

CLEARABLE DERIVATIVE PRODUCTS FRAMEWORK

JSE Clear
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VERSION CONTROL

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VERSION HISTORY

Version	Date of Revision	Summary of Changes	Author
1.0	October 2018	Document Creation	Post-trade Risk
2.0	February 2020	Regular review	Post-trade Risk
3.0	May 2021	<ol style="list-style-type: none"> 1. Document classification (framework) 2. Removed restriction that custom baskets of equities can only have long constituents. This allows baskets with long & short constituents. Options on custom baskets can only be listed if the value of the custom basket does not go negative. 3. Added guidelines on the process for existing products that no longer meet clearability requirements 4. Updated Clearable Derivatives Products List (Section 6) with clearing guidelines for ETFs 5. Review of the ADTV and Market Cap thresholds and how these are determined 6. Reference to 'Can-dos' has been replaced with 'Structured Products' 7. Minimum of 2 Clearing Members required for approval of new products 8. Added frequency of clearability thresholds review and frequency of existing products ongoing clearability eligibility review 	Post-trade Risk
4.0	May 2022	<ol style="list-style-type: none"> 9. The reference index, S&P 500 Index, is replaced with Russell 3000 Index to calculate the ADVT and Market Cap thresholds for International (US) equity instruments 	Post-trade Risk

1. INTRODUCTION

Currently, JSE Clear (JSEC) performs a clearing function for every product listed on the JSE derivatives exchange and for all products in which participants have positions. This framework sets out the assessment criteria used when considering whether a product is suitable for clearing. This framework also provides a short description of the governance process involved in approving a new product to be cleared and the intended use of the capabilities that have been developed in the JSE's Structured Product platform.

2. ASSESSMENT CRITERIA

The business of a clearing house is to process payments and settlements for financial transactions. Through its rules and netting arrangements, the clearing house reduces counterparty credit and liquidity risk exposures through netting. It also provides standardised and transparent risk management. The efficiency with which a clearing house is able to do this is a function of the products for which it clears.

The following criteria were used to assess the clearing suitability of the products shown in this document:

- 2.1. **Standardization.** When creating and managing a clearing environment, standardising products wherever possible improves efficiencies and lowers operational risks. Managing the reference data for standardized contracts is significantly simpler than for non-standardized contracts. Crucially, the default management process for portfolios containing only standardized contracts is significantly less complex. Furthermore, standardization can concentrate trading activity in a smaller number of instruments, and thereby contributes to liquidity.
- 2.2. **Complexity.** More complex instruments are typically more difficult to value, increasing the risk of inaccuracy in quantifying the risk profile. Inaccurate collateralization is more likely. Complex instruments are often also more difficult to hedge. This complicates the task of managing defaults of portfolios that include such complex instruments. Complex instruments also often require bespoke valuation and risk measurement solutions (not typically provided by the standard infrastructure suppliers) which introduce more inefficiency and risk into established processes and systems. The potential benefit of complex products should be weighed against the potential costs of higher operational risks resulting from non-standard, manual and difficult to maintain processes and procedures. Risks associated with complex and exotic products may cause them to not be listed for clearing.
- 2.3. **Liquidity.** More accurate pricing information is available for more heavily traded, liquid products. This allows more accurate valuation of positions, which in turn reduces the risk that positions will be under-collateralized or over-collateralized. Second, more actively traded, liquid products typically have more reliable time series price data. Such data facilitates the development, testing, and calibration of more accurate risk models that permit CCPs to choose initial margin levels that more precisely reflect the true risks posed by these products. Positions that may be difficult to manage in the event of a default are unlikely to be listed for clearing.
- 2.4. **Risk characteristics.** Various risk characteristics affect the ability of CCPs to clear certain products:
 - *Volatility:* more volatile products are often more challenging to clear;
 - *Tail/gap risk:* price discontinuities pose various challenges to CCPs and can lead to higher exposures at default;
 - *Dependencies:* a CCP faces elevated risks when a clearing member's probability of default is elevated precisely when it owes the CCP substantial amounts on its cleared positions (wrong-way risk).
 - *Clearing Members:* New products will not be approved without a minimum of 2 clearing members. Exceptions may be considered for exotic products only, with appropriate risk mitigation and conservative margining at JSEC's discretion. For existing products which have a small number of clearing members or where a clearing member clears a large portion of a given product or instrument relative to daily trading volumes and relative to other clearing members, additional margin components for concentration will be considered. Consideration may also be given to discontinuing in an orderly and phased manner the clearing of such products.
 - *Data:* The volume and quality of historical data under normal and stress conditions are key factors in the prediction of risks and clearability of products and underlying assets. Products will not be listed for clearing unless sufficient relevant data is available to calculate risk parameters and margins.

All the products that have been approved for clearing by JSE Clear are listed in Section 6 of this document. The exact underlying assets that each product references need to meet certain criteria, mainly related to liquidity and price transparency. These criteria are set by JSE Clear and a brief description of these is placed in Section 6.

No derivative cleared on JSEC may have a tenor longer than **3 years** except for Swap Futures.

3. GOVERNANCE PROCESS FOR APPROVING ALL NEW PRODUCTS FOR LISTING

Any product that is not on the list in Section 6 is considered a new product and will need to follow the process outlined here before listing. Products which haven't been traded/used for a period of longer than **6 months** will no longer be offered and should interest be shown, they will follow the new product process before being listed/offered. New products are considered by JSEC after full consultation across all parts of the business.

The business unit initiating the product will document the details of the product. In consultation with the various enabling business units the details of the operational mechanics, risk factors and any peculiarities will be documented. The JSEC Risk team opines on the suitability of clearing the proposed product. Once there is consensus on product details, the product will be presented to the JSE Executive Committee for approval before being put to the JSEC Risk Committee for approval.

The JSE Executive Committee will consider the underlying assumptions relating to the product, its valuation and margining; and evaluate JSEC's potential risk exposure should the assumptions fail. Consideration is to be given to possible difficulty in valuing any new product, and how the product might perform in a stressed economic environment. The JSE Executive Committee is to ensure that changes in the central counterparty's risk exposure are identified and reviewed and that any changes to the CCP's infrastructure, policies, processes and procedures needed as a result of the product being introduced are in place before the product is made available for clearing.

It is the responsibility of the management to ensure that all specific underlyings continue to meet the requirements as set out in this document. Where there is doubt, the JSEC Risk team is to be requested to provide clarity on a particular attribute, e.g. valuation methodology or inputs. It is the JSEC Risk team's responsibility to ensure that all products and specific contracts meet the criteria in this document and are risk managed appropriately. **Should there be no consensus on the clearability of a product or specific underlying, the product will be brought to JSEC Risk Committee to determine whether it should be offered for clearing after seeking advice from the Clearing Member Risk Advisory Committee.**

The JSEC Risk Committee is to be provided with assurance that the product is appropriate for clearing by JSEC and that the JSE can effectively clear positions therein.

4. EXOTIC AND STRUCTURED PRODUCTS PLATFORM

For instruments to be eligible for listing on the Structured Products platform there must be a standardised and robust valuation mechanism and risk measurement established within the JSE which includes effective and efficient processes for handling and maintaining reference data for that product type. This valuation will be the final, definitive and authoritative determinant of variation and initial margin requirements. Inputs into the valuation and risk management calculations are conservative and take operational and liquidity risk into account.

For Structured Product option offerings, the JSE will allow combinations of options to be listed as a single exotic option. To robustly manage reference data, reduce operational risk and be in a position to provide adequate information in the case of a default, no more than **5 options** are permitted to be combined into one instrument (e.g. call spread comprised of 2 options within the structure or a fence comprised of 3 options within the structure).

5. REVIEW OF LISTED PRODUCTS

The products currently listed on the JSE derivative market and noted in Section 6 meet the JSEC 'Clearability' criteria described above; they have clearly specified hedging strategies, relatively low levels of complexity, relatively high levels of liquidity and manageable risk characteristics.

It should be noted that the specific underlying to any instrument must still meet the requirements currently in place for liquidity. Listed products and their underlying assets or instruments should be reassessed monthly (and additionally ad-hoc, if required) to ensure that they continue to meet the requirements for clearing set out in this document. The following guidelines should be considered in the review of ongoing clearability of a product:

- 5.1. Contracts with underlyings that no longer meet listing requirements and **do not have open interest** will be suspended and further contract expiries with those underlyings will not be created.
- 5.2. Contracts with underlyings that no longer meet listing requirements and **do have open interest** can have their margins increased at the discretion of the JSEC Risk Team. The JSE will evaluate the continued eligibility of affected contracts, but as a general guideline, no new contract expiries are to be listed. Exceptions will be considered on a case-by-case basis, at the discretion of the JSEC Risk Team.
- 5.3. Market Communications will be disseminated to inform Parties of increased margin requirements and/or suspension and delisting of contracts.
- 5.4. Suspended contracts will not be automatically relisted if listing requirements are met again. Consideration of relisting will be dependent on request from Capital Markets should there be client and clearing member interest.

6. PRODUCTS APPROVED FOR CLEARING

6.1. *Equity Derivatives*

6.1.1. Local equities

- Cash settled futures and vanilla options on indices
- Cash and physically settled futures, dividend neutral futures, CFDs and vanilla options on single names

6.1.2. Foreign equities

- Cash settled futures, dividend neutral futures (ZAR and quanto¹) on indices and single names
- Cash settled options on quanto futures on indices and single names
- Out of currency settled options on certain indices and single names

The underlying instrument must have

- been listed for at least 10 trading days
- traded on 67 out of the previous 90 days or on all trading days if listed for less than 67 days
- a market capitalization above the relevant threshold below
- a stable adjusted average daily value traded (ADVT²) above the relevant threshold below³

The current ADVT and Market Cap thresholds are presented in the below table. Refer to Appendix 2 for details on how the thresholds are determined.

Region where instrument trades	Reference Index	Index Ticker	Market Cap Clearability Threshold	ADVT Clearability Threshold
Local (SA) ⁴	FTSE/JSE All Share Index	JALSH Index	ZAR 4 bn	ZAR 3 mn

¹ Quanto instruments are cash settled derivatives with underlying assets denominated in a foreign currency, but settled in domestic currency at a predefined fixed exchange rate

² ADVT is calculated by averaging the last 90 day's value traded after removing the nine largest days

³ Market Cap and ADVT Thresholds are to be reviewed at least semi-annually by JSEC Risk

⁴ Refreshed market cap values reviewed. Threshold maintained at ZAR4 bn

International (US)	Russell 3000 Index	RAY Index	USD 3 bn	USD 7 mn
International (Europe)	STOXX Europe 600 Index	SXXP Index	USD 3 bn	USD 7 mn
International (Asia-Japan)	Nikkei 225 Index	NKY Index	USD 1.4 bn	USD 7 mn
International (Asia-China)	Shanghai Stock Exchange Composite Index	SHCOMP Index	USD 300 mn	USD 4 mn

If the market capitalisation and/or the ADVT are lower than the above listing thresholds but within 15% thereof, JSE Clear can still at its discretion decide to list the derivatives at margins that are deemed appropriately conservative. This could include IMRs based on 100% VaR values, or higher (since risk could be even greater on short positions).

Single names and indices include ETFs based on underlyings that satisfy the requirements and which are not geared or have an inverse pay-off profile.

For custom baskets of equities (local and international), options will only be allowed where 90% of the basket by notional weight makes up an observed underlying on which there exists observable option pricing inputs. Options on custom baskets of equities are NOT eligible for listing if the value of the basket can be negative.

Cash settled futures on a custom basket of JSE listed or international equities – at least 80% of the constituents must satisfy the criteria for a single name future. The contract size of any basket will be 10. For all local single name equity derivatives, the contract size will be 100. For international single name equity derivatives, the contract size will be 1. All indices (local and international) will have a contract size of 10.

Options may be listed on international equities (indices and single names) where there is an observable option market and a pricing model has been established that includes the automatic, daily sourcing of all pricing inputs.

- Cash settled single barrier knock-in/out options.
- Cash settled strike-resetting options (maximum of 5 reset events allowed)

The set-up of the above instruments must be standardised to reduce operational risk and have to fulfil the requirements of the Structured Products platform (as mentioned above) for an instrument to be listed.

6.2. **Currency Derivatives**

6.2.1. G20 currency prices against the ZAR where the currency pair is quoted in ZAR per currency

- Cash settled futures and options

6.2.2. G8 currency prices against one another

- Cash settled futures and options

6.2.3. Cash settled futures and options on certain sub-Saharan currencies against the ZAR

- Cash settled futures and options

6.2.4. All currencies pairs must exhibit the following:

- Evidence of liquidity of that currency; and
- Absence of a tight peg against the benchmarked currency (evidence of a free-float currency).

6.2.5. Exotic options:

- Cash settled single barrier knock-in/out options.
- Cash settled strike-resetting options (maximum of 5 reset events allowed)
- Out of currency settled options on certain currency pairs

Options (vanilla and exotic) will only be allowed in the existence of a deep and liquid options market.

FX futures on currencies which exhibit sufficient liquidity but are pegged against another currency do not meet the Clearability criteria. These currencies have exhibited discreet price moves when the peg is adjusted and hence futures thereon cannot reasonably be risk managed.

6.3. **Fixed Income Derivatives**

6.3.1. Fixed coupon ZAR government bond curve

- Physically settled single-name bond futures
- Cash settled index futures

6.3.2. Inflation-linked ZAR government bond curve

- Physically settled single-name bond futures
- Cash settled index futures

6.3.3. Fixed coupon ZAR SOE bond curve

- Physically settled single-name bond futures

6.3.4. ZAR interbank curve

- 3M JIBAR linked Swap futures
- 3M JIBAR futures

6.4. **Commodity Derivatives**

6.4.1. Metals

- Cash settled futures and vanilla options (ZAR and quanto)

6.4.2. Energy

- Cash settled futures and vanilla options (quanto)

6.4.3. Local grains

- Physically settled futures and vanilla options

6.4.4. Foreign grains

- Cash settled futures and vanilla options (ZAR and quanto)

6.4.5. Livestock

- Cash settled beef carcass, feeder calves and lamb futures.

6.4.6. Soya bean complex

- Cash settled futures on a basket of long soya bean, short soya meal and short soya oil

6.4.7. Other soft commodities

- Cash settled futures on SA wool, coffee beans, cocoa, cotton and sugar

6.5. **Derivatives on Exchange Traded Funds (ETFs)**

For clarity, exchange traded funds (ETFs) refers to securities listed on an exchange that track the performance of an underlying basket of securities, index or other assets by directly owning the securities or assets in the fund. This asset class excludes exchange traded notes (ETNs) which are typically unsecured debt securities that track an underlying basket of securities, index or other assets without necessarily owning the securities they attempt to track the performance of.

ETFs often present some unique complexities over more traditional underlying assets of derivative contracts (such as equity, currency or commodity underlyings) particularly in terms of quantifying liquidity risk, look-through and understanding the underlying asset exposures and risks, potential lack of price discovery, tracking errors and methodology risks.

ETF liquidity has many layers and involves multiple market participants. Listing a new derivative contract on an ETF should only be approved if there is comfort over the following liquidity risk dimensions:

- *Underlying market liquidity* – There should be sufficient liquidity in the underlying markets and securities/assets being tracked. Greater liquidity in underlying markets make it easier to create or redeem new ETF shares in the fund
- *Authorised participants and primary market* – The number of authorised participants in the primary market that can create or redeem ETF shares to match ETF share demand from end investors (often referred to as the ‘arbitrage’ mechanism). An efficient arbitrage mechanism ensures better alignment between ETF share prices and the value of the underlying basket of securities (per share) held by the fund
- *Market makers* – The availability and number of dedicated and robust market makers operating in the secondary market that guarantee to provide two-way prices and trade size to support buying and selling of ETF shares by investors. This should also be considered during periods of increased market volatility or stress events.
- *Secondary market liquidity* – Assessing ETF share volumes traded (visible or “on screen” ADVT on the exchange) as well as ETF share bid-ask spreads relative to bid-ask spreads in the underlying assets
- *Trading within foreign market closures* – If an ETF tracks an index or basket of securities outside the exchange on which the ETF is listed it may be trading during periods when the underlying index or securities market is closed which could result in a disparity between the daily performance of the ETF and index/fund benchmark being tracked and greater market and liquidity risks.

Given the unique risk profile of ETFs and the diversity of funds and the underlying assets, the JSEC Risk Team will apply discretion and conservatism in consideration of the ability of JSEC to appropriately margin, risk manage and clear derivatives on ETFs.

Requirements for clearability:

- ETF must be passive (index-based)
- Underlying index must fall into: Local equities (SA), International equities (US, UK, Europe, Global, Emerging Markets) or Fixed Income
- ETF and underlying assets must trade on major WFE exchanges (i.e. Top 20)
- ETF cannot be leveraged
- Cash-settled
- ETF must meet liquidity requirements:
 1. If secondary market “on screen” (ETF share) liquidity is equal to or greater than the ADVT threshold in section 6.1 it is not mandatory to continue with step 2 onwards to check underlying asset liquidity and hedge-ability. JSEC will, however, exercise discretion if there are exceptions that necessitate look-through even if ETF share liquidity is above the threshold.
 2. If secondary market liquidity, in step 1, is lower than the ADVT threshold in 6.1 then look-through to underlying asset liquidity. If underlying asset liquidity is above the acceptable threshold, then step 3 is not mandatory.

3. If a decision is not reached on the acceptability of liquidity based on 1. ETF share liquidity or 2. underlying asset liquidity, step 3 is to confirm existence of reputable, committed ETF market makers guaranteeing liquidity (two-way prices and volume) and confirm the market maker's ability to hedge its risk. Potential factors include the existence of highly liquid index futures, similar or well-correlated ETFs or proxies. This must be considered in volatile and stressed market conditions when correlations usually break-down relative to normal markets.
4. If an ETF fails all 3 steps above it does not meet liquidity requirements and will not be cleared.
 - The market cap of the ETF or its underlying index, if available, must exceed the market cap threshold applicable to the respective region outlined in section 6.1.
 - Availability of time series data for the ETF and Benchmark Index and/or underlying assets covering a minimum 3-year lookback period as well as a stress period

Appendix 1 – JSE Clear Risk Committee and Board actions

No.	Ref	Action Item	Frequency	Applicable Governance Forum
1.	3	The JSE Executive Committee is to ensure that changes in the central counterparty’s risk exposure are identified and reviewed and that any changes to the CCP’s infrastructure, policies, processes and procedures needed as a result of the product being introduced are in place before the product is made available for clearing.	Not specified	JSE Clear Exco

Appendix 2 – ADVT and Market Cap threshold methodology

Region where instrument trades	Reference Index	Index Ticker	Market Cap Clearability Threshold based on	ADVT Clearability Threshold based on
Local (SA)	FTSE/JSE All Share Index	JALSH Index	Average and/or Median Market Cap of the lowest ~20 index constituents ranked by Market Cap in ZAR (e.g. constituents 121-140)	Average and/or Median ADVT (90D, excl 9 largest outliers) of the lowest ~20 index constituents ranked by Market Cap in ZAR (e.g. constituents 121-140)
International (US)	Russell 3000 Index	RAY Index	Average and/or Median Market Cap of the lowest ~300 index constituents ranked by Market Cap in USD (e.g. constituents 2737-3037) – Threshold floored at International (Europe) threshold	Average and/or Median ADVT (90D, excl 9 largest outliers) of the lowest ~300 index constituents ranked by Market Cap in USD (e.g. constituents 2737-3037)
International (Europe)	STOXX Europe 600 Index	SXXP Index	Average and/or Median Market Cap of the index constituents ~541-560 ranked by Market Cap in USD	Average and/or Median ADVT (90D, excl 9 largest outliers) of the index constituents ~541-560 ranked by Market Cap in USD
International (Asia-Japan)	Nikkei 225 Index	NKY Index	Average and/or Median Market Cap of the lowest ~25 index constituents ranked by Market Cap in USD (e.g. constituents 201-225)	Average and/or Median ADVT (90D, excl 9 largest outliers) of the lowest ~25 index constituents ranked by Market Cap in USD (e.g. constituents 201-225)
International (Asia-China)	Shanghai Stock Exchange Composite Index	SHCOMP Index	Average and/or Median Market Cap of the lowest ~200 index constituents ranked by Market Cap in USD (e.g. constituents 1351-1553)	Average and/or Median ADVT (90D, excl 9 largest outliers) of the lowest ~200 index constituents ranked by Market Cap in USD (e.g. constituents 1351-1553)