



Executive Summary

Report on Central Counterparty Clearing Models for BASA

ANALYSIS AND REPORT
CONDUCTED ON BEHALF OF BASA
BY MARKET STRUCTURE PARTNERS



JANUARY 2023

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**This Study was commissioned by
The Banking Association of South Africa (BASA)
and undertaken by Market Structure Partners**

BASA advances the interests of the industry with its regulators, legislators and stakeholders, to make banking sustainable, profitable and better able contribute to the social and economic development and transformation of the country.

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EXECUTIVE SUMMARY

This Study was undertaken on behalf of the Banking Association of South Africa (**BASA**). It analyses the central counterparty (**CCP**) clearing model that is currently used in South Africa's financial markets and compares it with the leading clearing models used in major international financial markets. The Study draws a number of conclusions and recommends changes that would improve the existing South African clearing arrangements and some related aspects of market structure, as well as better position the market to expand centralised clearing to other instruments and asset classes. The Study is composed of 8 chapters as follows:

- Study Background and Approach
- Generic Elements of the CCP Model Relevant to this Study
- Overview of Relevant South African Financial Market Structure Characteristics
- Stakeholder Feedback on the Current South African Market Clearing Model
- Comparing Relevant International Market Structure with South Africa
- Comparing International Clearing Models and Best Practices with South Africa
- Conclusions
- Recommendations for the South African Clearing Model

A. STUDY BACKGROUND AND APPROACH

The South African regulators, the Financial Sector Conduct Authority (**FSCA**) and the South African Reserve Bank Prudential Authority (**PA**), have jointly set out a regulatory road map **to evolve the current clearing model to adopt the G20 recommendations**, including the clearing of OTC derivatives. Currently, JSE Clear is the only CCP licensed in South Africa. It only clears listed derivatives (futures and options) but is also considering adding bonds and equities to central clearing.

Clearing members (**CMs**) of JSE Clear are all represented by the Banking Association of South Africa (**BASA**) and have **some concerns about the clarity of their role and legal and contractual relationship**, particularly in relation to their obligations in the event of a client's default and their freedom to manage such an event under the current JSE rules. They believe their concerns with the current model should be addressed before the market evolves further to ensure that the clearing model is **robust** and does **not increase systemic risk**.

The objective of the Study was therefore to assess South Africa's current clearing model, compare it to leading clearing models in international financial markets (Australia, Canada, Europe, UK and USA) and recommend enhancements that would benefit the South African market.

The Study was conducted in three Phases:

- **Research and analysis** of the South African market, using publicly available documentation; including a review of the relevant regulations and JSE Clear rules as well as **one-to-one interviews** with CMs and other relevant market stakeholders to assess current market practices and concerns.
- Using the output from Phase 1 as a frame of reference, conducted research into the **best practice and evolving trends in leading international markets**.
- **Compared** the South African market against the results of the international research, **drawing conclusions** and **making recommendations**.

B. GENERIC ELEMENTS OF THE CCP MODEL RELEVANT TO THIS STUDY

A CCP helps to underpin the **stability** of financial markets by acting as the single counterparty to all transactions allowing it to **manage the collateralisation of exposures centrally**, thereby **removing the bilateral credit risk** that otherwise exists between buyers and sellers. This arrangement can provide other benefits including **high levels of automation, collateral optimisation, post-trade anonymity, position management (e.g. exercise/expiry) and reporting**, together with **settlement netting of physical securities**, which reduces the number of transactions that participants have to settle, so **reducing errors, fails and trade processing costs**.

CCPs originally evolved to clear instruments traded by members of **regulated markets** (exchanges or authorised trading venues), which required CCP clearing to manage risk over the duration of contracts, some of which can be long term, and, also to provide counterparty assurance when automatic matching of trades was introduced. Such instruments included listed derivatives and cash bonds and equities. (The terms *futures*, *exchange-traded derivatives (ETDs)* and *listed derivatives* are all used interchangeably).

A CCP that is controlled by an exchange and clears only business related to transactions on that exchange, is considered to operate within a **vertical model**. A CCP that offers clearing services for the same instruments that are traded on multiple, non-affiliated exchanges, is considered to operate a **horizontal model**.

After the Financial Crisis in 2008, the G20 countries committed to a series of reforms intended to strengthen capital markets, **mitigate risk and increase client protection**. This included an **increase in the capital requirements** associated with holding uncleared positions in financial instruments and the **mandated use of a CCP for clearing of certain categories of bilaterally traded over-the-counter (OTC) derivatives**, e.g. interest rate swaps (**IRS**). This significantly expanded the number of market participants who needed access to clearing services.

All participants in markets which are subject to clearing must either be a clearing member (**CM**) of the CCP in order to clear their own trades or have a **clearing agreement** with a CM that clears on behalf of others. These are known in the US as Futures Commission Merchants (**FCMs**). Hereafter, all clearing members will be referred to jointly as CMs.

Management of counterparty risk is critical as a CCP is exposed to the risk of default by its CMs and, in turn, the CMs are exposed to the risk of default by their clients. Poor handling of the latter can lead to the former. CCPs thus manage risk through various lines of defence which include:

- Initial and ongoing assessment of the suitability of their CMs (e.g. credit rating resources, balance sheet strength etc.)
- Accurate and continuous **calculation of market risk** and associated initial and variation margin obligations across products and CMs
- **Collection of the eligible collateral** that CMs must deposit with the CCP to cover the margin obligations on their cleared positions
- A **default fund** that every CM must contribute to
- Putting part of the CCP's **own capital at risk**
- Establishing and **testing** effective technical and operational procedures to support the management of a CM default including **porting (transferring) of client positions** to a viable alternative CM
- Some CCPs also have **insurance** policies and **rights of replenishment** against solvent CMs in the event that the pre-funded resources are inadequate.

Of particular importance are the CMs' **obligations** towards the CCP in the event of a client default. The CCP's rules, its agreement with its CMs and the nature of the defaulting client's account structure need to support the CM's **freedom to act** as they deem necessary to close down the client's positions in a timely manner that also minimises risk and losses.

B1. Clearing Relationship Contractual Model

The contractual model which determines the obligations between the CCP and its CMs, and between the CM and its clients are generally referred to as either a '**principal**' or an '**agency**' model.

There are legal and contractual differences between the two models that result in **the same economic obligations in relation to the management of cleared positions** for an agent and a principal. Furthermore, under both models, the CM is always responsible for the positions it holds with the CCP and, similarly, the day-to-day operations, position and account management, risk measurement, and collateralisation are performed largely in the same way.

The important differentiator is that a CM acting as **principal** has to hold **both sides (client and CCP) of its positions on its balance sheet**, but, if acting as an **agent, holds only one position (CCP)**. However, in the event of a client default, a CM operating under a principal model or an agency model automatically assumes its client's positions and associated obligations towards the CCP. A model that conveys this obligation on the agent (**CM**), whereby the agent is contractually and automatically switched to take on a principal role at the point of a client default, is sometimes referred to as a 'del credere' agency model.

B2. Segregation of Collateral and Positions

Regulators usually require CMs to **fully segregate** their client's positions and associated collateral from their own assets. CCPs enable this by providing at least one of **two types of client account structure**: either an Omnibus Segregated Account (**OSA**) and/or an Individually Segregated Account (**ISA**). If there is a choice, the CM's client can elect its preferred option. Under both models, the client remains the legal owner of its positions but there are key differences:

- Under an OSA, the CCP holds the CM's clients' positions and collateral in a **single pool**. If the CCP margins on a net basis, then **efficiencies can be passed** to the CM and its clients. The CM maintains real-time position and collateral records at a client-by-client level to manage their individual client counterparty risks and, in the event of their own default, support the porting of clients' positions and associated collateral. OSAs can lead to the **sharing of default risk** and associated proportional losses among clients should another client and the CM default contemporaneously (generally called 'fellow customer risk').
- Under an ISA, there is **no pooling of collateral** and so **no sharing of risk**. There is also **no sharing of efficiencies** between clients. Positions and collateral held at the CCP are recorded against the ownership of the particular end client (albeit managed by the CM on a day-to-day basis). ISAs readily provide the CCP, as well as the CM, with an accurate real-time record of the positions and collateral at a client-by-client level making it much **easier to identify the client's assets**, collateralise them, **unwind them in the event of their default**, or **port their collateral and positions** in the event of the CM's own default.

C. OVERVIEW OF RELEVANT SOUTH AFRICAN FINANCIAL MARKET STRUCTURE CHARACTERISTICS

- Current financial market regulations and the prevailing legislation¹ for Financial Market Infrastructures in South Africa (SA) set out the basis for **segregated clearing** but does **not mandate any type of account structure or specify an agency or principal** clearing model.
- There is **one dominant exchange**, the Johannesburg Stock Exchange (JSE), which offers trading of equities, listed derivatives and bonds. The JSE is a **listed company** on its own exchange and is a **for-profit** organisation.
- **JSE Clear** is the only CCP operating in the market. It has only recently obtained its licence to operate as an independent clearing house and is a **wholly-owned subsidiary of the JSE**. It **only clears listed derivatives** traded on its own exchange and therefore operates a **vertical clearing** model.
- JSE Clear only offers an **ISA** account structure and only accepts **domestic cash** currency (**ZAR**) as collateral.
- JSE Clear operates an **agency** model under which it **determines** if a CM's client is in default and, if so, **determines the transfer value** of a defaulting client's portfolio with the obligations falling to the client's CM/Trading member (**TM**), to trade out of the client's positions and assume any losses.
- Equities and bonds are not cleared but the JSE also owns and operates a **back-office accounting system: Broker Dealer Accounting (BDA)**. This provides some risk mitigation elements for the equity market because all participants must use it and all records are accessible in one place. The JSE **charges** for the service.
- JSE Clear has **7 members** in total. This includes **5 major SA clearing banks** and two international banks. No international firms offer third-party client clearing services in South Africa.
- There is **some competition in equity trading** from new exchanges, from the OTC market and from a large Contracts for Difference (**CFD**) market. Equities and listed derivatives are **electronically-traded**, and the advance of technology and competition is encouraging HFT participation. Most **bond trading is conducted in the OTC** market.
- OTC derivatives are not centrally-cleared domestically but many participants clear their OTC interest rate swap business **directly or indirectly** in London through the London Clearing House (**LCH**).

D. STAKEHOLDER FEEDBACK ON THE CURRENT SOUTH AFRICAN MARKET CLEARING MODEL

There is a **clear consensus** amongst JSE Clear's **CMs** on a number of issues that impact them and their end clients. CMs are of a view that:

- They are operating under a **poorly defined del credere model**, rather than a pure agency model, and **require clarity** in relation to their obligations towards the CCP and their clients in the event of a client default.
- In any event, they are best placed **to manage a client default** and should do so without JSE Clear's involvement, which only **delays the CM's risk mitigation** activities.
- JSE Clear's determination of the **transfer value of a defaulted client's** portfolio crystallises the value at a price that may or **may not be accurate**. This could increase losses experienced by the CM when closing down positions. In some circumstances, it would be better to offset positions against the client's collateral already posted and return residual collateral when the process is completed.

- The client's listed positions may well be **offsetting positions** generated on other exchanges and/or the OTC market which cannot be seen by JSE Clear. Instead, the CMs prefer to **fully control** the unwinding process using its own TM and other brokers.
- There is unfair **asymmetry** in the treatment of, and rights to, the collateral of a defaulted client, with the CM having to accept all losses but pay out all profits associated with closing out the client positions, despite having no control of the close-out pricing.
- The model, as it currently operates, **precludes** TMs and CMs from **netting** all exposures against a defaulted client, and precludes CMs from providing (and consequently clients benefitting from) a formal collateral transformation service.
- **Acceptable forms of collateral** at JSE Clear should be **expanded**.

Other stakeholders who are not CMs of JSE Clear but interact directly or indirectly with both the JSE and JSE Clear for different services, had varied, and generally **less, knowledge of the details** of the clearing process but, together with the CMs, also raised broader issues:

- **Preparing in advance for the portability** of positions and collateral in the event of CM default is problematic due to constraints that prevent clients from having two CM relationships.
- Participants believe there are **not sufficient economies of scale** to support another CCP for listed derivatives nor equities in South Africa. This gives rise to two issues. First, general concerns about the **leverage that JSE Clear** has in the market, and second, the constraints on competition in equity and bond trading if other exchanges are not able to access JSE Clear should it begin to clear these securities.
- The mandated use of the BDA system which appears effective in managing risk but incurs cost, which for some, is **unnecessary**. It is also seen as **ageing** technology.
- The **absence of any pre-trade risk** controls in electronic, order driven markets.
- Settlement **netting** for cash equities is **not optimised via BDA nor within Strate**.
- Market participants are aware that FSCA's **regulatory roadmap will materially impact** all areas of South African financial markets over the next few years, which is considered to present **opportunities as well as risks**.

Whilst no market participant initially raised it as a concern, MSP observed that CMs in South Africa have typically used their parent banking entity to join the CCP. This is unusual in international markets. Most organisations house their clearing memberships in subsidiary entities to isolate the parent entity from the risk of a CCP insolvency.

E. COMPARING RELEVANT INTERNATIONAL MARKET STRUCTURE WITH SOUTH AFRICA

To provide some context to the clearing models under investigation and address some of the broader issues raised by participants, the market characteristics in relation to the main asset classes in each of the major international markets researched for this Study were considered.

All the markets, including South Africa, **exhibit many similarities** with respect to the development of financial legislation that sets out the requirements for: market infrastructures; the oversight model of those infrastructures, which includes central bank and financial regulator coordination for CCP oversight; their overall product coverage; the nature of their participants; and the evolution of the market structure with electronic order book trading on regulated, listed markets, together with a significant amount of all asset classes being traded OTC.

Key differences or points of note are:

- **Cash Equity and Bond Markets**
 - Listed cash **equities** and a significant number of **bonds** are cleared through a **CCP** in all other major markets, and participants are benefitting from the efficiencies associated with this. South Africa is the only market examined where there is no clearing of either asset class, and where the only leading equity exchange runs a back-office, equities-related accounting system for participants.
 - In all other equity markets, incumbent exchanges now face **significant competition in trading**. This has been **facilitated** by the use of CCPs, as well as the application of **horizontal clearing** models, **competition** in clearing or **Fair Access Provisions**.
 - In the US, there is a **single, member-owned, not-for-profit** CCP clearing all equities and bonds and, similarly, a CCP owned by multiple exchanges to facilitate the clearing of options. Both offer horizontal clearing for multiple trading venues.
 - In Europe, there has been significant success in the use of voluntary CCP interoperability, allowing customers a choice of where to clear and CCPs to compete to clear for multiple trading venues.
 - In Australia and Canada, Fair Access Provisions have been created to enable access to the single domestic equity CCPs, which are owned by the incumbent exchange groups.
- **Listed and OTC Derivative Markets**
 - There is no material competition in trading and clearing of listed derivatives in any market.
 - The EU is the only market to try and address competition in derivatives through an **Open Access Regime**, which, subject to certain criteria being met, requires exchanges to provide trade feeds and offer clearing services to other exchanges and CCPs in its regulations. However, it is politically unpopular and CCPs argue that it gives rise to inherent risk, so it has yet to prove successful.
- **Equivalence**
 - **All markets, except South Africa have already introduced the concept of equivalence** whereby a clearing house in one jurisdiction can offer its services in a foreign jurisdiction with the regulator of that jurisdiction relying on the 'home regulator's' supervision of the CCP.
 - Equivalence is predicated on broad **commonality of regulatory regimes** and standards of supervision. If the CCP is considered systemically important, it may have to apply for full recognition or undergo additional monitoring by the Central Bank in the foreign market where it operates. The bilateral nature of OTC trading and the existence of equivalence has helped to create competition for the clearing of OTC derivatives.
- **Numbers of Clearing Members**
 - Most CCPs in international markets have **attracted significant numbers** of domestic and international CMs across every cleared asset class. JSE Clear has only 7 members in total.
- **Algorithmic and Electronic Trading**
 - Algorithmic trading accounts for a significant proportion of trading in all listed markets but is at lower levels in South Africa. All markets except South Africa have enshrined **pre-trade risk control** requirements for participants in their rules and regulations.

F. COMPARING INTERNATIONAL CLEARING MODELS AND BEST PRACTICES WITH SOUTH AFRICA

Each market has to accommodate its own domestic legislation, tax treatment and insolvency laws. However, as part of the G20 reforms introduced in **2012**, the **Principles for Financial Market Infrastructures (PFMIs)**, which included central clearing, were created. Currently, each market has already created or amended regulations to meet these Principles as well as mandating the clearing of certain OTC derivative instruments, except South Africa. **Alignment with the PFMIs** has resulted in major markets exhibiting many similarities.

Key differences with South Africa or points to note are:

- CMs are generally fully segregated legal entities from their parent with their own capitalised balance sheet.
- Both agency and principal relationship models are used internationally. The only country where a particular model is prescribed is the US where **CCPs are required to operate under an agency model as this** is a better fit for US participants under US insolvency, tax and capital regimes. The vast majority of markets in Europe, UK, Australia and Canada currently operate under a principal model. Under both models, the CM's **counterparty risk obligations** towards the CCP when its client defaults and the operational components comprising its service to its clients, are largely the same. However:
 - When the US market moved to clear OTC contracts under its agency model, market participants sought and obtained legal clarity that in the event of a client default, they are contractually committed to automatically switch to **act in a principal capacity**.
 - In certain jurisdictions, the CM's capital obligations can be higher under a principal model. This will become **a material issue for Europe** when mandated pension fund clearing of OTC trades is introduced in mid-2023. **Participants** are now **looking to introduce an agency model** to avoid the balance sheet impact this would otherwise cause.
 - All markets, other than South Africa, have **evolved initially with an OSA** style model and have more latterly introduced the choice of an ISA model, at least for derivatives markets, for their clients in response to G20 reforms. CCPs and CMs are required to **make disclosures** about their operational models and potential risks to customers of different account structures.
- **All CCPs leave the management of a client default to the client's CM** and usually do not hold detailed information on the client's positions, especially where clients elect for an **OSA**. Even if a client has an ISA, there is no active management of these accounts by the CCP unless a CM default occurs.
- All CCPs/exchanges allow their clients/trading members to **use more than one CM**, indeed backup plans are encouraged by regulators (some restrictions may apply to ensure firms are not hiding large exposures) to improve portability in the event of a default.
- All CCPs consider cash (domestic and other major currencies), and high-quality debt instruments, to be eligible collateral.
- All CCPs look to **port the defaulting CM's clients'** derivatives positions and collateral to one or more CMs before closing out any remaining positions in the market. Most CCPs must test default processes and have at a minimum, made some initial, informal contingency plans about which CMs a defaulting CM's positions could be ported to.

G. CONCLUSIONS

An **attractive clearing** model that retains, and potentially **increases**, the number of domestic and international trading and clearing members is necessary for **growth** in South Africa. Given the similarities between the South African market and other international markets in terms of market development, types of participants and trading activity, it seems reasonable to expect the South African market and clearing model to be broadly **aligned** with international peers.

However, this Study has revealed several differences. Some of these highlight areas where improvements could be made to **enhance competition, innovation and risk management**. Some are more **fundamental** and without addressing these concerns, unnecessary risks exist and JSE Clear or the South African market **may struggle to be PFMI compliant** with the G20 reforms.

The greatest concerns are related to the current clearing model as follows:

- The **concentration risk** in the market resulting from having only 7 CMs, and the fact that they are not segregated and separately funded from their parent entities.
- The issues highlighted in this report in relation to JSE Clear's process for **managing a client default**, the perceived lack of clarity in relation to CM's obligations in this regard in **its rules** and the associated **asymmetry** that arises in terms of risk and reward for CMs.

Other differences that do not give rise to the same level of concern but should be considered because addressing these will either benefit the attractiveness of the current clearing model or help prepare for future changes are as follows:

- JSE Clear's **ability to efficiently manage a CM default** has fortunately not yet been **tested**. However, it is not apparent the extent to which JSE Clear, the JSE and its respective participants have regularly tested the systems, operations and procedures that would be used to manage such an event.
- The CCP's mandated use of ISAs and **no offering of OSAs** to CMs. Other CCPs that may seek recognition in the SA market are not precluded, under the current SA regulations, from offering OSAs.
- ZAR cash currently being the JSE Clear's **only acceptable form of collateral**, though it is understood that the list of eligible collateral is being expanded.

The differences in the broader market structure that could be addressed to bring the SA market on a par with its peers are:

- The limited involvement of algorithmic trading to date, which is now growing as it has done in other markets and, in the **absence of pre-trade risk** controls may increase the risk of a TM/CM default and/or a 'flash crash' scenario to the SA market.
- The current **lack of fair access** regulation/guidelines to support the growth of competing cash equity trading venues through fair and equal access to the BDA accounting system or an equity CCP (when introduced).
- The **lack of central clearing of equities and bonds**, which in line with other markets could de-risk the market, bring efficiencies for participants and help facilitate trading venue competition.

H. RECOMMENDATIONS

MSP recommends that CMs collaborate with their regulators and their CCP to effect the following changes to the current clearing model:

- **CMs be provided with full control and responsibility for the management of the default of a client.** CMs already have the appropriate books and records to manage this without CCP involvement, but JSE Clear will need to amend its rules and formal disclosures and repapering of CM/client agreements could be required.
- **Clarity be provided within the CCP's rules in relation to the CMs' obligations towards the CCP in relation to the default of one of its clients.** This will provide the necessary certainty to CMs and avoid potential conflicts.
- **Fully explore portability and comprehensive testing of a CM default.** The CCP and regulators should encourage and enable end clients to have backup CM arrangements in place. Testing of systems and operations for a CM default scenario should be undertaken by all stakeholders annually.
- **Retain the agency model.** The international trend is towards the use of agency models, and this readily supports the clearing of securities and OTC markets.
- **Retain the ISA structure and do not expand to an OSA model.** Whilst other markets offer both ISAs and OSAs, the trend is increasingly towards ISAs which improve portability and arguably provide greater client protection.

More broadly in relation to the future clearing model and market structure enhancements, MSP recommends that CMs and other market participants explore the following:

- CMs examine the pros and cons of **housing their CCP membership in a subsidiary** entity that ringfences clearing related risk from their parent.
- The **inclusion of equities, bonds and OTC instruments into the CCP model** with careful consideration of the opportunities and risks that may arise, and the impact of the operational, risk, financial and contractual changes required in relation to each asset class.
- **A fully segregated default fund for OTC derivatives** in the event that they are cleared through JSE Clear, as the likely size, risk profile and longer dated nature of the positions cleared would suggest the market's interests would be best served by compartmentalising the associated default risk. However, it raises further capital requirements for banks.
- **The possible introduction of an OSA model for other newly cleared asset** classes. International CCPs seeking (under equivalence) to clear securities and/or OTC derivatives in SA are likely to want to offer OSAs to their CMs. They offer both models elsewhere and OSAs are suitable and widely used models for clearing such instruments.
- A **Code of Conduct** in relation to fair and open access to BDA and, ultimately, a CCP for cash equities and bonds should be established to support competing equity and bond trading venues.
- **Pre-trade risk controls** should be introduced to counter the increasing risks inherent in algorithmic trading.