

JSE CLEAR CREDIT AND LIQUIDITY STRESS TESTING POLICY

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VERSION CONTROL

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VERSION HISTORY

Version	Date	Summary of changes	Author
1.0	November 2012	Initial Draft of Policy.	Post-trade Risk
2.0	June 2017	Corrections to reporting and formatting. Inclusion of the use of hypothetical scenarios.	Post-trade Risk
3.0	February 2019	Minor clarification and confirmation.	Post-trade Risk
4.0	June 2020	Edits for clarification.	JSE Clear Risk
5.0	October 2021	Minor clarification to section 6. Update to stress testing scenarios and methodology review frequency.	JSE Clear Risk
6.0	July 2022	Regular review. Updates relating to the acceptance of securities collateral.	JSE Clear Risk
7.0	September 2024	Regular review. Bond CCP updates – note, where applicable, Bond CCP related updates are held in a separate version pending go live of the Bond CCP.	JSE Clear Risk
8.0	October 2025	Regular review.	JSE Clear Risk

1. Introduction

This policy details the ownership, governance and approach for credit and liquidity stress testing in JSE Clear (JSEC). The purpose of stress testing is to assess the adequacy of the firm's financial resources to sustain it in a period of severe stress, defined by "extreme but plausible" stress scenarios.

JSE Clear's financial resources that it may apply in meeting its obligations as a central counterparty consists of:

- variation margin payments (from variation margin losers) to settle daily variation margin profits (due to the variation margin winners, where applicable);
- initial margin held throughout the lifetime of a position in the form of cash and securities collateral; and
- a default fund in the form of cash and securities collateral.

Credit stress testing results will be used, inter alia, to inform the size of the JSE Clear default fund and the large exposure margin add-on. On a daily basis, the results will be used to monitor and manage JSE Clear's credit exposures to clearing members.

Liquidity stress testing results will be used to inform the magnitude of JSE Clear's liquidity needs under stressed conditions.

2. JSE Clear approach to stress testing

Credit risk for JSE Clear, as a central counterparty (CCP), arises from its clearing and settlement obligations and processes. JSE Clear faces the risk that a clearing member(s) is unable to meet a variation margin payment obligation. As such, credit risk stress testing for JSE Clear consists of calculating the value of the cleared portfolio under a stress scenario and measuring the impact of one or more clearing members defaulting on variation margin calls.

The aim of stress testing for liquidity risk is to assess whether JSE Clear has sufficient liquid resources to meet intra-day and multi-day payment obligations under stressed conditions. There are broadly two

types of scenarios that could cause a liquidity stress – the default of a clearing member or an operational event impacting the CCP.

In stress testing credit and liquidity risk, the following 5 high-level steps are followed:

2.1. Scenario definition

Stress scenarios are intended to assess JSE Clear's potential exposure and resilience in the event of counterparty credit risk, market risk and liquidity stresses. Market risk stress testing scenarios should consider historical, hypothetical and/or risk factor sensitivity testing under severe but plausible market movements.

Liquidity risk stress testing scenarios assess whether JSE Clear has sufficient liquid resources to meet payment obligations under stressed market conditions relating to the default of a clearing member or to operational events impacting the CCP.

Stress testing scenarios will be documented in the JSE Clear Stress Testing Scenarios document. The management team of JSE Clear will, as market conditions require, define specific hypothetical market scenarios to manage any observed market anomalies or imminent potential market events.

2.2. Exposure and/or cash flow assessment

For credit risk, the exposure (or stressed loss) is determined through revaluing the cleared portfolio applying the stressed risk factor values or movements defined by each scenario.

For liquidity risk, the maximum potential liquidity needs under the market stress scenarios are determined. Operational events impacting the CCP are also considered.

2.3. Stress event definition

The stress events are defined for the purpose of assessing the potential loss or liquidity needs resulting from a stress scenario. For credit risk stress testing, this refers to the default assumptions that will be applied.

For liquidity stress testing, this relates to either the default assumptions or the operational failures that will cause a liquidity stress.

2.4. Calculate resulting loss and/or liquidity needs

Given the scenario and stress event definition, JSE Clear calculates the stressed exposure at default or cash flow requirement and assesses the adequacy of JSE Clear's financial resources to cover the stressed financial needs.

2.5. Management action

The JSE Clear Chief Risk Officer (CRO) and JSE Clear Chief Executive Officer (CEO) will review stress testing results and in particular any breaches and take all and any actions necessary.

3. Roles and responsibilities

The CEO delegates the responsibility to execute the stress testing framework in JSE Clear to the JSE Clear CRO, who then takes responsibility for JSE Clear's stress testing methodology, calculation and reporting.

The JSE Clear Risk team is responsible for:

- Reviewing and updating scenarios on a regular basis (as set out in section 6 below).
- Reviewing the approach and methodology for stress testing on a regular basis (as set out in section 6 below).
- Ensuring that results are generated timeously and reviewing these results and reporting to management regularly (as set out in section 5 below), and for escalating concerns to management timeously.

It is the responsibility of the CRO to escalate concerns to the CEO and Risk Committee.

4. Governance

The JSE Clear stress testing policy, methodologies and scenarios will be reviewed annually or when there are any material changes to JSEC's risk profile, methodologies or processes.

The JSE Clear Risk Committee will recommend the initial approval of this policy by the JSEC Board or when there are material changes. The regular annual review of this policy will be approved by the JSE Clear Risk Committee.

5. Frequency of calculations

Credit risk stress tests will be run on a daily basis and reviewed by the JSEC Risk team. A summary of results will be communicated to the CEO and the JSE Clear Risk Committee on a quarterly basis. Any escalation level breaches, i.e. stressed losses exceeding prefunded resources, will be reported to the CRO and CEO on the day that the breach arises. The defined scenarios used for the quantification of prefunded resources in the form of initial margin (large exposure add-on) and the default fund, will be reviewed and approved annually by the JSEC Risk Committee.

Liquidity stress testing calculations will be conducted on a daily basis and reviewed by the JSEC Risk team. A summary of results will be communicated to the CEO and the JSE Clear Risk Committee quarterly. Breaches, i.e. liquidity need exceeding available liquid resources, will be reported to the CRO and CEO on the day that the breach arises.

6. Review of stress testing scenarios and methodology

Stress testing scenarios will undergo a formal review annually and this will be supplemented by additional ad hoc reviews in the event of material economic or market changes. This provides assurance that stress testing scenarios, parameters and assumptions are appropriate on an ongoing basis. The stress testing methodology will be reviewed and independently validated via the protocols set by the JSE Group Model Committee, the results of which will be presented to the JSE Clear Risk Committee.

7. Supporting documentation

In order to get a full understanding of stress testing in JSE Clear, this document should be read together with the following documents:

- JSE Clear Stress Testing Scenarios
- JSE Clear Stress Testing Methodology

- JSE Clear Default Fund Policy
- JSE Clear Default Management Policy
- JSE Clear Margin Policy
- JSE Clear Margin Methodology

APPENDIX 1 – GOVERNANCE COMMITTEE ACTIONS

No.	Ref	Action Item	Frequency	Applicable Governance Forum
1.	4	The Stress Testing Policy will be reviewed and approved on an annual basis by the JSE Clear Risk Committee	Annual	• JSE Clear Risk Committee
2.	5	A summary of credit risk stress testing and liquidity stress testing results will be communicated to the Chief Executive Officer and the JSE Clear Risk Committee on a quarterly basis.	Quarterly	• JSE Clear Risk Committee
3.	6	Stress testing scenarios will be formally reviewed on an annual basis, complemented by ongoing / ad hoc review as required.	Annual & ad hoc	• JSE Clear Risk Management Team
4.	6	The Stress Testing Methodology will be validated annually and results presented to the JSEC Risk Committee	Annual	• JSE Clear Risk Committee