

COUNTERPARTY CREDIT RISK MONITORING POLICY

JSE Clear

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VERSION CONTROL

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VERSION HISTORY

Version	Date	Summary of changes	Author
1.0	October 2017	Approval of policy	JSE Clear Risk Team
2.0	October 2018	Review	JSE Clear Risk Team
3.0	October 2019	Review	JSE Clear Risk Team
4.0	February 2021	Review	JSE Clear Risk Team
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1. POLICY CONTEXT

In South Africa, clearing members might play multiple roles as clearing members, settlement banks and investment banks. Since JSE Clear (JSEC) interacts with all three of these market participants, it has exposure to different risks from the failure of a single entity. The risks associated with the failure of JSEC's settlement bank which may be due to credit or operational issues, are covered through credit risk monitoring of the clearing member banks that also serve as JSEC's settlement banks, as well as through JSE Clear's operational and business continuity policies, plans and arrangements. The risks associated with the failure of an institution/s with which JSEC invests funds are governed by the investment mandates and liquidity policy. This policy focusses on the counterparty credit risk JSE Clear manages in relation to the default of a clearing member.

The Counterparty Credit Risk Monitoring Policy is a core element of the JSEC risk management framework, as it addresses the exposure that JSEC manages as a central counterparty. Counterparty credit risk is broadly defined as the risk that a counterparty will be unable to meet fully its financial obligations when due or at any time in the future. Counterparty credit risk in this context is concerned with monitoring and measuring of the likelihood of default by clearing members.

This policy defines the approach employed by JSEC to effectively measure, monitor and manage market participant exposures and the counterparty credit risk that arises as a result of clearing activities. This policy is guided by the applicable local and international regulatory requirements, including the Financial Markets Act, the Financial Markets Acts regulations¹ as well as the Principles for Financial Market Infrastructures by CPMI-IOSCO², respectively.

This policy should be read together with the JSEC Initial Margin policy, the JSEC Stress testing policy and the JSEC Default Fund policy to fully understand how counterparty credit risk is managed at JSEC.

2. POLICY GOVERNANCE

This policy is owned by the JSE Clear Chief Risk Officer (CRO) and will be reviewed at least annually or in the event of material economic or market changes.

The JSEC 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.

¹ Financial Markets Act 19 Financial Markets Act Regulations,
[http://www.treasury.gov.za/otc/Final%20Financial%20Markets%20Act%20Regulations%20\(clean\)%20\(20%2007%202016\).pdf](http://www.treasury.gov.za/otc/Final%20Financial%20Markets%20Act%20Regulations%20(clean)%20(20%2007%202016).pdf)

² Principle for financial market infrastructure.pdf
<http://www.bis.org/cpmi/publ/d101a.pdf>

3. ROLES AND RESPONSIBILITIES

The CRO is responsible for the monitoring and reporting of credit risk issues within JSEC. The CRO must escalate any concerns identified with the credit standing of a clearing member and any breaches of the credit risk monitoring thresholds specified in this document to the JSE Clear Chief Executive Officer (CEO) and notify the JSEC Risk Committee.

It is also the responsibility of the CRO to ensure that the JSEC Credit Risk Monitoring Policy is kept relevant and up to date.

The JSEC Executive Committee is responsible for approving any increases in margin requirements, limiting of cleared exposure and/or suspension from executing trades that may be required as a result of breaches in credit risk limits and will consult with the JSEC Risk Committee as required.

4. POLICY OBJECTIVES

The principal objectives of the credit risk monitoring policy are:

- to identify the sources of counterparty credit risk from clearing members;
- to ensure a comprehensive risk-based monitoring process is in place that timeously identifies potential issues;
- to mitigate counterparty credit risk and hence minimise the frequency and extent to which the default fund could potentially be used; and
- to ensure compliance with the JSE Clear rules and FMA regulations relating to counterparty credit risk.

5. POLICY SCOPE

The scope of this policy is the counterparty credit risk management of JSEC clearing members.

This policy does not cover the credit risk which could emanate from JSEC's treasury investment banks, suppliers, current debtors, trading members and clients of trading members.

6. POLICY STATEMENTS

The following statements are relevant to JSEC in their monitoring of counterparty credit risk:

- JSEC shall set a minimum credit standard for its clearing members and monitor continued adherence to that standard;
- JSEC shall ensure that pre-funded resources, in the form of margin and default fund, are calculated according to best practice to account for counterparty credit risk;
- JSEC shall ensure that margin calls and default fund contributions are adequate to cover potential losses based on historical events;
- JSEC may request ad-hoc information and/or visit clearing members at its discretion whenever JSEC has a reason to believe that a clearing members' credit risk profile has adversely changed;
- JSEC places reliance on the regulatory oversight provided by the PA and FSCA on JSEC's Clearing Members who are banks; and

- The JSEC rules require that Clearing Members that are not banks (or subsidiaries of a bank) must be members of the exchange, and as such, are required to provide accurate and timely capital adequacy returns in accordance with the Rules, monitor these indicators on an ongoing basis and alert JSEC to any potential breaches.

7. CLEARING MEMBER MINIMUM ENTRY REQUIREMENTS

JSEC has set minimum entry requirements for applicants wishing to become clearing members as set out in Section 3 of the JSE Clear Rules. The minimum requirement is that a clearing member that is not a bank or a branch of a foreign bank must procure that its obligations to JSE Clear in terms of these rules are guaranteed by a bank or a foreign bank headquartered in a jurisdiction that substantially adheres to current Basel capital requirements. Such a clearing member shall also have own funds of at least R200 million, or such other sum as JSEC may determine. On a quarterly basis, adherence to this minimum requirement will be monitored. If a clearing member fails to meet the minimum requirement; then the clearing member together with its trading members and clients may be suspended from executing further trades. The suspension will last until it can be proven that the clearing member meets the minimum entry requirements.

8. COUNTERPARTY CREDIT RISK MEASURES AND EARLY WARNING SIGNS

The JSEC Risk Team has identified six categories which will be used to measure and monitor the counterparty credit risk exposure of each clearing member. Within each category, various metrics have been identified to give a level measure of the credit quality of each entity. The external credit ratings will be monitored on a quarterly basis and more often as required. Exposures, limits (where applicable) and margin will be monitored daily. Balance sheet data for non-bank Clearing Members, market data and operational data will be monitored monthly, since this data does not change on a regular basis. Below are the six categories and the metric(s) in each.

8.1. External credit ratings

The national short-term issuer credit rating of clearing members will be monitored on at least a quarterly basis. The issuer credit rating is a forward-looking opinion on an obligor's overall creditworthiness. Two notches (ratings levels) below the Standard and Poor's national (sovereign) short term rating will be used as the threshold credit rating. In the absence of Standard and Poor's credit rating, on Bloomberg, the equivalent Moody's rating will be used.

In addition, the sovereign credit ratings of each sovereign of each clearing member will be monitored. The deterioration in sovereign creditworthiness brings increased risks to the banking sector. A sovereign downgrade is usually followed by the downgrade of local banks by rating agencies. The sovereign credit rating indicates the capacity and willingness of rated governments to repay commercial debt obligations in full and on time. The long-term foreign issuer rating of each sovereign of each clearing member will be monitored quarterly. JSEC will source the credit rating of the clearing members and the sovereign(s) directly from Bloomberg.

8.2. Exposures

As part of the daily monitoring of exposures the following analysis is conducted:

- **Stressed exposure at default:** an estimation of the extent to which the central counterparty may be exposed to a counterparty in the event of, and at the time of, that counterparty's default. The stressed loss in excess of initial margin of a defaulting clearing member is determined through the application of extreme but plausible stress scenarios to the current set of exposures and aggregated to clearing member level. This result is then compared to the size of the default fund.

This daily monitoring and analysis is reviewed by the Risk Team who will escalate any potential concerns immediately to the JSEC Chief Executive Officer in accordance with the Stress Testing Policy and per the thresholds defined in JSE Clear's risk appetite level 2 limits. This analysis is supplementary to the additional internal monitoring measures below.

8.3. Balance sheet analysis

JSEC is to undertake credit monitoring of non-bank Clearing Members via analysis and assessment of the capital adequacy returns that Derivative members are required to submit to the JSE on a monthly basis as per Rule 3.70.4 and of the available financial statements to assess the capital adequacy and underlying financial health of these counterparties. To support this, standardised balance sheet ratios are used as indicators of the counterparties' capital adequacy and access to liquidity³.

Results or input data for the above analysis will be obtained from Bloomberg and/or capital adequacy returns and financial statements submitted by the Clearing Members. This monitoring is dependent on the availability of the inputs into the ratios.

For credit monitoring of Clearing Members that are banks, JSE Clear acknowledges that the Prudential Authority (PA) is the primary prudential regulator of the banks and takes responsibility for the monitoring of their capital adequacy and financial health. In light of the fact that the PA has far greater access to information regarding the financial health and performance of each bank, and has extensive resources dedicated to monitoring these entities, JSE Clear will be satisfied that its bank members are meeting their capital requirements if the PA allows these banks to maintain their banking license and ongoing operations (and if no capital related fines are imposed on these institutions). Should a bank Clearing Member have its banking license suspended or be issued a fine in relation to a shortfall in its capital adequacy, this will prompt JSE Clear to urgently engage with the member and the PA to determine if a suspension of membership (or other mitigating action) needs to be implemented.

8.4. Margin and exposure analysis

In addition to balance sheet data, JSEC makes use of its own internal data to provide a further indicator of clearing members' abilities to meet obligations. The measures in place are:

- Total stressed exposure at default in excess of initial margin;
 - Escalation is required in accordance with the stress testing policy and JSE Clear's risk appetite level 2 thresholds
- Clearing member total margin paid as a percentage of market total margin.

³ For ratio and thresholds used please refer to section 10 under 'Balance Sheet Data'

- The total margin paid includes initial margin, large exposure add-on margin and liquidation add-on margin. As with the balance sheet data, such information provides and represents a useful monitoring tool when assessing overall clearing member riskiness.

8.5. Market data

Apart from the external ratings, JSEC performs monthly (and more often where required) monitoring of benchmark market indicators for its clearing members. Key indicators include:

- The implied volatility of the clearing member's equity. If implied volatility is unavailable, historical volatilities will be used;
- Share price moves;
- Probability of Default (PD);
- Bond spreads to appropriate benchmarks as agreed from time to time; and
- Credit Default Swap (CDS) spreads.

These measures need to be placed in the context of overall market moves to differentiate between general credit risk adjustments and obligor specific credit risk deteriorations. For example, clearing member share price moves may need to be adjusted to take account of general market or sector specific volatility.

8.6. Operational review

In addition to the quantitative methods, a review of the operational, IT systems, risk and compliance procedures and processes which support the clearing business and a demonstration of the adequacy of all current and planned arrangements is monitored.

JSEC will aim to conclude a comprehensive review of each clearing member on an annual basis to enable JSEC to have an up-to-date understanding of the credit risk each clearing member poses to the clearing service.

Such reviews will include, but not be limited to the financial performance of the company; the performance of the clearing member with respect to the CCP (e.g. reliability and timeliness of margin and other payments); changes in senior management structure or governance and decision making; risk governance; examination of key individuals' experience; margin and clearing trends, levels and volumes; key clients; and operational, IT systems, risk and compliance processes.

JSEC will also conduct an assessment using internal data to check the following:

- The number of unsuccessful payments in the last 6 months;
- The number of late payments in the last 3 – 6 months; and
- The number of incorrect payments in the last 0 – 6 months.

The outputs of the review provide an understanding of the resilience of the clearing member's business and controls and will be a key indicator of the operational processes in the overall credit risk monitoring process.

9. COUNTERPARTY CREDIT RISK MANAGEMENT ACTIONS

In order to mitigate the risk that might be posed by the metrics above, the JSEC Risk Team has identified risk mitigation actions for the breach of some key metrics. Not all breaches of the metrics listed above will warrant an action to be taken. A breach of certain metrics might warrant the intensifying of monitoring of those metrics instead of taking an action.

The table in Section 10 of this policy details the metrics that will require an action, should they be triggered. The different actions which could be taken include the increase in the frequency of monitoring a metric(s), notifying the clearing member, calling for additional margin or a combination of actions.

Below are the explanations of the different actions which could be taken:

- **Notify clearing member:** means the JSEC Risk team should inform the clearing member representative(s) of the riskiness of the positions and the potential need for risk mitigating actions
- **Call for additional margin:** means the JSEC Risk team should communicate the triggered metric(s) to the CRO. The CRO will escalate the issue to the CEO. Both the CEO and CRO will give guidance on whether or not additional margin should be called from the clearing member.
- **Place a limit on the cleared exposure:** means both the CEO and CRO will engage the clearing member to limit the amount of cleared exposure. This limit will be stated in terms of initial margin or notional exposure per asset class.
- **Increase frequency of monitoring:** means the JSEC Risk team should monitor daily, the specific metric which has been triggered.

The JSEC Risk Team will on a quarterly basis provide a report to the JSEC Risk Committee summarizing its view of the overall credit standing of JSEC's clearing members including trends, breaches and significant changes in profile.

10. COUNTERPARTY CREDIT RISK MONITORING THRESHOLDS

The metrics below will be monitored and where a threshold is triggered the appropriate action will be taken.

	Metric	Stable	Threshold	Action
External credit rating	National short term credit rating	{AAA, AA+, AA, AA-, A+, A-, BBB+, BBB, BBB-}	Any downgrade	- Engage the clearing member to understand the root cause.
			Two notches below sovereign	- Engage the clearing member to understand - Potentially place limit on cleared exposure and review their membership.

	Metric	Stable	Threshold	Action
Exposures	Stressed Exposure		Stressed Exposure in excess of IM > 100% of the Default Fund	- Consideration will be given to the calibration of large exposure initial margin.
Balance Sheet Data	Liquidity coverage ratio	LCR >= regulatory minimum	LCR < regulatory minimum	- Engage the clearing member to understand the root cause. - Consider whether further action is required
Market Data	Clearing member's at-the-money implied volatility	+/-35%	50%	- Engage the clearing member to understand the root cause. - Consider whether further action is required
	Clearing members' decrease in share price		20% in one month	- Engage the clearing member to understand the root cause. - Consider whether further action is required
	CDS spreads		Spread increase of 20% in one month	- Engage the clearing member to understand the root cause. - Consider whether further action is required
	Probability of Default		0.5%	- Engage the clearing member to understand the root cause. - Consider whether further action is required
	Spread of Clearing member bond to chosen benchmark		Spread increase of 20% in one month	- Engage the clearing member to understand the root cause. - Consider whether further action is required
Operational Data	Number of unsuccessful payments in the last 6 months (assuming ultimately resolved and no default)	0	2	- Engage the clearing member to understand - Potentially place limit on cleared exposure.
	Number of late payments in the last 6 months	0	2	- Engage the clearing member to understand the root cause. - Consider whether further action is required
	Number of incorrect payments in the last 6 months	0	2	- Engage the clearing member to understand the root cause. - Consider whether further action is required

APPENDIX A – JSE CLEAR GOVERNANCE COMMITTEE ACTIONS

No.	Ref	Action Item	Frequency	Applicable Governance Forum
1.	2	The JSEC Risk Committee will recommend the initial approval of this policy by the JSEC Board or when there are material changes.	As required	<ul style="list-style-type: none"> • JSE Clear Risk Committee • JSE Clear Board
2.	2	The regular annual review of this policy will be approved by the JSE Clear Risk Committee.	Annual	<ul style="list-style-type: none"> • JSE Clear Risk Committee
3.	3	The JSEC Executive Committee is responsible for approving any increases in margin requirements, limiting of cleared exposure and/or suspension from executing trades that may be required as a result of breaches in credit risk limits.	As required	<ul style="list-style-type: none"> • JSE Clear Executive Committee