



CDSC – Central Depository and Settlement Corporation

CPMI-IOSCO PFMI Disclosure Framework

May 2020



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About this Assessment Exercise

The Central Depository and Settlement Corporation Limited (CDSC) commissioned Thomas Murray to assist in the CPMI-IOSCO self-assessment of the Principles for Financial Market Infrastructures (PFMIs) as part of Kenya's efforts to comply with mandates set by G-20 authorities. Thomas Murray, as an independent capital markets expert, conducted an analysis of CDSC's practices and arrangements in the context of the assessment methodology defined by CPMI-IOSCO.

The approach taken by Thomas Murray is based on its well-established methodology designed to assess CSD risk in the context of best global practices. The Thomas Murray methodology has been employed to assess 140 CSDs worldwide for the last 20 years. The approach used also relies heavily on its experience conducting CSD public risk assessments since 2006.

CDSC's assessment consisted of three stages: data collection, an onsite due diligence visit and remote analysis. During the first stage CDSC completed a questionnaire designed by Thomas Murray to efficiently gather all the relevant information on CDSC. This included copies of the legal framework governing CDSC's operations and any other supporting material needed for the assessment.

The data was analysed, and a preliminary report was generated prior to conducting the due diligence visit in October 2019. During this visit, Thomas Murray held discussions with all of CDSC's internal departments, market participants, the stock exchange, the regulator and the external auditor. The third stage consisted of analysis of the data collected in the first two parts of the assessment. The findings from this process are documented in this paper.

This document follows the structure of the PFMIs as published by CPMI-IOSCO. Accordingly, there is a section for each Principle. Each section contains a summary of the Principle, which is a high-level description of CDSC's arrangements in the context of the topic addressed in that Principle.

The main component of each section is a complete analysis of the respective applicable Key Considerations, which includes a description of CDSC's arrangements in accordance with each applicable Key Consideration. CDSC have also been provided with an assessment of the degree of observance, the relative weight within the Principle and an independent gap analysis. The latter reflects the shortcomings or issues that prevent CDSC from completely observing the Key Consideration. Thomas Murray has provided sufficient explanation of why there is a gap, and where possible, included an example of best market practice. Additional recommendations aimed at helping CDSC prioritise the gaps found in each Key Consideration were provided in relation to the potential negative impact (in terms of loss and damage to the market, CDSC, participants and CDSC's shareholders) of an event taking place due to the gap identified and the urgency to address that gap. The intention of this stage is to assist CDSC in efficiently allocating priorities on the gaps identified in this report.

About CDSC

The Central Depository & Settlement Corporation Limited (CDSC) is a limited liability Company, operating on a for-profit basis, incorporated in March 1999 under the Companies Act and commenced operations in November 2004. CDSC operates under the provisions of the Companies Act, the Central Depositories Act 2000 and the Central Depositories (Regulation of Central Depositories) Rules 2004.

CDSC is one of two CSDs in the market, the other being the Central Bank of Kenya (CBK) which provides custody services for government securities. CDSC is the CSD responsible for providing central clearing, settlement and depository services in respect of equities and corporate bond transactions carried out at the Nairobi Stock Exchange (NSE). The Kenyan market does not operate a formal OTC segment. CDSC provides a centralised system for the transfer and registration of securities in electronic form, with no physical securities held under CDSC's custody. The dematerialisation of equities and corporate bonds quoted on the NSE was completed in November 2013 and November 2014 respectively.

CDSC is 50% owned by the Capital Markets Challenge Fund Ltd, 22.5% by the NSE, 18% by the Association of Kenya Stockbrokers Nominees Ltd, 7% by the CMA Investor Compensation Fund and 2.5% by the Uganda Securities Exchange.

CDSC implemented a new core Central Depository System, developed by Perago Financial Systems Enablers Limited, in October 2019. The new CDSC system is interfaced with the RTGS system (KEPSS) of the CBK for the purposes of securities and funds transfer on a DVP settlement basis. A T+3 settlement cycle, operating under BIS Model 2 is in place, whereby cash entitlements are netted at the Central Depository Agent (CDA) level and transferred directly between the accounts of designated settlement banks at the CBK. Securities are transferred on a gross basis directly between client accounts at the CDSC once, and only once, confirmation of cash settlement has been received from the CBK.

CDSC operates 2 daily settlement batches at 11.00am and 1.30pm each day, with cash and securities movements being processed on a fully automated, near-simultaneous basis. The new CDSC system is SWIFT-enabled, but presently CDSC does not use SWIFT for communications with infrastructure entities or participants. Settlement messaging between CDSC and CBK is conducted over a secure VPN link.

Client securities are held in CDSC under CDA nominee names followed by designated account numbers. By law, the securities of clients must be segregated from any proprietary securities of CDAs. Both omnibus and segregated client account structures are permitted. In practice, client accounts tend

to be in segregated form, however, based upon the account naming convention, CDSC are not aware of the underlying client details attached to each account.

CDSC has no direct links in place with foreign FMIs.

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.

Principle Summary

The key legal concepts for the capital markets are reasonably well embedded in Kenyan national law and regulation, but in some cases the coverage is vague and open to interpretation. The key concepts that are clear in law and supported in the local regulation include rights and interests in financial instruments, netting, safekeeping, immobilisation, dematerialisation and segregation. However, the key concepts that are partially covered, include finality, delivery-versus-payment, free-of-payment, and default procedures. It must be mentioned that in many of these cases, as detailed further in Key Consideration 1, there are still legal gaps.

The Capital Markets Authority (CMA) reviews for approval all CDSC rules, investing them with legitimacy; and market consultations are conducted for rule changes. CDSC makes available through its website the relevant laws and regulations for its activities. CDSC also advises participants electronically for any change in the pertinent regulation and resolutions.

CDSC's business is almost entirely based in Kenya, and therefore only the Kenyan legal and regulatory framework is pertinent. However, CDSC has never requested the view and/or analysis from an independent party regarding the enforceability of its rules, processes and procedures in the jurisdiction that applies to them. Nevertheless, CDSC has a high degree of confidence that its rules, procedures and contracts, related to its operations, are enforceable.

Key Consideration 1.1:

The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

Description

Kenyan legislation provides some basis and legal certainty for material aspects that concern the activities of CDSC, with most key concepts either being solely covered or supported by the Central Depositories Act of 2000 and Capital Markets Regulation, or in the CDSC Rules which hold full legal backing in accordance with section 5A of the Central Depositories Act. However, there are a few gaps and vagaries within the legal framework that need to be addressed.

The establishment of CDSC as a joint-stock company, overseen by the Capital Markets Authority (CMA), is defined under Central Depositories Act 2000.

The following key concepts have been defined in the national law or regulation:

Finality

Finality and irrevocability of securities transactions is defined in Rule 70 of the Central Depositories Rules 2011, as follows:

- Upon completion and settlement of the eligible securities and Settlement payment therefor title to the securities shall transfer on settlement date and the transaction shall be final and irrevocable.

Although finality is included in the rules, some ambiguities exist over the exact timing of finality on settlement date (explained further in Principle 8 on Finality). The NSE trading rules stipulate the circumstances under which a trade may be cancelled, however, irrevocability of securities transactions is not clearly defined in law or CDSC rules, nor is a reference provided in the NSE Trading Rules definitions.

Finality and irrevocability of cash payments is defined in Section 9 (2) and (3) of the National Payment System Act, 2011 as follows:

- A settlement that has been affected by payment of money or by means of an entry to the credit of the account maintained by a settlement system participant in the Central Bank settlement system or a designated payment system shall be final and irrevocable.
- An entry to or payment out of the account of a designated payment system participant to settle a payment or settlement obligation in a designated payment system shall be final and irrevocable.

This is also reinforced by the Kenya Electronic Payment and Settlement System (KEPSS) rules 6 as below:

- Payment instructions in KEPSS are deemed to be final and irrevocable once the sending participant's account is debited and the receiving participant is credited with the amount specified in the payment instruction.

Rights and Interest in Financial Instruments

Section 20 of the Central Depositories Act, 2000 clarifies that the central depository or its nominee company shall not be deemed to have an interest in relation to the book-entry securities which are registered in its name; and that it shall be deemed to be a bare trustee.

The rights and obligations of securities holders are defined within the Depository rules. Section 15 of the depository rules state rights to the securities as:

- Securities deposited into the Central Depository shall be held in custody by the Central Depository in trust for the beneficial holders.
- A transfer of securities into the Central Depository by a depositor shall not convey any transferor's beneficial interests over the securities deposited.
- The beneficial owner shall be entitled to all rights and benefits and be subjected to all liabilities in respect of his/her securities held by the Central Depository.

Further, the rights on securities are set out in clause 37 of the Central Depositories Act, 2000. It stipulates that a depositor of any book entry security whose name appears in the record of depositors shall be entitled to all rights, benefits, powers and privileges and be subject to all liabilities, duties and obligations in respect of, or arising from such security (whether conferred or imposed by the Companies Act, or such other written law or the deed of establishment or the memorandum or articles of association of the issuer, or otherwise) as if he were a member or debenture holder registered in the appropriate register, as the case may be, maintained by the issuer of such security, pursuant to the said Act or any other written law.

Clearing:

Legal grounds for CDSC to conduct clearing of bilateral operations can be found in the Central Depositories Act, Section 59 (B). The Act states that the depository may conduct clearing and settlement of securities contracts and making adjustments of a contractual obligation arising out of a securities contract.

Safekeeping:

Section 8(c)(i) of Central Depositories Act indicates that a central depository shall ensure adequate measures to prevent and mitigate fraud or any other system manipulation mechanisms. The Act further states that it ensures safe custody of certificates and other documents deposited with the central depository; guard against falsification of records or accounts required to be kept or maintained under the Act and ensures a proper and efficient system for tracing, verification, inspection, identification and recording of all transactions with the central depository. Section 18 of the same Act establishes, that a central depository may, by notice, prescribe a date following which no member of a securities exchange may receive a certificate representing an eligible security merely for safe custody.

Immobilisation

The legal grounds for immobilisation are set in Section 13 of the Central Depositories Act which states that a securities exchange may, from time to time, after consultation with a central depository, prescribe that any security listed or quoted or proposed to be listed or quoted on the securities exchange be immobilised by depositing such security with the central depository. Section 17, under the same Act stipulates further provisions on immobilised securities as follows:

- No person shall, after the immobilisation date, trade any eligible security on a securities exchange unless such security has been deposited with a central depository
- An eligible security may, at any time after the immobilisation date, be deposited by a depositor with the central depository subject to such additional fees, if any, as may be imposed under the CDS rules.

Dematerialisation

The concept of dematerialised securities is clearly defined in the Central Depositories Act. Section 24 provides the legal grounds for the existence, circulation and acknowledgment of dematerialised (non-documentary form) securities. Section 24 sets out the provisions for dematerialisation of securities. Section 25 of the same act stipulates that on or after the dematerialisation date, every issuer of a security prescribed as a dematerialised security shall:

- surrender the physical register of members or debenture holders, as the case may be, to the central depository; and

- provide information to the central depository of any member or debenture holder who appears in the appropriate register as a holder of a certificate not already immobilised by the central depository. Further, section 5 of the Central Depository Procedures describes the procedures to be complied with by the issuer with respect to dematerialisation

Delivery versus payment

Delivery-versus-Payment (DVP) and Free-of-Payment (FOP) arrangements are not defined directly in the law. However, Rule 68 of the Central Depositories Rules makes provisions for DVP as the settlement mode. According to the rule, upon settlement of a transaction, the transferor's securities mode account is debited with the eligible securities being the object of the transactions and the CDA's settlement account is credited with the corresponding payment. Simultaneously, the transferee's securities account is credited with the securities being the object of the transactions and the CDA's settlement account is debited with the corresponding payment.

Free of payment

FOP transactions are referred to as Private Transactions in the Capital Markets Act. Rules 31 and 32 in the Central Depository rules restrict FOP trades without the prior approval of the regulator. The rules stipulate that transfers of eligible securities between custodians as well as between custodians and their clients where there is no change in beneficial ownership, donations, hereditary transfers (subject to relevant approval), sales on attachment, foreclosures on execution, pledges, free deliveries, loans and other dispositions of eligible securities shall be effected within the CDSC through CDAs with prior approval of the Authority pursuant to Section 31 of The Capital Markets Act.

Netting

Netting is only applicable for cash settlement within Kenya. The concept of netting is defined in the National Payment System Act, 2011 as the determination of the net payment obligations between two or more settlement system participants within a payment clearing house or the determination of the net settlement obligations between two or more National Payment System participants within a settlement system. This is also incorporated in Rule 69 of the Central Depositories Rules, 2011 and backed by section 10 of KEPSS Rules and Procedures.

Segregation

Section 31 and 32 of Capital Markets (Conduct of Business) (Market Intermediaries) Regulations, 2011 dictates that all securities and other property held or received by a market intermediary on behalf of a client in connection with its regulated activity shall be segregated and accounted for separately. Furthermore, a market intermediary shall keep such books and accounts as are necessary to show all its dealings with a client's securities and other property held or received by it on behalf of a client; and distinguish securities and other property it holds or has received on behalf of each client from its own

securities and property and other securities and property held or received by the market intermediary. Rule 15 (1) of the Central Depositories Rules, 2011 stipulates that Securities deposited into the Central Depository shall be held in custody by the Central Depository in trust for the beneficial holders. Also Rule 22 of the Central Depositories Rules, 2011 requires CDAs to segregate their client accounts from the accounts in which they hold beneficial ownership of securities. Section 38 of the Central Depositories Act also covers segregation by restricting central depository to purchase, acquire, or otherwise deal in, book-entry securities as principal other than for such purpose and in such manner as may be permitted by the Authority under CMA rules made under this Act.

Default procedures

Although Section 5A, 5B, 5C and 5D of Central Depositories Act lays down the process and responsibilities of CDSC in case of default of a CDA, the legal framework does not protect assets in case of default of its custodian bank. The legislation relating to the insolvency of natural persons and incorporated, and unincorporated bodies is covered by the Insolvency Act, 2015, however, the type of legal grounds that CDSC has to enjoy to enforce its interest or ownership rights in assets held in custody in case of the default of a custodian are not explicitly covered and are lacking in detail.

Protection of creditors' interests in the liquidation process is not covered in the Insolvency Act, 2015 and there does not appear to be any legal protection of CDSC's assets held with banks, in the event of insolvency of said bank. In the event of a bank's failure, Kenya Deposit Insurance Corporation (KDIC) is mandated to provide deposit insurance coverage of up to KES 100,000 to each depositor of a member institution. The insurance covers all types of deposit accounts. However, protected payment is restricted to one depositor per institution. Where a depositor has more than one account in an institution, the accounts are consolidated for settlement as one claim subject to the maximum protected limit of KES 100,000. All seven custodian banks are the members of KDIC.

Key Consideration 1.2:

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

Description

CDSC's internal rules, procedures and contracts are deemed to be clear and consistent with local legislation and regulation. Section 5A of the Central Depositories Act establishes that the depository must provide rules covering for:

- a) registration or transfer of securities;
- b) settlement of transactions involving securities;
- c) the proper regulation and efficient operation of the clearing facility which it operates;
- d) its default process;
- e) the establishment of a settlement guarantee fund;
- f) the qualifications for appointment of central depository agents;
- g) the proper regulation and supervision of its agents;
- h) the exclusion from participation as central depository agents of persons who are not fit and proper;
- i) the expulsion, suspension or disciplining of a central depository agent;
- j) the carrying on of the business of a central depository having regard to the interests and protection of the investing public, and;
- k) such other matters as the Authority may direct.

In addition, section 6 of the same act states that any changes to CSD rules, require the approval of CDSC's Board of Directors and must be submitted to the CMA for approval. The CMA will, within thirty days of receipt of a notice, notify the central depository of its decision regarding any proposed amendments, and where it does not approve the same, shall specify the reason for its decision. Furthermore, the CMA may, after consultation with the central depository, amend the CDSC rules by written notice, specifying the amendments and the dates on which such amendments will come into force.

CDSC has stated that changes made to its rules and by-laws could take, on average, six months, as the authorities need to sign off on any changes but there is nothing in the regulation or policies that stipulates such a term. The actual speed of changes will depend on the degree of importance/urgency attached to the change that is going to be introduced.

CDSC rules are reviewed by the depository every time changes in regulation are introduced or when market participants make recommendations about particular aspects during their onsite inspections or on ad-hoc basis.

Procedures, including estimated timelines and responsible persons from the Legal Department, for the preparation and review of contracts, agreements, SLAs, rules, regulations, policies and procedures

are stipulated within the CDSC Legal Department Policies and Procedure Manual. However, CDSC has not requested independent legal opinion on the enforceability of its rules, procedures and contracts.

Key Consideration 1.3:

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.

Description

CDSC has indicated that it articulates the legal grounds for its activities via direct circulars to relevant participants. The CSD also advises its participants of any changes or adaptations to the legal basis or the rulebook through announcements on the website, emails to members and press releases.

CDSC has a “Legal Framework” section on their website which is divided into four sub-sections: Legal and Regulatory Framework, Rules and Procedures, Central Depository Act and CDA Requirements. All the information is available in English.

- Regulatory Framework: This section contains the introduction of legal framework and lays down the basis of CSD operations in Kenya.
- Rules and Procedures: This section contains CSDC's Rules, Guarantee Fund Rules, CDS Operational Procedures and notices issued by the depository.
- Central Depository Act: In this section of the website, a pdf copy of Central Depository Act is available to download.
- CDA Requirements: CDA Application Form and CDA Compliance Policy documents are available in this section of the website.

Prior to implementing changes to CDSC procedures, these are announced and discussed with market participants. Occasionally, public consultation is conducted, although this is not the general rule for all changes. However, CDSC seems to be pro-active in socialising its projects to market participants through round tables and similar mechanisms.

Nevertheless, some participants have expressed concerns in relation to changes / amendments and have asked for rules, procedures and contracts to be clarified accordingly.

Key Consideration 1.4:

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.

Description

CDSC does not have any active contracts with FMIs in jurisdictions outside Kenya.

Key Consideration 1.5:

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

Description

CDSC does not operate in multiple jurisdictions.

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.

Principle Summary

CDSC's governance arrangements are defined in their Articles of Association (AoA) and the Board Charter. The governing rules and regulations are documented in the Capital Markets Act, the Central Depositories Act, and the Capital Markets (Corporate Governance) (Market Intermediaries) regulations, 2011.

CDSC has a stringent Board Charter in place. The document outlines the roles and responsibilities of the Board of Directors, the criteria for prospective Board members, and the relevant rules and procedures in the case of a conflict of interest. The management charter contains the roles and responsibilities of the management team which has representation from every department. The Board assesses management annually via an appraisal process which involves key performance indicators (KPIs) for each department head.

There is a comprehensive Enterprise Risk Management Framework containing the definition, categorisation and analysis of eighteen potential risks that may affect CDSC. It also contains a risk-tolerance policy and explains CDSC's tolerance position against various specific categories, including guarantee fund liquidity, asset commitment risk and general business risk. There is further clarification on risk appetite in the CDSC Risk Appetite Statement, which also contains both a general risk adversity statement and appetites for specific risks.

CDSC's four committees are detailed in the Company Secretarial; Legal, Risk and Compliance Department Policies and Procedures Manual, and aim to support the Board on various issues under their respective remits. Ad hoc committees are also put together for specific projects.

Key Consideration 2.1:

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.

Description

The purpose and objectives of the company are laid out in CDSC's Articles of Association, of March 1999. Article 3 provides the objectives for which the company was established, stipulating that CDSC should 'provide central clearing, settlement and depository services for securities whether held in electronic form or otherwise and to provide all services which may reasonably be provided by a central depository system'. The AoA proceed to elaborate on the mechanisms that CDSC might employ to achieve these objectives.

The Central Depositories Act, 2000 (section 59D) stipulates that the CMA may revoke a licence granted to a central depository if it 'is operating in a manner detrimental to the public interest'.

The CDSC Board Charter stipulates that the composition of the Board shall reflect the percentage of shareholding of the Parties except in the case of the Uganda Stock Exchange (USE) and the Dar Es Salaam Stock Exchange (DSE – Tanzania) (no longer a part owner) and shall be based upon the respective share subscription of the Parties to the Company.

CDSC receives feedback from participants via informal meetings and through CDA Questionnaires, where it asks about areas of concern in dealing with CDSC. However, this is the only question of the twenty included that focuses on feedback regarding CDSC.

There is a Risk Appetite Statement in place which mentions financial tolerance levels in relation to different risk types and the investment policy. Inside the Enterprise Risk Management (ERM) framework there is also a mention of a low risk approach to investment. KPIs and KRIs are in place for specific key risks and activities including ICT, Legal, Settlement, Financial and Operational, however, there is no explicitly documented companywide financial stability objective in place.

Key Consideration 2.2:

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.

Description

CDSC is governed by the Capital Markets Act, the Central Depositories Act and, at a more general level, the CMA. The Capital Markets (Corporate Governance) (Market Intermediaries) regulations, 2011 sets out stringent requirements for Board composition, roles of Board members, roles of the board committees and board meetings. The regulations also have rules on conflicts of interest; misuse of position; misuse of information; integrity of records and transactions; confidentiality; fair and equitable treatment and insider loans.

CDSC also has an in-depth Board Charter in place which details similar requirements, namely: board composition; roles and responsibilities; powers of the board; meetings; and potential conflicts of interest.

The ERM Framework states in section 12.2.2 that risks which are identified as 'high' or 'medium' are escalated to the Board for action and guidance. The framework also states that the investment policy requires that funds are invested in tier-1 commercial banks or treasury bills and that no single institution should hold more than 20% of investments without Board approval, and that any more general deviation from the investment policy is approved by the Finance Committee. Board approval is also required for various company changes, for example, new business strategies and initiatives have to be supported with business cases documenting operational and financial viability, which in turn have to be approved by the board for implementation. The Board reviews the status of implementation of CDSC's strategy at least on an annual basis.

The board has four standing committees (finance and staff; audit and risk; business conduct; and technology) and ad hoc committees to aid various projects. However, little information is publicly available on CDSC committees including the members, the roles and responsibilities of each committee and meeting details (this final point is also applicable to the overall board)

CDSC's organisational structure and the relationship between the Board of Directors, the CEO and each internal department is documented via a high-level schematic, however, this does not include

relationships and reporting lines with CDSC's board committees and is not available on the CSD website.

The Capital Markets (Corporate Governance) (Market Intermediaries) regulations, 2011 state in section 15(2)(b) that the shareholders of a market intermediary shall ensure that the board, through general meetings and related forums, is constantly held accountable and responsible for the efficient and effective governance of the market intermediary.

CDSC is held accountable by CMA. The Central Depositories Act, 2000 states that no person shall establish, maintain or hold himself out as maintaining a central depository except with the prior written approval of the Capital Markets Authority, and that a company incorporated under the Companies Act which proposes to operate a central depository shall apply to the Authority in writing to be licensed as such.

Key Consideration 2.3:

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.

Description

The roles and responsibilities of CDSC's Board of Directors are present in the Board Charter, 2014. It contains guidelines for both individual directors and the board. The Chairman is elected every three years by the Directors from among their body, can serve a maximum of two terms and is not eligible for re-election until the expiry of two successful terms. The Chairman's responsibilities are clearly stated in the Charter and include providing independent guidance to the Board of CDSC and chairing both Board and Annual General meetings.

Criteria for prospective Board members is present in 3.3.6 of the Charter but it is only stated that the process for appointments should be 'formal and transparent'.

Board meetings are held a minimum of four times per year (every quarter), with additional 'special' meetings to be organised as necessary. Any member of the Board can request an item is added to the

agenda, which will be set, in consultation with the Chief Executive and Company Secretary, by the Chairman.

Section 6 of the Charter states that directors must disclose to the board, fully and immediately, any real or potential conflict of interest, direct or indirect, which they may have. Section 4.5 also states that a conflict of interest register must be kept and maintained, where any conflicts of interest declared by directors are recorded. The Charter documents options to be considered in the case that a conflict of interest arises, namely: refraining from voting, refraining from discussion and in the case that the conflict is more substantial, exclusion from that portion of the meeting.

The Board is reviewed externally every year, currently by The Institute of Certified Public Secretaries of Kenya. All directors present on the Board must rate the other directors' performance as part of this process. An annual board performance review is made publicly available via the CDSC website.

Key Consideration 2.4:

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).

Description

According to the AoA, the board must comprise of not less than three but not more than eleven directors. There are currently nine members but only five (a simple majority) are needed to make a decision.

The definition of an independent director is stated in section 2 of The Capital Markets (Corporate Governance) (Market Intermediaries) Regulations, 2011. The Regulations also state in section 3.(1)(b) that at least one third of the Board must be made up of independent and non-executive directors. The positions of chief executive officer (CEO) and chairman of the board are not held by the same person. More than 80% of the Board is currently made up of non-executive members, and more than 30% by independent members.

The presence of independent directors is complemented by the involvement of several executive members. Executive members bring insight on day-to-day operations of CDSC, but they do not account for a controlling majority of the Board. This ensures the collective judgement remains

balanced. This point is emphasised by the representation of participants, shareholders and other infrastructure on the board.

The board contains members with an advanced level of expertise in finance; economics; IT systems; communications and risk management, but a low level of expertise in human resources; domestic law and regulation; and international law and regulation. It is stated in section 3.3.6 of the Board Charter that appointments to the Board are considered based on criteria to demonstrate their adequacy, including: crisis management skills and financial and capital markets literacy.

CDSC provides both a fixed monetary remuneration per meeting and a bonus to Board members to ensure they can be retained, with the bonus paid between 20% and 29.9% of fixed remuneration.

Key Consideration 2.5:

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.

Description

The roles and responsibilities of CDSC's management team are clearly defined in the Management Charter. The Charter clearly outlines the responsibility and whom each role reports to for the following: CEO, Head of Legal, Compliance & Company Secretary, Head of Information Communication and Technology (ICT), Internal Audit Manager, Risk Manager, Head of Finance and Administration, Head of Operations and the Head of Human Resource and Corporate Affairs.

All departments within the organisation are represented in the management team which the Chief Executive leads. Management decisions reached in team meetings are communicated via the respective heads of departments and/or the Chief Executive's Office. Matters pertaining to policy making and amendments are deliberated on by the management team before presentation to the relevant committee. There is also an annual strategy review in August which the heads of each department must attend.

Team members are part of the Management Team for as long as they serve as a head of department. It is stated in the Charter that adequate staffing as per the approved organisation structure must be

observed at all times to ensure departments have enough resources to properly distribute the workload and achieve set objectives.

A variety of different channels are used for communication, including internal memos, emails, chat engines, telephone calls and a short messaging system.

Each departmental head is responsible for defining their departmental resource requirements. The budget, approved by the Head of Finance, is communicated to management within 5 days of Board Approval.

The CDSC Board assesses senior management annually via an appraisal process. All managers are assessed individually via KPIs and the CEO is assessed by the Chairman of the Finance Committee. The KPIs for management cover; strategic objectives, strategies, specific activities and metrics are stipulated in order to quantify performance.

There are in-depth job descriptions for all management roles containing the various required qualifications for each. However, the experience, skills and knowledge requirements could be better detailed.

The HR Policy Manual states in section 5 that the Finance and Staff Committee shall be responsible for the recruitment of all heads of department and managers in consultation with the Chief Executive and will make up the interview panel for such recruitments. The manual also documents the management appraisal process which includes goal setting, progressive feedback and an annual review. Section 11.2.2 states that managers must have: full participation in the performance appraisal process; review quarterly and annually work plans for direct reports; establish individual goals in consultation with individual staff; support and develop staff; provide an enabling environment for staff to Excel; and ensure poor performance is identified and dealt with consistently. There is also a training needs assessment with documented procedures to identify company gaps and future skill requirements which is approved by the Finance and Staff Committee.

Key Consideration 2.6:

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.

Description

CDSC launched its Enterprise Risk Management Framework 2.0 in March 2019 which contains well documented procedures. It includes the risk management process, risk management tools and techniques and policy administration.

Section 7 contains a comprehensive categorisation and definition of 18 potential risks that could present themselves to CDSC, and the appendices contain analysis of these risks. For example, mitigation of political risk includes CDSC having insurance against several potential loss scenarios, including property sabotage and terrorism. Each risk also has key risk indicators to monitor the emergence of the respective risk.

The document contains a risk-tolerance policy and explains CDSC's tolerance position against various specific categories, including guarantee fund liquidity, asset commitment risk and general business risk.

There is further clarification on its risk appetite in the CDSC Risk Appetite Statement, which contains both a general risk adversity statement and appetites for specific risk categories. The Board are responsible for determining and approving the risk strategies and appetite. In addition, the risks enumerated in the risk registers are supported with a risk appetite statement, tolerance and a key risk indicator. Where the risk exposure exceeds the appetite, the risk owner must provide risk mitigation action plans to bring the risk to within CDSC's specified appetite. Management are responsible for implementing approved risk strategies and designing policies to identify, measure and mitigate the risks in accordance with the set appetite. CDSC has a low risk appetite and tolerance towards the guarantee fund and the statement contains steps to ensure this is adhered to. The Risk Appetite Statement itself is reviewed annually together with the review of CDSC's strategy risks.

In section 5.0 of the ERM Framework, it is stated that the policy shall be reviewed every two years, however, an immediate review of the policy would be done if there is a material change in CDSC systems and processes, or; the organisation undergoes a major change in strategy or ownership structure. The review of the policy is initiated and coordinated by the Officer in charge of risk.

CDSC's committees are detailed in the Company Secretarial; Legal, Risk and Compliance Department Policies and Procedures Manual; and each committee has its own Terms of Reference Charter. The Business Conduct Committee is established under Rule 42 of the CDSC Rules and is mandated to recommend the adoption of a risk management policy to the Board of Directors, monitor the operations relating to risk management issues (including ensuring the enforcement of the risk management policy at all levels of the organisation) and monitor the operations relating to the

guarantee fund. They must also hear complaints from CDAs claiming to be adversely affected by a CDSC decision.

The Audit and Risk Committee is mandated to fulfil its oversight responsibilities, including: the integrity of the company's financial statements and financial reporting process; the compliance of CDSC with legal and regulatory requirements including disclosure controls and procedures; and assessing and managing CDSC's risk issues.

There is also a Technology committee which oversees technology matters and a Finance and Staff Committee responsible for oversight of finance and procurement, as well as some staff matters.

Key Consideration 2.7:

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.

Description

CDSC gathers the views and interests of participants (direct and indirect) and stakeholders through public consultations, informal channels and user groups, although there are no standing CDSC user groups that meet on a periodic basis, only those that are set up for specific projects. Views of CDSC can also be expressed through the CDA questionnaire, but only in the final question in section E.

CDSC and the CMA both state it is official procedure for changes to Rules and Fees to require consultation prior to regulatory approval. Such major decisions are disclosed during general meetings, via newsletters/emails, on the website, via physical mail and through the local media. However, it has been noted that although major decisions and rule changes are provided to market participants, the level of decisions provided publicly is lower placing much of the burden of sharing market information on the participants themselves.

Principle 3: Framework for the Comprehensive Management of Risks

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

Principle Summary

CDSC has a comprehensive and documented Enterprise Risk Management framework in place. The ERM framework stipulates the methods by which risk is identified, monitored and managed and covers all departments. CDSC has appointed a designated risk officer to develop the risk model.

The CSD has identified the risks it is exposed to by performing internal and external audits, analysing processes and procedures, and through feedback received from participants. CDSC has an Audit and Risk committee comprising of board members, which is assisted by reporting from the management team and the risk department. Risks are split by department and every department has a risk champion who is responsible for identifying the risks associated with their department. On an annual basis, every department is required to prepare or review the risk register and include significant risks, preventive measures to reduce risk occurrence, KRIs for each risk identified and the risk appetite and tolerance for each identified risk. Additionally, the CSD is subject to ad-hoc checks by the CMA.

CDSC has a risk register in place dedicated specifically to risks posed by CDSC to other entities, as well as numerous risks borne by CDSC from third parties embedded within departmental risk registers. The channels for monitoring third party risk compliance and information could be enhanced. CDSC does not have a detailed incentives scheme in place that would encourage participants and their customers to monitor and manage the risks they pose to the CSD.

CDSC has identified scenarios that could prevent the entity from providing its services and has a business continuity plan (BCP) in place, which is tested regularly. However, the CSD does not have formal contingency procedures for its recovery or orderly wind-down.

Key Consideration 3.1:

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.

Description

CDSC has a comprehensive and documented ERM framework in place. CDSC has identified the following risks as relevant risks borne by the entity:

- General business risk
- Strategy execution risk
- Operational risk
- Financial risk
- Credit risk
- Liquidity risk
- Custody risk
- Investment risk
- Legal / Regulatory risk
- Compliance risk
- Systemic risk
- Information and communication technology risk
- Agency risk
- Reputational risk
- Investment risk

- Workplace health & safety risk
- Settlement and depository risk
- Other risk

The Financial Market Infrastructure (FMI) has clear lines of responsibilities to identify and assess the above risks. These are identified by performing internal and external audits, analysing processes and procedures, review of issues log maintained by ICT, client relations, whistle blowers and customer care centre, business impact analysis, seminars, matters raised by regulators and any feedback received from participants.

CDSC uses a risk register and risk matrix to manage risks and the associated controls. All identified risks and related controls are split by department and are in place for each department. On an annual basis, every department is required to prepare or review the risk register and include:

- foreseeable significant risks;
- rating of likelihood and consequence of each risk occurring;
- preventive measures to reduce risk occurrence,
- KRIs for each risk identified; and
- the risk appetite and tolerance for each identified risk.

The risk exposures are reviewed every month and signed off by the risk manager. With the implementation of the new system, there is an increased level of automation with regard to the control process, however, many of the controls are still manual in nature. CDSC advised that there is a proposal to acquire a new risk management system in 2020.

Every department has a dedicated risk champion who identifies the risks associated with their department and identifies each risk as High, Medium and Low based upon the likelihood and consequence of each risk occurring. The respective head of each department and the risk officer sign off the operational risk controls. These are reviewed by the Board annually.

The ERM framework sets clear objectives in terms of managing risk, as well as a series of mechanisms to pro-actively monitor risk. Defined Risk Impact Criteria for all risk categories is included in the ERM Framework, with impact levels being established and categorised in 5 levels from insignificant to catastrophic.

CDSC staff are required to report all incidents that have occurred in their respective departments to the risk department. Monthly reporting is undertaken for each department to the Board and Management. Quarterly reporting is required on the overall management of risks and key risk issues

to the Risk Committee of the Board of Directors. The reports contain recommendations, follow up of recommendations and progress status. CDSC has penalties in place for failure to implement the recommendations within the agreed timeframe.

The ERM document clearly outlines the duties and functions of the Board of Directors, the Risk Committee of the Board, Management team, the risk officer, departmental champions and all employees.

All CDSC staff are trained on a regular basis on the risk management process and its application. At the end of the year-end review, each employee's training needs are identified, and a budget is set aside for internal and external trainings.

The internal audit team follows a risk-based approach and all critical and non-critical processes are audited every year. The audit plan includes planning, fieldwork, reporting and a follow up process. The Central Depositories Act, section 33 requires CDSC to appoint an external auditor at the end of every financial year to conduct an independent operational audit. The scope of the external audit is detailed in the engagement letter. The external auditors engage with the concerned department when conducting the audit. At the end of the audit programme, an exit meeting is held between the internal auditor and the heads of departments to discuss the recommendations, receive clarifications and set a timeline to implement the recommendations. The recommendations are also sent to the CDSC Board and followed up every quarter. A copy of the report detailing the operational capabilities of the CDSC system and its functionalities must be submitted to the regulator within 90 days.

CDSC has general insurance policies in place for various insurable risks including crime and civil liability, directors' and officers' liability, business interruption, property sabotage and terrorism etc.

Key Consideration 3.2:

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

Description

Participants are notified of key risk related information through circulars, CDSC website (partially) and in contracts. The CDSC website is updated with the latest Central Depository Rules, Operational

Procedures and Guarantee Fund Procedures, however, provides little in the way of risk-related information.

Before any change is proposed, CDSC conducts a socialisation session with its participants. These are then issued to the public and market infrastructures for public consultation before submitting the same to the regulator for approval. Training is provided to all participants before a change is implemented.

CDSC does not provide any kind of positive incentives to ensure that participants manage and contain the risks they pose to the CSD. Some negative incentives are in place, which include penalties and temporary suspension of licences for participants in case of non-fulfilment of securities settlement obligations. The premium added to securities purchased through the buy-in board, which is passed onto the defaulting party also acts as an incentive for CDAs to ensure securities positions are in place prior to settlement deadlines.

CDSC conducts some basic participant monitoring using its annual CDA questionnaire and receives annual financial reports from participants. CDSC Rules stipulate some basic membership criteria, however, they are predominantly reliant on the criteria set by the market regulators to be licensed to operate within the market. In addition to this, CDSC is heavily reliant on the market regulators for ongoing market participant monitoring processes.

Key Consideration 3.3:

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

Description

CDSC has identified various risks that it bears from and poses to other market entities, which are monitored daily through market data (financial indicators, balances and risk exposures) and participant feedback through mostly informal channels. A dedicated risk register focused on the risks CDSC poses to other identities including Account holders, CDAs, CBK, Issuers, Kenyan Revenue Authority (KRA), NSE, Settlement Banks and system vendors is in place covering a variety of risk categories.

Risks posed to CDSC from other entities have also been identified and are embedded within the various departmental risk registers. Monitoring of third-party risk adherence primarily focuses on checks on whether participants have fulfilled ongoing settlement obligations and their debit exposures in relation to their guarantee fund contributions.

The CDSC settlement officers assess the level of the guarantee fund daily to ensure that the fund will be sufficient to cover the settlement obligation in case a CDA defaults. The testing scenarios are detailed in the CDSC Guarantee Fund Rules. These results are presented to the management team and the Board on a monthly and quarterly basis respectively.

Under the tripartite agreement between CDSC, CDAs and the settlement banks, settlement banks are obligated to cover any cash shortfalls of defaulting CDAs as part of the settlement process. However, CDSC does not have documented procedures in place in the event of a settlement bank default.

As part of the CDSC finance investment policy, CDSC assets are held with Tier 1 commercial banks in accordance with specified concentration ratios detailed in the plan. However, CDSC does not conduct any additional monitoring of the financial soundness and non-financial criteria of these commercial banks as part of its investment policy.

CDSC uses redundant networks in place where possible to mitigate the operational risk emerging from exposure to communication (internet) providers and power (electricity) providers.

CDSC assesses the effectiveness of these measures by considering feedback from the regulator and participants, internal and external audit reviews, key performance indicators (KPIs), surveys, whistle blowers etc. The regulator performs ad-hoc checks of the CSD and the CSD is required to submit copies of its audit reports to the regulator.

CDSC has general insurance policies in place for various insurable risks including crime and civil liability, directors and officer's liability, business interruption, property sabotage and terrorism etc.

Key Consideration 3.4:

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

Description

CDSC has identified scenarios that can affect it from providing its core services as part of its documented Disaster Recovery and Business Continuity Plans. These are prolonged power outages, IT infrastructure failure, man-made calamities such as civil unrest, terrorist attacks, natural calamities and epidemics. Further, the FMI has categorised the risks in 2 levels based on their severity.

CDSC has a detailed and documented operational reliability plan in place and include IT security arrangements and checks, systems review, IT contingency plans, monitoring and testing. CDSC has established a down-time tolerance threshold is 0.5% of total operating hours. Over the last 12 months, the FMI's systems up-time was 99.7% of operating hours. The RPO and RTO are documented in the service level agreement and service charter.

The ERM framework sets clear objectives in terms of managing the general business risk, as well as a series of mechanisms to pro-actively monitor it. These include careful oversight of the overall business strategy in the context of the organisation's annual budget, its balance sheet, its profit and loss statement and cash flow. The monitoring also includes ensuring that minimum regulatory capital levels, and a six-month operational expenses reserve are met at all times. CDSC is well capitalised and has healthy financial assets in cash reserves.

CDSC does not have documented plans in place for its recovery or orderly wind-down, although the CSD representatives advised that the entity is very well capitalised, and the possibility of winding down is very remote. In the event the CSD must wind down its operations, there is no plan in place that details how CDSC will continue to provide its critical operations and services or manage / transfer client assets to another entity. The CDSC Board advised that in case capital infusion is required, the shareholders can be called upon as per the shareholders agreement. However, the shareholders are not obliged to provide any additional capital, so this re-capitalisation process cannot be fully relied upon.

CDSC is required to share the recovery and wind-down plans with the regulator, however, currently CDSC only shares the BCP and DR plans. These plans are reviewed every three years.

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 sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two 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 sufficient 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.

Principle Summary

CDSC does not manage cash funds from participants at any stage. As a result, Principle 4 on credit risk does not apply to the Central Depository.

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.

Principle Summary

CDSC does not manage collateral from its participants. As a result, Principle 5 on collateral does not apply to the Central Depository.

Principle 6: Margin

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

Principle Summary

This principle only applies to an FMI which is a central counterparty. As a result, Principle 6 on margin does not apply to the Central Depository.

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.

Principle Summary

CDSC only settles securities transactions in local currency (KES) through a BIS Model 2 DVP settlement cycle over 2 daily settlement batches. CDSC operates a Settlement Guarantee Fund, which is governed under the provisions of the CDSC Rules with supporting process and requirements stipulated within the CDSC Operating Procedures, the CDSC Enterprise Risk Management Framework, the Guarantee Fund Rules, the Guarantee Fund Procedures and the Guarantee Fund Stress Testing methodology. CDA contributions consist of a fixed amount of KES 5 million plus a

risk-based contribution of 20% of each CDA's average three-day rolling net debit obligations over the previous 12 months.

CDSC has relatively strong documentation and control measures in place in relation to the size of the fund, although some gaps exist with regard to the calculation of debit exposures. The fund appears to be of sufficient size in relation to average market conditions and a number of stress scenarios have been identified and tested to ensure that the fund could cope with various unexpected events.

A guarantee fund investment policy is in place, which stipulates concentration limits and eligible investments, but does not make enough use of the Central Bank as a safe and extremely liquid safekeeping facility. CBK is used in determining the banks that are eligible to hold guarantee fund assets, but CDSC does not have a framework in place to perform due diligence, set any additional minimum requirements or conduct an ongoing review process of the chosen banks.

Key Consideration 7.1:

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.

Description

Cash settlement on SD is conducted directly between the accounts of designated settlement banks and, although initiating the process, CDSC does not hold any settlement funds at any point.

CDSC operates a settlement guarantee fund, which has been established in accordance with section 60B and is managed in accordance with section 60C of the Central Depositories Act 2000. The Central Depositories Act states that the Fund shall consist of a variable risk-based contribution, to be determined by the central depository, in consultation with the Authority, and payable by CDAs who are involved in settlement. Contribution requirements are stipulated in the CDSC Guarantee Fund Procedures and include a fixed cash contribution of KES 5 million plus an additional contribution of 20% of the average 3-day rolling debit (buy) obligation over the past 12 months per CDA. Some penalties and other market levies are also added to the guarantee fund.

CDSC only settle in local currency (KES) and the potential sources of liquidity risk, from which the guarantee fund will be utilised are only in relation to failing debit (buy) obligations. The fund will be used to reimburse a settlement bank in the event of a CDA failing to fund its account with its settlement bank by SD+1, or as a result of a shortage of funds on SD of a settlement bank, having not received the required funding from their CDAs. The fund works on a defaulter pays – survivor pays model whereby the contribution of the defaulting party will be used first, followed by non-defaulting parties' contributions. If the full size of the fund is insufficient CDSC will use its own reserves to complete reimbursement.

Each CDA is assigned a settlement limit, with the calculation of said limit being described in the CDSC Guarantee Fund Procedures. Additionally, these procedures include the requirement for CDAs to provide additional cash contributions to the fund by 12.00pm the following day should they exceed their settlement limit. Daily penalties will be issued to CDAs who fail to provide the extra contributions, but aside from that, there are no mechanisms in place to prevent CDAs from building up excessively large debit exposures.

Designated CDSC settlement officers conduct daily assessments of the sufficiency of the guarantee fund in meeting the net settlement obligations of CDAs, as specified in section 14.2 of the Enterprise Risk Management Framework. The daily check is against the Largest CDA net debit exposure, the total net debit obligations of all CDAs and the largest settlement bank exposure.

Quarterly, point-in-time stress testing is conducted on the sufficiency of the guarantee fund and includes identification and measurement of various potential risk exposures along with stress testing scenarios. These are detailed within the Guarantee Fund Stress Testing Methodology, with stress testing reports issued on a quarterly basis. The full guarantee fund framework is reviewed on an annual basis by the CDSC risk and operations departments and is approved by the Board of Directors.

The Guarantee Fund Stress Testing methodology has specified scenario testing involving the default of the largest CDA and the largest settlement bank, however, the Guarantee Fund Procedures only detail the processes to be followed in the event of a CDA funding shortage. There are no detailed procedures for dealing with the default of a settlement bank, who often act as CDAs as well. The CDSC, CDA, Settlement Bank Tripartite agreement (Section 6e) stipulates that a settlement bank will complete payment on behalf of its CDAs if the CDA does not provide the funds, however, no mechanisms or procedures are in place to ensure that a settlement bank has these funds available if required. It is assumed that, should a settlement bank be short of funds, the guarantee fund will make good the payment, but this process is not detailed within the CDSC procedures.

It should be noted that the guarantee fund testing and settlement limit calculations are currently only based on equities transactions and do not include corporate bonds.

Key Consideration 7.2:

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.

Description

CDSC provide CDAs with reports at the end of each day detailing any shortages of securities balances prior to SD and the system will automatically remove any trades from the settlement batch on the morning of SD should there still be a securities shortage. If securities are not in place prior to the 2nd daily settlement batch, the buy-in process will be initiated. This process ensures that trades will not be sent for settlement in the event of a shortage of securities.

CDSC have no access to monitor the cash accounts of CDAs or settlement banks to ensure that sufficient funds are available and are reliant on settlement banks informing CDSC of any CDA cash shortages by 10.15am on SD. Upon receipt of this information, CDSC will ensure that the related securities will be posted to a separate CDSC account during the settlement batch and will not be released until the settlement bank confirms receipt of funds from the CDA. Should the CDA not fund the Settlement Bank by SD+1 (T+4) then CDSC will use the guarantee fund to reimburse the Settlement Bank on T+5. This means that settlement banks are exposed to 2 days of cash deficits in the event of CDA funding shortages.

The Tripartite agreement and the daily guarantee fund monitoring helps ensure that non-defaulting CDAs will receive funds on SD and that the guarantee fund is of sufficient size to ensure settlement banks are reimbursed by T+5.

Settlement banks have access to the CBK intraday liquidity facility, however, details of how the facility can be accessed and the scenarios under which it can be used have not been provided. CDAs and CDSC are not able to access this facility.

Key Consideration 7.3:

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.

Description

CDSC operate two daily settlement batches to help ensure settlement occurs on contractual settlement date and, as mentioned previously in this principle, has mechanisms in place to ensure that settlement occurs on SD in the event of a CDA cash shortage. In accordance with the documented CDSC Risk Appetite Statement and CDSC's Risk Management framework, the guarantee fund must ensure that it holds adequate liquid resources to meet the fund settlement obligation of the CDA with the largest 3-days payment obligation.

For the period 1 January 2019 – 31 October 2019, CDSC's daily guarantee fund exposure testing showed that there were 5 occasions whereby the 3-Day debit exposures of all CDAs combined were above the level of the guarantee fund (equating to 2.4% of the trading days during 2019). There were no days, during which the largest CDA exposure or the largest Settlement Bank exposure were greater than the value of the guarantee fund. Throughout the year 2019 (1 January to 31 October), the average 3-day rolling exposures as a percentage of the Guarantee Fund are as follows:

Table 1: Average 3-Day Rolling Exposures

Largest CDA Exposure	23.71%
All CDA Exposure	44.81%
Largest Settlement Bank Exposure	24.80%

This indicates that in practice, the CDSC guarantee fund is of sufficient size to cover the default of all CDAs in almost all cases under normal market conditions.

As noted in KC 1, the guarantee fund requirements and testing are currently only based upon equities related obligations and do not include corporate bonds. For the same time period in 2019, corporate bond net debit obligations have only accounted for approximately 1% of the total net debit obligations of all CDAs throughout the year. However, this can be slightly misleading as corporate bonds were only traded on 27 of the 210 trading days during 2019 and some larger exposures were noted on these days. The largest 3 individual days' trading of corporate Bonds during the year gave net debit exposures of 50.45%, 39.15% and 38.21% of the value of the total guarantee fund on each given day. The largest 3 day rolling net debit exposure relating to corporate bond trading during 2019 was valued at 69.68% of the total value of the guarantee fund, which presents a large, unaccounted for risk in the event of a CDA default.

Quarterly stress testing of the fund is carried out following provisions within the documented guarantee fund methodology. Data collection and analysis for the testing is conducted manually, meaning that CDSC are currently unable to conduct more frequent stress testing. During the most recent 2 stress tests it was observed that the fund would be sufficient to cover the default of all CDAs. However, due to very high levels of concentration between the two largest CDAs (67% of transaction value processed through Standard Chartered during 2019), the contributions of these CDAs would not have covered their own default and significant loss sharing would be experienced.

Four additional scenario tests are conducted during stress testing of the fund to compare against historical peak and percentage losses over all securities and those held by CDAs. In each scenario, the full size of the fund was sufficient to cover total losses.

Key Consideration 7.4:

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.

Description

This key consideration does not apply to CDSC as it is not a CCP.

Key Consideration 7.5:

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.

Description

A CDSC Guarantee Fund Investment Policy is in place, detailing the risk tolerance, return target, eligible investment assets, concentration limits and other restrictions and requirements. The investment policy is reviewed by the fund administrator at least every two years. CDAs may only provide cash contributions to the guarantee fund, which can be invested in the following instruments:

- Government securities
- Tier 1 commercial bank deposits (fixed and call)
- Commercial papers
- Other money market instruments as approved by the finance committee

Concentration limits are in place, whereby exposure to a single financial institution will be limited to 20% of the fund's assets. The fund administrator may invest up to 40% of the fund's assets in Treasury bills subject to approval by the Finance Committee.

As of 30 September 2019, 83.29% of the guarantee fund assets were held with 5 commercial banks, as fixed deposits and in current accounts, the remaining 16.71% being held as Central Bank T-Bills. It has been advised that bank, fixed deposits can be liquidated within 24 hours with no penalties and T-Bills can be liquidated on T+1 indicating that accessing the funds would not cause a significant problem, but if same day payment was required, e.g. in the event of a settlement bank default, it is not clear exactly how quickly funds could be utilised.

CDSC does not have access to any central bank liquidity facilities either on an intraday or overnight basis.

Banks, including some of the more active market participants, assume the role of CDA and settlement bank, as well as holding a portion of the CDSC guarantee fund as fixed deposits. It is unclear as to the level of protection of the guarantee fund assets, should one of these banks default or go into insolvency. This may exacerbate any issues whereby the fund may be required to cover debit obligations of said bank, however, any assets of the fund, held with the bank may be either temporarily or permanently unavailable, thus reducing the ability of the fund to cover the default.

Key Consideration 7.6:

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.

Description

Key Consideration 7.6 does not apply to CDSC as it has no access to additional liquidity facilities such as committed lines of credit.

Key Consideration 7.7:

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.

Description

CDSC Guarantee Fund Investment Policy stipulates that guarantee fund contributions may be held with Tier 1 banks, as fixed or call deposits as well as in Government Securities which are safekept with the CBK. The CBK determines the criteria for banks to be classed as Tier 1, which includes value of assets and financial requirements. This provides some assurance to CDSC that these banks are sufficiently robust and low-risk, however, CDSC does not conduct any additional testing or analysis on these banks and their ability to liquidate funds in good time.

The Investment Policy also stipulates that up to 40% of the guarantee fund assets can be held in Treasury Bills, however, presently only 16.71% of the fund's contributions are held in CBK T-Bills and no funds are held in an account with the CBK. Therefore, there is no requirement to hold any guarantee fund contributions at all in government securities, which are seen as virtually risk-free assets.

Key Consideration 7.8:

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.

Description

CDSC does not hold accounts with the Central Bank for settlement purposes or to hold guarantee fund contributions. CBK provides an intraday liquidity facility, which is available to settlement banks, although CDSC does not have access to this facility.

Key Consideration 7.9:

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.

Description

As mentioned previously in Principle 7, CDSC conducts daily testing of the size against the 3-day rolling net debit exposure of the largest CDA and the total exposure of all CDAs. However, this test only includes the exposures relating to the equity market and does not include bond trades, which, although a small proportion of market activity, have been shown to significantly distort the figures on occasion. The results of the daily tests are presented to senior management monthly and the Board on a quarterly basis.

A quarterly, point-in-time stress test is conducted by the risk department, which tests the size and composition of the fund against various scenarios. Detailed test reports are compiled and reported to the Business Conduct Committee and the Board of Directors. A documented guarantee fund stress

testing methodology is in place, which is supported by the guarantee fund procedures and the risk management framework and is reviewed on an annual basis.

The stress testing methodology has identified the following guarantee fund risk exposures:

- Credit Risk
- Market (Price) Risk
- Liquidity Risk
- Wrong-way Risk
- Legal Risk
- Operational Risk

Each risk has been defined in the methodology and detailed risk measurement criteria and modelling is in place, using a 99% confidence interval. Several testing scenarios have been identified and are conducted in the quarterly tests. These include:

- Credit Risk
 - 2 Member Default Scenarios
 - 4 Market Stress Scenarios
- Liquidity
 - Inability to liquidate 20% of the GF Funds invested with commercial banks
 - Non-performance / insolvency of a settlement bank with the highest debit fund settlement obligation
- Reverse Stress Tests
 - Increasing default scenarios
 - Increasing market shock scenarios
 - Simultaneous increased default and market shock scenarios
- CDA default knock-on analysis
- Concentration analysis
 - Collateral contributed by the CDAs
 - Value of transactions settled by CDAs
 - Value of transactions settled through settlement banks

Due to the manual nature of compiling the data and conducting the testing, CDSC are not currently able to carry out more frequent testing than on a quarterly basis.

Key Consideration 7.10:

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.

Description

The tripartite agreement between CDSC, CDAs and Settlement Banks stipulates that settlement banks agree to fund the positions of any CDA's who have not provided sufficient funding prior to settlement. This helps to ensure same-day settlement and that non-defaulting sellers will receive funds on contractual settlement date.

The use of the fund and the mechanisms to replenish the fund are detailed within the CDSC Operational Procedures, the Guarantee Fund Rules and the Guarantee Fund Procedures, however, the process for utilising and replenishing the fund in the event of a settlement bank cash shortage have not been stipulated. In the event of a shortage of funds by a buying CDA, CDSC has documented procedures in place to move securities from the relevant seller's accounts and allocate them to a guarantee fund account, where they will be held until the defaulting buyer reimburses their settlement bank, or alternatively, will be liquidated if the CDA does not reimburse their settlement bank. In this event, the proceeds of the sale, plus penalties issued on the defaulting party to account for any price risk, will be used to replenish the fund.

A transaction will only be cancelled in the event of a securities shortage and the inability to source securities through the buy-in procedure.

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.

Principle Summary

The concept of finality is defined within CDSC Rules, but slight ambiguities in relation to the exact timing exist within the wording. Payment finality is clear and concise within the CBK KEPSS Rules as the moment the payer has been debited and the receiver has been credited with the contracted amount. The introduction of an intraday advice or report detailing settled transactions would assist in alleviating any potential issues that may arise through finality disputes. Processes and timings surrounding settlement are clearly stipulated within the CDSC Operational Procedures, aside from the discrepancy relating to irrevocability of rejected transactions.

Key Consideration 8.1:

An FMI's rules and procedures should clearly define the point at which settlement is final.

Description

The concept of finality is defined within section 70 of the CDSC Rules, which stipulates “Upon completion and settlement of the eligible securities and settlement payment therefor title to the securities shall transfer on settlement date and the transaction shall be final and irrevocable”. CDSC Rules hold full legal backing in accordance with section 5A of the Central Depositories Act of 2000, which provides additional certainty in the event of any disputes. However, the definition itself of finality within the CDSC Rules is imprecise on the exact timing and as a result may be interpreted as securities settlement not being considered final before the end of day on settlement date. Section 58 of the CDSC Rules states that the Central Depository shall maintain and continuously update a register

of existing depositors by security and the net balance of their holdings, but the rules, and accompanying rules and regulation, are silent on the timing of registration.

Finality of payment is clearly stated within Section 6 of the CBK – KEPSS Rules and Procedures, detailing that “Payment instructions in KEPSS are deemed to be final and irrevocable once the sending participant’s account is debited and the receiving participant is credited with the amount specified in the payment instruction”. This definition is clear on the timing, value and location of finality of cash payments.

CDSC does not have any linkages in place with entities in other jurisdictions for settlement purposes.

Key Consideration 8.2:

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

Description

The CDSC Operational Procedures 2012 (Amended October 2019) defines the flow of assets and timings for cash and securities funding and settlement. The procedures are publicly available and stipulate the methods of communication between the interfaced systems of CDSC and the CBK’s RTGS system (KEPSS) and the deadlines established for the exchange of assets between CDAs’ accounts.

CDSC operate two daily settlement batches at around 11.00am and 1.30pm, during which, book-entry transfer of securities is conducted following the receipt of confirmation from the CBK that net funds transfers through the CBK RTGS system has been completed. The settlement of funds is initiated by an automated message sent by CDSC to the CBK triggered at 10.30am (1st batch) and 1.00pm (2nd batch), which feeds directly into KEPSS and transfers funds between designated settlement banks. An automated response is sent back to CDSC, which then triggers the securities movements between the CDA accounts without the need for manual intervention. The operation of 2 settlement batches helps ensure that any transactions that were unable to be settled in the first batch can be recycled to the second batch, although in practice, this has so far only needed to have been used to settle linked buy and sell transactions with the same settlement date.

Completed daily transaction details are reported to participants via end-of-day reports through their direct linkages into the CDSC system, although this is not stipulated within the CDSC Operational Procedures, which confirms that statements of accounts will be made available on a monthly basis or on an interim basis (unspecified) upon request and upon payment of the prescribed fee. A report is initiated at 12.30pm and sent to settlement banks prior to the second settlement batch, which includes settlements outstanding after the first batch but does not specifically state the trades that have settled successfully in the first batch. No other intraday settlement confirmations are sent.

So far, CDSC has not needed to defer final settlement to the following business day due to circumstances not contemplated within its procedures.

Key Consideration 8.3:

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

Description

The NSE Trading Rules for Equities clearly stipulates the instances under which a transaction may be cancelled as confirmed to be fraudulent or if the transaction may result in other than the transparent, fair and orderly trading of the affected securities. Both instances require the approval of the authority. As a result, trades are irrevocable upon trading in the sense they cannot be cancelled, aside from in these circumstances. However, the CDSC Rules do not reference irrevocability clearly, nor do they reference the cancellation specifications in the NSE rules.

Section 6.3 of the CDSC Operational Procedures stipulates that Custodian Banks have until 3.00pm on T+2 to negatively affirm trades and any trade not rejected by this time shall be deemed to be accepted, clearly implying that irrevocability of trade obligations is at 3.00pm on T+2 for non-rejected trades.

Inconsistencies in the CDSC Operational Procedures have been noted in relation to irrevocability timings for rejected trades. Section 6.3.6 stipulates that if a trade is not allocated by 8.00am on T+3, the trade shall be dealt with in accordance with procedures 7.6 or 7.8. Sections 7.6.3 and 7.8.4 state the arrangements to take place should rejected buy or sell trades not be allocated by the CDA by 9.00am on T+3. The procedures clearly state that following this deadline the trade shall be allocated

to the CDA to be settled along with their other obligations and, if required, the settlement guarantee fund or buy-in process will be utilised.

Principle 9: Money Settlement

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 minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Principle Summary

CDSC conducts settlement in local currency only between the accounts of designated settlement banks at the Central Bank through the CBK's RTGS system. Finality of cash payments is clearly stipulated within the KEPSS Rules and Procedures, and all cash funding and settlement timings are detailed within the CDSC Operational Procedures.

Key Consideration 9.1:

An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

Description

Securities settlement activities are conducted in local currency only, the Kenyan Shilling (KES). The process is conducted directly between the accounts of designated settlement banks at the CBK via the CBK's RTGS system. Each CDA is required to appoint a settlement bank who, as part of the Tripartite agreement between CDSC, the CDA and the settlement bank, agree to fund the positions of any CDA's who have not provided sufficient funding prior to settlement. As a result, settlement banks

can be exposed to their CDAs. This is mitigated through the use of the CBK intraday liquidity facility, which is only available to settlement banks, and the settlement guarantee fund in the event of a settlement bank cash shortage on settlement date.

Funds transfers are initiated solely by CDSC through a settlement report sent directly from CDSC to CBK prior to each daily settlement batch. Brokers do not have direct access to the cash accounts of investors.

Key Consideration 9.2:

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.

Description

This key consideration does not apply to CDSC as it only conducts settlement activities in Central Bank money.

Key Consideration 9.3:

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, capitalisation, 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.

Description

This key consideration does not apply to CDSC as it only conducts settlement activities in Central Bank money.

Key Consideration 9.4:

If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

Description

This key consideration does not apply to CDSC as it does not conduct money settlements on its own books.

Key Consideration 9.5:

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.

Description

According to Section 6 of the CBK – KEPSS Rules and Procedures, “Payment instructions in KEPSS are deemed to be final and irrevocable once the sending participant’s account is debited and the receiving participant is credited with the amount specified in the payment instruction”. The funds are immediately available and ready to be used by the receiving bank in accordance with its internal

procedures or agreements with the CDAs. The tripartite agreement and CDSC operational procedures stipulate the final deadlines for cash settlement to occur between settlement banks at the CBK.

Principle 10: Physical Securities

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.

Principle Summary

Principle 10 does not apply to CDSC as all securities are held in dematerialised form.

Principle 11: Central Securities Depositories

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

Principle Summary

As the sole equities and corporate bond central securities depository in Kenya, CSDC provides settlement and safekeeping services. It offers omnibus and beneficial owner accounts, which by law and under CDSC rules must be segregated between proprietary and third-party assets. CDSC has rules, procedures, and controls, including a daily reconciliation process of book-entry securities to safeguard the rights of securities issuers and holders. Under CDSC rules, there are no circumstances under which a securities account can be overdrawn.

Equities and corporate debt instruments are held in dematerialised form at CDSC. The CDSC rules include provisions to protect assets against custody risk which also appear to be consistent with the

legal framework. Under the Central Depositories Act, CDSC is liable to a depositor for any loss, damage or liability suffered or incurred by a depositor in respect of any disappearance, loss or destruction of any certificate deposited by the depositor with the central depository or such agent due to any wilful act, omission, neglect or default on the part of the central depository or its central depository agent.

Key Consideration 11.1:

A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

Description

CDSC acts as central securities depository in Kenya, holding eligible securities in fully dematerialised form. Accounts opened at CDSC are generally in the name of a custodian nominee followed by a designated client number. Clients' assets are segregated from the custodian's assets. The nominee company is the registered and legal holder in the eyes of the issuer; however, the clients are acknowledged to be the beneficial owners. The custodian's nominee company, in whose name assets are registered, is a separate legal entity, which is not permitted to incur any debts or liabilities. Accordingly, the nominee company is divorced from the custodian's bankruptcy or insolvency. The securities registered in the custodian's nominee name will not be included in the disposable assets of the custodian and will be free from attachment or liens by any of the custodian's creditors or the liquidator. However, the legal definition of nominees, as mentioned in Principle 1, does have some gaps.

Omnibus accounts are also permitted at CDSC, but participants' assets must be segregated from clients' assets. Participants are required to disclose the beneficial owners of securities within their accounts to the CDSC upon request. The regulator also requires disclosures of beneficial owners from market participants on a monthly basis. Controls and procedures related to securities account access are in place. CDSC does not hold cash deposits.

The rights and obligations of securities holders are defined within the Depository rules. Section 15 of the depository rules stipulates rights to the securities as follows:

- Securities deposited into the Central Depository shall be held in custody by the Central Depository in trust for the beneficial holders.
- A transfer of securities into the Central Depository by a depositor shall not convey any transferor's beneficial interests over the securities deposited.
- The beneficial owner shall be entitled to all rights and benefits and be subjected to all liabilities in respect of his/her securities held by the Central Depository.

Further, the rights on securities are set out in clause 37 of the Central Depositories Act, 2000 as follows:

- Notwithstanding the provisions of the Companies Act or any other written law governing the issuer, a depositor of any book entry security whose name appears in the record of depositors shall be entitled to all rights, benefits, powers and privileges and be subject to all liabilities, duties and obligations in respect of, or arising from such security (whether conferred or imposed by the Companies Act, or such other written law or the deed of establishment or the memorandum or articles of association of the issuer, or otherwise) as if he were a member or debenture holder registered in the appropriate register, as the case may be, maintained by the issuer of such security, pursuant to the said Act or any other written law.

CDSC provides reconciliation reports to its participants on a daily basis with respect to the assets held at the CSD, including notices of transfers to or from the participant's accounts. These reports are uploaded on the CSD system by 5.00pm at the end of each operational day upon any securities movement (securities balance increase/decrease) as a result of a transaction. The positions and transactions are downloaded from the CDSC terminal by the banks who will then carry out reconciliations internally.

Internal controls are documented and are checked by the internal audit function. CDSC send out questionnaires to participants periodically and carries out on-site inspection on each participant once every 2 years. Detailed end-to-end trade lifecycle audits are also conducted by internal auditors annually.

An annual statutory audit is performed by the external auditors in line with the requirement of section 32 and 33 of the Central Depositories Act. This involves an audit of controls and procedures used in safekeeping of securities and CSDS's IT system.

Debits and credits of accounts can only be triggered by CDSC and are processed only in accordance with participant's matched instructions. The custodian rejection facility helps to ensure that any

erroneous trades, booked by the broker, are not processed across the client's account. However, there are technically no controls in place to ensure that the custodian does negatively affirm the erroneous trades.

Key Consideration 11.2:

A CSD should prohibit overdrafts and debit balances in securities accounts.

Description

In the new settlement system, a broker may technically book a short sell trade, where there is an insufficient balance in the client account. However, the securities must be available in the CSD system by 8.00am on SD at which point they are blocked. If securities are not available, the CDSC system will automatically remove the trade from the first settlement batch and roll settlement to the second batch. If securities remain unavailable prior to the second settlement batch, the same, automatic removal process will occur, and this will be followed by a buy-in. The CDSC system will not process any attempted settlement where there are insufficient shares available, meaning that a debit balance on the securities account is not possible.

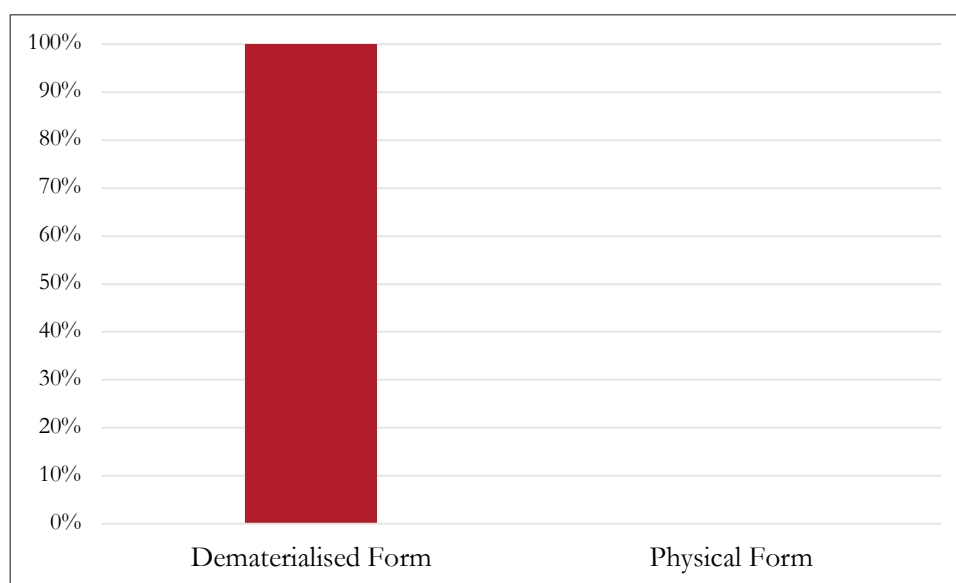
Key Consideration 11.3:

A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

Description

All securities held by CDSC are held in dematerialised form. The dematerialisation of equities and corporate bonds quoted on the NSE was completed in November 2013 and November 2014 respectively. Clause 23 of the Central Depositories Act prohibits the withdrawal of dematerialised securities from the central depository.

Table 2: Distribution of Securities (Dematerialised/Physical)



Key Consideration 11.4:

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

Description

The CDSC rules include provisions to protect assets against custody risk in case of the following events: CSD's negligence, omission, mistakes, misrepresentation, fraud or error. Pursuant to its procedures, CDSC also takes steps to reconcile securities balances in its system daily.

The Central Depositories Act also holds the depository liable to a depositor for any loss, damage or liability suffered or incurred by a depositor in respect of any disappearance, loss or destruction of any certificate deposited by the depositor with the central depository or such agent due to any wilful act, omission, neglect or default on the part of the central depository or its central depository agent.

Section 31 of the Act requires that the a central depository shall issue to all depositors statements of account in respect of all book-entry securities held in custody by, or registered in the name of, the central depository or its nominee company for the depositors and that a depositor may, at any time, by written notice, require the central depository to issue to him a statement of account in respect of all or any of the book-entry securities for the time being held in custody by, or registered in the name of, the central depository or its nominee company on behalf of the depositor.

The rules and procedures related to custody risk appear to be consistent with the legal framework. CDSC also has Financial Institutions Directors' and Officers' liability insurance that includes securities claims coverage, as well as Management Liability insurance of up to KES 100 million.

Key Consideration 11.5:

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

Description

CDSC rules stipulate that participants must open separate accounts for clients' securities. Participants are required to disclose the beneficial owners of securities within their accounts to the CDSC upon

request. Law protects participant assets from claims and liabilities of the depository. Section C of the CSD Rules stipulates:

“Every CDA shall open and maintain with the Central accounts Depository one or more securities accounts for the recording of the deposit or withdrawal of securities and for dealing in such securities. These accounts shall comprise a CDA’s securities account and client securities account.”

CDAs shall, where they are permitted to hold proprietary securities accounts, be required to segregate their client accounts from the accounts in which they hold beneficial ownership of securities.

The depository, however, allows both omnibus accounts and designated accounts for clients of the CDAs. The segregation at the beneficial owner level is carried out in the books of CDAs. Due to the nature of the naming convention at CDSC, all accounts are treated the same way whether omnibus or designated segregated. Market practice is for accounts to be segregated at the level of the direct client of the CDA (i.e. the Global Custodian), however, CDSC will not be aware of whether the account holds the assets of one or many clients. Further, the market or law does not differentiate between an omnibus or a designated account. However, section 14 of the Central Depository Act stipulates:

“The central depository shall from time to time and at any time with or without notice, require its agents to produce to it or a duly authorised person such documents or records in respect of any securities transactions or accounts and to provide access to its terminals and other computer peripherals situated at the agent's premises and any data record or information in respect thereof as may, in the opinion of the central depository, be necessary for the purposes of enabling it to perform its audit investigation or review.”

According to the ERM framework, participants are required to disclose to CDSC upon request, the beneficial owners underlying a Nominee Account.

Key Consideration 11.6:

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

Description

CDSC does not offer any central clearing services, lending and borrowing facilities or collateral management.

CDSC's role in asset servicing in the market is reasonably limited, in that they do not calculate entitlements on corporate actions, nor do they conduct the voting or instruction processes in relation to voluntary corporate actions. CDSC provides account holder information to issuer/registrars upon request, then (if it is a securities entitlement) credits the securities to the beneficiary's account(s). CDSC exercises a standard of responsibility for these actions so that should a loss be triggered by their negligent action/omission, they would be liable for direct losses.

CDSC also provides registrar services. This includes services directly to issuers of securities, as well as services to the existing registrars. However, these services are carried out through CDSC's wholly owned subsidiary, CDSC Registrars Ltd.

Principle 12: Exchange-of-value Settlement System

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.

Principle Summary

CDSC operates a near-simultaneous, interdependent DVP settlement model, whereby securities will only settle upon confirmation of related cash settlement. In addition, the removal of trades from the upcoming settlement batch, should the seller have insufficient securities, ensures that the buyer is not exposed to loss of principal whereby cash will settle, without the linked securities settlement taking place. The DVP settlement process is initiated by CDSC through its interface with CBK's RTGS system, with a short time lag of up to 5 minutes between cash and securities settlement.

Key Consideration 12.1:

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.

Description

CDSC is responsible for the settlement of securities in the market and uses the BIS Model 2 to do so. The Kenyan market does not operate a formal OTC segment and all CDSC clearing and settlement activities are limited to transactions executed at the Nairobi Securities Exchange (Equities and Corporate Bonds).

Under the settlement model, the proprietary system for the settlement of securities of CDSC is interfaced with the RTGS payment system of CBK for funds settlement.

At 8.00am on settlement date, CDSC blocks trades and checks for eligible securities balances. If a selling party has a short securities balance, the CDSC system will remove the trade from the first batch settlement and will not include it in the netting process. Prior to each daily settlement batch, the CDSC system automatically triggers a settlement instruction message to CBK (at 10.30am and 1.00pm), which is sent directly into the RTGS system through a secure VPN link. The message will automatically initiate net cash transfer within the RTGS system and once complete, a return message is sent back to CDSC into an SFTP folder. The CDSC system monitors for the CBK file every 5 minutes and once it is received, securities settlement will be conducted automatically. The entire process is fully automated and takes place without any manual intervention. Securities will not settle until cash settlement has been confirmed and the pre-settlement securities balance checks ensure that only trades whereby the seller holds sufficient securities balances will be sent for settlement.

The time-frame from CDSC sending the initial file to CBK and the return file being received from CBK can be up to 20 minutes, which is partially a result of the intermittent checks for new messages carried out by the CBK system and partially as a result of the CDSC file joining the queue for funds settlement through the RTGS system. Once the file reaches the front of the queue, settlement is immediate, as is the return message to CDSC, meaning that cash and securities settlement takes place on a near-simultaneous DVP basis of up to 5 minutes, despite the entire process from sending the initial settlement message taking up to 30 minutes.

Table 3: Value of trades conducted on a DVP basis

Values in KES	Linked settlements	Not linked settlements
On-exchange 2018	294,244,894,828.26	-
Off-exchange 2018	-	-

As stated within Principle 8, Securities finality is defined within the CDSC Rules, which holds legal backing, however, ambiguities exist over the timing of finality on settlement date. Cash finality, however, is clearly defined in the CBK KEPSS Rules and Procedures. Despite not specifically stating the term “Delivery Versus Payment”, section 68 of the CDSC Rules details that upon settlement linked securities and cash payments will be conducted simultaneously, however, does not state any requirement for interdependency between the cash and securities settlement. Sections 7.4 and 7.5 of the CDSC Operational Procedures, however, in accordance with the CDSC Rules, stipulate that securities settlement shall only take place upon receipt of the confirmation from CBK of successful settlement of funds.

The table below shows the value of settled trades in local currency (KES) by asset class for the year-ending 31 December 2018.

Table 4: Value of settled trades in local currency units

	Net basis	Gross basis
Equities	0	175,657,361,498.35
Fixed income	0	118,587,533,329.91

The only operations allowed on a FOP basis at CDSC are those related to private transactions that do not involve change of beneficial ownership and therefore, are not covered within the scope of this Principle.

Principle 13: Participant-default Rules and Procedures

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

Principle Summary

Section 5B of the Central Depositories Act, 2000 stipulates CDSC's requirements in the event of a default of a CDA and what should be expanded upon within the CSD rules. However, detailed rules to manage the default (insolvency) of a participant or the relevant steps to be taken by all parties have not been documented. CDSC advised that in case of insolvency of a CDA, it would freeze client assets and wait for instructions from the regulator. Section 43A of the Central Depositories Act, 2000 stipulates that the default process of the CSD will take precedence over the laws of Insolvency.

Section 60A of the Central Depositories Act No 4 of 2000, requires the CSD to establish adequate arrangements to guarantee the settlement of all transactions relating to securities through its system. CDSC operates a settlement guarantee fund, which has been established in accordance with section 60B and is managed in accordance with section 60C of the Central Depositories Act 2000. Contribution requirements are stipulated in the CDSC Guarantee Fund Procedures and include a fixed cash contribution of KES 5 million plus an additional contribution of 20% of the average 3-day rolling debit (buy) obligation over the past 12 months per CDA. Some penalties and other market levies are also added to the guarantee fund. The fund appears to be of sufficient size in relation to average market conditions

CDSC Operational Procedures Section 7.7 and 7.8 details the funds settlement default procedure. CDSC settlement guarantee fund (SGF) rules and procedures are in place and publicly available on the CDSC website. However, the rules and procedures only contain measures to be taken by CDSC when a CDA fails to fulfil its settlement obligation.

Key Consideration 13.1:

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.

Description

CDSC has procedures and rules in place to manage failing trades based upon the provisions set out in Section 5B of the Central Depositories Act, 2000. Section 60A of the Central Depositories Act, requires the CSD to establish adequate arrangements to guarantee the settlement of all transactions relating to securities through its system. CDSC operates a settlement guarantee fund, which has been established in accordance with section 60B and is managed in accordance with section 60C of the Central Depositories Act 2000. Section 43A of the Central Depositories Act, 2000 stipulates that the default process of the CSD will take precedence over the laws of Insolvency, however, the default processes in the event of a CDA / settlement bank insolvency are not stipulated within CDSC Rules. Part 18 of the Companies Act details the legal process for the dissolution of a company, but as mentioned above, this is not expanded upon in the CSD Rules or Regulation to provide for the specific processes and requirements in the event of a securities market agent bankruptcy.

Sections 7.7 and 7.8 of the CDSC Operational Procedures detail the funds settlement default procedures. The use of the settlement guarantee fund and the mechanisms to replenish the fund are detailed within the CDSC Operational Procedures, the Guarantee Fund Rules and the Guarantee Fund Procedures. These are publicly available on the CDSC website.

The Central Depositories Act states that the Fund shall consist of a variable risk-based contribution, to be determined by the central depository, in consultation with the Authority, and payable by CDAs who are involved in settlement. Contribution requirements are stipulated in the CDSC Guarantee Fund Procedures and include a fixed cash contribution of KES 5 million plus an additional contribution of 20% of the average 3-day rolling debit (buy) obligation over the past 12 months per CDA. Some penalties and other market levies are also added to the guarantee fund. The SGF is tested daily to assess the sufficiency of the guarantee fund meeting the net settlement obligations of CDAs in addition to quarterly stress testing (detailed in Principle 7). The daily check is against the Largest

CDA net debit exposure, the total net debit obligations of all CDAs and the largest settlement bank exposure. The fund appears to be of sufficient size in relation to average market conditions.

Although in practice, the size of the guarantee fund appears large enough to cover the default of all CDAs under average market conditions, there is no regulation or formal procedures that establish the framework and the activities to be followed by all the markets infrastructures in case one of the participants defaults (financial or operational). It was advised that in the event of a CDA default, the assets under custody of the insolvent CDA would be frozen and direction on how to proceed would be given by the CMA. It should also be noted that current default procedures, relating to failed settlements, do not cover the default of a settlement bank.

To guarantee settlement, CDSC has entered into tripartite agreements with the CBK and the settlement banks where the settlements banks authorise the CBK to debit the settlement banks settlement accounts at the CBK upon receiving instructions from CDSC. In addition, CDSC, settlement banks and the CDAs have entered into a tripartite agreement where the settlement banks guarantee to meet the settlement obligations of a CDA in the event the CDA fails to deposit cash into the settlement accounts in the stipulated timeframe.

Key Consideration 13.2:

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

Description

As outlined in KC 13.1, CDSC Operational Procedures Section 7.7 and 7.8 details the funds settlement default procedure. The use of the fund and the mechanisms to replenish the fund are detailed within the CDSC Operational Procedures, the Guarantee Fund Rules and the Guarantee Fund Procedures. The rules and procedures clearly specify the lines of responsibility within the CSD with regard to settlement default.

However, CDSC does not have policies, rules or procedures that specify the lines of responsibility within the CSD's management regarding participant default (insolvency). It has been advised that

CDSC would freeze the assets of the defaulting client and await instructions from the CMA, however, this is not provided for in documented rules or regulation.

Key Consideration 13.3:

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

Description

CDSC rules and procedures with regard to the settlement guarantee fund are disclosed to the public and available on the CDSC website. However, the SGF rules and procedures only contain the steps that CDSC would take in the event a settlement obligation is not fulfilled by the CDA.

Key Consideration 13.4:

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.

Description

CDSC does not test the default procedures with the participants and, as mentioned previously, does not have detailed processes in relation to a participant insolvency. All new and amended CDSC Rules, however, do include a participant consultation process prior to entering into force.

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.

Principle Summary

This Principle does not apply to CDSC given that it does not act as a CCP for a derivatives market.

Principle 15: General Business Risks

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

Principle Summary

CDSC has a relatively comprehensive business risk framework including KPI's to proactively monitor and manage a series of conditions. These include oversight on the balance sheet, P&L, cash flow, and that a 6-month operational expenses reserve fund is met at all times. CDSC also assesses the effectiveness of its business risk management tools by getting feedback from participants/the regulator, and audit reviews. As per CDSC's investment policy, a maximum of 20% of liquid reserves can be held with any one bank, reducing concentration risk.

Although CDSC has robust financial resources and have been profitable for several years, however there is no official financial policy or recovery and resolution plan in place and CDSC does not conduct any stress testing of its liquidity positions or requirements, nor does it gather effective MIS.

Key Consideration 15.1:

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.

Description

CDSC has a comprehensive Enterprise Risk Management framework in place which stipulates a detailed process for identification, assessments, risk categorisation, measurement and risk evaluation with regards to general business risks. The framework defines the general business risk as the risk of financial losses due to the decay of CDSC's financial position due to a collapse of its revenue or a significant increase in its costs that would force the depository to use its capital to cover the gap.

The ERM framework sets clear objectives in terms of managing the general business risk, as well as a series of mechanisms to pro-actively monitor it. These include careful oversight of the overall business strategy in the context of the organisation's annual budget, its balance sheet, its profit and loss statement and cash flow. The monitoring also includes ensuring that minimum regulatory capital levels, and a six-month operational expenses reserve are met at all times.

The analysis has highlighted the following general business risk exposures. Quarterly reporting is required on the overall management of risk and key risk issues to the Risk Committee of the Board of Directors.

General Business Risk	Strategy Execution Risk	Operational Risk
Financial Risk	Credit Risk	Liquidity Risk
Custody Risk	Investment Risk	Legal/regulatory Risk
Compliance Risk	Systematic Risk	Information and Communication Technology Risk
Agency Risk	Reputational Risk	Investment Risk

Workplace Health & Safety Risk	Settlement and Depository Risk	Other risk (Political Risk)
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The framework states that shareholders can be called upon to provide additional capital if needed and indicates that there is a limited pool of investors who may not be willing to inject more capital when need arises.

However, there is lack of analysis of the potential losses and plan to ensure recovery of the operations and services. There seems to be no legal framework for operations in case of recovery, as well as a policy on the critical services that must continue to be provided even if the entity is under immense financial stress, the trigger mechanism, the instruments and tools available. It also appears that CDSC does not use any regular quantitative data or reporting (MIS) to help identify and monitor business risk. Risks are assessed and monitored intuitively and on a qualitative basis.

The investment policy of the CSD is stipulated in the Administration and Financial policy manual which sets clear criteria for investments. These include licensing from the CBK, minimum capital, liquidity ratio and lending ratio requirements, however, investments are made without following a formal risk-based approach or conducting stress testing.

CDSC also have insurance policies in place for various insurable risks including; crime and civil liability, Directors and Officers liability, GPA/WIBA, Money, Property sabotage and terrorism, combined liability (Public liability [third parties], workman compensation act and employer liability, and terrorism liability) and assets all risk (fire and special perils, burglary, electronics data, business interruption).

The Directors and Officers Liability Policy covers CDSC for KES 100 million against claims made against CDSC in relation to the following:

- Management Liability;
- Company Securities;
- Non-Executive Directors Protection;
- Assets and Liberty;
- Emergency Costs;
- Extradition;
- Investigation;
- Outside Directorship
- Public Relations Expenses
- Discovery
- Run Off for Retired Insured Persons

- New Subsidiary
- Risk Management

In order to measure and assess the effectiveness of the business risk management tools, CDSC relies on feedback from participants, the regulator and the audit reviews.

Key Consideration 15.2:

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.

Description

CDSC's net liquid reserves are segregated from any other fund. As of 31 August 2019, CDSC holds all its liquid reserves as short-to-medium term deposits (which can be liquidated within three working days if required) **across six commercial** banks as follows:

Table 5: CDSC Liquid Reserves Holdings

Bank	Cash Deposits (KES millions)
Co-operative Bank	79.03
KCB	55.34
CBA	75.76
Barclays	74.96
SBM	48.91

Chase Bank	48.91
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CDSC's investment policy requires that funds are invested in tier-1 commercial banks or treasury bills and that no single institution should hold more than 20% of investments without Board approval. (the value of all short and medium-term deposits as at 31 August 2019 was KES 382.9 million).

Although the investment policy stipulates a defined criterion for the construction of an investment portfolio, there have never been any formal stress tests of the liquid net assets using either historical data or hypothetical scenarios.

Key Consideration 15.3:

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.

Description

The CDSC's liquid net assets sufficiently cover over six months of current operating expenses. Operating expenses are around KES 262.35 million (USD 2.55 million) per year, i.e. KES 131.18 million (approx. USD 1.28 million) for 6 months. Current liabilities during 2018 were KES 51.31 million (USD 0.50 million). The CSD maintain liquid net assets of around KES 382.9 million (USD 3.72 million). Based on these figures, CDSC has sufficient liquid net assets to cover approximately 15 months of operating expenses, which is well above the 6-month requirement needed to implement a recovery and wind-down plan.

However, although there is evidence that the CSD has sufficient financial resources to implement it, and CDSC has ensured that there are liquid net assets to cover 6 months of operating expenses; CDSC doesn't have an official recovery and orderly wind-down plan.

Key Consideration 15.4:

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.

Description

100% of CSDC reserve funds are held in cash deposits at six commercial banks, and assets are allocated according to the interest rates. These banks have tier 1 capital ratios and there is a concentration limit threshold of a maximum of 20% deposit in one single bank. The cash is locked (in small tranches) for no more than 2 years but can be withdrawn before the end of the term if needed (without the interest gain).

The current highest concentration is within Co-operative Bank, where KES 79.03 million is held as long-term bank deposits, representing 20.64% of CDSC's total bank deposit holdings. The bank deposits usually have a maturity of around 2 years; however, they can be liquidated within three days with no penalty charged. In this instance, CDSC would only suffer loss of interest. However, no initial or ongoing credit risk or liquidity risk analysis is conducted on the banks chosen by CDSC.

The investment policy states that a maximum of 40% of CDSC reserves may be held in T-Bills or Government Bonds, as well as bank deposits, however, presently no CDSC reserves have been invested in government securities. There is a cause for concern in case of market closure where it could be difficult to arrange instant liquidity, if required.

Key Consideration 15.5:

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

Description

CDSC does not have a formal plan in place to raise additional equity. Any additional capital increase must receive prior regulator and board approval. Once regulatory approval is received, there are no restrictions on CDSC requesting a capital increase from shareholders, however the shareholders are under no contractual obligation to contribute any additional funds. According to the Memorandum and Articles of Association of the CDSC:

“The capital of the Company is Kenya Shillings 100,000/= divided into 10,000 shares of Kenya Shillings 10/= each, with power for the Company to increase or reduce the said capital, and to issue any part of its capital, original or increased, with or without any preference, priority, or special privilege, or subject to any postponement of rights, or to any conditions or restrictions; and so that, unless the conditions of issue shall otherwise expressly declare, every issue of shares, whether declared to be preferential or otherwise, shall be subject to the power hereinbefore contained.”

The Memorandum and Articles of Association do not place any restriction on ownership of the depository.

Principle 16: Custody and Investment Risks

An FMI should safeguard its own and its participants' assets and minimise 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.

Principle Summary

CDSC is one of 2 depositories in Kenya, the other being the Central Bank of Kenya. Securities are held in dematerialised form (equities and corporate debt) on its books on behalf of participants and investors for the domestic market. CDSC does not hold any foreign securities and have no accounts with any foreign entities. Cash settlement for securities transactions is processed through accounts held at the CBK, removing the risk of processing payments through commercial bank funds. CDSC has strong controls governing its relationships with its custodians. Regarding prompt access to participants assets, CDSC has legal grounds to enforce interest or ownership rights on assets under custody.

However, for its own assets, Key Consideration 3 stipulates that CDSC should evaluate and understand its exposures to its custodian banks but as yet CDSC does not have a documented custodian assessment programme. CDSC has fairly limited criteria for appointing banks, with which they will deposit their funds, other than the fact that they must be classified as Tier 1 banks by CBK. CDSC does not conduct any prior or ongoing analysis and monitoring of the chosen banks' financials or any other criteria and base their selection processes on the interest rates offered. CDSC holds all of their reserves as highly liquid investments, however, there is no clarity in law over the protection of and entitlement to assets held with another entity, should that entity become insolvent.

As per CDSC's internal investment policy, CDSC's reserves can be invested in cash deposit certificates and government securities. Currently 100% of CDSC's reserves are held as highly liquid cash deposits, spread across 6 banks. It is stipulated within the investment policy that a maximum of 20% of the total reserves can be held in any one bank to reduce concentration risk.

Key Consideration 16.1:

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.

Description

All the securities that are handled in CDSC are in dematerialised form and there is no custody of participants' physical assets. Furthermore, the CSD does not hold cash in its books, nor does it hold foreign securities traded in other countries.

As per its Investment Policy, CDSC is permitted to invest its reserves and the settlement guarantee fund contributions in cash deposit certificates and government securities. CDSC's custodians are subject to the supervision of CBK. CDSC uses interest rate comparison as the basis for choosing which bank to deposit their funds. Additionally, a concentration limit is in place, whereby the amounts deposited cannot exceed 20% of the total deposits per bank. At present, the total value of bank deposits is KES 380 million and is spread across 6 local banks.

As of 30 September 2019, 83.29% of the settlement guarantee fund assets were held with 5 commercial banks, as fixed deposits and in current accounts, the remaining 16.71% being held as Central Bank T-Bills.

However, no credit risk, liquidity risk or any other type of prior and ongoing monitoring of the banks is conducted.

Key Consideration 16.2:

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

Description

Participant assets are not held with any third-party custodians or with any entities based in other jurisdictions. This key consideration is only applicable for CDSC's proprietary assets and settlement guarantee fund assets; specifically, cash deposits certificates held with banks. It was advised that these take three days to liquidate, in the case of CDSC reserves, although the guarantee fund methodology stipulates that funds can be made available from guarantee fund investments in 24 hours.

The legal framework does not protect assets in case of default of its custodian bank. The legislation relating to the insolvency of natural persons and incorporated, and unincorporated bodies is covered by the Insolvency Act, 2015, however, the type of legal grounds that CDSC has to enforce its interest or ownership rights in assets held in custody in case of the default of a custodian are not explicitly covered and are lacking in detail.

Protection of creditors' interests in the liquidation process is not covered in the Insolvency Act, 2015 and there does not appear to be any legal protection of CDSC's assets held with banks, in the event of insolvency of said bank. In the event of a bank's failure, Kenya Deposit Insurance Corporation is mandated to provide deposit insurance coverage of up to KES 100,000 to each depositor of a member institution. The insurance covers all types of deposit accounts. However, protected payment is restricted to one depositor per institution. Where a depositor has more than one account in an institution, the accounts are consolidated for settlement as one claim subject to the maximum protected limit of KES 100,000. All seven custodian banks are the members of KDIC.

There is no mention of whether assets are frozen or immediately accessible, should a bank become insolvent, or in case of the closure of the market.

Key Consideration 16.3:

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

Description

CDSC does not have a documented custodian assessment programme. The bank selection criteria adopted by CDSC are very limited and do not contain any initial and ongoing financial, operational or any other testing or analysis to ensure that the banks are of sufficient quality.

As mentioned above, as part of CDSC's investment policy, a maximum of 20% can be held with any one commercial bank as a bank deposit, thus helping minimise concentration risk. CDSC currently use 6 commercial banks for this purpose, with the largest individual holding in any one bank amounting to approximately 20.6% of CDSC's total bank deposits.

Key Consideration 16.4:

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.

Description

CDSC does currently have a risk management framework; however, there is no consistent investment strategy. The investment policy is stipulated in the Finance & Administration Policy and Procedures Manual, which only indicates the types of eligible securities for investments. There is a lack of detail on limits, concentration, etc, in the investment policy document, although the concentration limits of 20% are stated within the ERM Framework and the Guarantee Fund Investment policy. The investment policy, however, specifies that investment in shares, Non-Government Bonds and other “Risky” investments are not permitted, helping to ensure that investments may only be conducted in low-risk instruments. Neither the investment policy, nor the ERM Framework are made available to participants or the public.

Investments are currently held as cash deposit certificates or T-Bills, in the case of a small portion of the guarantee fund assets. The only loss CDSC will experience through early liquidation will be loss of future interest. As has been mentioned above, bank deposits are held with Tier 1 commercial banks, which must be licensed by the local regulators, and interest rate comparison is the sole method of choosing which banks to use. Concentration limits are in place for bank deposits, whereby no single institution should hold more than 20% of investments without Board approval. The high level of investments in cash deposits ensures that almost all of CDSC’s assets may be liquidated at short notice.

Principle 17: Operational Risk

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

Principle Summary

Section 8(1)(d) of the Central Depositories Act, 2000 requires the CSD to manage the risks associated with its business and operations prudently. The CDSC ERM framework identifies, analyses and

evaluates the risks that CDSC may be subject to as well as the measures the depository should incorporate in order to mitigate the impact of these risks. The framework is reviewed every two years.

CDSC has put in place operational procedures and controls for all CDSC processes including settlement and depository services, ICT, human resource, finance and administration. There are clear lines of responsibility to identify and assess operational risks with operational risk controls being signed-off by the department head and the risk manager.

There is an adequate audit programme that consists of a risk-based internal operational audit programme, external operational and IT audits. There is a Risk and Audit committee which oversees CDSC's approach to the audit process and results. The scope of the audits covers all areas of CDSC's operations.

CDSC has a documented DR plan and is tested every quarter for DR readiness. The scope of the testing is included in the DR plan. The Back-up data centre is a warm site and is 19kms from the main site. There is a time lag of 5 minutes in mirroring data from the main site however, there are measures in place to retrieve the data lost.

CDSC has a detailed and documented BC plan which is tested every quarter. The site is warm and 6km from the main site.

Key Consideration 17.1:

An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Description

Section 8(1)(d) of the Central Depositories Act, 2000 requires the CSD to manage the risks associated with its business and operations prudently. The CDSC ERM framework identifies, analyses and evaluates the risks that CDSC may be subject to as well as the measures the depository should incorporate in order to mitigate the impact of these risks. The risk framework covers all departments and is reviewed every two years.

The ERM policy defines operational risk as loss resulting from inadequate or failed internal processes, people and systems or from external events. The FMI identifies operational risk through the ERM framework and via both internal and external audit processes. The scope of the areas that the ERM policy covers include settlement and depository services, ICT, human resource, finance and administration.

Operational risk controls are designed by the Head of the operational department and signed off by the Risk Manager. The operational procedures describe in detail all processes and how these should be carried out. The procedural manuals are owned by each Head of Department and are reviewed on a regular basis. CDSC has clear lines of responsibilities in terms of managing operational risk as well as series of mechanisms to pro-actively monitor it. Changes to procedures must be represented by the Head of Department to the Risk Manager for sign-off.

Risk controls are mainly manual although electronic controls have been introduced with the implementation of the new CSD system. The level of automation of the FMI's controls covers settlement instructions, settlement instruction tracking, the interface with the payment system and authorisation. However, the system is still new and the risk controls for the new system are yet to be fully identified and documented.

IT procedures documents describe a range of controls and approach to controlling risk. The IT Policy Manual covers policies on: Backup Procedures; User Creation; Fault handling; Data Backup and Restoration; CDA Network Setup; ICT Procurement etc. A full operational manual is in place for the Perago core securities settlement system. However, the operational manual does not give a detailed breakdown of all aspects and functions of the system throughout the whole post-trade lifecycle.

CDSC has in place comprehensive risk register / matrix to manage risks and associated controls with a dedicated register in place for each department. Each risk register contains the following categories and mitigation measures:

- Function
- Risk Category
- Causes of Risk
- Impact
- Inherent Rating (based on a combination of probability and impact)
- Existing Mitigation
- Residual Risk
- Residual Rating (based on a combination of probability and impact)
- Action Plan
- KRI

- KPI
- Appetite and Tolerance

Risk registers are currently maintained on Excel spreadsheets and are identified, measured and monitored manually. The CSD does not have automated tools to monitor and highlight the performance of key risk indicators.

CDSC staff receive training on risk procedures and controls on an ongoing basis.

Key Consideration 17.2:

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

Description

There are clear lines of responsibility to identify and assess operational risks with operational risk controls being signed-off by the by the head of respective department, risk manager and the CEO. The board explicitly reviews and endorses CDSCs operational risk management framework every two years, however, an immediate review shall be done if there is a material change in CDSC systems and processes, or the organisation undergoes a major change in strategy or ownership structure.

Operational guidelines and manuals are also reviewed every year by the department manager with any material changes being signed-off by the Risk Manager. All critical and non-critical processes and procedures are reviewed annually. Operational guidelines and manuals are reviewed every two years by the process owner, line manager, risk officer, internal and external auditor. Issues may be identified during this process.

Internal Audit

CDSC has a designated IA function which reports to the Risk and Audit committee of the Board and the CEO. CDSC has documented the internal audit policies and procedures manual which is reviewed on a needs basis but at least every two years. The IA programme takes a risk-based approach with different departments/services being audited on different frequencies based on man hour

requirements. The internal audit team, which consists of one employee, considers the department's self-assessments as well as review the previous year's internal and external audit results to determine the risk ratings for each department. The audit plan is drawn at the start of every calendar year and includes priorities and audit scope. This is reviewed and approved by the Risk and Audit Committee and the CEO. The audit process consists of four stages: planning, fieldwork, audit reporting and follow-up.

An exit meeting is held between the IA and the heads of department to discuss the findings, recommendations, receive feed-back and agree on timelines to implement the recommendations. These are then submitted to the Board committee. Audit recommendations are followed up every quarter and logged on an Excel spreadsheet. IA monitors that the deadlines to address the issues are met although no dedicated application to do so is available. All issues identified during the previous audit are included in the current years plans to ensure that the recommendations made are effective.

External Audit

Section 32 and 33 of the Central Depositories Act, 2000, requires CDSC to conduct an independent audit of its resources including operations, technology, finance and human resources. External audits are conducted once a year and cover operations, IT, accounting and financial processes. CDSC has contracted PKF as the external auditor for the above processes. The scope of the audit is detailed in the engagement letter and would cover:

- Amendment of accounts
- Account opening
- Transferring certificates to CDSC
- Transfer of sec between CDA's
- Pledges and pledge release
- Transfer of securities between investors
- Procedures and controls of the CSD.
- IT - systems in place, controls, data monitoring, governance with respect to IT, identity controls, segregation of duties, IT logs, system configuration etc.
- DR and BC Plan

The auditors also test the cyber security framework and the measures in place to mitigate these risks. Operational and IT audits are separate to the financial audit and mostly run concurrently. The teams for both audits are separate. During the TM meeting with the external auditors it was advised that the IT audit is as per the ISA and the operational audit is ISO 20007 compliant.

As part of systems testing, the links between CDSC, NSE and CDA's are tested and the gap analysis is submitted to the concerned department and the Board committee. However, the gaps identified by the NSE and the CDA's are not disclosed to PKF.

Internal audit reports are made available to PKF. The external audit team engage with the concerned department during the process. The findings are disclosed to the audit and risk committee and the CEO.

In addition, the external auditors also audit the settlement Guarantee Fund of the CDSC with regard to the income and outgoing of receipts of CDA's and the investments made by the fund.

At the time of the assessment, it was stated that the interim operational and system audit was being conducted and that CDSC has asked for the external full operational and IT audit to be conducted in mid-November. Any issues identified during the audit process are graded in risk categories. It was advised that no material exceptions were found during the last audit.

In addition, PWC stress tested the CDSC system before the new system was implemented. The findings of the testing were made available to CDSC and the meeting to discuss the findings was due to be held in the third week of October 2019.

The areas where the recommendations or issues were raised are as follows:

Table 6: Internal/External Audit Issues

	Operations	IT	Accounting / Finance	Human Resources	Other
Internal audit	✓	✓	✓	✓	✓
External audit	✓	✓	✓	✓	

Key Consideration 17.3:

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

Description

CDSC has a detailed and documented operational reliability plan in place which includes IT security arrangements and checks, systems review, IT contingency plans, monitoring and testing. The IT securities manager conducts regular testing and the process is fully automated. Securities Incident and Monitoring System (SIMS) is used to monitor breaches and any breach gets flagged automatically in real-time. SIMS does not quarantine flagged issues.

CDSC has established a down-time tolerance threshold of 0.5% of total operating hours. Over the last 12 months, the FMI's systems up-time was 99.7% of operating hours. CDSC stated that the recovery point objective (RPO) is between 10 and 15 minutes before the loss of availability and the recovery time objective (RTO) is 60 minutes, although it was advised that during testing prior to the launch of the new system, failover was conducted in 46 minutes. This is documented in the Service Level Agreements and Service Charter. CDSC system data is backed up at the DR centre with a 5-minute time lag, although an inconsistency was noticed within the ERM framework which states data is backed up every 30 minutes. It was advised that any real-time data that may be lost in this window can be recovered, however, this is reliant on the receipt of the information from third parties such as the NSE (trade information) or CDAs (e.g. for account opening details).

Timelines to update the CDSC core system are detailed in the system road map. Software is updated regularly or as and when there is a new update. CDSC has a 3-year hardware change policy for computers.

System changes are tested in a dedicated test environment which is a replica of the live environment. CDSC operates three environments:

- Live production environment
- Internal testing environment
- UAT environment (full replica of production)

The full change process is documented and backed-up.

The software provider and the FMI have agreed an SLA of 1 hour in case of disruption. The response time has been agreed in the SLA. The internal ICT team will work on resolving the issue and the vendor is simultaneously informed. CDSC has a detailed CSD Operations Manual in place.

CDSC has an agreement with 2 separate hardware providers for its hardware requirements / maintenance. For initial reaction, CDSC has a contractual agreement with its hardware provider that support would be provided within 1 hour of the incident. Precautionary checks are maintained throughout the year – network maintenance occurs quarterly; penetration tests are carried out every 3

years. The results of that test are provided to the IT department, IT manager, management team, IT committee and the board of directors.

CDSC hosts its primary data centre in its main site and have number of measures in place to ensure operational reliability. The server rooms can only be accessed by IT personnel and all other access has to be authorised and approved by the Board. The server room doors are fire-rated and two gas fire-suppression system, fire alarms, smoke and dust sensors, humidity monitoring and CCTV are in place which are tested every quarter. Flood controls are in place through raised floors and a monitoring system for leaks in the air-conditioning units. There are two 30 KVA Uninterruptible Power Supply (UPS) systems with battery lives of 140 minutes and 146 minutes. There are 3 levels of network redundancies on site.

The main building is powered on the main power grid and has two 500KVA diesel-powered back-up generators. In addition, CDSC has its own backup generator for its premises. CDSC has one network provider with two links, so in the event the network faces downtime, other modes of communication are used.

CDSC is linked with the CBK via VPN and NSE via direct interface. The procedure to be followed for network setup between the CDA and CDSC is documented.

Physical access to the building is controlled by security guards and electronic access keys. Access to the CDSC premises are controlled by electronic access keys which are separate to the building access keys.

The Business Continuity Plan (BCP) and the Disaster Recovery Plan (DRP) provide details of the technological arrangements and steps to be followed in order to ensure the reliability of CDSCs services. The BCP is regularly tested in a live environment and the testing frequency and requirements are included in the documented policy or procedure. In the event of a disaster the DR can be activated within 1 hour.

Key Consideration 17.4:

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

Description

CDSC assesses its system capacity on a monthly basis. As per the CDSC IT Manual, the rule is that IT capacity should not exceed 70% of the installed capacity. The system capacity at the time of the assessment was at 40% of the installed capacity. Furthermore, CDSC stated that it has extra capacity allocated but not yet deployed.

The management framework describes contingency measures to increase IT capacity. The IT resources are based on virtual environment and the system capacity is tested by simulating market stress conditions. The results of the systems' capacity test are disclosed to the risk officer, management team, IT auditor, external auditor, internal auditor, board of directors. CDSC stated that on an average it could take a week to increase the system capacity and would need approval from the finance department and the CEO depending on the cost involved.

As mentioned in KC 17.3, CDSC has established a down-time tolerance threshold of 0.5% of total operating hours. Over the last 12 months, the FMI's systems up-time was 99.7% of operating hours. CDSC's RPO is between 10 and 15 minutes before the loss of availability and the RTO is 60 minutes. This is documented in the Service Level Agreements and Service Charter. CDSC system data is backed up at the DR centre and has a 5-minute time lag. Any real-time data that may be lost in this window should be able to be recovered / pulled.

Key Consideration 17.5:

An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

Description

CDSC has a security and safety plan that is approved by the board of directors. The plan includes procedures to prevent, mitigate, contain and/or manage fire, earthquake, terrorism attack, fraud and theft, war/violent conflict. The security and safety plan is prepared by an external consultant and is reviewed every two years. The plan has clearly defined lines of responsibility.

There is a building security management system and passwords, PIN codes, ID cards and other measures are in place to safe keep CDSC's systems. Physical access to the building is controlled by use of building security / guards, and ID card. Access to the CDSC premises is controlled by ID card and biometric measures.

In terms of security of information and data, CDSC has a dedicated Cyber Security Framework, which is reviewed annually by the head of IT, the CEO, the Chairman of the technology committee and the chairman of the Board. The framework is based upon the recommendations contained within the CPMI-IOSCO Guidance on Cyber Resilience for Financial Market Infrastructures – June 2016. A security plan is in place and the measures employed include anti-malware, spyware and anti-virus applications and firewalls to protect the IT infrastructure. A security incident and event monitoring system is also in place, which checks for potentially dangerous activities and automatically flags anything identified. In addition, there are access matrices mapped to user access as a function of job description. This prevents staff from accessing systems they are not authorised to operate. Internal and external penetration testing is conducted by a dedicated information security manager and PWC respectively.

CDSC hosts its primary data centre in its main site. In order to access the area, key cards are needed, and visitors must be pre-authorised, provide an ID and sign a log manual. The server room doors are fire-rated and two gas fire-suppression systems, fire alarms, smoke and dust sensors, humidity monitoring and CCTV are in place which are tested every quarter. Flood controls are in place through raised floors and a monitoring system for leaks in the air-conditioning units. There are two 30 KVA Uninterruptible Power Supply (UPS) systems with battery lives of 140 minutes and 146 minutes. There are three levels of network redundancies on site.

When the FMI is implementing software changes, upgrades, improvements to code and/or bug fixes, measures are in place to assure that no disruption to the service takes place as a result of the changes made. Such procedures include quality assurance test, dry run, Off-line testing, participant involvement etc. System changes are tested in test environment which is a replica of the live environment.

Key Consideration 17.6:

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

Description

CDSC has detailed and documented BCP and DR plans in place with objectives, policies, clear lines of responsibilities and action plans in case the main offices of CDSC are unavailable or the main data site is compromised. However, the DR site was previously shared by CDSC and the NSE and following implementation of the new CDSC and NSE systems, CDSC no longer shares the premises with the NSE. The DR plan documents are yet to be updated to reflect the new arrangements.

The FMI has identified and categorised the risks in 2 levels based on their severity as follows:

Level 1

- Loss of Information
 - Fire
 - Hardware failure
 - Disclosure of confidential information
 - Electrical disturbance
 - Computer virus attack
 - Employee sabotage
 - Operator / user error
 - Theft
 - Vandalism

- Breakdown of systems and equipment - This breakdown is outside the normal breakdown often leading to a prolonged downtime of service delivery.

Level 2

- Fire and floods
- Earthquakes
- Bombings
- Volcanic eruptions
- Lightning and thunderstorms
- Political unrest

CDSC has categorised its systems as critical functions and essential functions as follows:

Critical functions

These are systems that host the CDSC and facilitate CDSC's core business as a securities depository, support CDSC's network and security appliances. These systems have to be restored within one hour of an outage incident affecting and /or disabling the CSD department and or the capital markets operations.

Essential functions

CDSC applications that support CDSC's electronic business communications, printing facilities, provide workstations to end users, facilitate end user document processing and facilitate customer relationship management. Processing support for these applications must be resolved within 1 week / several days of outage.

As stated above, CDSC has an agreement with two separate hardware providers for its hardware requirements / maintenance. For initial reaction, CDSC has a contractual agreement with its hardware provider that support would be provided within one hour of the incident. Precautionary checks are maintained throughout the year – network maintenance occurs quarterly, penetration tests are carried out every three years, and as a policy, data is backed up every five minutes.

CDSC software is designed by a third party. For initial reaction, CDSC has a contractual agreement with its software provider that support would be provided within 1 hour of the incident.

Disaster Recovery

Data is backed up every five minutes. It was advised that no information is lost as the trading data could be recovered from NSE. Data that can be lost is new account opening information which can be pulled or can be provided by the CDA.

The DR site is warm and shared. The distance between the FMI's main and DR site is around 10km. Production can be swapped from the main site to the DR site within one hour. DR readiness and connectivity tests are conducted every six months. The last DR test was conducted before the system upgrade in October 2019.

The table below has the list of those parties involved in the FMI's DR readiness and connectivity tests, as well as the circumstances of the testing.

Table 7: CDSC's DR Readiness Test Programme

	Live environment	Offline	N/A
Payment system provider from their main site	✓	-	-
Payment system providers from their DR site	-	-	-
Participants from their main site	✓	-	-
Participants from their DR site	-	-	-
Critical service providers from their main site	✓	-	-
Critical service providers from their DR site	✓	-	-
Exchange / data providers from main site	✓	-	-
Exchange / data providers from DR site	-	-	✓
Clearing house/CCP from main site	-	-	✓
Clearing house/CCP from DR site	-	-	✓

The site is protected. There is an outer wall with an electric fence as a first line of defence. Entrance to the site can only take place if previously announced by authorised staff at CDSC. The list of CDSC staff visiting the DR site should be sent to the DR site admin department two days prior to the visit. In a real-disaster scenario this process would obviously not be possible. There is a CCTV system in

place, although it did not appear to cover all external areas. Access to the server rooms is biometric and all entries are logged.

In terms of equipment safety, the server rooms are installed with cameras, smoke detectors, temperature and humidity control. It was advised that this is monitored, however, this was not seen by TM staff.

The DR site has one electric power supplier and is powered by the Kenya Power Lighting Company. In addition, there are two generators of 220KVA and 500KVA. It was advised that 20,000 litres of diesel are held as reserve and in case of emergency, additional diesel can be supplied within two hours. The two UPS that are available can last for two hours.

Business Continuity

CDSC has a documented Business Continuity Plan (BC plan) in place. The plan details clear lines of responsibilities and action plans in case the main offices of CDSC are unavailable or the main data site is compromised. The BC plan details the potential scenarios and circumstances that could force CDSC to activate the BC strategy.

The site is 6km away from the main site and is tested every quarter in a live environment. The site is warm and can take up to 30 minutes to set up the configurations and have the site ready for operations. 22 BCP slots have been allocated to CDSC and includes slots for CDAs. CDSC staff is not provided with remote access to CDSC systems.

In terms of physical security, the BC site has security guards, metal detectors and bag check scanners in place. All laptops carried to the premises have to be registered. The BC site is on floor 10 of the building and is guarded.

Key Consideration 17.7:

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

Description

CDSC has identified Regulatory Compliance Risk, Settlement Risk, Operational Risk and Information Security Risk posed to CDSC by other FMIs. The depository further establishes a detailed methodology to identify, control, monitor and manage the risks emanating from critical providers, other FMIs and participants. CDSC also conducts socialisation programmes with participants for new services, processes etc to ensure they are fully conversant with them and any operational errors are kept to a minimum.

CDSC has a risk register in place dedicated specifically to risks posed by CDSC to other entities (detailed in Principle 3), which includes numerous operational risks and controls relating to various stakeholders. In addition to this, multiple risks borne by CDSC from third parties have been identified and are embedded within each of the departmental risk registers along with the accompanying controls for each risk. The ongoing monitoring of these risks is conducted manually and internally and CDSC does not include external parties in the process. The mechanisms to monitor risk will depend on the provider/entity, but the CSD does not have a specific tool to assess this. Operational risk emerging from exposure to communication (internet) and power (electricity) providers is mitigated through the use of redundant networks from different providers when possible.

CDSC does also use some market data and participant feedback to assess risks posed by third parties, however, the data is quite limited and mostly relates to settlement rates and participant feedback is conducted informally.

CDSC uses redundant networks to mitigate the operational risk emerging from exposure to communication (internet) providers and power (electricity) providers. In addition, CDSC has a DR site and BC site that can be used in case the main building is not functional.

Principle 18: Access and participation requirements

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

Principle Summary

As per the Central Depositories Rules, only persons prescribed under Section 9 of the Central Depositories Act and Rule 10 of the Act shall be eligible for appointment as CDA. As such, only members of the exchange, custodian subsidiaries of commercial banks, insurance companies and statutory bodies are admitted as CDAs.

CDSC rules and contractual agreements contain some high-level operational requirements for participants and places a lot of emphasis in the technical capability and robustness of members. However, specific parameters for initial and ongoing compliance with participation requirements are not in place meaning that concluding a CDA's level of compliance may be unclear. The CSD does not set elaborate financial criteria as it mainly relies on the financial requirements set by the CBK and the CMA.

CDSC carries out inspections on participants on an annual basis. However, CDSC does not have an exhaustive program to monitor participant compliance with all the parameters as part of the access criteria, which is currently largely attributed to resource constraints. The CSD does not have procedures for conducting enhanced surveillance or imposing additional controls on participants.

Key Consideration 18.1:

An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

Description

As per the Central Depositories Rules, only persons prescribed under Section 9 of the Central Depositories Act and Rule 10 of the Act shall be eligible for appointment as CDA. As such, only members of the exchange, custodian subsidiaries of commercial banks, insurance companies and statutory bodies are admitted as CDAs. In addition, participation to the KEPPS, the CBK's Real Time Gross Settlement System are outlined in the KEPSS Rules and Procedures. CDSC's approach to accept market participants requires organisations to have the necessary legal documentation and meet the operational requirements set by CDSC. CDSC does not set exhaustive financial criteria as it mainly relies on the financial requirements set by the CBK or the regulator. In terms of financial requirements, minimum capital requirement for settlement banks is KES 1 billion as outlined in the Banking Act.

Section 8 of the Central Depositories Rules outlines the continuing obligations that must be fulfilled by the CDA throughout its term, which include high-level financial, legal, technological and operational standards. Some basic legal, and technical compliance requirements are included in the CDA Agreement contracts; however, these are high-level requirements and lack a level of specific detail on what constitutes compliance with each criterion. Aside from settlement activity dictating guarantee fund contributions, the specified criteria are not risk-based and appear to be standardised for all participants, which includes trading participants of the NSE, banking institutions, institutional investors and prescribed body corporates, all of which will have varying risk profiles.

Key Consideration 18.2:

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

Description

Market participants must meet specific requirements drawn by the CMA and the CBK as documented in their regulations, in addition to the requirements set by CDSC. These requirements cover financial,

operational, and legal criteria and apply to all classes of participants. The CMA requirements are available on their website.

According to the CMA guidelines, the paid-up share capital and liquid capital for market intermediaries are outlined in the table below:

Table 8: Financial Licensing Requirements

Licensed Activity	Paid-up Share Capital	Required Liquid Capital
Stockbroker	KES 50 million	KES 30 million
Investment bank	KES 250 million	KES 30 million
Investment adviser	KES 2.5 million	KES 1 million
Fund manager	KES 10 million	KES 5 million

As per the Banking Act, the minimum capital requirement for settlement banks is KES 1 billion.

However, as has been mentioned previously, there is very little in the way of additional, CDSC specific requirements, and those that are in place are not shared publicly. CDSC do, however, conduct onsite and offsite reviews of their participants, using inspection criteria based on set terms of reference, which are provided to the CDA prior to the inspection. However, the basis for selecting the criteria against which they are reviewed is unclear and it was advised that the most recent onsite CDA review programme was conducted in 2017.

Key Consideration 18.3:

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

Description

The CDSC compliance officer is responsible for:

- Conducting annual compliance inspections of the CDAs;
- providing guidance and support to all staff and CDAs in meeting their obligations;
- liaising with external parties;
- ensuring that obligations are monitored and met; and
- Making recommendations to the BCC on sanctions and penalties in the event of non-compliance.

Section 5A of the Central Depositories Act requires CDSC to conduct annual inspections on all CDAs, however, at the time of the review the last inspection on CDAs had been conducted in 2017. In accordance with Rules 8 and 9 of the Central Depository Rules and the CDSC Compliance Policy, CDA's shall be checked on handling of complaints, compliance with CDSC operating procedures and compliance with CDA agreement. CDSC's compliance policy is available on the CDSC website.

CDSC issues an annual questionnaire to CDA's to receive feedback and information on the CDA, however it is unclear exactly how the content of the questionnaire is directly linked to compliance with participation requirements, or how the information is utilised once it has been received.

CDSC operational procedures detail the monetary penalties and surcharges that will be levied on CDAs for non-compliance. However, these relate to securities settlement only. Penalties to be levied for failure to comply with the provisions of the Depository Act, Rules and Regulations are not detailed / available.

Suspension or revocation of a CDA is mentioned within article 13 of the CDSC Rules and refers to violation of provisions of the Act, CMA Rules or CDSC Rules, but does not refer to any breaches of terms stipulated in contractual agreements which include a significant portion of the participation requirements.

If the CSD is informed by the CMA about the suspension of a participant, CDSC then puts into motion the necessary process for barring the member from accessing the CDSC system. CDSC would freeze the accounts of the participant and then follow CMA instructions.

Principle 19: Tiered Participation

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

Principle Summary

Principle 19 focuses on tiered participation arrangements. These arrangements occur when some firms (indirect participants) rely on the services provided by other firms (direct participants) to use the securities settlement facility's settlement facilities. The dependencies and risk exposures inherent in these tiered arrangements can present risks to the securities settlement facility and its smooth functioning, as well as to the participants themselves and the broader financial markets.

This principle does not apply since CDSC does not currently have any indirect participants that rely on direct participants for settlement purposes.

Principle 20: FMI Links

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

Principle Summary

This principle is not applicable to CDSC.

Principle 21: Efficiency and Effectiveness

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

Principle Summary

CDSC has relatively good communication with its participants to ensure it operates in an efficient and effective manner. This is done via general meetings, customer surveys/questionnaires and participant representation in Board meetings. The level of participant feedback on CDSC's performance could be enhanced through the CDA questionnaire. It is market practice for participants to be consulted on changes to Rules and Fees prior to regulatory approval.

CDSC's mission and vision are communicated on its website, though the additional of specific company goals would be beneficial. However, CDSC does not have any formal structure by which to gauge efficiency and effectiveness, just methods such as risk assessments.

Key Consideration 21.1:

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.

Description

When the new system was designed, CDSC attempted to consider the needs of its participants in relation to clearing and settlement arrangements; operating structure; delivery systems and technologies; and individual services and products.

CDSC uses general meetings, customer surveys/questionnaires and has participant representation in Board meetings in order to determine whether the requirements and needs of participants are met. However, there is currently no formal structure for a user group that meets on a periodic basis, just groups for specific projects.

As it has continued operations, CDSC has evolved with changes in technology; for example, the implementation of the new system on 14 October 2019. Participants stated they felt they were duly consulted in the process.

On a more general level, feedback from participants indicates that CDSC takes into account participants' views and needs when making decisions. It is market practice that participants are consulted regarding any rule, fee or system changes prior to regulatory approval from CMA.

Key Consideration 21.2:

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

Description

CDSC has a defined vision and mission statement which is published openly on its website. The statement includes providing innovative solutions for custody, clearing and settlement services, as well as leveraging technology. However, there are no detailed, publicly available goals and objectives on the website.

The CDSC Board ensures the efficiency and effectiveness of senior management annually via an appraisal process. All managers are assessed individually via KPIs. The CEO is assessed by the Chairman of the Finance Committee. The KPIs for management cover strategic objectives, strategies, specific activities and attempt to quantify performance.

Risk management expectations are set out in the Enterprise Risk Management Framework which contains the definition, categorisation and analysis of eighteen potential risks that may affect CDSC. It also contains a risk-tolerance policy and explains CDSC's tolerance position against various specific categories, including guarantee fund liquidity, asset commitment risk and general business risk.

Key Consideration 21.3:

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

Description

As established in KC 21.1 and 21.2, CDSC uses participant feedback and questionnaires to establish its degree of efficiency and effectiveness. There is also an in-depth review process for the Board, which is conducted externally every year, currently by The Institute of Certified Public Secretaries. As part of this review, directors present on the board must rate the other directors' performance.

However, there are no formally established mechanisms specifically for the regular review of efficiency and effectiveness.

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.

Principle Summary

CDSC uses a proprietary electronic system to communicate with its participants. Their system is SWIFT enabled, but it is not utilised.

CDSC possesses a communications strategy in the Communications Policy Manual 2019. Within the document, there is a crisis communication strategy involving a crisis management team which comprises of the CEO and a team leader from each department.

Key Consideration 22.1:

An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

Description

CDSC uses a proprietary electronic system to communicate with its participants. The new system implemented on 14 October 2019 is SWIFT enabled, but as of yet, SWIFT messaging has not been adopted by CDSC. As a result, the current messaging processes may require participants to convert incoming SWIFT instructions into CDSC format. CDSC adheres to international standards such as IFSD, FpML ISITC and XBRL.

CDSC has a fairly comprehensive communications strategy in place in the Communications Policy Manual 2019. Within the document, there is a crisis communication strategy involving a crisis management team which comprises of the CEO and a team leader from each department. Section 10.2 states that in case of a crisis, CDSC Management shall become the Crisis Communication Management Team (CCMT) and co-opt other members as the situation may demand. It then states that the CCMT aims to constantly monitor, interpret and manage issues with the potential to escalate into crises and shall gather details about crises and approve strategies for internal and external communication.

There are also statements on crisis communication and crisis response, which involves the Chief Executive, in liaison with the Head of Human Resources and Corporate Affairs (HRCA), developing and advising the appropriate strategies to deal with the situation and communicate appropriate information to relevant stakeholders.

The manual states in section 10.2 that during crisis communication, the Chief Executive shall release relevant, appropriate and verifiable information to the media regarding any crisis. The Manager in charge of Corporate Affairs Chief shall institute mechanisms in consultation with the Chief Executive to continually monitor media coverage and respond to accordingly.

CDSC does not perform cross-border operations.

Principle 23: Disclosure of Rules, Key Procedures and Market Data

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

Principle Summary

CDSC's rules and procedures are comprehensive, in accordance with local regulation and in general well-designed. Both the Central Depository Rules and the Central Depositories (Operational) Rules are available to the public via its website. CDSC's consultation process to amend rules and procedures includes participants, shareholders, regulators, other FMIs and the general public, which lasts on average between three and six months.

CDSC publicly discloses its fees at the level of individual services online via a secured website. Changes in fees and discounts are announced to the public through newsletters, media, online and via physical letters.

This is the first CPMI-IOSCO PFMI assessment that CDSC has undertaken. The CSD plans to conduct the assessment every four years or more.

Key Consideration 23.1:

An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

Description

CDSC's rules and procedures are comprehensive, in accordance with local regulation and in general well-designed. Both the Central Depository Rules and the Central Depositories (Operational) Rules

are available to the public via its website. CDSC receives comments and requests from participants asking for amendments/clarifications to rules and procedures on an annual basis. However, the section on the CDSC website dedicated to clearing and settlement services is extremely brief, and, in some cases, the information is out-of-date, or inconsistent with CDSC Rules and Procedures. For example, the settlement section currently states that settlement is on a rolling T+4 settlement cycle. This could cause issues should investors look at this section for information rather than the rules and procedures documents.

CDSC's consultation process to amend rules and procedures includes participants, shareholders, regulators, other FMIs and the general public, which lasts on average between three and six months. Initial consultation announcements are made using media, newsletters, website announcements and physical letters, and CDSC collects feedback through physical letters, emails and via informal means.

Neither the CMA nor CDSC has had to amend its rules or procedures as a result of adverse legal outcomes.

Table 9: Areas/relevant aspects covered by CDSC's rules and procedures

Areas/relevant aspects covered by the FMI's rules and procedures	
Membership	✓
Safekeeping	✓
Eligible securities	✓
Deposit and withdrawal	✓
Liens	✓
Settlement	✓
Irrevocability	✓
Finality	✓
Fails management	✓

Securities lending and borrowing	
Defaults	✓
Guarantee/clearing fund	✓
Collateral	✓
Corporate actions	✓
Registration	✓
Prices and fees	✓
Communications	✓
Reporting	✓
Disaster recovery	✓
Business continuity	✓

Key Consideration 23.2:

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

Description

The technical documents that are made available to each stakeholder, partner and/or participants are listed in the table below. However, the general public does not have access to any technical documentation:

Table 10: Availability of Key Documentation

The means used by CDSC to share technical documents with stakeholders are listed in the table below.

	Participant	Provider	Regulator	Other FMI	External auditor/ third party assessor	General public
Software specification	✓	✓	✓		✓	
Hardware requirements	✓	✓	✓			
Network features	✓	✓	✓			
System schematics		✓			✓	

IT high-level architectural diagram			✓			
None of the above				✓		✓

Table 11: Main Distribution Channels

	Participant	Provider	Regulator	Other FMI	External auditor/ third party assessor	General public
Unsecured website						
Secured on-line access						
Annex to contract		✓				
Due diligence report	✓		✓		✓	
Brochure						
None of the above				✓		✓

CDSC provides its participants and other stakeholders with the technical specifications related to the systems design and operations. However, the CSD does not share technical documents related to the system hardware, software or network architecture with the general public.

Key Consideration 23.3:

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.

Description

The table below shows the material that CDSC has available on its operations and rules, as well as the channels used for its distribution to participants.

Table 12: Documentation Available on Operations

	Free on-line	Physical- available request	Regular onseminars/user groups	Introduction (welcome pack)	N/A
Rules and by- laws	✓		✓		
Operational guidelines	✓		✓		
Procedures and processes	✓		✓		
Risk Assessment					✓

Information on procedures and rules disclosed to participants by the CDSC through its website is comprehensive.

The evidence is collected informally and via open communication channels. Feedback is also gathered through CDSC user groups, although these are only in place for specific projects and therefore cannot be relied upon as a regular and general communication channel. In particular, with the implementation of the new system, CDSC has consulted different stakeholders to provide training and details of the project. This process allows the CSD to assess and address participants' understanding of the changes.

Key Consideration 23.4:

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.

Description

CDSC publicly discloses its fees at the level of individual services online via a secured website. The fees listed include transaction levy, depository levy, CDA fees and security transfer fees. Changes in fees and discounts are announced to the public through newsletters, media, online and via physical letters.

CDSC announces changes in fees and discounts between one and two months in advance and provides a description of its priced services as to allow for comparison across similar FMIs.

However, CDSC does not disclose information on its technology and communication procedures or any other factors that affect the costs of operating.

Key Consideration 23.5:

An FMI should complete regularly and disclose publicly responses to the CPMI-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

Description

This is the first CPMI-IOSCO PFMI assessment that CDSC has undertaken. The CSD plans to take the assessment every four years or more. CDSC intends to publish the assessment findings in this report.

The information that CDSC makes available to participants through its reporting channels is reasonably comprehensive and includes failed trades (reported in real-time), and settlement (volumes and values), safekeeping and financial accounts which are reported daily. However, CDSC does not publish statistical information on its website. This can include settlement and safekeeping statistics broken down into various categories (e.g. by participant, type of investor, type of investment product) and is a useful tool for the public and potential investors.

Principle 24: Disclosure of Market Data by Trade Repositories

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

Principle Summary

CDSC does not act as a trade repository.



Post-Trade Risk and Custody Specialists

CDSC – Central Depository and Settlement Corporation

CPMI-IOSCO PFMI Disclosure Framework

May 2020



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