

# Assessment of Securities Clearing Center against CPMI-IOSCO PFMI Principles

Summary Report

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## Background

To leverage its existing infrastructure more effectively, diversify its revenue and align itself with the Kingdom's Vision 2030, Tadawul has established Muqassa, a 100% Saudi Tadawul Group (the Group) owned subsidiary, as a Central Counterparty Clearing House (CCP). Muqassa will eventually clear a variety of derivative instruments, beginning with Stock Index Futures and then Single-Stock Futures. Currently, Stock Index Futures on the MT30 index are cleared. Later, equity clearing will be introduced. As one of the top 20 exchanges in the world by market capitalisation and its inclusion into the major indices (MSCI, FTSE and S&P), Saudi Exchange's aim has been to provide additional risk management techniques to remove systemic risks from the Saudi Capital Market as part of the Financial Sector Development Program. The establishment of Muqassa allows Saudi Exchange to meet these aims.

Muqassa began operations in the second half of 2020 and has developed infrastructure, rules, processes and procedures that are in accordance with international best practices and standards.

An initial report on CPMI-IOSCO compliance was commissioned from independent consultant, in 2019 during the development stage of the project to understand the current gaps in order to validate the readiness of Muqassa to go live. A second report, this report, was conducted following go live of the index futures market, with the same independent consultant. Rather than produce a second document, the original report has been updated using new and updated information provided during March, April and May 2021.

## Assessment Scope

The key risks reviewed were:

- **Systemic Risk:** This relates to the safety, soundness and reliability of the infrastructure, in particular, the safety and efficiency of Muqassa to mitigate systemic risk through the inability of one or more participants to meet their obligations, which may have a variety of “knock-on” effects on the wider financial market
- **Legal Risk:** Legal risks arise when there is an unexpected application of a law or regulation, usually resulting in a loss. Legal risk can also arise if the application of relevant laws and regulations is uncertain or the application of a law is different from that specified in a contract, by a court in a relevant jurisdiction
- **Credit Risk:** Participants may face various types of credit risk, which is the risk that a counterparty, whether a participant or other entity, will be unable to meet fully its financial obligations when due, or at any time in the future. The resulting exposure is the cost of replacing the original transaction at current market prices
- **Liquidity Risk:** Muqassa and their participants may face liquidity risk, which is the risk that a counterparty, whether a participant or other entity, will have insufficient funds to meet its financial obligations which can potentially create systemic problems
- **General Business Risk:** These are risks related to setting the strategy, administration and operation of Muqassa as a business and ensuring revenues exceeds costs. Poor execution of the strategy may result in adverse reputational effects, ineffective response to competition, losses in other business lines of its parent, or other business factors
- **Custody and Investment Risk:** The risk of loss on assets held in custody as a result of the custodian’s insolvency, negligence, fraud, poor administration or inadequate record keeping. Investment risk is the risk of loss faced by Muqassa when it invests its own or participant’s resources, such as collateral. These risks can be relevant to the cost of holding and investing resources but also to the safety and reliability of Muqassa risk management system
- **Operational Risk:** The risk that deficiencies in information systems or internal processes, human errors, management failures, or disruptions from external events will result in the reduction, deterioration, or breakdown of services provided by Muqassa

## Information Gathering

For the original report, the Consulting Team submitted a range of questions, requested a number of documents and conducted a series of meetings with each relevant department via conference calls. Following the submission of the draft report, follow up meetings to provide further information and feedback were undertaken. This involved calls with Board Secretary; Legal Team; Finance; Operations; Operational Risk Manager; CCP Risk Manager; IT and HR.

For this second report, the focus was on testing in the live environment, Board approvals of policies, recovery and wind-down plan, review and testing of procedures and other operational matters. Updated and new documentation was provided to the Consulting team, and questions provided and answered.

The following is the full list of documentation provided by Muqassa and reviewed by the Consulting Team during the course of the two consulting assignments:

**Table 1 - List of Documents Requested and Provided**

| Board Related Documents   | Legal Related Documents   |
|---|---|
| <ul style="list-style-type: none"> <li>• Audit Committee Working Rule</li> <li>• Board Membership and CVs of Members</li> <li>• Board of Directors Regulations</li> <li>• Board Meeting Minutes</li> </ul>  | <ul style="list-style-type: none"> <li>• Articles of Association (in Arabic)</li> <li>• CCP Implementing Regulations</li> <li>• Memorandum of Associations (in Arabic)</li> <li>• Support Services Agreement (in Arabic)</li> <li>• CCP Rules</li> <li>• Clearing Membership Agreement</li> </ul>           |
| Procedures Documents  | Technical Documents   |
| <ul style="list-style-type: none"> <li>• Clearing Procedures</li> <li>• Muqassa Stress Testing Procedures</li> <li>• Default Management Procedures</li> <li>• External Clearing Procedures</li> <li>• Stress Testing Procedures</li> <li>• Derivatives Clearing Operational Manual for Core Desktop (CD)</li> <li>• Operational Manual</li> </ul> | <ul style="list-style-type: none"> <li>• Clearing system user guides and manuals</li> <li>• Internal Operational Routine Guide 2021</li> <li>• System Description</li> </ul>  |
| Methodology Documents   | Risk Related Documents  |
| <ul style="list-style-type: none"> <li>• CCP Risk Calculation Methodology</li> <li>• Muqassa Margin Methodology</li> <li>• Counterparty Credit Rating Methodology</li> <li>• Muqassa Default Fund Methodology</li> <li>• Muqassa Liquidity Methodology</li> <li>• Project Management Methodology Manual</li> </ul>                                | <ul style="list-style-type: none"> <li>• Default Committee Charter</li> <li>• Investment Policy Statement</li> <li>• Investment Strategy Allocation</li> <li>• Clearing Liquidity Plan 2020</li> <li>• Muqassa Margin Guide</li> <li>• Risk Appetite Statements</li> <li>• Muqassa Risk Register</li> </ul> |

| Operational and Management Related   | Policy Documents   |
|--|--|
| <ul style="list-style-type: none"> <li>• Business Continuity Plan (BCP)</li> <li>• CCP Organization Structure</li> <li>• Explanation of governance arrangements to external parties (NASDAQ)</li> <li>• Muqassa Strategy and Control</li> <li>• Shared Services Governance</li> <li>• Various Job Descriptions</li> <li>• Compliance Grid</li> <li>• Muqassa Organization Structure Review</li> <li>• Muqassa Recovery &amp; Wind Down Plan</li> <li>• End of Year Performance Report</li> <li>• Strategy for Default Management Fire Drill 2021</li> <li>• Stress Test Report</li> <li>• Tadawul Product Failover Exercise 2020</li> <li>• Default Management Committee Charter</li> <li>• Derivatives clearing Business document</li> <li>• Default Management Fire-drill test report</li> <li>• Clearing Member Credit Rating Analysis Q1 2021</li> </ul> | <ul style="list-style-type: none"> <li>• Regulatory Oversight Policy</li> <li>• Stress Testing Framework Policy</li> <li>• Collateral Policy</li> <li>• Credit Risk Policy</li> <li>• Default Management Policy</li> <li>• Liquidity Policy</li> <li>• Margin Framework Policy</li> <li>• Model Validation Policy</li> <li>• Risk Capital Policy</li> <li>• Risk Management Policy</li> <li>• Risk Resources Investment Policy</li> <li>• Default Fund Policy</li> <li>• Enterprise Risk Management Policy</li> <li>• Information Security Policy</li> </ul> |
| Forms  | KPIs   |
| <ul style="list-style-type: none"> <li>• Rectify Trade Request Form</li> <li>• User Access Request Form</li> <li>• Take-Up Request Form</li> <li>• Series Closeout Request Form</li> <li>• Collateral Transfer Request Form</li> <li>• Give-up Request Form</li> <li>• Collateral Transfer Request Form</li> <li>• Collateral Withdrawal Request Form</li> <li>• Position/Portfolio Transfer Request Form</li> <li>• Clearing Account Request Form</li> <li>• Member Trading Limit Change Request form</li> <li>• Withdrawal Request form SAMA (Arabic)</li> <li>• Position/ Portfolio Transfer Request Form (Sender)</li> <li>• Trading Account Import Template</li> </ul>  | <ul style="list-style-type: none"> <li>• Various departmental KRIs (IT, HR, Legal, Marketing, Operations, BCP, Strategy)</li> <li>• Annual KPI's development and measurement Procedure</li> <li>• Corporate KPI's with Measurement</li> <li>• Corporate Development Department KPI's 2020</li> <li>• MCCP SLA Derivatives KPI's</li> </ul>   |

## Muqassa Assessment Conclusion

The Consulting Team was originally impressed with the overall progress of the establishment of Muqassa at the time of the first report. It was particularly impressed by the robustness of the risk management framework. Notwithstanding the fact that the establishment of Muqassa was still a work in progress at the time and could only be fully validated once it was live, the process, procedures and methodologies developed at the time were in line with international best practice. Following the second assessment within a live environment the Consulting Team continues to be impressed with many unanswered questions from the original assessment being resolved.

Based on the assessment undertaken in this second review of the current status of Muqassa set up (as at May 2021), the Consulting Team have given an overall rating of **“Observed”** as per the rating shown below. Many of the outstanding items from the previous review have now been resolved. There are a few items still outstanding but in the opinion of the Consulting Team do not present a material impact to downgrade the rating of the Principle.

## Rating Results

The following ratings are assigned against each Principle.

- **Observed:** Any identified gaps and shortcomings are not issues of concern and are minor, manageable and of a nature that could be considered resolving in the normal course of business.
- **Broadly Observed:** The assessment has identified one or more issues of concern that should be addressed and followed up in a defined timeline.
- **Partly Observed:** The assessment has identified one or more issues of concern that could become serious if not addressed promptly.
- **Not Observed:** The assessment has identified one or more serious issues of concern that warrant immediate action.
- **Not Applicable:** The principle does not apply to Mugassa because of the particular legal, institutional, structural or other characteristics.

Table 2 - Rating Results

| Observed  | Broadly Observed | Partially Observed | Not Observed | Not Applicable  |
|---|------------------|--------------------|--------------|---|
| P1 - Legal basis  |                  |                    |              | P2 - Governance                                       |
| P3 - Framework for management of risks                    |                  |                    |              | P4 - Credit Risk                                      |
| P5 - Collateral   |                  |                    |              | P6 - Margin   |
| P7 - Liquidity risk                                       |                  |                    |              | P8 - Settlement finality                              |
| P9 - Money Settlement                                     |                  |                    |              | P10 - Physical deliveries                             |
| P11 - Central Securities Depositories                     |                  |                    |              | P12 - Exchange of value settlement systems            |
| P13 - Participant default rules and procedures            |                  |                    |              | P14 - Segregation and Portability                     |
| P15 - General business risk                               |                  |                    |              | P16 - Custody and investment risks                    |
| P17 - Operational risk                                    |                  |                    |              | P18 - Access and participation requirements           |
| P19 - Tiered participation arrangements                   |                  |                    |              | P20 - FMI links                                       |
| P21 - Efficiency and effectiveness                        |                  |                    |              | P22 - Communication procedures and standards          |
| P23 - Disclosure of rules, key procedures and market data |                  |                    |              | P24 - Disclosure of market data by trade depositories |



## Assessment Findings

The following is a summary of the analysis completed by the Consulting Team;

### General Organisation

- **Principle 1 – Legal Basis: Observed**

Legal basis for the establishment of Muqassa is provided by the Capital Market Law (CML) and all the detailed provisions including Settlement Finality, Netting and the form of novation are provided by the Implementing Regulations. Muqassa's Rules and Procedures were drafted with the assistance of an international law firm and in close collaboration with prospective Clearing Members. Muqassa has a principle-to-principle relationship with its Clearing Members and this is reflected throughout the Rules and Procedures. Additionally, Muqassa, at this stage, does not envisage offering clearing for Clearing Members based outside of the Kingdom of Saudi Arabia.

With relation to a Clearing Member default, it is understood that the Implementing Regulations have primacy over Insolvency/Bankruptcy Provisions which is an important point for Clearing Member's collateral in the event of default;

As the current operations and membership is limited to the Kingdom, the Consulting Team is of the view that an independent legal opinion is not required on material aspects of the Rules and Regulations.

- **Principle 2 – Governance: Observed**

Muqassa has a Board of Director's whose responsibility is to monitor, validate and approve the policies and procedures and ensure that Muqassa is fit to go-live. The Consulting Team has reviewed the CVs of the current Board and is of the view that their experiences are of a high level to provide the right oversight and guidance to Muqassa. The Board of Directors has three advisory committees, the Audit, Investment and Risk Management Committee. There is a process for managing conflicts of interest

At every stage, Muqassa has consulted with potential Clearing Members as well as worked closely with the regulator, CMA and external experts.

Independent directors with relevant experience have been appointed to the Board of Directors and the Board Committees. The governance arrangements are disclosed to the public via the Muqassa website.

- **Principle 3 – Framework for the Comprehensive Management of Risks: Observed**

Muqassa has a number of risk policies in place that have been approved by the Board, that provide it with a comprehensive framework for the management of risk. The responsibilities for the management of risks and the commitment to externally validate these policies on an annual and ad-hoc basis are clearly stated. Muqassa follows the 'three lines of defence' model, which provides the Board with the independent assurance that Muqassa is operating in compliance with the Risk Policy Framework.

Muqassa has also drafted a comprehensive Recovery and Wind-Down Plan which is subject to stakeholder's comment, Muqassa's BoD and Authority's approval before it can be deemed final. The legal basis for recovery is provided for in the CCP Rules, and at a higher level the CMA's Implementing Regulations.

In addition, Muqassa incentivises its Clearing Members to manage the risks that they pose by maintaining clear documentation on the risk models and more importantly providing them with functionality for them to be able to simulate their margin requirements.

### Credit and Liquidity Risk Management

- **Principle 4 – Credit Risk: Observed**

Muqassa has established a number of policies that articulate the management of credit risk by identifying the sources and origination of credit risk. Muqassa has in place a Default Waterfall, the structure of which is common among other international CCPs and it includes a CCP capital contribution to the Default Fund (also known as Skin-in-the-Game).

Muqassa sizes its Clearing Member contributed Default Fund to cover the largest two Clearing Members (and affiliates) – Cover 2 Model, that could potentially cause the largest aggregated credit exposure for Muqassa in extreme but plausible market conditions, this is determined by following the Stress Testing Policy/Methodology.

Additionally, Muqassa has developed a Credit Risk Assessment Framework (CRAF) to internally score Clearing Members and Financial Infrastructures on a scale from 1 to 6, with 1 being the highest rating. The Internal Credit Score (ICS) is utilised for onboarding new Clearing Members, continuous monitoring as well as for setting the Risk Limit and Trading Limit towards the counterparty

Daily stress testing is carried out and the results are reviewed daily and reverse stress testing results reported monthly. The Consulting Team has reviewed and discussed the output from these Stress Testing Reports and have no concerns as to its adequacy.

- **Principle 5 – Collateral: Observed**

Muqassa has established a Collateral Policy which defines the principles for Margin and Default Fund collateral with respect to what the permitted collateral types are, the valuation and evaluation of collateral as well as the collateral haircuts and limits. However, at the present time, Muqassa only accepts cash denominated in Saudi Riyal (SAR) at the moment.

- **Principle 6 – Margin: Observed**

Muqassa's Margin Methodology is described in detail in the provided Margin Framework Policy and Margin Methodology documents. The margin model covers the Current and Potential Future Exposure of the underlying. The margin methodology used is NASDAQ's Delta Hedge product is based on the widely used CME SPAN methodology. For current technical reasons, margin is calculated every 30 minutes; however, it is envisaged that when the clearing of the cash market is implemented, it will be real time. Where margin calls have been initiated, Clearing Members can continue to trade so long as they are within their trading limits or can close-out their positions. They have 90 minutes to meet the intra-day margin calls or until 11:00 a.m. next day for end-of-day calls.

Daily back testing is undertaken to confirm the adequacy of the margin model. The Consulting Team has reviewed and discussed the output from the daily back-testing reports and have no concerns.

- **Principle 7 – Liquidity Risk: Observed**

Muqassa, through policies such as the Liquidity Policy and Risk Management Policy, along with the Liquidity plan has demonstrated to the Consulting Team that it can, in theory, effectively measure, monitor and manage its liquidity risk.

As the only form of collateral is SAR-denominated cash, liquidity management is not considered particularly complex and Muqassa, like with credit risk, uses a Cover 2 methodology for the sizing of its liquidity needs which, again, is considered conservative and should help to ensure that it has enough 'headroom' to manage its daily liquidity needs. Reverse liquidity stress testing to confirm this is carried out. In addition, Muqassa has plans to establish committed credit lines to further ensure that it is able to address its liquidity needs.

Muqassa has an account at the Central Bank, SAMA, to keep its cash collateral.

### Settlement

- **Principle 8 – Settlement Finality: Observed**

As mentioned under Legal Basis, Settlement Finality is provided for by the Capital Market Law (CML) which provides for the Implementing Regulations to detail when final settlement should be affected. The Implementing Regulations states that the CCP, within its Clearing Procedures, must detail the time at which instructions issued by a Clearing member or a relevant participant are capable of being revoked. The rules and procedures make clear when and how settlement finality is achieved.

- **Principle 9– Money Settlement: Observed**

Settlement at Muqassa takes place in central bank money; participants which do not have access to central bank need to appoint a bank to send/receive payments.

- **Principle 10 – Physical deliveries: Not Applicable**

Not applicable

### Central Securities Depositories and Exchange-of-Value Settlement System

- **Principle 11 – Central securities depositories: Not Applicable**

Not applicable

- **Principle 12 – Exchange of value of settlement systems: Not Applicable**

Not applicable

### Default Management

- **Principle 13 – Participant Default Rules and Procedures: Observed**

Muqassa has clearly defined Rules and Procedures in place to address a Clearing Member's Event of Default, which provides both legal certainty and the operational flexibility to be able to respond to different default scenarios. Within the Default Management Procedure (DMP), it is clear who is responsible for decision making and who needs to be informed at, during and on the conclusion of the Event of Default.

Given the importance of the Default Rules, both them, and the related procedures, are publicly disclosed (via the Clearing Rules) providing the clarity to the market. In addition, Muqassa has stated that the DMP will be tested at least annually with the results from the tests communicated to Clearing Members, on request. An internal test has been

undertaken and the comprehensive results and analysis was reviewed by the Consulting Team to its satisfaction. Management have indicated that the next planned test this year will involve Clearing Members.

- **Principle 14 – Segregation and Portability: Observed**

Muqassa offers a number of different clearing account structures that allow for the identification and separate treatment of positions and collateral, either in the books of the CCP as an Individual Client Account or at the Clearing Member for Client Omnibus Accounts.

In the Event of a Default being declared on a Clearing Member, clients of that Clearing Member may wish to move (port) to a different non-defaulting Clearing Member. Muqassa facilitates this with the concept of a Replacement Clearing Member (RCM). A RCM is a non-defaulting Clearing Member that has agreed, either prior to or at the time of default, to receive the client positions from the defaulting Clearing Member.

Testing of the portability arrangements without Clearing Members has been conducted and the next test will involve Clearing Members.

### General Business and Operational Management

- **Principle 15 – General Business Risk: Observed**

The Chief Risk Management Officer and the Chief Finance Officer have the responsibility to ensure that all aspects of general business risk have been accounted for. The overall approach is approved by the Board and all risks are escalated to the Board when and as required.

Muqassa has, within its Risk Appetite Statement, mentioned that it sets aside six months of operating expenses for an orderly wind-down of the CCP as well as capital to address business, operational and legal risks. Muqassa, within its Risk Capital Policy maintains a capital shortfall plan which permits it seek a capital contribution from Tadawul, its parent.

Muqassa has a recovery and wind-down plan (currently subject to final approval from the Board and the CMA) and a comprehensive risk register.

- **Principle 16 – Custody and Investment Risk: Observed**

Muqassa bears no investment or custody risk as all Collateral is received in cash in Saudi Riyal (SAR) which is held in SAMA, the Central bank. In addition, Muqassa's own Risk Capital is held in SAMA.

- **Principle 17 – Operational Risk: Observed**

Muqassa addresses operational risks that it faces under its CCP Risk Management Policy. This sets guidelines for the Enterprise Risk Management Framework, including Operational Risk Management and Business Continuity. Muqassa has in place departmental Key Risk Indicators (KRIs) which lists the indicators as well as the metrics in which they should be measured against.

The IT infrastructure of the CCP should meet the necessary standards for replication and disaster recovery and should allow for the rapid resumption of activities in the event of a major failure. In addition, capacity planning is reflected in the business operations document and Service Level Agreements (SLAs) which set out the potential constraints and how they can be met within certain timeframes.

The risks from participants and service providers have been identified and form part of the risk monitoring.

The Business Continuity Plan has been reviewed and tested, and the results shared with the Consulting Team for which there are no concerns.

### Access

- **Principle 18– Access and Participation Requirements: Observed**

Clearing membership is clearly laid out in the Rules and Clearing Procedures and includes minimum paid-up capital and minimum contributions to the Default Fund. Clearing Members can participate in Muqassa directly or indirectly. For direct access, Clearing Members can choose either to become a General Clearing Member (GCM) or Direct Clearing Member (DCM). Indirect access is for clients of these Clearing Members and for Non-Clearing Members who clear via a General Clearing Member. The Consulting Team consider access and participation requirements to be fair and non-discriminatory.

Clearing Members are reviewed on both an annual and ongoing basis to ensure that the counterparties meet and continue to maintain acceptable credit criteria.

- **Principle 19 – Tiered participation requirements**

Not Applicable

- **Principle 20 – FMI links: Not Applicable**

Not Applicable

### Efficiency

- **Principle 21 – Efficiency and Effectiveness: Observed**

Muqassa’s design of its clearing arrangements and the choice of systems clearly point towards the desire to operate an efficient and effective CCP. The list of KRIs indicate that there are measurable targets to meet this objective whilst SLAs are in place to ensure that stringent standards are maintained with Nasdaq, the system service provider.

Performance against the KPIs is reviewed quarterly, and more formally, annually

- **Principle 22 – Communication Procedures and Standards: Observed**

Muqassa’s participants can communicate with the CCP in two ways: (1) FIX protocol standard; and (2) through the Graphical User Interface (GUI). Currently, the arrangements in place are based on international standards and it was stated that any future expansions will also follow internationally accepted communication protocol standards.

### Transparency

- **Principle 23 – Disclosure of Rules, Key Procedures and Market Data: Observed**

Muqassa has demonstrated that its Rules and Clearing Procedures are in alignment with international best practices, and these are disclosed to potential Clearing Members through the Muqassa website. The documentation was prepared with the assistance of international experts and has been further reviewed by the Consulting Team who confirm that they are readable, clear and comprehensive.

The Rules and Clearing Procedures contain information about the overall design and operation of the clearing processes as well as the degree of discretion that Muqassa can exercise over decisions. The original summary CPMI-IOSCO PFMI assessment report was published on the Muqassa website, along with the quarterly CPMI-IOSCO Quantitative

Disclosures. It is intention of Senior Management to publish on the Muqassa website this detailed report.

The intention of CCP's management is to meet the requirement of this assessment every two years. Muqassa's post going-live assessment i.e. the first report was disclosed to the public via the website.

- **Principle 24 – Disclosure of Market Data by Trade Repositories**

Not Applicable.



مقاصة  
Muqassa

من مجموعة تداول السعودية  
From Saudi Tadawul Group

**Thank you**