# An Introduction to Single Stock Futures

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# Welcome to the "Futures"

- A new age instrument that provides a link between two kinds of financial markets
  - The Equity (Stock Market) and the Futures Market
- Instruments that make it easier to hedge portfolios and capture market opportunities.
- That are traded on a regulated exchange
- Require reduced capital to trade
- Are cheaper to trade than shares
- Allows you to make money in both rising and falling markets

# Introduction

**Standard Bank is a leader in Listed Retail Derivatives on the JSE**

- By retail we mean: Derivatives for the private investor

- **What is a listed derivative?**
  - A financial instrument, traded on an exchange, the price of which is directly dependent upon (i.e. "derived from") the value of one or more underlying securities.

- **Examples of listed Retail Derivatives include**
  1. Warrants
  2. Share Instalments
  3. **Single Stock Futures**

# The History of Futures

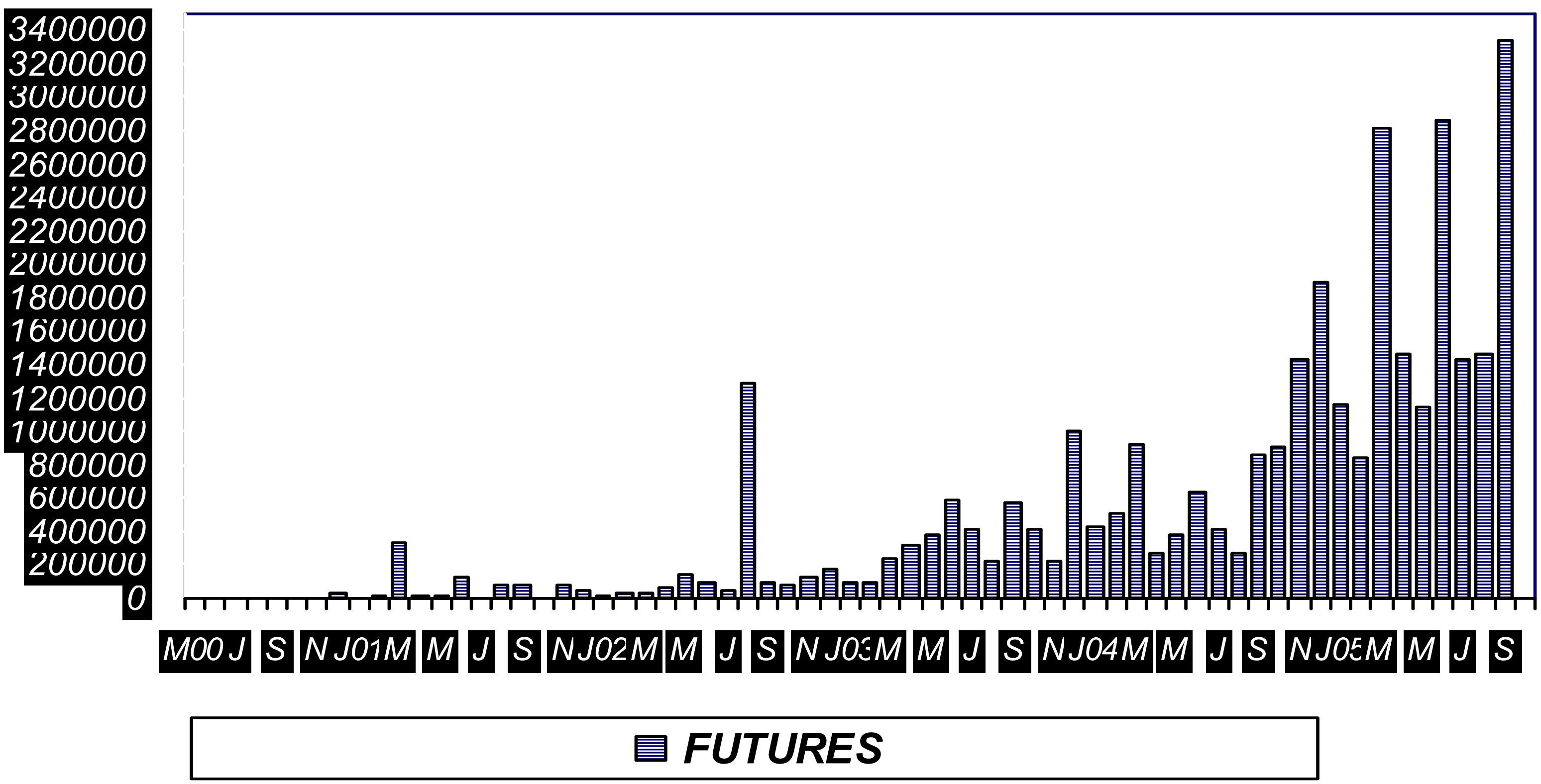
- Futures trading started with attempts to improve the efficiency of early agricultural market places.
- Started with forward contracts - simple agreements between people to buy now but settle later.
- Records, of “forward” agreements in the rice markets in seventeenth century Japan.
- Around 1840 “modern” futures began being traded in Chicago.
- As volumes grew trade became inefficient, a group of businessmen formed the Board of Trade of the City of Chicago in 1848.
- They standardized contracts to make the delivery process more efficient.
- Due to the ease of trade the contracts changed hands many times before expiry.
- Traders were able to sell contracts (“go short”) that they felt were over valued hoping to buy them back later at a lower price.

# History cont.

- For a century the futures market centred around agricultural products.
- Early 1970's a fundamental shift occurred with futures over financial products.
- Until 1971 currencies were pegged to the gold standard, with its abolishment currencies began to "float".
- Within a short period of time there was huge trade in currency futures with traders looking to hedge out the risks of forex movements.
- In 1976 the first interest rate future was listed .
- 1980's index futures started to become popular The Chicago Mercantile Exchange (CME) launched its first stock index future a contract over the S&P 500 in 1982.
- Into the 1990's as markets evolved demand grew for futures listed not only on the major indices but also on individual equities (shares) enter SSF's.

# South Africa

- SAFEX introduced SSF's to South Africa in 1999.
- Initially offered over 4 shares. Grown to cover over 200 counters.
- South Africa ranks 4th globally in terms of SSF'S markets.
- R73bn underlying value traded in 2005.

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# What are Single Stock Futures?

SSF's are an agreement between two parties, where one commits to buy a set quantity of stock and another to sell a set quantity of stock on a specified date.

| A SSF contract is: | |
|---|---|
| A standardized contract | **For 100 shares of the underlying** |
| That is listed on SAFEX (South African Futures Exchange) | **Trading on a regulated exchange removes counter-party risk.**<br><br>**Participants are protected from default by other counter-parties.** |
| That expires on a pre-determined futures date | **SSF contracts expire on the third Thursday of March, June, September and December.** |

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# What are Single Stock Futures? cont.

- Each SSF is based on an underlying stock (Anglo American Plc).
- As the underlying goes up and down, so does the SSF.
- Unlike stocks, profits and losses on SSF's are realised on a daily basis.
- To trade in SSF's you open a futures account and deposit funds -"Margin"
- The Margin deposited earns a rate of interest as set by SAFEX.
- As the holder of an SSF's you will have no voting rights on the underlying.
- If you hold your SSF until expiration – you will have to either take delivery or make delivery of the underlying.

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# A Practical Example

**SSF's are used Primarily**

- To *speculate* when the belief is that prices of shares will change
- To *hedge (*remove) the risk that owning a share exposes a portfolio to.

**Investor A (Equity/Share Trader)**

- Investor A is confident that Anglo American Plc shares are set to rise.
- He has R20,000 cash available.
- The share price is R200, so he buys 100 shares.
- Two months later, the price is R220.

**The investor sells and makes R2 000 profit (R20 per share multiplied by 100 shares)**

# Investor B (SSF Trader)

**Investor B invests in SSF's**

- He acquires 1 AGL SSF (equivalent to 100 Shares), which cost R1500 in margin.
- The contract has the following reference: AGLQ Jun-06.
- Investor B has the same position as Investor A, but has put up R18,500 less.
- The SSF contract exposes the holder to the full movement of the underlying shares, both up and down.
- Assume that the price of AGL moves up and reaches R220 and you close out your position.
- At this point your initial margin is refunded along with the difference in the value of the underlying shares, which is 1 Contract x (R220-R200) x 100 = R2 000.
- <u>The R1 500 initial capital outlay has increased to R3500</u>
- <u>A return of 133% during a period in which the share price only increased by 10%.</u>

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# Margin

- Every trade that takes place on SAFEX is guaranteed by the exchange.
- By a process known as **novation** SAFEX guarantees the performance on each trade and removes the risk of counterparties not meeting their obligations.
- In order to protect itself against any particular party failing to meets its obligations SAFEX employs a process of margining.
- Think of margin as a “good faith” deposit.

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# Initial Margin

- To ensure that  you meet your obligations of your trade, SAFEX requires that you post INITIAL MARGIN.
- This money remains on deposit as long as the position is open.
- It earns a market related rate of interest.
- The initial margin is returned to the investor when the position is closed out, or the contract expires.
- Initial margin can vary from under 10% to 50%.
- It is meant to equal the highest loss that may occur in a one day’s trade.
- Note that many brokers will require that clients post initial margin in excess of the minimum SAFEX requirements.

# Other margins

**Variation Margin**

- At day end, the JSE determines the profit or loss on each position
- Based on mark-to-market (closing price) of the current day less the mark-to-market price of the previous business day.
- The profit or loss is referred to as the **"variation margin"** is settled the next business day.

**Maintenance Margin**

- The minimum account balance you must maintain before your broker will force you to deposit more funds or close out your position.
- When this happens, it is known as a **"margin call."**

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# Key Points

- Margining is the means by which the exchange ensures that buyers and sellers of SSF's have enough money to meet their obligations.
- Margining increases your buying power.
- An initial investment is required when you open a position (initial margin).
- You are required to keep a minimum amount of money in your account that can range from 10% - 50% of the ongoing value of the transaction (maintenance margin).
- You earn interest on any margin kept in the account.
- If the margin in your account falls below the maintenance margin level, your broker will issue a margin call.
- Margin calls will result in you having to liquidate stocks or add more cash to the account.
- Brokers may be able to sell your securities without consulting you.
- Keep excess cash in the trading account.
- Monitor the status and value of positions closely (several times each trading day).

# SSF Pricing

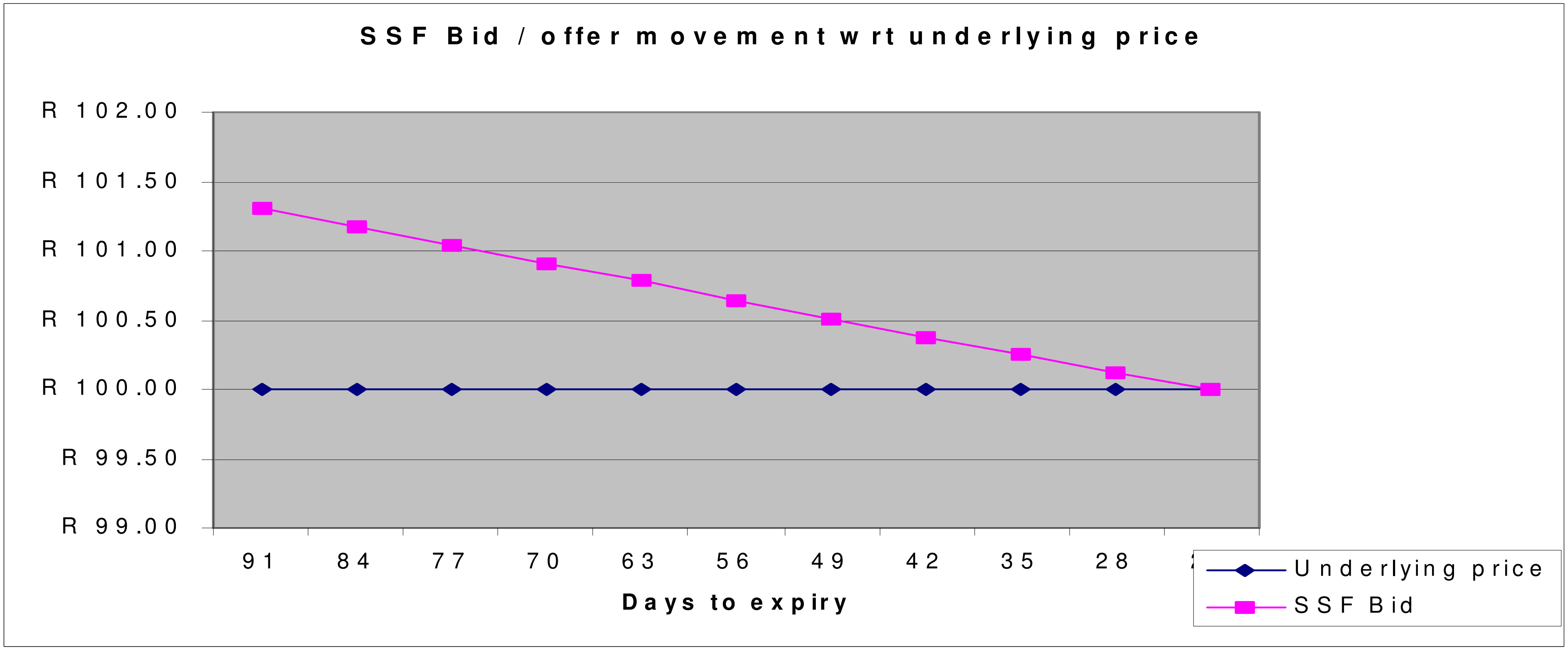
1. As the Stock price goes up and down, so too does the SSF price.
2. But the two prices won't be the same.
3. In most cases the price of an SSF will be above the price of the underlying with the price of the SSF and the underlying converging on the expiry date of the SSF.

## Why is there this difference?

- The stockowner receives dividends **and the SSF owner doesn't**.
- Because the SSF ties up less money, **there's an opportunity cost to holding the actual Stock over the SSF.**

# The Basis

- The difference in price between the SSF and the underlying is called the "Basis."
- The Basis reflects a number of factors, collectively called "Carrying Costs".



# SSF Pricing - Fair Value

- The price at which the SSF is trading referred to as “Fair Value”

FV = Will equal the future value of the underlying price plus carrying costs less the future value of dividends.

- Changes in Fair Value can be brought about by :

1. TRANSACTION COSTS (Commission)
2. BORROWING COSTS
3. DIVIDEND ASSUMPTIONS

# Pricing Formulae

**SSF Bid PRICE =**

**STOCK PRICE x ( 1 + ( i x t1/365) ) - (STOCK PRICE * Comm.) – DIVIDEND x ( 1 + ( i x t2/365))**

**SSF Offer PRICE =**

**STOCK PRICE x ( 1 + ( i x t1/365) ) + (STOCK PRICE * Comm.) – DIVIDEND x ( 1 + ( i x t2/365))**

- i = short-term interest rate (typically JIBOR).
- t1 = Number of days until expiration.
- t2 = Number of days between dividend payment and contract expiration.

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# Dividends

- SSF's holders do not receive the dividends that are paid by the underlying
- But, you do not forgo the benefits of the dividend stream as these are priced into the SSF for you.
- Please Note:
- Prior to their announcement the price of the SSF will include a dividend assumption.
- If actual dividends are different from assumed dividends it will effect the price of the SSF.

| Actual Dividend greater than expected dividend | Actual Dividend less than expected dividend |
|---|---|
| Reduces the SSF Price | Increases the SSF Price |

- **Some brokers will provide dividend protection.**

# Comparing Costs

| Projected Costs | |
|---|---|
| Projected share cost at bid price: | **R100000.00** |
| UST: | **R250.00** |
| STRATE: | **R10.60** |
| Brokerage @ 0.8% | **R800.00** |
| VAT on charges: | **R113.48** |
| Insider Trading Levy: | **R0.70** |
| Overall projected cost: | **R101174.78 = 1.17% brokerage** |

**Futures Purchase Gearing: 6.67times (R100,000/R15000)**

| Projected Costs | |
|---|---|
| Current position: | **0** |
| Number to buy: | **10** |
| New position: | **10** |
| Initial margin on current position: | **R 0.00** |
| Initial margin on new position: | **R 15000.00** |
| Initial margin required for this trade: | **R 15000.00** |
| SSF Brokerage: | **R 99.00** |
| VAT: | **R 13.86** |
| Net cash amount required: | **R 15112.86** |

| Summary of profit and loss for a R10 increase in the XYZ share price | Alternative 1: Invest in 1000 XYZ shares at R100 each | Alternative 2: Invest in 15,000 in SSF over XYZ at R101 Future Price) |
|---|---|---|
| Purchase price | (R100,000) | (R15,000) |
| Trading Costs | (1174.78) | (512.86) |
| Sale price | R110,000 | R111,000 |
| Brokerage | (R1016.05) | (R512.86) |
| Profit | R7809.17 | R8674.28 |
| Percentage return | 7.8% | 57.8% |

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# Advantages of SSF’s

1. The ability to short sell.
2. Ability to hedge portfolio’s
3. There is no UST payable on SSF’s
4. High levels of gearing
5. Lower transaction costs
6. The ability to engage in pairs trading

# Trading Tips

- Are you suited to trading SSF's?
  - Do you understand the risks
  - Do you have the time to check your positions on a daily basis
- Risk Control
  - We recommend using stop losses - *The market can remain irrational longer than you can remain solvent*
- Never become emotionally attached
  - SSF's are short-term trading instruments – "*When the facts change, I change"*
  - A loss never bothers me after I take it. I forget it overnight. But being wrong - not taking the loss - that is what does damage to the pocketbook and to the soul.
- Find an angle
  - Play to your strengths: Be original
  - Use contrarian thinking

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# Trading Tips

- Use fundamental analysis to pick your stocks, combined with some technicals to time your entry into the SSF.
- Be wary of averaging down.
- Only invest around 20% of your money in geared instruments.
- Have a separate trading account (tax purposes / track returns independently).
- Set realistic targets - >30% per annum is excellent.
  - A portfolio growing at a compound rate of 10% per annum will take 7.25 years to double
  - At 30% per annum  it would be 670%
  - Don't be greedy – view it as a long term investment, made up of short-term trades.
- Don't be scared of going into cash – if you are unsure of the market head for the sidelines.
- Bank your profits from time to time.

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## Warrants, CFD’s & Futures

| | Warrant | Future | CFD |
|---|---|---|---|
| Regulated | By JSE | By JSE | No regulation |
| Listed instrument | Yes | Yes | No |
| Geared | Yes | Yes | Yes |
| Payment upfront | Warrant premium | Margined | Margined |
| Trade costs | Cheaper than shares | Cheaper than shares | Cheaper than shares |
| Short the market? | Yes | Yes | Yes |
| Max loss | Premium paid | Unlimited Loss | Unlimited Loss |
| Risk profile | Lower than Futures & CFD’s | High (see max loss above) | High (see max loss above) |
| Liquid market | Yes = dedicated market makers | Yes = dedicated market makers | Liquidity only provided by person who initially traded with you |
| Pricing methodology | Option Pricing (Black & Scholes) Delta between 0 and 1 | Futures Pricing (delta 1) | Similar to futures (Delta 1) |

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# A Last Thought ….

I hear and I forget.
I see and I remember.

I do and I understand.