving its opinion on management. The Audit Committee, is responsible for monitoring and ensuring compliance with the BCP. In addition, compliance with the SARO is verified by the Internal and External Audits who periodically validate its execution and management, informing Management and the Committees of any non-compliance that may arise.</p> <p><b>Q.17.2.2 : Does the FMI Board explicitly review and support the operational risk management framework? How often does the board review and support the FMI's operational risk management framework?</b></p> <p>The Board of Directors reviews and supports the operational risk management framework through the monitoring carried out by the Risk Committee, verifying the performance of the risk profile (inherent and residual) and the materialized events.</p> <p>DRnF submits a six-monthly management report, which is accepted by management and presented to the Risk Committee and the Board of Directors.</p> <p><i>Review, audit and testing</i></p> <p><b>Q.17.2.3 : How does the FMI review, audit and test its systems, policies, procedures and controls, including its operational risk management mechanisms, with its participants? How often does the FMI carry out such reviews, audits and checks with its participants?</b></p> <p>CRCC performs a technological readiness check with each of its Members prior to the start of its operations, verifying the correct functioning of the systems, procedures and controls required.</p> <p>Another way to carry out these verifications is through the different technological tests carried out throughout the year, in which both Members and other Infrastructure entities with whom they have links, participate. For more information refer to the answer Q.17.1.4</p> <p>These checks are executed whenever new products are developed, upgraded, or systems are changed, with the participation of related entities and Members in the comprehensive testing of simulation environments.</p>

	<p><b>Q.17.2.4: To what extent, if any, is the FMI's operational risk management framework subject to external audit? The Statutory Auditor's Office issues an annual assessment of operational risk management, identifying opportunities for improvement with respect to operational risk and reporting these results to the Risk Committee, Audit Committee and the Board of Directors.</b></p> <p>The Statutory Auditor's Office issues an annual operational risk management assessment, identifying opportunities for improvement with respect to operational risk and reporting these results to the Risk Committee, Audit Committee and the Board of Directors.</p>
<b>Key Consideration 3</b>	<p><b>A FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.</b></p>
Description	<p><b>Q.17.3.1 : What are the FMI's operational reliability objectives, both qualitative and quantitative? Where and how are they documented?</b></p> <p>CRCC has specific operational reliability objectives for the market. These objectives define the performance, service levels and capacity not only of the technology, but also of the human resources and infrastructure required in the operational processes. The validation of these processes is carried out with periodic monitoring by Management, through management indicators, including indicators of availability of infrastructure services, infrastructure capacity, service desk capacity, operational processes and recovery in the event of a contingency. All of the above, seeks to offer participants a service available at all times during the hours of trade acceptance, clearing and settlement, trying not to have delays or failures in the system generating late or incorrect information delivery.</p> <p>The objectives are documented in the written procedures of each of the processes that are carried out, which include the times in which they must be executed, to avoid operational delays. Likewise, senior management permanently monitors the indicators and the evolution and results of the performance of these management indicators are presented to the Audit Committee on a quarterly basis.</p> <p><b>Q.17.3.2 : How do these objectives ensure a high degree of operational reliability?</b></p> <p>Through the automated tools of the monitoring system (HP Business Service Manager, Spotlight and Oracle Enterprise Manager) and the redundancy of the infrastructure, among other elements, operational stability is largely guaranteed.</p> <p>CRCC has internally established some service indicators, among which are:</p> <p>Infrastructure Availability 99.90%. Operational capacity 30%.</p> <p>At the end of each day the operations area verifies the accuracy of the data generated and sent to Members. On average, there are very few incidents, reflecting the reliability of CRCC processes.</p> <p><b>Q.17.3.3 : What FMI policies are designed to achieve its operational reliability objectives so that the FMI can take appropriate action when necessary?</b></p> <p>CRCC has its own, robust and stable information system provided by companies from the business group to which BME Clearing, the Spanish central counterparty, belongs, as well as a redundant technological and operational infrastructure available to meet service objectives, including service indicators or metrics within the strategic objectives.</p>

	<p>Additionally, the operational risk events presented are brought before the Risk Committee, where the incidents are analyzed and evaluated, their main causes are identified, and the action plans implemented so that they do not present again, strengthening operational reliability.</p> <p>In the same way, the development and execution of the test plan included in the BCP are presented to the Audit Committee and are part of the performance management of the areas involved.</p>
<b>Key Consideration 4</b>	<b>An FMI should ensure that it has adequate versatile capacity to manage increased volumes of tension and to achieve its service-level objectives.</b>
Description	<p><b>Q.17.4.1 : How does the FMI review, audit and test the versatility and adequacy of its capacity to manage at least the expected volumes of tension? How often does the FMI carry out such reviews, audits and checks?</b></p> <p>CRCC monitoring system checks all aspects of server load in real time 7x24, generating alerts in case of exceeding the defined thresholds, saturation or failure of any of its components. In addition, the performance and capacity of the system in the face of unexpected volume increases is reviewed once a year and whenever new products are upgraded, improved or added, by means of load tests, verifying the processing speed in the event of increases in the volumes traded, allowing the adequate maintenance of service levels.</p> <p>Performance, capacity and service levels are monitored in real time with technology tools such as BSM (HP Business Service Manager) and Spotlight, operated through the service desk. Likewise, the performance of the databases is monitored through the Oracle Enterprise Manager tool, which is operated by the database administrator. Every quarter, capacity reports are generated in which the performance of the resource consumption of the infrastructure is analyzed and action plans are determined, if necessary. On the other hand, the process is audited at least once a year. IT performance is monitored and evaluated, and the performance capacity is audited and the availability of the systems that support the operation is verified.</p> <p><b>Q.17.4.2 : How do you deal with situations where the volume of transactions approaches or exceeds the limit of operational capacity?</b></p> <p>Currently, the operational capacity of CRCC is an average of 30% of its installed capacity and expects no significant increase in the volume of operations in the short or medium term. Technological upgrades of the entity are carried out periodically due to obsolescence rather than capacity.</p>
<b>Key Consideration 5</b>	<b>An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.</b>
Description	<p><i>Physical Security</i></p> <p><b>Q.17.5.1: What are the policies and processes of the FMI, including change management and project management policies and processes, to continuously address plausible sources of physical vulnerabilities and threats?</b></p> <p>CRCC has an Information Security Management System (ISMS) that is supervised by the Audit Committee, which defines the policies and procedures to guarantee the confidentiality, availability and integrity of the information, in accordance with the regulations established by the SFC. Within the main policies it establishes that in any modification</p>

	<p>to the systems and applications, products and processes, compliance with the procedures established for the control of changes must be guaranteed, with the participation and approval of all the interested parties. Specialized third parties safeguard both physical and digital documentation catalogued as critical.</p> <p>The building where CRCC operates has ISO 9001-2008 quality certification for the management of physical security, within its evacuation plan, which includes three emergency exits per floor, firefighting equipment (cabinets, fire extinguishers and hose), smoke detectors, alarm system, power plant and own water supply, among other elements. In addition, CRCC has internal policies for the management of physical security, documented in the emergency plan, conducting evacuation exercises at least once a year, with all other offices in the building, and training the Emergency Brigade.</p> <p><b>Q.17.5.2 : Do FMI policies, processes, controls and checks adequately consider relevant international, national and sectoral physical security standards?</b></p> <p>CRCC follows the recommendations on controls and good practices on physical security established in the international standard ISO_27001, both for its headquarters, and for each of its data centers and alternate operating headquarters.</p> <p><i>Information Security</i></p> <p><b>Q.17.5.3 : What are the policies and processes of the FMI, including change management and project management policies and processes, to continuously address plausible sources of vulnerabilities and threats to information security?</b></p> <p>Among the policies implemented to ensure compliance and safeguard all information are access control, change management, backups, antivirus, among others, and which, together with the periodic testing of the entire BCP infrastructure, ensure the normal functioning of applications, infrastructure, information restoration, etc., reporting action mitigation plans and opportunities for improvement.</p> <p><b>Q.17.5.4 : Do FMI policies, processes, controls and checks adequately consider relevant international, national and sectoral information security standards?</b></p> <p>CRCC follows the recommendations on controls and good practices established in the international standard ISO_27001 and has the implementation of the information security requirements that apply to it and that are stipulated in the local regulation through the Basic Legal Circular Letter, 029 of 2014, Part I, Title II, Chapter I, issued by SFC.</p>
<b>Key Consideration 6</b>	<p><b>An FMI should have a service continuity plan in place that addresses events that pose a significant risk of disruption to its business, such as major disruptive or large-scale events. This 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 of the occurrence of the disruptions in question. The plan should be designed to allow the FMI to complete the liquidation before the end of the day on which the disruptions or disruptions occur, even in the event of extreme circumstances. The FMI should regularly check these mechanisms.</b></p>
<b>Description</b>	<p><i>Objectives of business continuity plan</i></p>

**Q.17.6.1 : How and to what extent does the FMI business continuity plan reflect the objectives, policies and procedures for a rapid and timely recovery and resumption of critical operations after major or large-scale disruption?**

The main objectives of CRCC in the face of a major event are to protect the lives of its employees, the resources of its Members and to give continuity to the business. Accordingly, and based on the continuity policy, CRCC has developed a Business Continuity Plan and a Disaster Recovery Plan, the purpose of which is to offer its services in an uninterrupted manner based on the established RTO (Recovery Time Objective) and in accordance with the evaluation of the processes detailed in the BIA (Business Impact Analysis). The plan details how the recovery of critical business processes should be carried out according to the priority assigned. In addition, different technological and operational tests are carried out during the year, which allow us to improve response and restoration times in the case of events that may affect the normal development of operations.

*Design of business continuity plan*

**Q.17.6.2 : How and to what extent is the FMI business continuity plan designed to ensure that critical IT systems can resume operations within two hours of disruptions, and to allow the FMI to facilitate or complete the liquidation before the end of the day even in extreme circumstances?**

The response and recovery procedures contained in the plan cover the physical, technological and operational infrastructure components that support the critical processes of CRCC and based on the validation of the scenarios proposed in the BCP, a redundant infrastructure has been built in the data center, operation center, communication channels, servers and security equipment. This infrastructure has the same service levels as the main infrastructure. Additionally, an annual testing program has been defined, seeking to return within the two hours established with the execution of the same and identifying opportunities for improvement when greater times are presented, therefore facilitating and completing settlements before the end of the session defined for settlement. The periodic test plan is published on the CRCC website [www.camaraderiesgo.com](http://www.camaraderiesgo.com)

**Q.17.6.3 : How is the contingency plan designed to ensure that the status of all operations can be identified with certainty at the time of the disruption? And if there is a possibility of data loss, what are the procedures for dealing with such loss (e.g., through reconciliation with participants or third parties)?**

The contingency plan is designed to mitigate single points of failure, with a redundant configuration through two different data centers (if there are failures in the main data center, the alternate data center immediately begins to operate), in the same way, there are two different communication providers and exclusive communication channels with the related infrastructures, ensuring high connectivity and avoiding the loss of operations.

The design of the CRCC infrastructure, ensures a very low likelihood of data loss, however, if data loss were to occur, the possibility of reconciling operations with participating entities manually has been contemplated.

**Q.17.6.4 : How do the FMI's crisis management procedures address the need for effective communication, both internally and with key external authorities and stakeholders?**

CRCC has established internal responsibilities for crisis activation notifications, with the help of call trees for incident notification, assessment and response. There are also procedures that establish responsibility for notifying Members, regulators and other interested parties of incidents that may affect the clearing and settlement service.



Currently, CRCC is part of the Market Crisis Management Committee, led by the Central Securities Depository (Deceval), the Central Bank and the Bolsa de Valores de Colombia (BVC), through which a protocol for communication and management of major crises has been established.

*Secondary site*

**Q.17.6.5 : How does the FMI service continuity plan incorporate the use of a secondary site (including ensuring that the secondary site has sufficient resources, capacities and functionalities, as well as adequate staffing mechanisms)? To what extent is the secondary site located at a sufficient geographical distance from the main site to have a distinct risk profile?**

CRCC has an Alternate Operating Centre (COA) or alternate site, equipped with the necessary elements to carry out the clearing and settlement operations and services, in the event of a disaster situation. Both the main and alternate sites have two communication channels from different providers. On the other hand, there are two staff shifts in the area of operations, who are constantly rotating their functions for cross training giving them a better knowledge of the job.

The secondary site is located at eight kilometers (8 km) from the main headquarters.

**Q.17.6.6 : Has the FMI considered alternative mechanisms (such as paper-based manual procedures or other alternatives) that allow for the processing of transactions that must be executed quickly in extreme circumstances?**

The contingencies established for the manual processing of operations are documented and tested, for those that cannot be received through the main means established, these contingencies are tested and certified each time changes are made to the parameters or conditions of the products.

*Review and testing*

**Q.17.6.7 : How are the FMI's contingency and continuity of service mechanisms reviewed and tested, including scenarios related to major or large-scale disruptions? How often are these mechanisms reviewed and tested?**

The technological and continuity plan is periodically reviewed and tested so that the entire redundant infrastructure is tested several times in one year, through the execution of different tests in which the operations, technology and support areas participate, which allow to establish its correct operation and in other cases, represent opportunities for improvement. This plan always includes new developments or changes in products or systems. The BCP and the results of the tests are evaluated periodically by the Audit Committee.

Once a month, CRCC carries out the operational transfer of its clearing and settlement operations, transferring its operations from the Main Centre to its Alternate Centre. This situation is transparent for the market, verifying the correct operation of its contingencies, which, together with the application tests, security systems and system maintenance, allows the BCP to review and adjust parameters.

**Q.17.6.8 : How does the review and testing of the FMI's contingency and continuity of service arrangements include the involvement, where appropriate, of participants, essential service providers and the FMIs with which it liaises? How often do these essential service providers and participants and the FMI with which they liaise intervene in the review and verification?**

	<p>The test plan establishes that all participants must actively participate. Therefore, with the Members, it is verified through the operational transfer mentioned in the previous point, with critical suppliers, such as the communications provider, monthly tests are carried out verifying their correct functioning, as well as the disconnection and connection of services. CRCC is part of the Securities Market Infrastructure Crisis Management Committee and participates annually in the tests that are carried out jointly to verify the functioning of the contingency mechanisms between the different infrastructure entities.</p> <p>They are reviewed at least once a year and whenever there are changes in the products, systems or processes, among the other Infrastructure entities (trading systems and/or registration, centralized securities deposits and valuation price providers), periodically checking that the contingency mechanisms work.</p>
<b>Key Consideration 7</b>	<p><b>An FMI should identify, monitor and manage the risks that major players, other FMIs and service providers may pose to its activities. An FMI should also identify, control and manage the risks that its activities may pose to other FMIs.</b></p>
<b>Description</b>	<p><i>Risks to the FMI's own operations</i></p> <p><b>Q.17.7.1 : What risks to the FMI's own operations have been identified by the FMI from major participants, other FMIs and service providers? How and to what extent does the FMI monitor and manage these risks?</b></p> <p>Among the main risks identified are system failures and operational process errors, for which redundant systems are available for each process. Likewise, risks have been assessed with critical service providers and incorporated into the BCP's testing plan as a fundamental component of the operation, with the latter having service level agreements in the different types of operation and the requirement for suppliers to have their own tested and documented BCP.</p> <p>When there are changes in the products or systems in any of the Infrastructures with which there are links, the correct functioning of the new processes and systems that support them is verified through integral tests.</p> <p><b>Q.17.7.2 : If the FMI has outsourced essential services for its operations, how and to what extent does the FMI ensure that the activities of an essential service provider meet the same reliability and contingency requirements that they would be required to meet if they were provided internally?</b></p> <p>For outsourced services, a criticality classification of each provider has been previously developed and for those considered critical, CRCC conducts inspection and verification visits, requesting certification of PCN compliance. All current critical suppliers meet the requirements and demands of the international standard ISO_27001.</p> <p><i>Risks posed to other FMIs</i></p> <p><b>Q.17.7.3 : How and to what extent does the FMI identify, monitor, and mitigate the risks it might pose to another FMI?</b></p> <p>There is constant interaction with the Infrastructure entities (trading and/or registration systems, centralized securities deposits and valuation price providers) with whom opportunities for improvement are periodically identified in relation to the services that are delivered or received, where they actively participate in the different tests.</p>

	<p><b>Q.17.7.4: To what extent does the FMI coordinate its service continuity arrangements with those of other interdependent FMIs?</b></p> <p>CRCC participates in the Committee for Continuity and Crisis Management of the Colombian Securities Market Infrastructures. This Committee recently implemented a communications and action protocol in the event of a major crisis or contingency that exceeds the contingency plans of each of the participating entities.</p>
<p align="center"><b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b></p>	
<p><b>PRINCIPLE 17: Operational Risk</b></p>	
<p><b>Key Consideration 1:</b></p> <p><b>An FMI should have a sound operational risk management framework that has the appropriate systems, policies, procedures and controls in place to identify, control and manage operational risks.</b></p> <p>CRCC has an Operational Risk Management System - SARO, which provides adequate and timely risk management, defining a solid internal framework with policies, controls and procedures to identify, control and manage potential sources of risk, identifying action plans to mitigate risks that are likely to occur. In addition, all procedures are updated as new products, changes or updates are introduced. These documents are confidential and therefore not open to public inspection.</p>	
<p><b>Key Consideration 2:</b></p> <p><b>The board of an FMI should clearly define roles and responsibilities for operational risk and should support the FMI's operational risk management framework. Systems, operational policies, procedures and controls should be reviewed, audited and verified periodically and after significant changes occur.</b></p> <p>The Board of Directors has clearly defined the functions and responsibilities related to operational risk, and therefore has an Operational Risk Management System (SARO) that minimizes the risk associated with the implementation of its processes, the feasibility and effective use of information systems, which contributes to compliance with local rules and regulations.</p> <p>In addition, Internal Audit evaluates the performance of operational risk management on a semi-annual basis and the Statutory Auditor's Office evaluates it at least once a year. On the other hand, CRCC has test environments that allow participants to verify that changes or updates have been made in an appropriate manner prior to production.</p>	
<p><b>Key Consideration 3:</b></p> <p><b>An FMI should have clearly defined operational reliability objectives and should have policies that are designed to achieve these objectives.</b></p> <p>Operational reliability objectives are based on providing Members with a service that is permanently available during the hours of trade acceptance, clearing and settlement, without delays or system failures that could result in late or incorrect information. To this end, the technology and operations areas have all the operational processes documented with controls in place to minimize operational risks and thus achieve sufficient operational reliability.</p> <p>In addition, there is a monitoring system and clearly defined operational management indicators to achieve the service objectives offered, presenting to the Risk Committee those events that have materialized, with their action and mitigation plan so that they do not recur.</p>	

**Key Consideration 4:**

***An FMI should ensure that it has adequate versatile capacity to manage increased volumes of tension and to achieve its service-level objectives.***

The monitoring system reviews the load aspects, generating alerts if the established thresholds are exceeded, saturation or failures in its components. These include voltage volume tests, which are conducted regularly in test environments before new products are put into production, or when upgrades or new system configurations are made, verifying processing speed against increase in operations to maintain appropriate service levels.

**Key Consideration 5:**

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

CRCC through the Information Security Management System (ISMS) has physical security and information security policies, aimed at detecting, evaluating and monitoring potential vulnerabilities and threats that may arise in the normal course of its business, protecting all types of information.

**Key Consideration 6:**

***An FMI should have a service continuity plan in place that addresses events that pose a significant risk of disruption to its business, such as major disruptive or large-scale events. This 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 of the occurrence of the disruptions in question. The plan should be designed to allow the FMI to complete the liquidation before the end of the day on which the disruptions or interruptions occur, even in the event of extreme circumstances. The FMI should regularly check these mechanisms.***

CRCC has a Business Continuity Plan and a Disaster Recovery Plan, which include various scenarios and events that may lead to significant changes in the entity's activities. There is a secondary site which is designed to ensure that critical processes and systems can be activated within two hours of an incident occurrence. In addition, it is activated every month, executing all clearing and settlement activities from this alternate site without affecting the market or the service to Members. The data processing centers (main and alternate) are located at a distance of twenty kilometers (20 kms) from each other.

**Key Consideration 7:**

***An FMI should identify, monitor and manage the risks that major players, other FMIs and service providers may pose to its activities. An FMI should also identify, control and manage the risks that its activities may pose to other FMIs.***

CRCC has redundant systems for each of the connections with other FMIs (trading and/or registration systems, centralized securities depositories and valuation price providers). There is active participation in the testing environments of the other FMIs when product developments occur involving them or CRCC. Contracts with essential or critical suppliers include requirements to have their own BCPs and adequate information management, among other aspects.

**KEY CONCLUSIONS FOR PRINCIPLE 17:**

CRCC has a Corporate Governance that promotes and supports the implementation of policies for the management of Operational Risk, Information Security and the Business Continuity Plan, verifying that the procedures and controls are in place to restore and provide continuity to its services, even in the event of disasters that expose its technical, physical and/or human resources. These policies are documented for each affected area and are validated annually by internal and external auditors, both for processes and management systems.

#### **ASSESSMENT OF PRINCIPLE 17**

Principle 17 referred to Operational Risk is **observed** by CRCC.

#### **Principle 18: Entry and participation requirements.**

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

##### *Summary narrative*

The access and participation criteria are objective as they are based on regulatory, operational, risk management and financial requirements that enable Members to meet their expected future obligations, thus better ensuring the security of the CCP and its Clearing Members. Additionally, these requirements are in line with the provisions of the Securities Law and Decree 2555 of 2010.

CRCC requirements are established in accordance with the risks and responsibilities assumed by each type of membership described in the Rulebook (General Clearing, Individual Clearing Member and Non-Clearing Member).

The admission requirements are objective, transparent and public, and are set out in the Rulebook published on the CRCC website. All entities aspiring to become Members must accredit to CRCC the fulfilment of these requirements. Membership is a function of the Board of Directors of CRCC.

<b>Key Consideration 1</b>	<b>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.</b>
Description	<p><i>Participation Criteria and Requirements.</i></p> <p><b>Q.18.1.1: What are the participation criteria and requirements (such as operational, financial and legal requirements)?</b></p> <p>In accordance with Law 964 of 2005, the Securities Law, and Decree 2555 of 2010, Article 2.13.1.1.1.8 which defines the entities that may act as counterparties (Members) of a CCP, the Rulebook of CRCC establishes the entities that may be Members, as well:</p> <p>Before admission by CRCC, entities must be subject to inspection and surveillance by the SFC. Intermediaries of any type of Assets, that have direct access to the means of payment and delivery established in these Regulations may become Members of CRCC, as well as public entities that are legally authorized to use trading systems when carrying out treasury operations; the Nation - Ministry of Finance and Public Credit; the Central Bank; and foreign entities that are authorized to be Members of CCP's from overseas or similar entities that are under the supervision of an entity equivalent to the SFC.</p>

Likewise, and in accordance with the provisions of Decree 2555 of 2010, the Regulations of CRCC establish the following types of Members:

1. Clearing Member: A Member that has direct access to CRCC through which it will credit and debit the respective accounts for clearing, settling and guaranteeing with CRCC the accepted transactions that are cleared and settled through it and that have been entered into on an exchange, trading venue, over the counter market or any trading mechanism. A Clearing Member may participate on its own account, i.e. in relation to its own Transactions, on behalf of Non-Clearing Members or on behalf of Third Parties. Such Members may be:
  - a. Individual Clearing Member: The one who acts on his own behalf or on behalf of Third Parties.
  - b. General Clearing Member: A Member acting on its own behalf, on behalf of Third Parties, or on behalf of one or more Non-Clearing Members.
2. Non-Clearing Member: A Member that has direct access to CRCC whose settlements are made through a Clearing Member. A Non-Clearing Member may act on its own behalf and on behalf of Third Parties.

The entities aspiring to become Members of CRCC must comply with and accredit the requirements established in the Rulebook, with the specificities established in the Circular. These requirements are public and can be found on the CRCC website. The requirements are objective and generate transparency since they are based on operational and risk management considerations and are related to the financial situation of the institution, so that they constitute the first ring of the risk management system, by guaranteeing compliance with the obligations under its responsibility to CRCC.

CRCC offers fair and impartial access to applicants, as it requires the same requirements to be accepted as a Member. Once the applicant meets the requirements, it may become a member upon admission by the Board of Directors of CRCC.

The Rulebook of CRCC establishes the following requirements for the admission of Members:

1. That it is one of the entities mentioned in Article 2.1.1 of the Rulebook (entities described above).
2. The applicant entity may be admitted and have access to stock exchanges, trading systems or any other trading mechanism in which transactions are entered into or registered for its own account or for the account of third parties that may be accepted by the CCP or, as the case may be, that are authorized to act in the over-the-counter market.
3. To be registered in the "Registro Nacional de Agentes del Mercado de Valores" and be a member of a self-regulatory authority if this requirement is applicable.
4. In the case of foreign entities, to accredit before the CCP that they are active Members of any market recognized in their country of origin, that they have access to the stock exchanges, to the trading systems, that they are authorized to act in the counter market or in any contracting mechanism, in which transactions are entered into or recorded on its own behalf or on behalf of third parties that may be accepted by CRCC and that are under the supervision of an authority equivalent to the SFC.
5. Have deposit accounts in the Central Bank, directly or through Paying Agents, if applicable.
6. To be a direct depositor in the centralized securities deposits and/or have a Custodian Agent linked to such deposits, if applicable.
7. To accredit that it complies with the required technical specifications of hardware, software, communications, procedures and securities that Members must comply with to access and operate the System.
8. Have the administrative policies and standards for the clearing and settlement of transactions and demonstrate an appropriate risk management structure for this purpose. At a minimum, CRCC will evaluate the formal, strategic and operational aspects.



9. To have properly trained personnel to operate the System.
10. To expressly and formally authorize CRCC to automatically debit or credit the Member's cash account with the Central Bank or a commercial bank, if any, in the course of its activities.
11. To authorize the CRCC to debit or credit automatically the securities deposit accounts of which it is the holder during its activities.
12. Accredit adequate contingency and business continuity plans that allow for timely processing and completion of clearing and settlement.
13. To meet with the minimum regulatory capital determined by CRCC through the Circular, according to the type of Member and Segments in question.
14. To have a system for the prevention and control of money laundering and financing of terrorism.

Additionally, the Rulebook establishes that to be a Clearing Member, the applicant entities must have the quality of banking institutions, financial corporations and/or brokerage firms. Likewise, the Nation - Ministry of Finance and Public Credit, the Central Bank and the Entities with Special Regimes supervised by the SFC may be admitted as Clearing Members in accordance with the provisions of articles 227 and following of the Organic Statute of the Financial System, or the rules that modify, substitute or add them.

The CRCC Rulebook provides that Members may participate on their own account, i.e. with their own operations or on behalf of Third Parties. For this purpose, it defines Third Parties as follows: the natural or legal persons, autonomous patrimonies or other legal entities that access the stock exchange, trading systems, over-the-counter market or any Trading Mechanism, through one or more Non-Clearing Members, Individual Clearing Members or General Clearing Members, as the case may be, to carry out, through them, operations susceptible of being accepted by CRCC.

**Q.18.1.2 : How do these criteria and requirements allow for fair and open access to the FMI's services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements?**

In accordance with the regulation, CRCC may not discriminate against clients or potential clients, regardless of the trading system in which they operate. However, it will establish minimum access requirements based on risk. In addition, it will guarantee access to its platform to any applicant who has met the requirements once they have been verified and approved by the Board of Directors.

The requirements described above are objective as they are based on the minimum operational, risk management and financial considerations that an applicant must meet to ensure compliance with its obligations to CRCC in its role as a central counterparty.

It is equitable since both the process and the requirements are public and are described in the Rulebook and Circular. All applicants for each type of Member must demonstrate that they meet the same requirements. In addition, it is for the Board of Directors to decide on the admission of an entity as a CRCC Member.

*Access to trade repositories*

**Q.18.1.3 : For a TR, how do the terms of access for use of its services help ensure that competition and innovation in post-trade processing are not impaired? How are these terms designed to support interconnectivity with other FMIs and service providers, where requested?**

	<p>CRCC is not a TR, it is a CCP. Notwithstanding the foregoing, in accordance with Decree 2555 of 2010, regardless of the shareholding composition of the share capital of CRCC, it must give equal treatment to any client or potential client, for which purpose it must guarantee any client access to its platform and ensure interoperability to those agents or parties involved in the service chain. This includes the trading of securities, without establishing discriminatory practices against clients or potential clients, regardless of the trading system and/or registration system where they carry out or register transactions. Such agents and participants, in turn, shall ensure free access to CRCC without regard to their shareholding structure.</p>
<b>Fundamental Consideration2</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Justification and rationale of participation criteria</i></p> <p><b>Q.18.2.1 : How are the participation requirements for the FMI justified in terms of the safety and efficiency of the FMI and its role in the markets it serves, and tailored to and commensurate with the FMI's specific risks?</b></p> <p>CRCC established the criteria for participation based on Law 964 and Decree 2555 of 2010. The entities that may be Members are entities under the surveillance of the SFC, which must comply with the operational and risk management requirements required for the safe and efficient operation of CRCC. On the other hand, its financial situation is verified to guarantee its economic solvency in accordance with the type of Member aspired.</p> <p>The participation criteria are adapted to the risks of CRCC, since they were established considering the processes it carries out and the risk management model adopted.</p> <p><b>Q.18.2.2 : Are there participation requirements that are not risk-based but required by law or regulation? If so, what are these requirements?</b></p> <p>Yes, Law 964 of 2005 and its implementation in Decree 2555 of 2010 define the entities that may be counterparties (Members) of a CCP.</p> <p><b>Q.18.2.3 : Are all classes of participants subject to the same access criteria? If not, what is the rationale for the different criteria (for example, size or type of activity, additional requirements for participants that act on behalf of third parties, and additional requirements for participants that are non-regulated entities)?</b></p> <p>The access criteria depend on the Member modality according to the Risk Management Model.</p> <p>Applicants may join in three membership categories, which are described in response to Q. 18.1.1. Applicants for the same modality will have the same requirements, however, there are differences between the modalities based on minimum technical equity and risk qualification requirements.</p> <p>This difference is justified in the risk relationships between CRCC and its Clearing Members. Each membership type has a different risk exposure to CRCC as well:</p>

	<ul style="list-style-type: none"> <li>- The General Clearing Member has direct access to CRCC and is responsible for the performance of the transactions recorded in its own accounts, in the accounts of its third parties (clients) in the accounts of the Non-Clearing Members and in the accounts of their third parties (clients), within its account structure.</li> <li>- The Individual Clearing Member has direct access to CRCC and is responsible for the performance of the transactions registered in its own accounts and in the accounts of its third parties (clients).</li> <li>- The Non-Clearing Member has direct access to CRCC, however, the clearing and settlement of transactions registered in its own account and in the accounts of its third parties (clients) is done through a General Clearing Member.</li> </ul> <p><i>Least restrictive access</i></p> <p><b>Q.18.2.4 : How are the access restrictions and requirements reviewed to ensure that they have the least restrictive access that circumstances permit, consistent with maintaining acceptable risk controls? How frequently is this review conducted?</b></p> <p>The requirements of CRCC are objective, transparent and equitable and are in accordance with the provisions of the Rulebook as stipulated in the development of Principle 18.</p> <p>If an applicant is unable to be bound by a particular fact, this should be reviewed by the Board of Directors, who will take appropriate measures, bearing in mind that high-risk management standards must be maintained.</p> <p><i>Disclosure of criteria</i></p> <p><b>Q.18.2.5 : How are participation criteria, including restrictions in participation, publicly disclosed?</b></p> <p>Membership requirements and procedure requirements are set out in the Rulebook and in the CRCC Circular. All applicants have access as they are published on the website. Also, this information and access to the forms to be filled in is available in the Member session of the website.</p>
<b>Key Consideration 3</b>	<p><b>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.</b></p>
<b>Description</b>	<p><i>Monitoring compliance</i></p> <p><b>Q.18.3.1: How does the FMI monitor its participants' ongoing compliance with the access criteria? How are the FMI's policies designed to ensure that the information it uses to monitor compliance with participation criteria is timely and accurate?</b></p> <p>In accordance with the Rulebook, it is the obligation of the members to comply with and maintain always the general and special requirements for admission as members.</p> <p>The Rulebook specifies that CRCC shall monitor the maintenance of financial, operational and technological requirements of Members. Periodic reviews are submitted to the Risk Committee.</p>

	<p><b>Q.18.3.2 : What are the FMI's policies for conducting enhanced surveillance of, or imposing additional controls on, a participant whose risk profile deteriorates?</b></p> <p>The Rulebook and the Circular establish that, if a Clearing Member does not comply with the minimum financial requirements defined for its modality, the Clearing Member must constitute a substitute Individual Guarantee in favor of CRCC.</p> <p>In addition, relevant information affecting the financial, operational and technological situation that may cause a deterioration in the Member's status with respect to compliance with obligations under CRCC is reviewed periodically and in the event of deterioration below the levels required by CRCC, the operating limits may be lowered, or preventive measures may be defined.</p> <p><i>Suspension and orderly exit</i></p> <p><b>Q.18.3.3 : What are the FMI's procedures for managing the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements?</b></p> <p>The Rulebook establishes the grounds for suspension and exclusion of a Member. Failure to comply with any of the obligations set forth in the Regulations, its Circulars or the Agreements signed with CRCC is grounds for suspension, without incurring any default of the obligations arising from the compensated and liquidated transactions. In this sense, the suspension is appropriate in events in which the Member no longer meets the admission and permanence requirements and does not resolve such non-compliance within the period established in the same Regulations.</p> <p>Similarly, exclusion (termination of service by CRCC to a Member and the loss of such status) is appropriate when a Member has been suspended more than two (2) times during the last six (6) months.</p> <p><b>Q.18.3.4 : How are the FMI's procedures for managing the suspension and orderly exit of a participant disclosed to the public?</b></p> <p>The Rulebook and Circular of CRCC establish the procedures to manage the suspension and orderly exit of a participant, these rules are published on the website.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>PRINCIPLE 18: Entry and participation requirements.</b>	
<p><b>Key Consideration 1:</b></p> <p><b><i>An IMF should allow fair and open access to its services by its direct participants and, where appropriate, indirect participants and other IMFs, based on reasonable risk-sharing requirements.</i></b></p> <p>The access and participation criteria are objective as they are based on operational, risk management and financial requirements that enable Members to meet their obligations, thus ensuring the safe and stable functioning of CRCC.</p>	

**Key Consideration 2:**

***The requirements for participation of an IMF should be justified in terms of safety and efficiency for the IMF and the markets it serves, adapted and proportionate to the IMF's specific risks and publicly disclosed. Without prejudice to the maintenance of acceptable risk control standards, an IMF should strive to set requirements that have the least restrictive impact on access as circumstances permit.***

The access criteria comply with the provisions of Law 964 of 2005, the Securities Market Law and Decree 2555 of 2010, which define the entities that may be members of a central counterparty. These admission requirements are public since they are established in the Rulebook and are developed in the Circular of CRCC and published on the CRCC website.

In addition, some requirements are different depending on the type of member in which the applicant entity is interested in participating, differences that are justified in the risk relations between CRCC and its Clearing Members. Each type of member has a different risk exposure to CRCC.

**Key Consideration 3:**

***An IMF should monitor compliance with its eligibility requirements on an ongoing basis and have clearly defined and publicly disclosed procedures in place to facilitate the suspension and orderly exit of a participant that violates, or no longer complies with, the eligibility requirements.***

The requirements demanded by CRCC are admission and permanence based, and their observance by Members is monitored. The Rulebook and the Circular establish evaluation and causal procedures for the adoption of preventive measures for the suspension and exclusion of Members.

**KEY CONCLUSIONS FOR PRINCIPLE 18:**

The access and participation criteria are objective as they are based on regulatory, operational, risk management and financial requirements that enable Members to meet their obligations, thus ensuring the safe and stable functioning of CRCC.

They are public since they are described in the Rulebook and Circular of CRCC and published on the website.

Additionally, a distinction is made in the admission requirements depending on the Member modality in accordance with the risks that each of these modalities assumes vis-à-vis CRCC.

The requirements demanded by CRCC are admission and permanence based and their observance is monitored by the participants. The Rulebook and the Circular establish evaluation and causal procedures for the adoption of preventive measures for the suspension and exclusion of Members.

**ASSESSMENT OF PRINCIPLE 1**

Principle 18, concerning the Requirements for Access and Participation is observed by CRCC.

## Principle 19: Tiered participation arrangements

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

### *Summary narrative*

Considering the membership structure of CRCC as described in Principle 18, the CRCC Rulebook provides that Members may participate on their own account, i.e. in relation to their own operations or on behalf of third parties. In this sense, CRCC's participation mechanisms allow for the clearing and settlement of Member and Third Party (client) transactions. For this purpose, the Member categories are: General Clearing Members, Individual Clearing Members and Non-Clearing Members.

The identified third parties are those natural or legal persons, autonomous estates or legal entities fully identified before CRCC that participate in the same through an Individual or a General Clearing Member, or through a Non-Clearing Member, with whom they have signed an agreement by means of which said third parties accept the rules of CRCC.

CRCC receives information from each of its participants as defined in the Rule Book and the Circular published on its website. The information that Members must provide allows CRCC to ensure the quality of its direct participants.

CRCC records transactions at the individual account level in a segregated manner, so it can manage risk at the account level and determine the transaction volume for each of them.

<b>Key consideration 1</b>	<b>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.</b>
Description	<p><i>Tiered participation arrangements</i></p> <p><b>Q.19.1.1: Does the FMI have any tiered participation arrangements? If so, describe these arrangements.</b></p> <p>CRCC has the following participation mechanisms:</p> <ol style="list-style-type: none"> <li>1. Members (see Principle 18 responses): The membership modalities established at CRCC are: <ol style="list-style-type: none"> <li>a. General Clearing Member.</li> <li>b. Individual Clearing Member.</li> <li>c. Non-Clearing Member.</li> </ol> </li> <li>2. Third parties (customers).</li> </ol> <p>For more information see Principle 18.</p> <p><b>Q.19.1.2: How does the FMI gather basic information about indirect participation? Which information is collected and how frequently is it updated?</b></p> <p>Members are obliged to provide information about their third parties (customers). Among the information required is the following:</p>



	<p>Basic information for the creation of the accounts requested by the Member for its third parties. Information on stop payment orders issued by legal or administrative authorities to third parties. Contact information for third parties on an annual basis.</p> <p><i>Risks to the FMI</i></p> <p><b>Q.19.1.3 : How does the FMI evaluate its risks arising from these arrangements?</b></p> <p>The information system managed by CRCC manages the risk at the holder account level with individual segregation and consolidates the risk on an aggregate basis at the Member level. Risks at each holder level are monitored and managed on an intraday basis, and the responsible for the risk management of each third party is the Member under which the third party is created.</p> <p><b>Q.19.1.4 : What material risks to the FMI arising from tiered participation arrangements has the FMI identified? How has it mitigated these risks?</b></p> <p>CRCC has identified the following material risks: i) concentration risk with respect to average daily volume, positions at the holder account level and aggregated positions at the Member level and ii) substantial increase in risk at the Member level.</p> <p>These risks are mitigated through i) Additional Initial Margin for the Equity Segment, ii) operating limits, such as the Daily Operating Limit (LRI) and the Margin Call Limit (LMC), stress test of the Default Fund, iii) daily analysis of the increased risk at the Member level and iv) CRCC 's technological risk tools, through its Limits module, allowing CRCC to monitor and control risk at the third level and aggregate level at the Member level with a five (5) minute periodicity and at the end of the session.</p> <p>For more information see Principles 3 and 4.</p> <p>In addition to the General Clearing Members that may have in their account structure Non-Clearing Members must comply with i) a technical equity requirement greater than an Individual Clearing Member and a minimum operating and resource structure established by CRCC,</p>
<b>Key consideration 2</b>	<b>An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.</b>
Description	<p><b>Q.19.2.1: How does the FMI identify material dependencies between direct and indirect participants that might affect the FMI?</b></p> <p>Through the CRCC System module called Limits, the proportion of activity and risk of Members and third parties is identified daily and intraday, specifically at the third-party level and aggregated at the Member level and allows a large extent to establish whether a Member is participating in clearing by a large number of other Members and third parties or by its own position. This allows CRCC to monitor and control risk at the third party and aggregate at the Member level. In addition, CRCC evaluates the proportion of transactions and open positions of each Member monthly, both in its own position and in that of its third parties.</p>

<b>Key consideration 3</b>	<b>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.</b>
Description	<p><b>Q.19.3.1: Has the FMI identified (a) the proportion of activity that each direct participant conducts on behalf of indirect participants in relation to the direct participants' capacity, (b) direct participants that act on behalf of a material number of indirect participants, (c) indirect participants responsible for a significant proportion of turnover in the system, and (d) indirect participants whose transaction volumes or values are large relative to the capacity of the direct participant through which they access the FMI to manage risks arising from these transactions?</b></p> <p>CRCC manages the information at the individual account level so that it can constantly validate the activity and risk at the individual account and aggregate at the Member level, in accordance with the defined participation mechanisms, so that CRCC can carry out adequate risk management vis-à-vis Clearing Members. See answer Q.19.2.1.</p>
<b>Key consideration 4</b>	<b>An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.</b>
Description	<p><b>Q.19.4.1 : What are the FMI's policies for reviewing its rules and procedures in order to mitigate risks to the FMI arising from tiered participation? How frequently is this review conducted?</b></p> <p>Annually, CRCC carries out the integral evaluation and presentation to the Risk Committee of the Risk Model defined for each of the Segments it manages, to guarantee that the methodologies defined are the appropriate ones to manage the risk generated by the different participation mechanisms defined.</p> <p>However, if there are any extraordinary events that could lead to a revision of the existing Risk Model, these decisions are submitted to CRCC Risk Committee for evaluation.</p> <p><b>Q.19.4.2 : What criteria does the FMI use to determine when mitigating actions are required? How does the FMI monitor and mitigate its risks?</b></p> <p>Please see the answer to question Q.19.1.4.</p>

#### **DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE**

##### ***Principle 19: Tiered participation arrangements***

##### ***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***

CRCC has the following participation mechanisms: General Clearing Members, Individual Clearing Members, Non-Clearing Members and Third Parties. To control and manage the risks associated with each of these mechanisms, the Rulebook and the Circular enable CRCC to collect the information it requires from Members and their Third Parties.

**Key consideration 2**

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

Through the systems it manages, CRCC identifies on a daily and intraday basis, the proportion of aggregate activity and risk at the Member and third-party levels, which makes it possible to establish whether a Member is participating in clearing through other Members and third parties or by its own position.

**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.***

CRCC manages the information at the individual account level so that it can constantly validate the aggregate activity of Members and individual third parties in accordance with the defined participation mechanisms, so that CRCC can carry out adequate risk management vis-à-vis Clearing Members.

**Key consideration 4**

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

Each year CRCC evaluates and presents to the Risk Committee the Risk Model defined for each Segment. However, if there are extraordinary events that could motivate the review of the existing Risk Model, these decisions are submitted to the monthly evaluation of the Risk Committee of CRCC.

**KEY CONCLUSIONS FOR PRINCIPLE 19:**

Considering the membership structure of CRCC as described in Principle 18, the CRCC Rulebook provides that Members may participate on their own account, i.e. in relation to their own operations or on behalf of third parties. In this sense, CRCC's participation mechanisms allow for the clearing and settlement of Member and Third Party (client) transactions. For this purpose, the categories of Members are: General Clearing Members, Individual Clearing Members and Non-Clearing Members.

CRCC has an adequate account segregation system that allows it to manage and monitor the risks associated with the defined participation mechanisms. On the other hand, its regulations allow it to obtain information about each of its members and third parties. CRCC has identified the risks arising from the defined participation mechanisms and has established limits and controls on these risks. CRCC has adequate policies in place to periodically review the risks associated with participation mechanisms.

**ASSESSMENT OF PRINCIPLE 19:**

Principle 19 on Multi-Level Participation Mechanisms is observed by CRCC.

## Principle 20: FMI Links

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

### *Summary narrative*

CRCC identifies, monitors and manages the risk related to the links established with the Trading and/or Registration Systems, the Centralized Securities Depositories, the Payment Systems and Precia as a Price Provider for Valuation.

When CRCC establishes a link with another FMI, an agreement or contract is provided by the legal area

CRCC reviews the risk management model at least once a year through CRCC Risk Committee and Board of Directors.

CRCC and Linked FMIs work together to resolve incidents and set continuity mechanisms in the aforementioned agreements which are triggered if communication links are severed. The CCP's Technology Department has a monitoring system to alert on any technical or operational incident in the operational processes.

The effectiveness of this control is verified annually through an internal audit and by external auditors.

<b>Key Consideration 1</b>	<b>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.</b>
Description	<p><b>Q.20.1.1 : What process is used to identify potential sources of risk (such as, legal, credit, liquidity, custody and operational risks) arising from prospective links? How does this affect the FMI's decision whether to establish the link?</b></p> <p>The process used by CRCC to identify the potential sources of risk that may arise from a link with another FMI is an internal procedure carried out by the different areas of CRCC and communicated to the Legal Area so that these are covered by the Agreements that CRCC signs with each of the FMI. Likewise, the bilateral nature of the agreements allows the potential sources of risk identified, as well as the duties and obligations of each of the parties (FMI) to be analyzed jointly and reflected in the corresponding Agreement.</p> <p>The FMI that does not comply with the standards required by CRCC the link is not accepted.</p> <p><b>Q.20.1.2 : What links have been established with other FMIs?</b></p> <p><b>Links to Securities Depositories:</b></p> <p>Central Securities Depository of Colombia S.A. - DECEVAL S.A. Central Securities Depository of the Banco de la República (Central Bank) – DCV Collateral in securities is pledged to CRCC in centralized securities deposits.</p> <p><b>Links to Trading Systems and / or Register of transactions:</b></p>

	<p>Bolsa de Valores de Colombia - BVC: Sistema de Negociación de Valores y de Derivados Estandarizados. Set Icap FX S.A.: Foreign Currency Trading and Registration System. Electronic Trading System - SEN: Securities Trading and Registration System administered by the Central Bank.</p> <p><b>Links to Payment Systems:</b></p> <p>Deposit Accounts - CUD: Central Bank's high-value payment system.</p> <p><b>Links to Price Providers:</b></p> <p>Precia Proveedor de Precios para Valoración S.A.: Entity in charge of providing professional prices in the financial markets.</p> <p><b>¿How does the FMI identify, monitor and manage the risks arising from an established link on an ongoing basis?</b></p> <p>The operational risks that arise from establishing a link with another FMI's is reviewed on an ongoing basis and it is presented to the Risk Committee monthly, along with the diagnosis, the action plan and the new controls that must be implemented to mitigate the operational risk. The new controls are included in the agreements defined with each FMI, through the renegotiation of the obligations and requirements set out in the agreement, if deemed appropriate.</p> <p>CRCC has an online Monitoring System that reviews and validates all technical and operational processes, including those related to links to other FMI websites.</p>
<b>Key Consideration 2</b>	<p><b>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.</b></p>
<b>Description</b>	<p><b>Q.20.2.1 : In which jurisdictions has the FMI established links? What are the relevant legal frameworks that support the links established?</b></p> <p>CRCC only has links with other FMIs in Colombia and with Colombian entities, which is why the legal framework that supports links with other FMIs is the legal framework of the Republic of Colombia. See principle 1 for more information.</p> <p><b>Q.20.2.2 : How does the FMI ensure that its linkages have a sound legal basis that supports its design and provides adequate protection in all relevant jurisdictions? How does the FMI ensure that these protections are maintained over time?</b></p> <p>CRCC only has links with other FMIs in Colombia and with Colombian entities.</p> <p>CRCC, through its legal area, carries out a rigorous analysis of the current regulatory framework to ensure that the contractual mechanisms through which the corresponding link is established with another FMI are based on a well-founded legal basis that supports its design and provides it with adequate protection under the Colombian jurisdiction.</p> <p>CRCC ensures that the links it has with other MFIs provide it with adequate protection through the conclusion of agreements establishing the obligations and activities of each of the infrastructures, operations, communication protocols, schedules, service levels, and procedures for resolving incidents/contingencies in the event of an operational</p>

	<p>risk event. Additionally, there are functional and technological annexes and technological communication protocols in which specific procedures are established with a high level of detail. It has been established that changes in any infrastructure must be comprehensively tested before being put into production (between infrastructures and with Members) to ensure the proper functioning of the service to the market.</p> <p>CRCC ensures that the risk mitigators identified are maintained and reviewed throughout the life of the link, through the contractual mechanisms that allow it to modify what was initially established in the Agreement. In addition, in accordance with the foregoing, SFC's instructions related to the interconnection of the FMI shall be binding on the parties and shall be incorporated into the agreements governing the relationship between the parties.</p>
<b>Key Consideration 3</b>	<b>The CSDs involved in a link should measure, monitor and manage the credit and liquidity risks that each generates to the others. Any granting of credit between CSDs must be fully covered by high quality guarantees and is subject to limits.</b>
Description	Not applicable
<b>Key Consideration 4</b>	<b>Provisional transfers of securities between linked CSDs should be prohibited or, as a minimum, the re-transfer of provisionally transferred securities should be prohibited before such transfer becomes final.</b>
Description	Not applicable
<b>Key Consideration 5</b>	<b>An investing CSD should only liaise with a sending CSD if the mechanism in question provides a high level of protection of the rights of the participants of the investing CSD.</b>
Description	Not applicable
<b>Key Consideration 6</b>	<b>An investing CSD using an intermediary to operate a link with an issuing CSD shall measure, control and manage the additional risks (including custodial, credit, legal and operational risks) resulting from the use of the intermediary.</b>
Description	Not applicable
<b>Key Consideration 7</b>	<b>Before formalizing a link with another CCP, a CCP must identify and manage the potential contagion effects of a CCP's non-compliance with the CCP with which it maintains a link. If a liaison is composed of three or more CCPs, each CCP shall identify, assess and manage the risks of the collective liaison mechanism.</b>
Description	Not applicable
<b>Key Consideration 8</b>	<b>Each CCP that integrates a liaison mechanism with a CCP should be able to cover, at least on a daily basis, its current and potential future exposures to the CCP with which it liaises and to its participants, if any, in their entirety and with a high degree of confidence without reducing the CCP's ability to meet its obligations to its own participants at all times.</b>
Description	Not applicable



<b>Key Consideration 9</b>	<b>A TR should carefully assess the additional operational risks associated with its links to ensure the versatility and reliability of IT and related resources.</b>
Description	Not applicable
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 20: FMI Links</b>	
<p><b>Key Consideration 1:</b></p> <p><b><i>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.</i></b></p> <p>The potential risk sources from establishing links between the CCR and other FMIs are analyzed prior to formalizing the link and regulated in the agreements executed with each FMI.</p> <p>The potential risk sources of links to other FMIs are reviewed and analyzed on an ongoing basis and in accordance with CRCC 's Corporate Governance. Operational and technological incidents arising from links with other FMIs are reviewed by CRCC 's Risk Committee.</p>	
<p><b>Key Consideration 2:</b></p> <p><b><i>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.</i></b></p> <p>The agreements with the different FMIs: Trading and/or Registration Systems, Securities Depositories, Payment Systems and Valuation Price Providers are subject to Colombian regulations, which support their design and provide adequate protection to the FMIs participating in the links.</p>	
<p><b>Key Consideration 3:</b></p> <p><b><i>The CSDs involved in a link should measure, monitor and manage the credit and liquidity risks that each generates to the others. Any granting of credit between CSDs must be fully covered by high quality guarantees and is subject to limits.</i></b></p> <p>Not applicable</p>	
<p><b>Key Consideration 4:</b></p> <p><b><i>Provisional transfers of securities between linked CSDs should be prohibited or, as a minimum, the re-transfer of provisionally transferred securities should be prohibited before such transfer becomes final.</i></b></p> <p>Not applicable</p>	

**Key Consideration 5:**

***An investing CSD should only liaise with a sending CSD if the mechanism in question provides a high level of protection of the rights of the participants of the investing CSD.***

Not applicable

**Key Consideration 6:**

***An investing CSD using an intermediary to operate a link with an issuing CSD shall measure, control and manage the additional risks (including custody, credit, legal and operational risks) resulting from the use of the intermediary.***

Not applicable

**Key Consideration 7:**

***Before formalizing a link with another CCP, a CCP must identify and manage the potential contagion effects of a CCP's non-compliance with the CCP with which it maintains a link. If a liaison is composed of three or more CPCs, each CPC shall identify, assess and manage the risks of the Collective Liaison Mechanism***

Not applicable

**Key Consideration 8:**

***Each CCP that integrates a liaison mechanism with a CCP shall be able to cover, at least daily, its current and potential future exposures to the CCP with which it liaises and to its participants, if any, in their entirety and with a high degree of confidence without reducing the CCP's ability to meet its obligations to its own participants at all times.***

Not applicable

**Key Consideration 9:**

***A TR should carefully assess the additional operational risks associated with its links to ensure the versatility and reliability of IT and related resources.***

Not applicable

**KEY CONCLUSIONS FOR PRINCIPLE 20**

CRCC identifies, monitors and controls the risks that arise from links with other FMI's sites. CRCC always signs agreements or contracts with other FMIs. Prior to establishing the agreement, all potential risks of the link are identified and mitigated. The risks related to the link are analyzed in the annual review of CRCC risk management system through its Corporate Governance and followed up through the Risk Committee.

**EVALUATION OF THE PRINCIPLE**

Principle 20 referred to FMI links is **OBSERVED** by CRCC.

## **Principle 21: Efficiency and effectiveness**

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

### *Summary narrative*

CRCC has clearly defined the agreements, the corporate governance structure, the policies and procedures, the technological resources and the risk management and monitoring tools that guarantee an adequate provision of services and satisfy the market needs. This allows CRCC to achieve high levels of efficiency and effectiveness.

The review and evaluation of the efficiency and effectiveness of CRCC is included within its performance management system, its internal control system and the audits carried out both by CRCC Internal Audit and by external entities. The efficiency of controls is verified annually by internal and external auditors and is monitored by the Board of Directors, the Risk Committee, the Audit Committee and the Administrative and Financial Committee.

CRCC conducts an annual Member Service Satisfaction Survey through which it measures the level of satisfaction of its Members with the various services provided by CRCC. This survey is presented to the Administrative and Financial Committee and the Board of Directors annually and is circulated to the entire organization. Based on the results obtained, action plans are established to improve the operational and technological processes and new services required by Members.

CRCC, through its commercial area, has a close relationship with the Members and actively participates in the different activities carried out by the industry.

<b>Key Consideration 1</b>	<b>An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.</b>
<b>Description</b>	<p><b>Q.21.1.1: How does the FMI determine whether its design (including its clearing and settlement arrangement, its operating structure, its delivery systems and technologies, and its individual services and products) is taking into account the needs of its participants and the markets it serves?</b></p> <p>CRCC has a design that meets the needs of the participants through its operational, technological, risk and business model.</p> <p>Through its Corporate Governance, comprised of the Board of Directors, the Risk Committee, the Audit Committee and the Administrative and Financial Committee, the objectives of CRCC are reviewed and adjusted on a regular basis. Likewise, its operational and corporate governance structure clearly defines the responsibilities and functions of the different bodies of CRCC to achieve these objectives and detect new needs or identify risk management issues.</p> <p>CRCC has been strategically defined as a multi-market/multi-active PPP using the current infrastructure to provide clearing and settlement services as a central counterparty to multiple trading and/or registration systems and for multiple products.</p>

	<p>CRCC has defined policies and procedures that with modern technology, provide secure and reliable clearing and settlement services, manage risk, add new customers and retain existing ones, expand its product portfolio through new projects and improve service quality.</p> <p><b>Q.21.1.2: How does the FMI determine whether it is meeting the requirements and needs of its participants and other users and continues to meet those requirements as they change (for example, through the use of feedback mechanisms)?</b></p> <p>CRCC has established service indicators to measure and monitor the needs of participants. An example of the above is the service desk that attends the requests and incidents of its members. Monthly indicators are generated to allow to adequately measure whether the level of service effectively meets the expected levels.</p> <p>CRCC conducts an annual Member Service Satisfaction Survey through which it measures the level of satisfaction of its Members with the various services provided by CRCC. This survey is presented to the Administrative and Financial Committee and the Board of Directors annually and it is distributed to the entire organization. Based on the results obtained, action plans are established to improve the operational and technological processes and new services required by Members.</p> <p>In addition to the above, the commercial area of CRCC maintains a close relationship with the Members and actively participates in the different activities carried out by the industry.</p>
<b>Key Consideration 2</b>	<p><b>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.</b></p>
<b>Description</b>	<p><b>Q.21.2.1 : What are the FMI's goals and objectives as far as the effectiveness of its operations is concerned?</b></p> <p>CRCC has a short and medium term strategic plan with achievable and measurable goals and objectives through a Performance Management System (PMS). In terms of effectiveness, its main objectives are aimed at fulfilling its responsibilities in risk management, operations management, company revenue, development and launching of new products and services.</p> <p>The effectiveness objectives, which are reviewed and analyzed by the Board of Directors and the Committees, are included within the following indicators:</p> <ul style="list-style-type: none"> <li>- Financial indicators of income and profitability</li> <li>- Operating process indicators</li> <li>- Indicators of availability of infrastructure services</li> <li>- Indicators of infrastructure capacity</li> <li>- Service table indicators</li> <li>- Management indicators (project monitoring schedules)</li> <li>- Customer service measurement indicators</li> <li>- Indicators of liquidity and residual risk</li> </ul>

	<p><b>Q.21.2.2 : How does the FMI ensure that it has clearly defined goals and objectives that are measurable and achievable?</b></p> <p>The Board of Directors of CRCC has established short, medium and long-term objectives which are regularly monitored. The organization has a performance management system - PMS at the Management level for both, Areas and Individuals, which is evaluated annually. After evaluating the objectives and the degree of compliance, others are proposed based on economic trends, market performance and developments and changes in the market. These goals and objectives are always measurable and achievable.</p> <p><b>Q.21.2.3 : To what extent have the goals and objectives been achieved? What mechanisms does the FMI have to measure and assess this?</b></p> <p>CRCC has always achieved its objectives, thanks to a periodic and continuous monitoring by the different bodies of its Corporate Governance. The different Committees review the progress made periodically, and take the necessary measures to redirect, when necessary, efforts to maximize their effectiveness in meeting the previously established objectives.</p> <p>The different levels of corporate governance of CRCC are responsible for measuring and evaluating compliance with the goals and objectives previously set.</p> <p>Through the performance management system - PMS, each one of the previously established goals and objectives is monitored. Each objective is related to a strategic option previously defined by the Board of Directors in its long-term planning.</p>
<b>Key Consideration 3</b>	<b>An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.</b>
Description	<p><b>Q.21.3.1 : What processes and metrics does the FMI use to evaluate its efficiency and effectiveness?</b></p> <p>CRCC carries out a strategic planning where the objectives and goals of the organization are established. Through the performance management system, the indicators and goals that guarantee the fulfilment of these objectives are parameterized.</p> <p>To evaluate the effectiveness and efficiency of the risk management model, periodic back-testing of the parameters and the margin model are carried out to ensure that a 99.5% level of confidence is maintained. For further details see response to Principles 3, 4, 5, 6 and 7.</p> <p>CRCC is efficient and effective in its Operations Management process when its Members receive all the information on operations, open positions, guarantees, valuation inputs, settlements, fees, etc. in an accurate and timely manner through its Information System.</p> <p>In general, in accordance with the Circular and the Rule Book, CRCC has policies and procedures to supervise the correct operational and technological functioning. Internal and external audits and compliance controls, also assess the efficiency and effectiveness of CRCC.</p> <p><b>Q.21.3.2 : How frequently does the FMI evaluate its efficiency and effectiveness?</b></p>

	The Corporate Governance of CRCC periodically evaluates efficiency and effectiveness through monthly meetings of the Board of Directors, the Risk Committee in the Administrative and Financial Committee and quarterly meetings in the Audit Committee. These bodies review and verify compliance with the objectives and targets.
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 21: Efficiency and Effectiveness</b>	
<p><b>Key Consideration 1:</b></p> <p><b><i>An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures</i></b></p> <p>CRCC is designed to meet the needs of its participants and the markets to which it provides its clearing and settlement services.</p> <p>CRCC is efficient and effective in terms of the information availability on settlements, guarantees, fees, etc. Such information is reliable, accurate and timely for its Members.</p> <p>CRCC improves its infrastructure and adapts to changes in regulatory issues and market situations. CRCC has measurement and monitoring tools for risk management, collateral and settlements designed to provide the best possible service to its members.</p> <p>CRCC conducts an annual Member Service Survey which is presented to the Administrative and Financial Committee and the Board of Directors. Based on the results of this evaluation, action plans are established to improve the operational and technological processes and new services required by Members.</p>	
<p><b>Key Consideration 2:</b></p> <p><b><i>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.</i></b></p> <p>The main objective of CRCC in terms of efficiency and effectiveness is to fulfil its responsibilities without incidents, in order to increase business both, in terms of developing new products and increasing profitability, always focusing on improving service to Members and Customers and developing the Colombian capital market.</p> <p>Its main objectives and goals are: (1) financial indicators; (2) indicators of infrastructure availability; (3) indicators of quality of service; (4) indicators to improve infrastructure, adapting them to changing market needs; (5) models and parameters that allow it to control risks efficiently.</p>	
<p><b>Key Consideration 3:</b></p> <p><b><i>An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.</i></b></p> <p>CRCC S.A. has a monitoring process for the different indicators defined by the entity's corporate governance bodies. The Performance Management System - PMS includes all levels of CRCC and it is constantly monitored.</p>	



#### **KEY CONCLUSIONS FOR PRINCIPLE 21:**

CRCC has clearly defined the agreements, the corporate governance structure, the policies and procedures, the technological resources and the risk management and monitoring tools that guarantee an adequate provision of services, to satisfy the needs of the market in general and of its Members in particular. This allows CRCC to achieve high levels of efficiency and effectiveness.

The review and evaluation of the efficiency and effectiveness of CRCC is included within its performance management system, its internal control system and the audits carried out both by CRCC Internal Audit and by external entities. The efficiency of controls is verified annually by internal and external auditors and is monitored by the Board of Directors, the Risk Committee, the Audit Committee and the Administrative and Financial Committee.

CRCC conducts an annual Member Service Satisfaction Survey through which it measures the level of satisfaction of its Members with the various services provided by CRCC. This survey is presented to the Administrative and Financial Committee and the Board of Directors annually and is distributed to the entire organization. Based on the results obtained, action plans are established to improve the operational and technological processes and new services required by Members.

#### **ASSESSMENT OF PRINCIPLE 21**

Principle 20 referred to *efficiency and effectiveness* is **OBSERVED** by CRCC.

#### **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.**

#### **Explanatory Summary**

- CRCC S.A. uses internationally accepted communication procedures and standards that allow the exchange of information with other companies. The format adopted is normally agreed with the FMI with which the link is established.
- CRCC does not carry out cross-border operations.

<b>Key Consideration 1</b>	<b>An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.</b>
Description	<p><i>Communication procedures</i></p> <p><b>Q.22.1.1: Does the FMI use an internationally accepted communications procedure? which one(s)</b></p> <p>CRCC uses internationally accepted communication procedures that allow for secure and reliable operation with other FMIs.</p> <p>The data transmission mechanism in the network is the TCP/IP protocol.</p> <p>Data messages are made via XML.</p>

	<p>CRCC provides its members with PBX (Paradox), CSV, Excel and PDF files with all the information related to their operation. These files are supplied through a Secure File Transfer Protocol Server SFTP. It also uses CRCC website to provide its participants with information.</p> <p>CRCC only adapts internationally accepted communication procedures.</p> <p><b>Q.22.1.2 : If the FMI engages in cross-border operations, how do the FMI's operational procedures, processes and systems use or otherwise accommodate internationally accepted communication procedures for cross-border operations?</b></p> <p>CRCC does not carry out transnational operations</p> <p><i>Communication standards</i></p> <p><b>Q.22.1.3 : Does the FMI use any internationally accepted communication standards? If so, which one(s)?</b></p> <p>CRCC uses internationally accepted communication standards that allow a secure and reliable operation with other FMIs.</p> <p>The communication standard for information exchange is XML, with the protocols: FIX (Financial Information Exchange) and FPML (Financial Products Markup Language).</p> <p>CRCC identifies financial instruments with CFI (Classification of Financial Instruments) codes in accordance with ISO 10962 and the ISIN (International Securities Identification Number) code under ISO 6166 with the support of the National Numbering Agency -ANNA-. The codes are generated and exchanged with other FMI's through XML messages and text files.</p> <p>CRCC only uses internationally accepted communication standards.</p> <p><b>Q.22.1.4 : If the FMI engages in cross-border operations, how do the FMI's operational procedures, processes and systems use or otherwise accommodate internationally accepted communication standards for cross-border operations?</b></p> <p>NOT applicable to CRCC, CRCC does not carry out transnational operations</p> <p><b>Q.22.1.5 : If no international standard is used, how does the FMI accommodate systems that translate or convert message format and data from international standards into the domestic equivalent and vice versa?</b></p> <p>It is NOT applicable to CRCC, only data transmission systems based on international standards are used.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 22: Communication Procedures and Standards</b>	
<b>Key Consideration 1:</b>	
<b>An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.</b>	

CRCC uses internationally accepted communication procedures and standards: FIX, FPML, through PX files, CSV, XML. The data transmission is done through the TCP/IP protocol. File transmission is done via SFTP Secure Protocol. CRCC identifies financial instruments with CFI codes in accordance with ISO 10962 and ISIN codes under ISO 6166. CRCC does not carry out transnational operations.

**KEY CONCLUSIONS FOR PRINCIPLE 22:**

CRCC uses internationally accepted communication procedures and standards to simplify payment, clearing, settlement and registration processes.

**ASSESSMENT OF PRINCIPLE 22**

Principle 22 referred to communication procedures and standards is **OBSERVED** by CRCC.

**Principle 23: Disclosure of rules, main procedures and market data.**

**An IMF 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 when participating in the IMF. All relevant rules and main proceedings shall be disclosed publicly.**

*Summary narrative*

The CRCC has clear and detailed rules and procedures and provides sufficient information to its members to enable them to identify and clearly understand the risks and responsibilities involved in participating in the clearing and settlement system administered by the CRCC.

In this sense, through its website and its internal regulations, CRCC discloses information relating to its corporate governance, the structure, design and operation of the system it administers, the fees for its services and the rights and obligations of its members and third parties, among others.

The information described above is of a public nature and can be found through the following link: <http://www.camaraderiesgo.com/>

<b>Key consideration 1</b>	<b>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.</b>
Description	<p><i>Rules and procedures</i></p> <p><b>Q.23.1.1: What documents comprise the FMI's rules and procedures? How are these documents disclosed to participants?</b></p> <p>The rules and procedures of CRCC are established in the rulebook, the Circular, and the Operating Instructions. These documents are disclosed to the public through the CRCC website. In addition, changes in its rules and procedures are disclosed to members of CRCC through Regulatory Bulletins, as appropriate, which are also posted on the CRCC website.</p>

This information can be consulted via the following link: <http://www.camaraderiesgo.com/regulacion/>

**Q.23.1.2 : How does the FMI determine that its rules and procedures are clear and comprehensive?**

The rules and procedures of CRCC are developed by the area in charge of the respective matter, with the support of the legal and operations and/or risks areas to guarantee the coherence and exhaustiveness of the measures adopted. Additionally, the operating regulations, as well as their modifications and additions, are subject to the approval of the SFC prior to their entry into force.

*Disclosure*

**Q.23.1.3 : What information do the FMI's rules and procedures contain on the procedures it will follow in non-routine, though foreseeable, events?**

Chapter Eight of Title Two of the Rulebook and Chapter Two of Title Seven of Part I of the Circular establish the rules and procedures for the declaration and management of a default of CRCC's Member. CRCC has defined in its Rulebook and Circular: (i) default of Third Parties, Non-clearing Members and Clearing Members; (ii) the determining circumstances or Default causes by Third Parties and Members, (iii) the effects of the default declaration, (iv) the measures that may be taken in the event of default by Third Parties or Members, (v) the order in which the collateral and pre-founded resources are liquidated in the event of default and the obligation to replenish them, (vi) the lines of communication in the event of default, and (vii) the frequency with which the parameters and methodologies are reviewed annually in the Risk Committee. (See Principle 13).

In addition, CRCC has alternative operating procedures in case of contingency, described in Title Twelve of Part I of CRCC Circular. In this respect, Article 1.2.1.1. establishes that in the event that the system interrupts its operation due to technical failures during the course of CRCC schedules, the alternative computer center shall be activated, and in this case, instructions shall be given to the market regarding the new compliance schedules, in coordination with the deposits, or in the event that the activation of the alternative computer center does not guarantee the re-establishment of the service, the members will be informed so that they may proceed to carry out the operations directly in the central securities deposits.

Moreover, CRCC has a member contingency plan in place to provide members of CRCC with a last resort system to support them in the event of infrastructure incidents that prevent the use of the MEFF-Station terminals located in its facilities, which can be consulted through the following link: <http://www.camaraderiesgo.com/saro/pcn-miembros/>.

Finally, CRCC has internally established a business continuity plan (BCP) and a disaster recovery plan, aimed at protecting its employees, promoting ongoing operation and customer service, protecting shareholders' interests and helping CRCC survive adverse events. (See Principle 17).

**Q.23.1.4 : How and to whom does the FMI disclose the processes it follows for changing its rules and procedures?**

The processes that CRCC uses to modify its rules and procedures are described in Chapter Four of Part I of the Rulebook, which is disclosed to the public through the CRCC website.

The modifications to the Rulebook must be published to receive comments from the members, the market, and the general public, for a term of five (5) working days, before their approval by the Board of Directors and their submission

	<p>for authorization by the SFC. Once these procedures have been completed, the modification will be disclosed to its members through a Regulatory Bulletin and published on the entity's website, through the following link: <a href="http://www.camaraderiesgo.com/regulacion/regulacion-camara/">http://www.camaraderiesgo.com/regulacion/regulacion-camara/</a>.</p> <p>The issuance of Circulars, which corresponds to the Manager of CRCC, does not bind its addressees except by virtue of their publication and their validity will begin on the next business day, unless otherwise provided. These circulars will be distributed to its members through a Regulatory Bulletin and incorporated and compiled in CRCC 's Circular, which can be consulted through the following link: <a href="http://www.camaraderiesgo.com/regulacion/regulacion-camara/">http://www.camaraderiesgo.com/regulacion/regulacion-camara/</a>.</p> <p><b>Q.23.1.5: How does the FMI disclose relevant rules and key procedures to the public?</b></p> <p>The rules and procedures of CRCC are defined in the Rulebook, in the Circular and in the Operating Instructions, which are published through the entity's website.</p>
<b>Key consideration 2</b>	<b>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.</b>
Description	<p><b>Q.23.2.1 : What documents comprise information about the system's design and operations? How and to whom does the FMI disclose the system's design and operations?</b></p> <p>Information on the design and operation of CRCC system is published through the Rulebook, the Circular and the Technology and Risk Management tabs of CRCC website.</p> <p><b>Q.23.2.2 : How and to whom does the FMI disclose the degree of discretion it can exercise over key decisions that directly affect the operation of the system?</b></p> <p>The discretion that CRCC may exercise in the operation of its system is regulated in the Rulebook and Circular, which are made available to the public through the CRCC website. Likewise, the decisions taken by CRCC in use of its attributions are informed to the members by means of Regulatory or Informative Bulletins as it corresponds.</p> <p><b>Q.23.2.3 : What information does the FMI provide to its participants about their rights, obligations and risks incurred through participation in the FMI?</b></p> <p>Chapter One of Title Two of the Rulebook clearly and specifically sets out the rights and obligations of members, agents and third parties participating in the clearing and settlement system administered by CRCC.</p>
<b>Key consideration 3</b>	<b>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.</b>
Description	<p><b>Q.23.3.1: How does the FMI facilitate its participants' understanding of the FMI's rules, procedures and the risks associated with participating?</b></p> <p>CRCC has a training plan that must be followed up by each of the entities that are in the process of being accepted as Members. This training covers operational issues, risk model and technological readiness. There is a multidisciplinary team in charge of offering this training to the Members, at the time of their joining and upon request</p>

	<p><b>Q.23.3.2 : Is there evidence that the means described above enable participants' understanding of the FMI's rules, procedures and the risks they face from participating in the FMI?</b></p> <p>In addition to the training plan described above, which allows Members to understand the rules, procedures and risks they face when participating in the clearing and settlement system administered by CRCC, CRCC staff are available to answer any questions that Members may have regarding its rules and procedures.</p> <p><b>Q.23.3.3 : In the event that the FMI identifies a participant whose behavior demonstrates a lack of understanding of the FMI's rules, procedures and the risks of participation, what remedial actions are taken by the FMI?</b></p> <p>If a situation of lack of understanding of the rules and procedures by a Member is identified, involving a breach of its obligations under the Rulebook and Circular of CRCC, other than a breach of obligations arising from the clearing and settlement of transactions, CRCC may choose to temporarily suspend or exclude it from its system, as appropriate.</p>
<b>Key consideration 4</b>	<p><b>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.</b></p>
Description	<p><b>Q.23.4.1 : Does the FMI publicly disclose its fees at the level of its individual services and policies on any available discounts? How is this information disclosed?</b></p> <p>CRCC publicly discloses its rates for each of the services it offers. This information is incorporated in article 1.10.1.1.1 of the Circular, published in the CRCC website.</p> <p><b>Q.23.4.2 : How does the IMF promptly notify participants and the public of any changes in its services and rates?</b></p> <p>Pursuant to Article 2.1.13. of the Rulebook, adjustments to the rates must be disclosed through its publication on the CRCC website or in any other mean to which the Members have access, at least 10 working days prior to the entry into force of the respective adjustments.</p> <p><b>Q.23.4.3 : Does the FMI provide a description of its priced services? Do these descriptions allow for comparison across similar FMIs?</b></p> <p>Article 1.10.1.1.1. of the Circular of CRCC provides a detailed description of the prices of its services. However, there is no other Central Counterparty in Colombia.</p> <p><b>Q.23.4.4 : Does the FMI disclose information on its technology and communication procedures, or any other factors that affect the costs of operating the FMI?</b></p> <p>Among the binding requirements for Members to enable their participation in the clearing and settlement system administered by CRCC is that of declaring compliance with the technological requirements of CRCC. Also, through the Technology link on its website, CRCC provides information about its technological infrastructure and the information systems it uses.</p>
<b>Key consideration 5</b>	<p><b>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.</b></p>



Description	<p><b>Q.23.5.1 : When did the FMI last complete the CPSS-IOSCO Disclosure framework for financial market infrastructures? How frequently is it updated? Is it updated following material changes to the FMI and its environment and, at a minimum, every two years?</b></p> <p>In May 2017, CRCC conducted a self-assessment of compliance with the Financial Market Infrastructure Principles, based on the document Principles for Financial Market Infrastructure jointly published with CPMI-IOSCO. Notwithstanding the above, this self-assessment and those that preceded it were not published by CRCC.</p> <p>In this order of ideas, the present self-assessment is the first to be carried out by CRCC based on the CPMI-IOSCO Disclosure Framework and Assessment Methodology.</p> <p><b>Q.23.5.2 : What quantitative information does the FMI disclose to the public? How often is this information updated?</b></p> <p>CRCC through its Newsletters discloses information about collateral received, the discount or haircut, information about the testing environment, the amount of the Default Fund, and the assets with which it operates. It also publishes its financial information on its website. The information is disclosed whenever something new comes up.</p> <p><b>Q.23.5.3 : What other information does the FMI disclose to the public?</b></p> <p>CRCC distributes to the market relevant information related to its regulatory framework, corporate governance, operating and risk model and tariffs.</p> <p><b>Q.23.5.4 : How does the FMI disclose this information to the public? In which language(s) are the disclosures provided?</b></p> <p>The information is disclosed by CRCC through publication on its website and by e-mail. All information is disclosed in Spanish.</p>
<b>DETAILED ASSESSMENT OF COMPLIANCE WITH THE PRINCIPLE</b>	
<b>Principle 23: Disclosure of rules, key procedures and market data</b>	
<p><b>Key Consideration 1:</b></p> <p><b><i>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.</i></b></p> <p>Information on the design and operation of the CRCC system is published through CRCC 's Rulebook, the Circular and the CRCC website.</p> <p>CRCC also has clear mechanisms for changes to its rules and procedures, including how those changes are to be published.</p>	
<b>Key Consideration 2:</b>	

***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.***

CRCC has clear and detailed rules and procedures and provides sufficient information for its members to identify and clearly understand the risks and responsibilities involved in participating in the clearing and settlement system operated by CRCC. For this purpose, CRCC S.A. has a publicly accessible website, through which it discloses relevant information for its members and for the market in general.

The Rulebook and the Circular establish the rights and obligations of Members and Third Parties who participate in the clearing and settlement system administered by CRCC.

**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.***

CRCC has a training plan that must be followed up by each of the entities that are in the process of being linked. This training covers operational issues, risk model and technological readiness. In addition to the above, the staff of CRCC is available to answer any questions that Members may have regarding its rules and procedures.

**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.***

CRCC S.A. informs the market of the fees it charges per item and per product, in a clear and detailed manner.

**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.***

This is the first self-assessment conducted by CRCC based on the CPMI-IOSCO Disclosure Framework and Assessment Methodology.

Through its website and internal regulations, CRCC distributes to the market, relevant information related to its regulatory framework, its corporate governance, its operating and risk model, its tariffs and the values and volumes of its operations.

**KEY CONCLUSIONS FOR PRINCIPLE 23:**

CRCC has clear and detailed rules and procedures and provides sufficient information for its members and third parties to clearly identify and understand the risks and responsibilities involved in participating in the clearing and settlement system administered by CRCC.

Through its website and internal regulations, CRCC distributes to the market relevant information related to its regulatory framework, its corporate governance, its operating and risk model, its tariffs and the values and volumes of its operations. It also provides all the necessary and adequate documentation and training to facilitate the understanding of the participants.

This is the first self-assessment conducted by CRCC based on the CPMI-IOSCO Disclosure Framework and Assessment Methodology.

***ASSESSMENT OF PRINCIPLE 23:***

Principle 23 referred to the disclosure of rules, key procedures and market data is **OBSERVED** by CRCC.