JSE CLEAR

IOSCO Disclosure Document

9 May 2020

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Responding institution:	JSE Clear
Jurisdiction(s) in which the FMI operates:	South Africa
Authority(ies) regulating, supervising, or overseeing the FMI:	Financial Sector Conduct Authority (FSCA)

The date of the disclosure is:	9 April 2020
The disclosure can be found at:	https://www.jse.co.za/services/post-trade-services/regulatory-compliance
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1. EXECUTIVE SUMMARY

This document provides an overview of the outcome of JSE Clear's detailed assessment against the principles featured in the CPSS-IOSCO "Principles for Financial Market Infrastructures (FMIs)", as completed in 2018. As a member of the G-20, South Africa (and its respective FMIs) is committed to comply with the principles and provisions of the CPSS–IOSCO report, as it is an integral part of the G-20's efforts to enhance the stability and integrity of financial markets. Consequently, as part of its compliance obligations, JSE Clear is required to adhere to the requirements of the CPSS-IOSCO disclosure framework – one of the stipulations of this framework is that the outcomes of an FMI's self-assessment should be published for public disclosure, and it is in this light that this document has been created.

The contents of this document contain details of JSE Clear's 2018 self-assessment. Subsequent versions of this document will be published post the completion of successive self-assessments (the frequency of which is dictated by the regulator).

Of the 24 principles that from part of the CPSS-IOSCO "Principles for Financial Market Infrastructures" report, only 20 are considered to be relevant to JSE Clear due to the nature of its operations as a clearing house. Having completed the self-assessment exercise, JSE Clear is rated as "**Observed**" across 18 of these principles and "**Broadly Observed**" in terms of the remaining 2 applicable principles.

As such, JSE Clear is thereby considered to be fully compliant with the requirements put forth by IOSCO for Central Counter Parties (CCPs). The documents containing JSE Clear's detailed responses to the various questions that make up the IOSCO self-assessment (along with all associated reference documentation) have been submitted to the Financial Sector Conduct Authority (FSCA) and have subsequently been reviewed and approved. This disclosure document provides a summary of the self-assessment content.

2. SUMMARY OF MAJOR CHANGES (SINCE THE LAST UPDATE OF THE DISCLOSURE)

During the last two years, JSE Clear has implemented a number of enhancements to the CCP's risk management infrastructure, and managed day-to-day risk associated with providing a clearing service without incident. Notably, the following enhancements were designed to bring the JSE Clear's risk management and operations capabilities in line with world class standards:

1. JSE Clear has concluded 2 independent model validation exercises (both executed by Deloitte, one in 2017 and one in 2018). Although in both instances minor model enhancements were identified, the outcomes of the reviews reinforced the soundness and appropriateness of JSE Clear's various risk models.
2. As part of the enhancement of the boarder Enterprise Risk Management capability within the JSE, JSE Clear has introduced detailed reporting focused on Enterprise Risk Management for the CCP. This information has been included in formal reporting to the JSE Clear Advisory, Risk and Board committees, and provides a more comprehensive view of the universe of risks that JSE Clear is required to monitor and manage.
3. In an effort to clarify the roles and obligations of all parties involved in a default event – while still limiting disruptions to the remainder of the market - extensive revisions have been made to the JSE Clear Default Management policy and procedures. These policies and procedure were approved by the Risk and Board committees in Q3 of 2018.
4. JSE Clear in 2018 introduced a policy relating to CCP Recovery and Resolution, drawing on the guidance provided by both the IOSCO recovery and resolution recommendations, and the specifications of our local FMA regulations. These policies and procedure were approved by the Risk and Board committees in Q3 of 2018.
5. Q2 of 2018 saw the finalisation of a unique Capital Management policy for JSE Clear. JSE Clear has received additional capitalisation in accordance with the requirements of the regulations (FMA Regulations) promulgated under the Financial Markets Act, No. 19 of 2012. The JSE's Finance team calculates and reports capital requirements to the Risk and Board committees on a quarterly basis.
6. JSE Clear completed a review of its disaster recovery processes to more fully align with the IOSCO requirements.
7. Work was undertaken to revise all JSE Clear governance, policy and procedure documentation (to remove all SAFCOM references and make requisite updates). Additionally, JSE Clear has implemented a formal annual review schedule for all required governance documentation.
8. A number of general updates have been made to our risk management tools – including initial margin approaches, stress testing methods, liquidity management etc. – in response to changing market conditions or industry best practice.

3. GENERAL BACKGROUND ON THE FMI

General description of the FMI and the markets it serves:

JSE Clear, a private company, is a wholly owned subsidiary of the JSE Ltd ("JSE"). JSE Clear is an associated clearing house as defined in the Financial Markets Act ("FMA") and is licensed as a clearing house by South Africa's Financial Sector Conduct Authority (FSCA). JSE Clear has been appointed as the clearing house and central counterparty ("CCP") of the JSE for all transactions in listed derivatives and listed cash bond securities concluded on the JSE's markets. The main objective of JSE Clear is to act as clearing house and central counterparty in transactions concluded on the JSE's markets and, in this regard, JSE Clear and the JSE, through the JSE Rules, take the necessary and appropriate steps to clear and risk manage transactions in securities listed on the JSE's Derivatives, Interest Rate and Currency markets. Currently the listed securities cleared by JSE Clear are options on futures contracts and futures contracts in the equity derivatives, commodity derivatives, currency derivatives, interest rate derivatives and spot bond markets of the JSE.

JSE Clear operates as a central counterparty ("CCP") by interposing itself in terms of the JSE's Rules between parties to transactions in listed securities on the markets operated by the JSE. JSE Clear also acts as collecting agent for all fees due to the JSE and as trustee in investing funds posted by market participants as collateral for due performance of their obligations on the JSE markets.

The Director of the JSE's Post-Trade Services Division has been designated as the officer responsible ("RO") for ensuring that all services provided by external service providers to JSE Clear are delivered in accordance with contractually agreed service levels.

Strategic Risk Profile:

The following table provides a summary of the 8 key strategic risks identified as being applicable to JSE Clear. These risks are reviewed by the JSE Clear Risk Committee on a quarterly basis or more often where relevant.

Risk Event	Risk Description
Strategy Execution Risk	• Strategy execution risk relates to the inability of JSE Clear to achieve its long term strategic objectives • Successful execution of strategic initiatives requires support from market stakeholders, as changes in the post-trade environment (including changes to the JSEC models and operating environment) are generally not isolated to the JSEC entity only.

Strategic Partner Risk	• Strategic partner risk relates to either strategic relationships deteriorating, or strategic partner capabilities deteriorating to an extent that hampers JSE Clear's ability to effectively run and grow the business.
	• Current strategic partners include:
	  • Clearing Members
	  • Key vendors (such as the providers of our various clearing systems - STT and Nasdaq)
	  • Regulators

Operational Risk	• Operational risk relates to the risk of an operational event occurring due to the complex operational environment within which JSE Clear operates. • Historically, there was a large dependency on manual workaround processes and controls which were used within the operating environment. Since the successful implementation of the Integrated Trading and Clearing (ITaC) system which saw the migration of the Equity and Currency Derivatives portfolios from a legacy system to the new Nasdaq Real Time Clearing (RTC) system, this has reduced significantly. • Planning is currently underway for the migration of the Interest Rate Derivatives and Commodity Derivatives markets off their current legacy platforms.

People Risk	• People risk relates to the assurance that appropriate business and IT staff are available to support the running of JSE Clear.
	• Focus areas for this risk category includes:
	  • The reduction of key man dependencies
	  • Embedding institutional knowledge within the organisation

IT Systems Risk	• IT Systems risk relates to the resilience of legacy systems to be able to run business-as-usual processes.
Compliance/ Regulatory Risk	• Compliance/ Regulatory Risk relates to the legal and financial implications of not adhering to required local and international regulations and benchmarks stipulated for the CCP. • JSE Clear is has been deemed to be compliant with all regulatory obligations placed on an Associated Clearing house, and currently in the process of applying to become an independent clearing house as required by the Financial Markets Act Regulations.
Business Environment Risk	• Business Environment Risk relates to risk emanating from environment within which the CCP operates. • JSE Clear is influenced by both local and global market trends, and is currently working on a number of new products and services in an effort to drive liquidity in the South African markets.

Legal and regulatory framework:

JSE Clear shall ensure that it remains a licensed clearing house in terms of the FMA, while subsequently maintaining its status as an IOSCO qualifying CCP (QCCP) and ESMA recognized equivalent CCP, and that it continues to comply with the requirements of any subsequent legislation.

In terms of regulating the market with regard to clearing and settlement, any proposed rule changes are subject of a robust engagement and approval process.

4. PRINCIPLE-BY-PRINCIPLE SUMMARY NARRATIVE DISCLOSURE

As previously stated in Section 1 of this document, only 20 of the 24 principles that make up the CPSS-IOSCO "Principles for Financial Market Infrastructures" have been deemed to be applicable to JSE Clear (please see APPENDIX 1, the "CPSS-IOSCO Compliance: Rationale for "Non-applicable" Principles" memo for an explanation of these exclusions).

The following table provides an overview of JSE Clear's approach to observing the various principles:

Principle-by-principle summary narrative disclosure	
Principle 1 – Legal basis *An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.*	
Summary narrative	JSE Clear's operations as a clearing house within South Africa occur within a clearly defined and robust legal framework. This legal framework is grounded in the Constitution and the Promotion of Administrative Justice Act, 2000 as well as the rule of law and the principles of common law. Self-regulatory organisations, such as exchanges and clearing houses, are also subject to the provisions of the Financial Markets Act, 19 of 2012 ("FMA") JSE Clear, a private company, is a wholly-owned subsidiary of the JSE Limited ("JSE"), and both entities operate solely in South Africa under licences granted in terms of the FMA. Although JSE Clear is licensed as the appointed clearing house for the JSE, it operates within the regulatory framework of the JSE rules, and has mandated the JSE (in terms of a formal contract) to perform its operating functions, its risk management and clearing services, as well as decision-making regarding the declaration of defaulting participants. As part of its duty to regulate the markets conducted under its auspices, the JSE has issued a set of rules known as the "Derivatives Rules". These rules form an overarching structure of regulation in terms of which the on-exchange derivative market is governed and to which all participants are bound. These rules also deal with and regulate all activities relating to JSE Clear clearing and settlement (which includes netting, novation and default).

Principle 2 – Governance _An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders._	
Summary narrative	JSE Clear operates within a clearly defined and robust (statutory) legal framework, and within a clearly documented and applied corporate governance structure. As a wholly-owned subsidiary of the JSE, JSE Clear is required to adhere to the highest standards of corporate governance, as set out in the Companies Act, 2008 and the King IV Code of Corporate Governance. Overall governance and direction of JSE Clear rests with its own Board of Directors, comprising a mix of JSE executives, clearing member representatives and independent industry experts. The JSE Clear Board is supported by a Risk Committee, Audit Committee and two Advisory Committees (one that is risk focused and the other that is focused on operations). JSE Clear's internal governance framework encompasses a memorandum of incorporation (required by statute, and which defines inter alia, the powers, duties and governance arrangements of JSE Clear) as well as a Board Charter, Risk Committee Terms of Reference, and a Code of Ethics. Although JSE Clear is licensed as the appointed clearing house for the JSE, in practice it operates as an integrated part of the JSE and within the regulatory framework of the JSE rules. JSE Clear has mandated the JSE (in terms of a formal contract called "The JSE Clear Services Agreement") to perform its operating functions, and its risk management and clearing services. The JSE Clear Services Agreement is supported by a series associated SLAs between the two parties which provide context to this operating relationship and provide the JSE Clear Board with a degree of control over the JSE resources providing the services on which it relies. Finally, as a wholly-owned subsidiary, JSE Clear is also subject to the oversight of the JSE Board, the JSE Group Risk Management Committee and the JSE Audit Committee.
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._	
Summary narrative	The provision of sound and appropriate risk management is seen as JSE Clear's primary objective and an overall approach to risk has been adopted into business operations and is driven by the Board. JSE Clear has put in place a rigorous governance framework which starts at Board level and extends to operations. The JSE Clear Enterprise Risk Management Framework document articulates JSE Clear's risk management philosophy and the various policies that have been established to underpin this. JSE Clear has in addition, developed a comprehensive and

	unambiguous risk appetite statement to guide business decisions and resource allocation. The cooperation – and establishment of comprehensive reporting mechanisms - between the PTS Risk Team, the JSE Clear Risk Committee, the JSE Risk and Audit functions has established a rigorous culture of risk management within the CCP which spans the business' operations. Risk management tools, risk triggers and mitigating actions are implemented in each area of the operation, and aim to highlight and monitor each type of risk applicable to the CCP. On-going risk identification, measurement, management, monitoring and reporting is paramount to JSE Clear's continued well-being. As such, JSE Clear has a program of regular risk assessment, reporting and policy review to ensure comprehensive capture and management of potential risks to its business.
Principle 4: Credit Risk *An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.*	
Summary narrative	As a CCP, JSE Clear has exposure to 3 sources of credit risk (which is the risk of losses due to the default of a counterparty) – namely its clearing members, its settlement bank and its investment banks: • The largest contributor to JSE Clear's credit risk is the counterparty credit risk exposure it has to clearing members, through the clearing and settlement process. Should a clearing member default, JSE Clear is responsible for managing all of its open positions. Potential losses could arise from the closing of positions. • JSE Clear also faces credit risk from its settlement bank due to its role in the daily settlement process. • Lastly, all initial margin and default fund contributions posted by clearing members as well as JSE Clear's own default fund contribution and its regulatory capital are invested with a range of investment banks - should one of these banks default, JSE Clear also stands to lose the margin deposited with that bank. To mitigate its counterparty credit risk, JSE Clear employs stringent clearing member entry requirements (which are specified in the JSE rules), a system of conservative margining and a Risk Waterfall which includes a Default Fund. The size of the Default

<table>
<tr><td></td><td>Fund is informed by a stress testing regime. These measures effectively mitigate the risk of a clearing member default.

The introduction of the JSE Clear Payment Clearing House (PCH) on 22 October 2012 (using central bank funds with netting at clearing member level across markets) has largely eliminated the credit risk faced from the settlement bank.

The credit risk arising from investment banks is managed through an investment mandate, which specifies a minimum credit quality for investment banks and limits the concentration of funds with any one bank.

JSE Clear uses a comprehensive stress testing framework to measure and manage counterparty and liquidity risk on a regular basis.</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td>Summary narrative</td><td>Cash collateral is currently the only form of collateral used to manage exposures.

There is an initiative underway to enable the posting of securities collateral.</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td>Summary narrative</td><td>JSE Clear has 3 types of margin:
• Daily variation margin (mark-to-market or MtM);
• Initial margin calculated using historical value-at-risk methodology, with a 2-day liquidation period, a 99.7% confidence level, and a rolling 3 year look-back period supplemented with a 1-year stressed period;
• Margin add-ons for liquidity and large exposures; and
• Possible intra-day margining in cases of extreme stress.

JSE Clear manages its current exposures to Clearing Members by performing at least one scheduled mark-to-market settlement cycle daily, where profits and losses are realized through variation margin payments. Potential future exposures are taken</td></tr>
</table>

	into account through initial margin, which is calculated based on Value-at-Risk methodologies and held as collateral throughout the lifetime of a position. Margins and risk parameters are very conservative with a 99.7% confidence level. Margins are calculated on an instrument level and offsets are allowed on a client level only. JSE Clear conducts risk management down to a client level. Margin is collected at a client level and paid to JSE Clear via the Clearing Members. No off-setting is provided for between a Clearing Member's clients. Systems, rules and policies are in place in order to calculate and implement margins and to manage the end-to-end margin collection process. The JSE Clear Risk Committee is consulted on all margin-related changes after which all changes are signed-off by the JSE Clear Board and then distributed via market notices and publication to relevant web sites.
Principle 7 - Liquidity Risk *An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.*	
Summary narrative	The nature of JSE Clear's daily liquidity flows are as follows: Clearing members must make or receive net variation margin payments to / from JSE Clear, based on their underlying client's position movements. These variation margin flows are processed through JSE Clear's settlement bank. Any new positions that are entered into or closed require net initial margin to be paid or received by JSE Clear, respectively. This initial margin is managed by JSE Clear and deposited into investment bank accounts, to be paid out when a position is closed out or used in the case of a default. This investment is performed in accordance with the JSE Clear Investment Mandate. As such, JSE Clear's liquidity risk can stem from two sources - the default of a clearing member, or operational issues at any of the four role players in JSE Clear's daily liquidity flows (clearing members, settlement bank, investment banks or JSE Clear itself). JSE Clear manages its liquidity risk stemming from different role players as follows: • The liquidity risk stemming from clearing members is mitigated via the existence of stringent entry requirements to becoming a clearing member • The liquidity risk stemming from JSE Clear's settlement bank is mitigated through the PCH agreement and an alternative (back-up) settlement bank arrangement • The liquidity risk stemming from investment banks is governed through JSE Clear's investment mandate, which aims to ensure that sufficient funds are

	available on call to make payment of initial margin returns due or variation margin payments due in the case of a clearing member default JSE Clear monitors liquidity flows through three processes: • The JSE Finance department monitors cash-flows daily • As part of the PCH agreement the SARB sends daily messages of payments in and out • JSE Clear's stress testing process includes liquidity risk stress testing, which involves identifying peak historical and possible future liquidity needs All of JSE Clear's cash-flows are in South African Rand. JSE Clear maintains dedicated liquidity lines with commercial banks to provide for potential liquidity needs.
Principle 8: Settlement Finality *An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.*	
Summary narrative	Finality of settlement is clearly defined and protected via the JSE Clear PCH Rules as well as the National Payment Systems Act. With settlement occurring through the JSE Clear PCH, finality occurs once confirmation from the Central Bank (via SWIFT message) is received - Irrevocability is defined by the JSE Clear PCH Rules as well as the National Payment Systems Act.
Principle 9: Money Settlements *An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risks arising from the use of commercial bank money.*	
Summary narrative	JSE Clear is a Payment Clearing House, which enables it to make use of funds provided by the central bank. As such, its money settlements are conducted in central bank money.
Principle 10: Physical deliveries *An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.*	
Summary narrative	JSE Clear is responsible for the facilitation of the delivery process for commodities, bonds and equity physical deliveries. With specific reference to the commodities

	market, JSE Clear administers invoicing (to both buyer and seller) and VAT compliance with Clearing Members, guaranteeing that good delivery takes place. JSE Clear also approves the silo facilities, as well as vetting the silo operators. Physical delivery procedures are well documented, and understood by all parties involved in the process. JSE Clear clearly distinguishes the obligations of all participants in its rules, and has put in place mechanisms to ensure that these obligations (be they activity-based or financial) are continually met to the appropriate standards, and that known risks are mitigated effectively.
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.*	
Summary narrative	JSE Clear has in place a formalised default management policy to ensure that the actions required to resolve a default event are executed in an orderly and timely fashion, and that there is no unnecessary disruption to the markets operated by JSE Clear. On an annual basis, the Default Management Policy is tabled for review at the JSE Clear Board and Risk Committee. All Clearing Member firms have appropriate representation at these Committees and thus indications are that participants understand their obligations in a default situation, and feel comfortable that they can comply with these should they ever be required to. Default fire drill testing is conducted with the Clearing Members on an annual basis, focused on ensuring the correct functioning of JSE Clear's systems, processes and communication mechanisms, as well as the Clearing Members ability to fulfil their default-related obligations (be they a defaulting or non-defaulting party). Additionally, representatives from local regulators (including the Financial Services Conduct Authority (FSCA), Prudential Authority (PA) and South African Reserve Bank (SARB)) are invited to attend as observers of the simulation.
Principle 14: Segregation and portability *A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.*	
Summary narrative	JSE Clear has the unique ability to fully segregate margin, collateral and positions between clearing members, members and their clients, offering far greater flexibility and protection to all levels of market participants. Segregation and portability has been tested in the past and experience shows that JSE Clear is able to act with a great deal of independence when enacting transfers in

	its market (both in terms of legal authority, as well as from a system capability perspective). JSE Clear is acutely aware of the role it plays in maintaining the stability of the market, and has created the appropriate segregation and portability mechanisms to facilitate this.
Principle 15: General business risk *An FMI should identify, monitor, and manage its general business risk* ***and hold sufficient liquid net assets*** *funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.*	
Summary narrative	JSE Clear identifies and monitors general business risks through the Enterprise Risk Management Framework (with the relevant business owners accountable for managing these risks). The risks are reviewed quarterly via the formal risk assessment process. High priority risks are identified and escalated immediately. Remedial actions and solutions are investigated by the risk management division and a proposed plan of action to resolve the situation is discussed with the market via the JSE Clear Risk Advisory Committee, the JSE EXCO, JSE Clear Risk Committee and JSE Clear Board. The CCP is well aware of the potential for business losses – particularly those outside of the immediate control of JSE Clear – and has ensured that sufficient liquid resources exist to weather situations of extreme distress. JSE Clear has implemented a capital plan that is calculated according to the FMA regulatory capital requirements for central counterparties. This plan includes capital specifically for business risk, as well as for the risk of wind-down. The JSE Clear's implementation of a recovery and resolution policy was formalised in 2018, which stipulates the circumstances under which the CCP can be recovered, and the tools that are available to facilitate this recovery.
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.*	
Summary narrative	JSE Clear has a clearly articulated Investment Mandate, and rigid mechanisms for the management of investment risk. JSE Clear policy for the investment of funds under management, is captured in the JSE Clear Investment Mandate where the primary aim is to minimize the risk exposure in these funds and thereafter maximize the investment income earned on

	funds invested. All these funds are administered and managed by the JSE on behalf of JSE Clear. The specific selection criteria are listed in the Investment Mandate, and are mainly that the banks should be registered and regulated in South Africa and that they meet the rating criteria. At present, all funds managed by JSE Clear are invested in a variety of bank accounts spread across a number of banks with a minimum of an "A-1+" or "A-1" rating. At least 30% of the total fund size must be invested on call, with no more than 30% of the amount on call invested with one institution. The maximum tenor for investment of funds is 180 days with a weighted average maturity not exceeding 50 days. JSE subscribes to a recognised credit agency and therefore will rely on their ratings in order to assess and compute credit limits for the banks used. JSE regularly checks the banks' ratings to ensure they meet the criteria for eligibility.

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.*

Summary narrative	The primary sources of operational risks as per the JSE Clear Enterprise Risk Management Framework, are considered to be: • Information Technology • Operational Processes • People or Management Failure Single points of failures are considered in the context of key man dependencies, critical business processes and technology-related. Single points of failures for key man dependencies, people-related risks and process-related risks are continually assessed based on past incidents and potential severe future incidents which could impact JSE Clear operations. The Operational Resilience Framework formally identifies single point of failures which are then actively addressed through analysing potential preventative controls as well as contingency plans to mitigate the impact of the single points of failures. Within the realm of IT and in light of the fact that the provision of systems is outsourced to the JSE, processes are in place to ensure that potential single points of failure are negated via architectural principles, technical implementation and stringent failover and DR testing. In the event of system failure, the JSE deploys a high availability environment in production which effectively means that where one server fails the system will automatically switch to another server. The basis of this is that there should never have outage in production. Where there is a total system failover, JSE Clear has a

	Recovery Time Objective (RTO) of 2 hours with JSE IT. Failing this, JSE Clear systems would fail over to the Disaster Recovery (DR) site.
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.*	
Summary narrative	The membership requirements put forward by JSE Clear are transparent and fair, and have enabled the introduction and participation of a broad range of market participants. The membership requirements are focused on ensuring that potential entrants are capable of fulfilling their various obligations, and will not introduce undue stress or risk to the rest of the market. Although enhancements to the monitoring of compliance will be implemented on an ongoing basis, JSE Clear has good visibility of the activities of its market participants, and a history of proactive intervention when necessary. The participation requirements are contained within the Derivatives Rules and Directives and the JSE Interest Rate and Currency Rules and Directives. These documents contain rules, typically relating to only capital requirements (for Clearing Members) - although there is a requirement of the appointment of a Compliance Officer. Additional reference is made to requirements relating to registered officers, and certain operational requirements. Further requirements are also detailed in the JSE Clearing Agreement and JSE Clearing member take-on procedure.

Principle 19: Tiered Participation Arrangements *An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.*	
Summary narrative	The JSE monitors and records all indirect participants' movements and accounts. In an effort to mitigate risks arising from tiered participation, the JSE takes into consideration concentration and large position risk. These risks are further managed through margining procedures. In terms of participation arrangements, the JSE currently allows for: • Direct Clearing Members who clear for themselves and their clients • General Clearing Members which clear for themselves and their clients as well as other Trading Members and clients • The Trading Members are also authorised and regulated by the JSE The structure of the market is: client to Trading Member and Trading Member to Clearing Members. All clients and Trading Members' accounts and positions are recorded on the JSE's systems. All Derivative Trading and Clearing Members have to apply for membership on the JSE and the JSE keeps a register of members. The register is updated whenever a new member is added or an existing member is terminated. There is also a requirement in the Rules that the Trading Members register various officers and dealers. Further to this, the Trading and Clearing Members have to do monthly capital adequacy returns. Lastly, all underlying clients have to be registered down to account-level on the JSE's systems. As mentioned above, the JSE also monitors for position build-up (large positions) where an add-on margin is called for. The JSE (in terms of the Rules) can request that a Trading Member reduces their positions.

Principle 21: Efficiency and effectiveness *An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.*	
Summary narrative	JSE Clear maintains its focus of the needs of the market via rigorous and frequent engagement, at every level. Feedback on the degree to which customers are satisfied is elicited via both formal (such as via the JSE Clear governance forums) and informal mechanisms. JSE Clear's service objectives are measured daily and reported back to the JSE Clear Risk committee and JSE Clear Board on a quarterly basis. Any shortcomings are immediately investigated and addressed with the participation of external participants (where necessary). JSE Clear prides itself on being a client-centric organisation, and places significance on efficiency and effectiveness. As a result, it actively looks for ways in which it can improve its internal operations, and consequently improve the efficiency of its

	service offering to the market (be it through the automation of manual processes, or in the alignment of processes with global benchmark and standards). JSE Clear assesses the effectiveness of its various internal operations - most explicitly via its ongoing SLA monitoring and management.
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.*	
Summary narrative	JSE Clear maintains multiple lines of communication with the market, and shares information with participants in a prompt and formalised manner. JSE Clear's systems utilise a globally recognised and accepted messaging standard (namely SWIFT ISO 15022 messages) – and these messages are disseminated on a reputable and established network.
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.*	
Summary narrative	JSE Clear has a comprehensive catalogue of policies and procedures (that define the basic obligations and responsibilities of each of the market participants) which are underpinned by its market-specific "Rules and Directives" – the primary reference document to be used by market participants to determine their rights and obligations. JSE Clear ensures that these vital reference documents are available to all parties that require details of the content held therein – where appropriate, this content is available for public access via the JSE website, or through contacting JSE Clear directly and requesting it.

APPENDIX 1: CPSS-IOSCO PFMI COMPLIANCE - RATIONALE FOR "NON-APPLICABLE" PRINCIPLES

Certain principles featured in the "CPSS-IOSCO Principles for Financial Market Infrastructures" have been deemed as not being relevant to JSE Clear. Of the 24 principles that have been published by IOSCO, only 20 are considered to be pertinent to the CCP, meaning that 6 are viewed as being "non-applicable".

There are 2 primary reasons for the exclusion of these 4 principles:

1. Section 1.21 of the "CPSS-IOSCO Principles for Financial Market Infrastructures" states that "*Most principles in this report are applicable to all types of FMIs covered by the report. However, a few principles are only relevant to specific types of FMIs*". Further to this, "Annex E" of the same document explicitly defines the applicability of the various key considerations to specific types of FMIs. JSE Clear is a CCP, and as such, Annex E specifies that:
   i. Principle 11 (Central Securities Depositories) and
   ii. Principle 24 (Disclosure of Market Data by Trade Repositories)

   are not relevant to CCPs, and can therefore be excluded from JSE Clear's self-assessment.

2. Due to the nature and design of the clearing and settlement service provided by JSE Clear for the equities derivatives market, 2 of the IOSCO principles have been deemed to be non-applicable because they make assertions about the functions of a CCP that are not true for JSE Clear. The 2 principles to which this applies are:
   i. Principle 12 (Exchange-of-value Settlement Systems)
   ii. Principle 20 (FMI links)

The following table provides a summary of the rationale for why the 4 "non-applicable" principles have been given this status:

Principle #	Principle Name	Reason for "Non-applicable" Status
11	**Central Securities Depositories**	This principle is not applicable to CCPs, in terms of Annex E of the "CPSS-IOSCO Principles for Financial Market Infrastructures" – therefore no responses have been given to these questions
12	**Exchange-of-value Settlement Systems**	Deemed to be "non-applicable" due to the fact that the question contents only apply to CCPs that clear cash markets (i.e. equities and bonds) and are linked to the CSD – JSE Clear does not clear cash markets and focuses exclusively on

		derivatives – hence, this principle is not applicable, and no responses have been given to these questions
20	**FMI Links**	Deemed to be "non-applicable" due to the fact that JSE Clear has no FMI links. The only other FMI in this market is Strate, and JSE Clear has no relationship with the CSD. We have no dependencies on other FMIs in South Africa, hence, this principle is not applicable, and no responses have been given to these questions
24	**Disclosure of Market Data by Trade Repositories**	This principle is not applicable to CCPs, in terms of Annex E of the "CPSS-IOSCO Principles for Financial Market Infrastructures" – therefore no response have been given to these questions

JSE Clear is satisfied that it has applied the correct level of scrutiny to the key considerations and questions related to the 4 principles listed above, and that the rationale for non-applicability stated here is factually correct. As a result, JSE Clear is only required to give detailed responses to 20 of the overall 24 CPSS-IOSCO principles, and these responses were issued to the regulator as part of a comprehensive compliance assessment.

JSE Clear – Governance and Compliance