



Online Share Trading  
Currency Futures



Wealth warning: Trading Currency Futures can offer significant returns BUT also subject you to significant losses if the market moves against your position. You may, in a relatively short time, sustain more than the total loss of the funds placed by way of initial margin. You may be required to deposit a substantial additional sum, at short notice, to maintain your margin balance. If you do not maintain your margin balance your position may be closed out at a loss and you will be liable for any resulting deficit.

## Currency Futures

### Introduction

Currency futures contracts can be hard-working additions to any investor's or trader's portfolio. They provide a way to hedge the risk to which a currency exposes the investor or to speculate when the belief is that the exchange rates will change. Currency Futures offer gearing on exchange rates in a cost effective way. Long or short trades, that is, buying or selling a currency can be executed with ease.

Currency Futures also allow individuals to trade outside their R2 million foreign investment allowance stipulated by the South African Reserve Bank. Individuals, in other words, have no limit on the value that they may transact in the currency futures market.

Overleaf are two simplified examples of how to use Currency Futures:

### Example 1: Hedging transaction in a weakening rand scenario:

John is travelling to the USA in December and wants to reduce his risk of a weakening in the US\$/rand exchange rate when he buys his US\$ travellers cheques (that is, his US\$ will cost him more if this happens).

By purchasing a currency futures contract now, in say September, he is able to 'lock in' the current exchange rate of R7,2125. John knows that every currency futures contract is worth US\$1 000 and as he plans to take US\$7 000 with him for his holiday he buys seven currency futures contracts making his exposure US\$7 000. This exposure to US\$7 000 at R7,2125 equates to an exposure of R50 488.

Fortunately for John, a currency futures contract does not require the full amount to be deposited with his broker, but only a deposit called an 'initial margin' of R4 830 (R690 initial margin x seven contracts).

His broker may charge him a brokerage fee which is negotiated directly with the broker.

In December John is ready to buy his travellers cheques at the current exchange rate which has now moved to R7,6035, so the US\$7 000 John needs to buy would now cost him R53 225 (an extra R2 737). However, his currency futures contracts have made a profit of R2 737 and John sells the contracts and uses this profit to offset the increased cost of the travellers cheques.

John has effectively paid R7,2125 per US\$1 for the travellers cheques, thus locking in his cost of travellers cheques at R7,2125 back in September.

### Example 2: Speculative transaction in a strengthening rand scenario:

Sarah is a trader and she has a view that the US\$ will be weakening against the rand as she thinks interest rates will be falling in the US and wants to be able to profit from such a move.

Sarah sells 10 currency futures contracts at R7,3245 and as such she is now 'long' the rand and 'short' the US\$. This exposure to US\$10 000 at R7,3245 equates to an exposure of R73 245.

Fortunately for Sarah, a currency futures contract does not require the full amount to be deposited with her broker, but only a deposit called 'initial margin' of R6 900 (R690 initial margin x 10 contracts).

Over the next few weeks the rand strengthens and Sarah closes her currency futures trade by buying 10 currency futures contracts at R6,9545. Her profit is R370 per contract (R7,3245 – R 6,9545 = 37c x US\$1 000 x 10 contracts = R3 700).

Sarah has made a profit of R3 700 on an investment of R6 900, which equates to a return on investment of 53%.

In summary:

A currency futures contract allows:

- investors/traders to transact outside their R2 million foreign investment allowance;
- investors/traders to trade an underlying exchange rate;
- investors/traders to take a view on the movement of the exchange rate between two currencies; and
- gearing of a position, as a currency futures contract only requires a smaller deposit than the actual exposure of the position.

The currency market is the largest and most liquid market in the world, with daily value around US\$10 billion and as such it is the most liquid of all assets. The major currency markets in the world are London, New York and Tokyo and the market opens at 5:00 on Monday in Sydney and trades continuously until closing at 17:00 on Friday in New York.

The currency futures market in South Africa trades from Monday – Friday from 9:00 – 17:00 and is traded on the JSE's Yield-X system, a regulated and guaranteed market.

**Important:** the rand continues to trade on global markets even while the South African currency futures market is closed.

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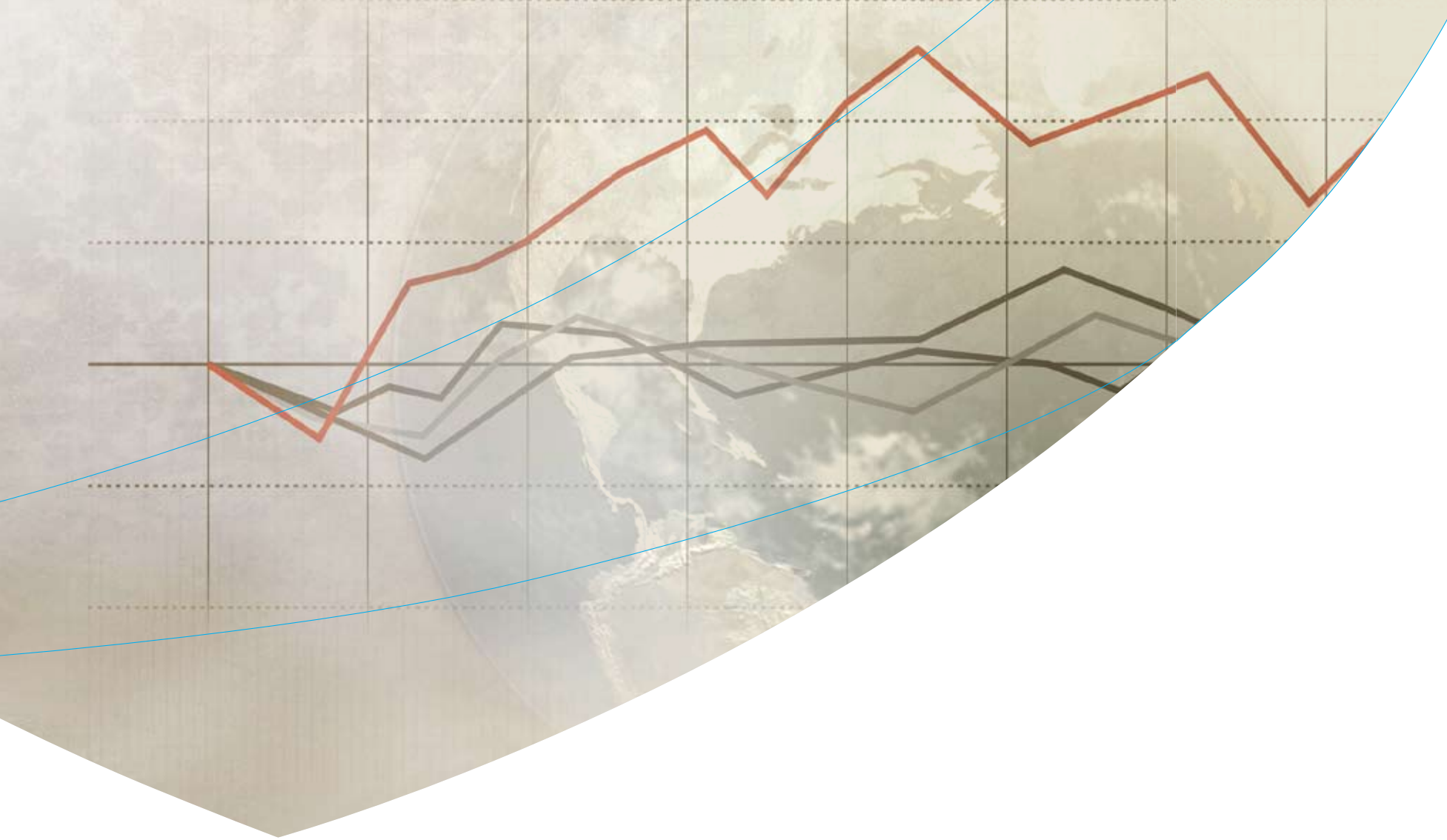
## What is a futures contract?

### Definition

A currency futures contract:

1. is a standardised contract of a standard quantity of a specific underlying asset
  - One contract is 1 000 units of the foreign underlying currency, so one currency futures contract on the US\$/rand will represent US\$1 000;
2. is listed on the JSE
  - Performance by the counterparties to a futures contract is guaranteed via Safcom (the JSE's clearing house) for all futures contracts that are traded. Standardised contracts traded on a regulated exchange enable the risk of both parties to be reduced and also increase the liquidity in the market. Liquidity refers to the ability of market participants to get in and out of their positions when they choose to.
  - Prices for each contract are negotiated between buyers and sellers via the Yield-X electronic order matching platform. Currency futures brokers input orders which are automatically matched on the basis of time and price priority, similar to the manner in which shares are traded;
3. expires on a predetermined future date
  - The expiry months specified for foreign currency futures contracts are March, June, September and December. All currency futures contracts expire at 12:00 two business days prior to the third Wednesday of the expiry month or, if that day is not a business day, then the previous business day; and
4. is at a fixed agreed price
  - The price at which you trade is determined at the time of trade being the expected future price as quoted on the Yield-X system.





Currency futures contracts are cash settled in rand. In other words, no physical delivery of the underlying currency will ever take place.

**Other relevant information**

**1. Minimum contract value**

One currency futures contract is the equivalent of 1 000 of the foreign underlying currency (for example US\$1 000 for the US\$/rand contract).

**2. Settlement at expiry**

Currency futures contracts are cash settled in rand. In other words, no physical delivery of the underlying currency will ever take place. Thus as explained in **Example 1**, the hedger will need to visit a bank to purchase the physical foreign currency for the overseas visit.

**3. Contract expiry and rollover/close out**

The expiry months specified for foreign currency futures contracts are March, June, September and December. All currency futures contracts expire at 12:00 two business days prior to the

third Wednesday of the expiry month or, if that day is not a business day, then the previous business day.

Single Stock Futures have shown us that a very small percentage of clients want their positions to expire and rather choose to roll over into the next dated contract, that is, from the Sep-07 into the Dec-07 contract.

To facilitate this, Online Share Trading rolls over or closes positions (as elected by the client on the website) **two** business days prior to the official expiry dates.

The default position as set on a portfolio will be for roll over, however clients will be able to request they be closed out. Auto roll over will be charged at the normal cost of transaction but you will only be charged once per contract.

**4. Margining**

The JSE’s clearing house, Safcom, becomes the counterparty to each trade once a transaction has been matched and confirmed on the Yield-X system. The clearing house therefore ensures settlement takes place on each trade. To protect itself from non-performance, Safcom employs a process known as margining. This mechanism is two-fold.

**Initial margin**

When a position is opened (either long or short), the investor is required to deposit an amount of cash called initial margin with the broker who subsequently deposits it with the clearing house. The amount is determined by the JSE and is updated on a regular basis and remains on deposit as long as the investor has an open position. The initial margin attracts a market related interest rate and is refunded to the investor once the position is closed out or when the contract expires.

The initial margin requirement for Currency Futures varies between the different currency futures contracts offered and will be between 6% and 12% of the underlying value of the currency futures contract.

**Variation margin – daily settlement of profits and losses**

Between 16:55 and 17:00 the JSE takes an arithmetic average of every currency trade’s price that occurred. This price becomes the underlying price to which forward points are added (see the fair value calculation) to arrive at the final currency future Mark-to-Market (MTM).

The JSE re-values each futures position at the close of each business day against the close of the previous day to determine the profit or loss of that position. Any difference from the previous day’s MTM price is either paid to the investors, or paid by the investors to the clearing house, in cash and rand denominated. This payment is called variation margin and is simply the daily profit or loss on the position.

Refer to the detailed cash flow example on page 8.

## Risk of trading Currency Futures

The old adage “high risk for high return” is especially appropriate to currency futures trading. No investment /trading product can offer the returns offered without the investor having to assume some risk.

The main risk associated with currency futures trading is attributable to the effect that gearing/ leverage has on a position.

A geared transaction is simply ‘the deposit of a smaller amount of cash, but being exposed to the full value of the transaction’. As detailed in the earlier examples, the investor and speculator only

deposit the ‘initial margin’ amount but get exposure to the full US\$ amount.

Gearing can cause significant profits or losses in a short period of time on a currency futures position because the effect of any profits or losses on the underlying currency can be up to ten times more on the future.

Let’s use the detail of Example 1 to describe the risks that gearing brings to a futures transaction if the market moves significantly. John is long US\$ futures contracts and thus starts to lose money if the US\$ weakens.

### At transaction date

Number of contracts:	Seven contracts at US\$1 000
Futures price:	R7,2125
Exposure at transaction date:	R50 488/\$7 000
Deposit / Initial margin:	R4 830 (R690 initial margin x seven contracts)
Number of times geared:	10,5 times

### A few days later, assuming significant US\$ weakness

Futures price now:	R6,3125 (12,48% drop in the currency)
Exposure at transaction date:	R44 188/\$7 000
Deposit / Initial margin:	R4 830 (R690 initial margin x seven contracts)
Losses incurred:	R6 300 (R6,3125 – R7,2125 x seven contracts x 1 000)

The trader has thus lost more than the deposit of R4 830. Losses stand at R6 300 which are required to be deposited by the trader by 12:00 the next morning. If the trader cannot meet this demand, the position will be closed out by the broker and the R4 830 deposit is refunded to the account. The net amount owing of R1 470 is due and payable.

Even though leverage is also referred to as a benefit, the risk is equal and opposite to any profit that could be earned from a futures trade.

Overnight risk is also an important consideration. Currencies trade from 05:00 on Monday in Sydney to 17:00 on Friday in New York. Yet the currency futures market only trades Monday – Friday from 09:00 – 17:00. Hence the rand is trading while the currency futures market is closed and any sharp moves during the South African futures closed hours would impact your currency futures exposure.

## Detailed example of cash flows on a currency futures position

Using **Example 1**, we'll show in detail the daily actual cash flows that will be debited or credited to the speculators trading account during the life of the position.

	Day 1 (trade day open position)	Day 2	Day 3	Day 4	Day 5 (trade day close position)
Initial margin per contract	(R4 830)	R0	R0	R0	R4 830
Currency futures trade price	R7,2125	R0	R0	R0	R7,6035
MTM price	R7,2405	R7,3515	R7,3085	R7,5555	n/a
Profit/(loss) for the day	R196 (7,2405-7,2125 x 7 x 1000)	R777 (7,3515-7,2405 x 7 x 1000)	(R301) (7,3085 -7,3515 x 7 x 1000)	R1 729 (7,5555-7,3085 x 7 x 1000)	R336 (7,6035-7,5555 x 7 x 1000)
Net cash in/(out) flow for the day	(R4 634) (-4 830 + 196)	R777	(R301)	R1 729	R5 166 (4 830 + 336)

### Summary of cash flows

Initial Margin R0 (-4 830 + 4 830)

Variation margin R2 737 (+196 + 777 - 301 + 1729 + 336)

*Note:* this example excludes any fees charged by a currency futures broker.

## Who may trade Currency Futures?

The following categories of clients are permitted to trade and hold positions in Currency Futures and are referred to as 'qualifying clients' by the South African Reserve Bank:

1. Individuals and foreigners with no limits;
2. Corporate entities with no limits;
3. Pension funds and long term insurance companies subject to their 20% foreign allocation limits;
4. Asset managers and registered collective investment schemes subject to their 30% foreign allocation limits.

There are four categories of participants in the currency futures market: hedgers, speculators, arbitrageurs and investors.

A member of Yield-X who is an authorised dealer (mostly the registered banks) and has been granted specific approval from the South African Reserve Bank to act as a market maker in the trading of Currency Futures may trade in Currency Futures on behalf of qualifying clients and may hold proprietary positions in Currency Futures. These members are required to report all transactions to the South African Reserve Bank on a quarterly basis.

## Market participants

There are four categories of participants in the currency futures market:

### Hedgers

Currency Futures can be used to hedge against currency risk. Currency hedging refers to the elimination of currency risk by entering into an equal but opposite currency futures position which responds to a change in the exchange rate in the opposite manner to an existing currency position. Refer to **Example 1**.

Participants would enter in a long currency futures position in order to protect themselves against depreciation in local currency, that is, rand weakening. These investors may have a payment, quoted in a foreign currency, expected in three months time, and are thus exposed to an increase in the exchange rate, that is, an appreciation of the foreign currency.

### Speculators

Speculators are directly opposite to hedgers. Where hedgers try to eliminate risk, speculators want to increase risk in the hope that they will make a short-term profit. Speculators enter into currency futures contracts in order to take a view on the movement of the underlying exchange rate. Refer to **Example 2**.

Speculators that view the underlying exchange rate to increase (local currency depreciation) will go long a currency futures contract, that is, buy US\$ currency futures contracts. Speculators that view the underlying exchange rate to decrease (local currency appreciation) will go short a currency futures contract, that is, sell the US\$ currency futures contract.





## Arbitrageurs

Arbitrageurs profit from price differentials of similar products in different markets, for example, price differentials between the underlying exchange rate and futures price or between the pricing of currency futures on different markets, for example, New York and London.

Arbitrage requires live data on all these markets and the ability to execute transactions quickly and cost effectively. The average person will find it difficult to effect arbitrage transactions due to the limited access to data, foreign markets and cost structures.

## Investors

Investors use Currency Futures to enhance the long-term performance of a portfolio of assets.

## How are currency futures prices determined and quoted?

### Which price does the investor see?

Online Share Trading displays all currency futures prices as quoted by market participants directly from the Yield-X trading system. The trader/investor thus has access to the open market directly and is ensured of a fair price at which to trade at all times.

Even during periods of less liquidity or currency instability in which spreads (differences between the best bid and offer price) can become large, the market makers will endeavour to always display a fairly priced bid and offer thus allowing other market participants to effectively trade in and out of their positions during market hours.

### How are currency futures prices determined?

Currency futures prices are dependent on the underlying exchange rate as well as the interest rate differential between the two relevant countries in question. The following equation explains the currency futures pricing model and would be referred to as the fair value price:

$$F = S \left[ \frac{1 + rdT_1}{1 + rfT_2} \right]$$

Where:

- $F$  is the fair value futures contract price quoted in local currency units per one unit of foreign currency;
- $S$  is the underlying exchange rate (spot rate) quoted in local currency units per one unit of foreign currency;
- $T_1 = \text{days}/365$  being the time to expiry of the futures contract;
- $T_2 = \text{days}/360$  being the time to expiry of the futures contract;
- $rd$  is the domestic currency interest rate (in decimals); and
- $rf$  is the foreign currency interest rate (in decimals).

Market makers will then add a spread either side of this fair value as their fee as detailed below. However, market forces of supply and demand and the expected increase in trade in these products will invariably lead to the bids and offers narrowing (getting closer together) as market participants jostle to be the best bid or offer.





Market makers ensure that there is always enough volume available to trade at a reasonable price.

### What does Online Share Trading offer the retail client?

#### Features

- Real time online trading environment
- Competitive brokerage fees
- Real time profit and loss reports\*
- Automatic stop loss\*
- Ability to enter, cancel and amend orders online
- Trade and price alerts via SMS and/or email
- Live streaming prices
- Charts of all major currencies
- Live portfolio values
- Auto close out (if cash runs out)

#### Contact

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\* Not available at launch

#### Dec-07 US\$/rand currency futures contract

$$S = R7,4203$$

$$rd = 11,0\%$$

$$rf = 5,45\%$$

T = 120 days (today being 21 Aug 07 and futures expiry being 14 Dec 07 but the currency transaction only settles on 19 Dec 07)

$$F = 7,4203 * [1 + ((0,110 - 0,0545) * 120/365)]$$

$$F = R7,5557$$

#### Example of a market makers price assuming a spread

Market makers ensure that there is always enough volume available to trade at a reasonable price. This reasonable price is a sum of the fair value price plus this spread to the market maker for supplying this service to the market.

Thus, using the value derived above the prices as quoted by a market maker, assuming a spread of R0,0400 (4c) the bid/offer as quoted on the Yield-X system will be:

$$\text{Bid price} = R7,5557 - R0,0200 = R7,5357$$

$$\text{Offer price} = R7,5557 + R0,0200 = R7,5757$$





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