

# Global Markets Currency Reference Warrants



## Currency reference warrants

In response to the growing popularity of currency trading in South Africa, The Standard Bank of South Africa Limited (“Standard Bank”) is pleased to launch currency reference warrants (CRWs). CRWs are listed on the JSE Limited and enable investors to trade currency as an asset class or to protect themselves against adverse movements of the South African Rand.

### What are currency reference warrants?

A currency reference warrant (CRW) is a derivative – its value is derived from another underlying asset, in this case an exchange rate. More specifically, its value is based on the change in the Rand price of one unit of a specified foreign currency.

CRWs are available in both calls and puts, allowing investors to take advantage of positive and negative views of the future direction of the South African Rand. Depending on the type of warrant traded, the investor has the right but not the obligation to either buy or sell the performance of the Rand against a specified foreign currency (e.g. the US dollar) at a specific rate (known as the strike price) on a specific date (known as the expiry or maturity date).

A CRW’s intrinsic value is determined from the difference between the underlying exchange rate and the strike price. It is the amount that the warrant is worth if it had to expire on that day. If a CRW does not have any intrinsic value at maturity, the loss incurred is the initial amount invested (the premium).

CRWs are cash settled in South African Rand which means that no transfer or settlement of foreign currency occurs. CRWs can only be exercised at maturity (European style), at which point investors will be paid their intrinsic value, if any. However, CRWs can be bought and sold throughout their term (i.e. up until expiry), with Standard Bank acting as the liquidity provider. In other words, CRWs trade in a liquid secondary market where investors may enter and exit their warrant positions with ease.

### Currency reference call warrants

- Call warrants enable investors to theoretically BUY a particular foreign currency (i.e. SELL the Rand against a particular foreign currency) and are therefore suitable for those who believe the Rand will weaken/depreciate against that foreign currency.
- Holders of call CRWs are at risk if the Rand strengthens against the specified foreign currency.
- Call warrants are said to be in-the-money if their strike price is lower than the relevant exchange rate as determined by Yield-X at the Expiration Time as the price of the relevant Exchange-Traded Currency Futures Contract at maturity.
- If a call warrant’s strike price is higher than the relevant exchange rate at maturity, the warrant expires worthless and the loss incurred is the amount invested.

### Currency reference put warrants

- Inversely, put warrants enable investors to theoretically SELL a particular foreign currency (i.e. BUY the Rand against a particular foreign currency) and are therefore suitable for those who believe the Rand will strengthen/appreciate against that foreign currency.
- Holders of put CRWs are at risk if the Rand weakens against the specified foreign currency.
- Put warrants are said to be in-the-money if their strike price is higher than the relevant<sup>1</sup> exchange rate at maturity.
- If a put warrant’s strike price is lower than the relevant exchange rate at maturity, the warrant expires worthless and the loss incurred is the amount invested.

### Why trade a currency reference warrant?

- To benefit from currency fluctuations;
- To take advantage of your view of where the Rand will be trading against a foreign currency (e.g. US dollar) in the future;
- To diversify your portfolio by adding currency exposure;
- To hedge against adverse movements in the Rand;
- There is no STT (Securities Transfer Tax) payable;
- No margining process applies as with trading currency futures and therefore no daily settlement of profits and losses takes place;
- Liquidity is provided by Standard Bank; and
- Geared/leveraged exposure to an underlying exchange rate.

<sup>1</sup> As determined by Yield-X at the Expiration Time as the price of the relevant Exchange-Traded Currency Futures Contract.

## Gearing or leverage

CRWs provide investors with leveraged exposure to an exchange rate. This implies that investors are required to pay a small price to purchase the warrant, but are exposed to the full value of the underlying. Therefore, a small percentage change in the underlying exchange rate will result in a much greater percentage change in the price or value of the warrant.

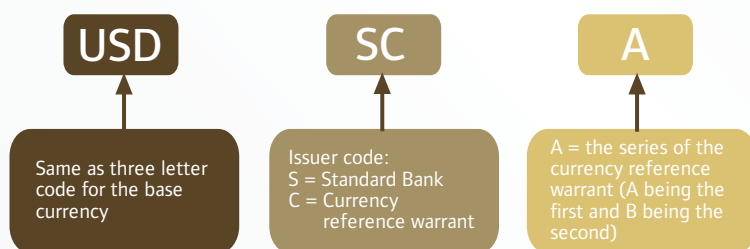
Gearing improves the potential profits when trading a warrant. However, an adverse movement in the underlying exchange rate will result in a greater percentage loss in the value of the warrant than the percentage change in the underlying exchange rate.

## Standard Bank - the issuer and liquidity provider

Standard Bank will issue CRWs over a number of currency pairs and will provide both bid (buy) and offer (sell) prices intraday to the market, allowing investors to enter and exit positions throughout the day.

## How to identify a Standard Bank currency reference warrant?

Standard Bank currency reference warrants will be identifiable by the following code:



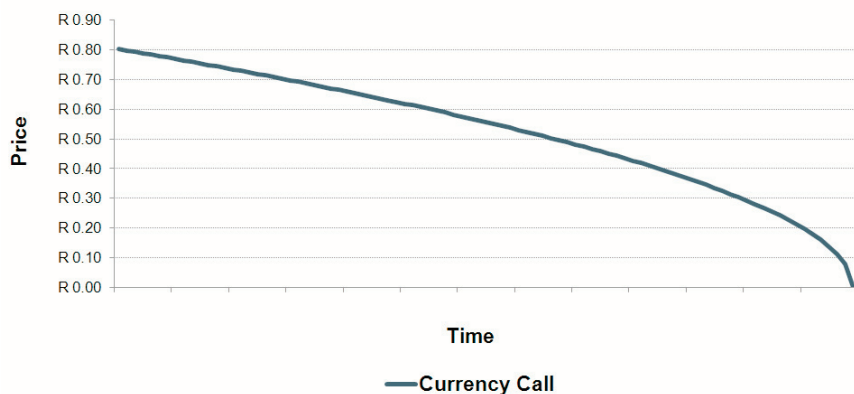
Call CRWs will be identifiable by the series A – O, and put CRWs by the series P – Z.

## Factors which influence the price and valuation of a currency reference warrant

Market Variable	Change in Variable	Change in Call CRW price	Change in Put CRW price
Market rate (e.g. USD/ZAR)	↑	↑	↓
Time to expiry	↓	↓	↓

- **Exchange rate** – The most important of the above factors is the underlying exchange rate. To allow investors to gauge the impact of changes of the underlying on the CRW, Standard Bank will publish a daily matrix of its bids and offers for specific levels of the exchange rate on its website [www.warrants.co.za](http://www.warrants.co.za).
- **Time to expiry** – All warrants lose value with the passage of time. The chart below shows a gradual decline in a call CRW's value over a three-month period. The exchange rate used has remained constant at a level equal to the strike price of the warrant.

## Currency reference call warrant



- **Volatility** – Volatility is the tendency of the exchange rate to rise and fall over the term of a warrant. Low volatility levels imply that an exchange rate has not been fluctuating significantly. Volatility is important because if a market does not move fast enough, the currency may not reach the strike price at maturity and the warrant's value will decrease.

## Risks associated with trading currency reference warrants

- If a warrant expires out-the-money at maturity, it is worthless. The loss is limited to the amount invested (the premium).
- CRWs are geared instruments. This implies that an adverse change in the underlying exchange rate will negatively impact their value by a factor of the percentage change in the underlying.
- A CRW that is far out-the-money and close to expiry is highly geared, which increases the risk of losing the amount invested.

## Currency reference warrants examples

### A call CRW example:

Warrant Details		USD/ZAR	CRW Call Price
Name	USDSCA	7.40	R0.25
Strike	R8.00/\$	7.50	R0.28
Conversion Ratio	2	7.60	R0.30
Style	European	7.70	R0.33
Expiry	6 months	7.80	R0.35

The investor purchases 100,000 USDSCA at R0.30 when the Rand is trading at R7.60 against the US Dollar.

- Given the conversion ratio (2:1), 100 000 warrants implies an exposure to \$50 000.
- The price paid to purchase the CRWs is R30 000; (R0.30 x 100 000).
- The CRW position enables the investor to profit from the Rand weakening against the US Dollar (i.e. an increase in the exchange rate).

Scenario 1: Assume the Rand strengthens to R7.40 against the US Dollar.

- The value of the call warrants will decrease to R0.25 (as shown in the table above).
- The investor could choose to hold the warrant position in order to take advantage of the time left until maturity and the possibility that the warrants will increase in value and expire in-the-money, thereby delivering a profit.
- Alternatively, the investor could exit the warrant position and sell the warrants in the market for fear that the Rand will continue to strengthen and therefore further reduce the value of the warrants or the likelihood of a positive investment return. The investor could sell the call warrants back to Standard Bank at R0.25 and thereby take a loss of R0.05 per warrant bought.

Scenario 2: Assume the Rand weakens to R7.70 against the US Dollar.

- The value of the call warrants will increase to R0.33 (as shown in the table above).
- If the investor sells the warrants in the market, the total return earned will be 10% [(0.33 – 0.30) / 0.30], for a 1.32% [(7.70 – 7.60) / 7.60] move in the underlying exchange rate.
- The CRW will therefore effectively gain 7.60 times the movement of the exchange rate. The total cash return earned (excluding trading costs) will equal R3 000; (R0.33 – 0.30) x 100 000).

If the investor holds the CRW until maturity and the Rand weakens above the strike level of R8.00, the investor will receive a Rand cash settlement. However, assume that at expiry the Rand strengthens and the exchange rate decreases below R8.00, the warrant will expire out-the-money and the investor will lose the initial amount paid to purchase the warrants.

## How do you calculate the gearing on your currency reference warrant?

The gearing indicates the extent to which the warrant will rise and fall if the exchange rate moves 1%.

$$\begin{aligned}
 &= [\text{Price of underlying exchange rate} / \text{price of currency call warrant} \times \text{conversion ratio}] \times \text{delta} \\
 &= [7.60 / (0.3 \times 2)] \times 40\% &= [7.80 / (0.35 \times 2)] \times 40\% &= [7.40 / (0.25 \times 2)] \times 40\% \\
 &= 5.07 \times &= 4.46 \times &= 5.92 \times
 \end{aligned}$$

Note how the gearing increases (everything else being equal) as the exchange rate decreases. As the gearing increases, so does the investor's risk.

### A put CRW example

The put example below is traded by an investor who expects the Rand to strengthen against the US Dollar over a three-month period.

Warrant Details		USD/ZAR	Currency Put Price
Name	USDSCP	7.40	R0.26
Strike	R7.50/\$	7.50	R0.24
Conversion Ratio	2	7.60	R0.22
Style	European	7.70	R0.20
Expiry	6 months	7.80	R0.18

Assume the investor purchases 100 000 USDSCP at R0.22 when the Rand is trading at R7.600 against the US Dollar

- Given the conversion ratio (2:1), 100 000 warrants implies an exposure to \$50 000.
- The price paid to purchase the CRWs is R22, 000; (R0.22 x 100 000).
- The CRW position enables the investor to profit from the Rand strengthening below R7.50 against the US Dollar (i.e. a decrease in the exchange rate).

**Scenario 1:** Assume the Rand weakens to R7.70 against the US Dollar.

- The value of the put warrants will decrease to R0.20 (as shown in the table above).
- The investor could choose to hold the warrant position in order to take advantage of the possibility that the warrants will increase in value over time.
- Alternatively, the investor could sell out of the warrant position at R0.20 per warrant and taking a loss of R0.02, if the investor expects the Rand to continue weakening against the US Dollar.

**Scenario 2:** Assume the Rand strengthens to R7.50 against the US Dollar.

- The value of the put warrants will increase to R0.24 (as shown in the table above).
- The investor could sell the put warrants and earn a 9.09% return  $[(0.24 - 0.22) / 0.22]$  in response to a 1.32%  $[(7.50 - 7.60) / 7.60]$  move in the exchange rate. The CRW would therefore gain 6.91 times the movement of the exchange rate. The total cash return earned would equal R2 000;  $(R0.24 - 0.22) \times 100\ 000$ .

If the investor holds the CRW until maturity and the Rand strengthens below the strike level of R7.50, the investor will receive a Rand cash settlement. However, assume that expiry the Rand weakens and the exchange rate increases above R7.50, the warrant expires out-the-money and the investor loses the amount paid to purchase the warrants.

### How do you calculate the gearing on your currency reference warrant?

$$\begin{aligned}
 &= [\text{Price of underlying exchange rate} / \text{price of currency reference call warrant}] \times \text{delta} \\
 &= [7.60 / (0.22 \times 2)] \times 40\% &= [7.50 / (0.24 \times 2)] \times 40\% &= [7.80 / (0.18 \times 2)] \times 40\% \\
 &= 6.91x &= 6.25x &= 8.67x
 \end{aligned}$$

Note how the gearing increases (everything else being equal) as the exchange rate increases and the put warrant becomes more out-the-money. As the gearing increases, so does the investor's risk.

### Restrictions in terms of exchange control regulations

Pension Funds and long term insurance companies who have the required Exchange Control approval may not exceed 20% of their retail assets when investing in CRWs.

Asset managers and registered collective investment schemes who have the required Exchange Control approval may not exceed 30% of their total retail assets under management when investing in CRWs.

Individuals, foreigners, trusts and entities other than those specified above are not subject to any additional restrictions other than those set out in the warrants documentation.

### Glossary

#### European style

This means that the warrant can only be exercised on its expiry date.

#### Conversion ratio

This refers to the number of CRWs that must be converted in relation to the Rand price of one unit of foreign currency.

#### Strike / strike price

The pre-determined level against which the warrants intrinsic value is determined at expiry.

#### Currency reference call warrant

A call warrant gives investors the right but not the obligation to buy the performance (in rands) of a specific foreign currency (i.e. sell the rand against a specific foreign currency) at the predetermined strike price at maturity. If the rand weakens against that foreign currency, the value of the call warrant will increase.

#### Currency reference put warrant

A put warrant gives investors the right but not the obligation to sell the performance (in Rands) of a specific foreign currency (i.e. buy the Rand against a specific foreign currency) at the predetermined strike price at maturity. If the Rand strengthens against that foreign currency, the value of the put warrant will increase.

#### Intrinsic value

The intrinsic value of a warrant is determined from the difference between the underlying exchange rate and the strike price.

Intrinsic value of a call warrant = (underlying exchange rate – strike) / Conversion ratio

Intrinsic value of a put warrant = (strike – underlying exchange rate) / Conversion ratio

A warrant can't have negative intrinsic value.

**Premium**

The price paid upfront to purchase the CRW.

**Gearing/Leverage**

Gearing allows for greater potential returns, but also greater potential losses. Simple gearing is the ratio of the underlying exchange rate to the warrant price. Effective gearing is the simple gearing multiplied by the warrant's delta.

**Delta**

Delta is a ratio that compares the change in the price of the underlying exchange rate to the corresponding change in the price of the warrant.

**Theta or time value**

The additional value of a warrant (if any) over its intrinsic value resulting from the remaining term of the warrant.

**Out-the-money**

A call warrant is out-the-money when the underlying exchange rate is lower than the strike price at maturity. A put warrant is out-the-money when the underlying exchange rate is higher than the strike price at maturity.

**In-the-money**

A warrant with intrinsic value.

**Liquidity**

This refers to ability of an investor to buy and sell a warrant in volume in the market without causing dramatic price fluctuations.

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**Authorised financial services and registered credit provider (NCRCP15)**

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