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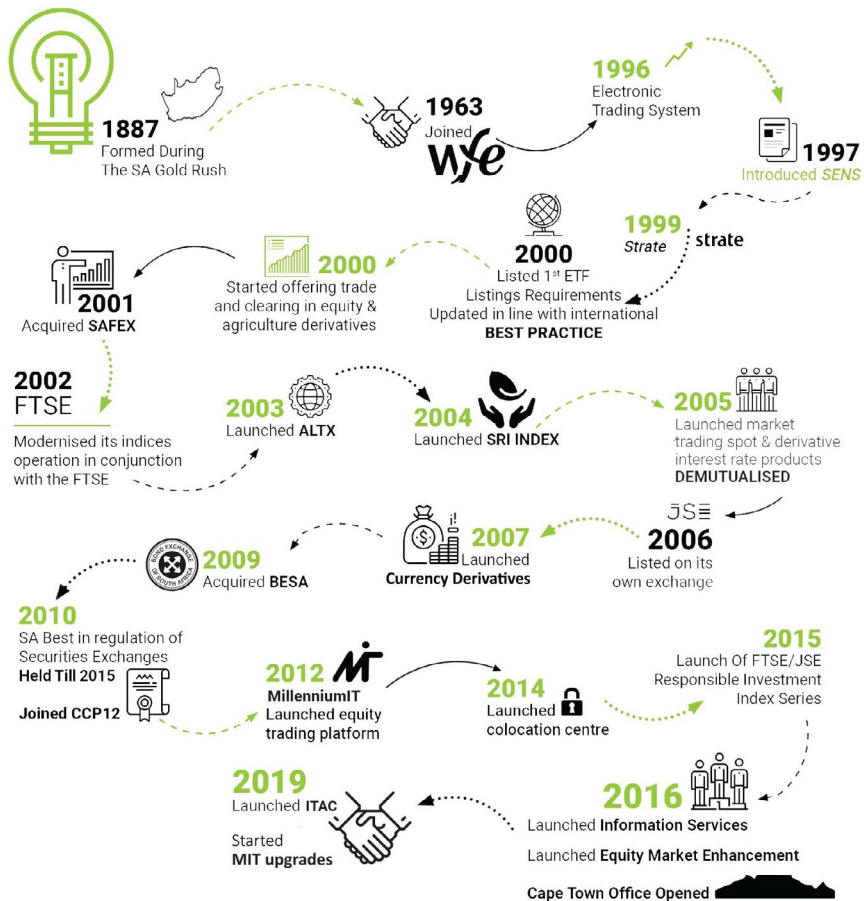


## Trade JSE Interest Rate Futures

3 Month JIBAR  
Futures Contract

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JSE



The Johannesburg Stock Exchange (JSE) has a well-established history operating as a market place for trading financial products. We are a pioneering, globally connected exchange group that enables inclusive economic growth through trusted, world class, socially responsible products and services for the investor of the future. We offer secure and efficient primary and secondary capital markets across a diverse range of securities, spanning equities, derivatives and debt markets. We pride ourselves on being the market of choice for local and international investors looking to gain exposure to leading capital markets on the African continent. We are currently ranked in the Top 20 largest stock exchanges in the world by market capitalisation, and are the largest stock exchange in Africa, having been in operation for 130 years.

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# An introduction to interest rate risk

Interest rates affect the prices of goods and services within an economy. As markets move, the volatility in interest rates introduces interest rate risk. The management of interest rate exposures allows participants to hedge against adverse movements in the levels of rates. While domestic money markets trade in the wholesale over-the-counter (OTC) market, the **Johannesburg Stock Exchange (JSE Limited)** has introduced **Short-Term Interest Rate (STIR) Futures** as a response to market participants' needs to manage interest rates effectively within a regulated environment.

## The interest rate cash markets

In the South African financial markets, **JIBAR (Johannesburg Interbank Average Rate)** is used as the barometer of short-term interest rate movements. JIBAR is an average rate (determined from borrowing and lending rates) that is independently derived from quotes obtained from a number of different banks for one, three, six and twelve month terms. In particular, the **3 month JIBAR rate is used as a benchmark** and is quoted as a yield and disseminated to the market at 10h00 every working day.

## Understanding 3 month JIBAR Futures

The 3 month JIBAR futures contract is a future based on the 3 month JIBAR rate. The future is traded electronically on the JSE Limited's interest rate market trading platform. The contract is a standardised product with characteristics as defined in the contract specifications which are available from the JSE.

## How are JIBAR Futures quoted?

The 3 month JIBAR futures are quoted in the same way as the underlying JIBAR rate, namely on a yield basis. The price is determined from the yield using the formula:  $100 - \text{yield}$ . The standard contract size is R100,000 and the contract value changes in terms of a fixed R2.50 per basis point (1/100 of 1 percent) per contract. Thus, a move of rates from 4.530% to 4.500% represents a move of 3 basis points which represents a change of R7.50 (3bps x R2.50) in the value of a contract.

The implied rate of the future is termed the "forward/ forward rate", and it refers to the forward interest rate for a specified time period starting on a forward date. Hence in the case of a JIBAR Dec 20XX Future, it represents the 3-month rate (forward rate) from the 3rd Wednesday in December 20XX (forward date).

## Management of interest rate exposure allows investors to hedge against adverse movements in the levels of rates

# Transparency on the JSE's electronic central order book

The JSE offers continuous electronic trading with immediate disclosure of competitive prices in real-time on the central order book. Market practitioners have access to bid and offer prices as well as complete transparency and market depth. This system is responsible for the display of prices, trading and matching of transactions. Subject to certain conditions, transactions may be dealt off-screen and reported to the exchange as report-only trades.

Dedicated liquidity providers post prices on the central order book.

## Contract months

The contract expires at 10h00 on the third Wednesday of the relevant expiry month in the quarterly and serial months as follows:

- **Quarterly contracts:** eight contracts extending out two years on the standard quarterly cycle of March, June, September and December are listed at all times.
- **Serial contracts:** in addition, four near-term contracts are listed at all times to ensure that there are six consecutive near months listed. Referred to as serial contracts, they are identical to the standard quarterly contracts in all respects except that they expire in months other than the standard quarterly contracts.

For example, on 26 January 20xx, the following contracts are available: February (S=Serial), March (Q=quarterly), April (S), May (S), June (Q) and July 20xx (S). Furthermore, the next 6 quarterly months are also listed for a total of 12 contracts. With the expiry of the February 20xx contract, the August 20xx serial contract is listed immediately.

The use of serial contracts provides the opportunity to manage short-term interest rate exposure including interest rate fluctuations that may occur around the Monetary Policy Committee ("MPC") dates where changes to the repo rate are determined.

## Mark-to-Market (MTM) and settlement

In order to mitigate risk, all open positions are explicitly marked-to-market. The mark-to-market process involves valuing the brought-forward positions and traded contracts using a settlement yield. The JIBAR Futures contracts are cash-settled against the final settlement rate which is the 3 month JIBAR fixing rate on the expiry date.

## Margining positions

All transactions are cleared by the JSE's clearing house via the clearing members which provides a credit risk mitigation process to ensure trade performance.

The JSE's clearing house, JSE Clear, becomes the counterparty to each trade once each transaction has been matched and confirmed, ensuring that settlement takes place on each trade. To protect against non-performance, JSE Clear adopts a process known as margining which includes initial margin and variation margin. This process mitigates bilateral counterparty credit risk.

## Initial margin

When trading futures, it is not necessary to pay the full nominal value of the underlying instrument. Instead, futures market participants are required to post Initial Margin into a margin account which accrues interest at market-related rates. This amount is just a fraction of the underlying nominal value, and can be considered a good faith deposit which is returned to the trading participant when the position is closed out or when the contract expires. Margin is expected to cover the possible losses that the position may encounter and is collected on the morning after the trade date (t+1).

## Variation margin

Futures are marked-to-market on a daily basis and the profit or loss resulting from this is called Variation Margin. This means that profits and losses are realized and paid over in cash daily, based on the difference between the current and previous day's closing market prices.

## Trading the JIBAR Futures

The JIBAR futures contract represents an efficient way to obtain exposure to the South African interest rate markets. Trading behaviour and liquidity make it ideal for trading and hedging interest rate exposures. The behaviour of traders can be defined as follows:

- Interest rates expected to fall - Go Long (buy a JIBAR Future)
- Interest rates expected to rise - Go Short (sell a JIBAR Future)

*Note that yields move in the opposite direction to prices; hence, in order to make a profit on a trade, a dealer needs to buy at a high yield (low price) and sell at a lower yield (higher price). This implies "Buy High, Sell Low Yield". The market screens will display a buy yield as higher than a sell yield.*

## Comparison to Forward Rate Agreements

Futures are exchange traded instruments while FRAs are over-the-counter (OTC) instruments. FRAs are used in the wholesale markets to hedge against interest rate movements. To profit from an increase in rates, a trader will buy a FRA (equivalent to paying a fixed rate on the FRA) or sell a STIR Future. Likewise, to profit from a decline in interest rates; a trader can sell a FRA (receive the fixed rate) or buy a STIR Future.

# How to close a trade position

A futures position can be closed out by entering into an opposite trade. Thus, a long position can be closed by selling an equivalent contract or letting it expire. The difference between the purchase and sale price represents the profit or loss of the position.

## Trading fees

The exchange charges a fee to trade the contract based on fees per contract traded per side. This fee is subject to change from time to time.

## Strategies using JIBAR Futures

- Hedging borrowings and investments
- Managing money market portfolios
- Hedging over-the-counter (OTC) derivatives: FRAs and interest rate swaps (floating rate)
- Spread trading
- Arbitrage
- Speculating on the future direction of interest rates
- Managing interest rate risk inherent in futures

## Example of a trade in the JIBAR Futures contract

A dealer believes that short dated interest rates will decline. In order to profit from this anticipated movement in rates, the dealer decides to BUY 100 3-month JIBAR Futures. In this example, the dealer buys the 3-month JIBAR Futures at a yield of 4.58% (based on the screen shown). On day 1, the contract is MTM at 4.55% and the dealer makes a profit of R750. The profit/loss account is represented by the variation margin flows as follows:

Market Screen on Day 1			
Bid Volume	Bid	Offer	Offer Volume
100	4.66%	4.58%	100
50	4.67%		
20	4.70%	4.55%	20

Day	Description	# of contracts	Yield %	MTM	Position Yield Change	Initial Margin	Variation Margin	Cash Flow	Acc-umulated Cash Flow
0				4.58%					0
1	Dealer buys 100 contracts	100	4.58%	4.55%	-0.03%	-22,000	750	-21,250	-21,250
2				4.62%	0.07%		-1,750	-1,750	-23,000
3				4.52%	-0.10%		2,500	2,500	-20,250
4	Dealer closes position	-100	4.45%	4.45%	-0.07%	22,000	1,750	23,750	3,250

**Day 1** Variation Margin:  $\text{ZAR } 2.50 * 3 \text{ bp} * 100 \text{ contracts} = \text{ZAR } 750 \text{ gain}$   
**Day 2** Variation Margin:  $\text{ZAR } 2.50 * 7 \text{ bp} * 100 \text{ contracts} = \text{ZAR } 1,750 \text{ loss}$   
**Day 3** Variation Margin:  $\text{ZAR } 2.50 * 10 \text{ bp} * 100 \text{ contracts} = \text{ZAR } 2,500 \text{ gain}$   
**Day 4** Variation Margin:  $\text{ZAR } 2.50 * 7 \text{ bp} * 100 \text{ contracts} = \text{ZAR } 1,750 \text{ gain}$

Effectively, the dealer bought 100 contracts at 4.58% and closed the position at 4.45% for a net gain of 13bp and a profit of 100 contracts x 13bp x R2.50 = ZAR3,250.

Note that on Day 1, the dealer pays an initial margin (IM) of ZAR 220 per contract \* 100 contracts = ZAR 22,000 for the open position. This margin, together with interest earned, is returned to the dealer after the position is unwound or closed out.

## For additional information contact:

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