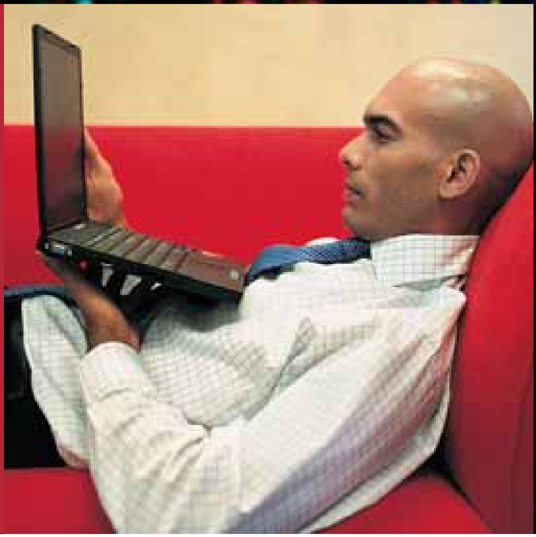


How to trade Covered Warrants

GOOD CALL

www.sgwarrants.co.uk

How Warrants Work

What is a Covered Warrant?

Covered Warrants are financial products, listed on the London Stock Exchange, which allow you to speculate on a rise or fall in an underlying asset such as a share, index, commodity or exchange rate. Covered Warrants can be traded through any UK stockbroker and can offer far higher returns than a direct investment in the underlying. Most importantly, your maximum loss is always limited to the initial amount invested.

Advantages of trading covered warrants

Gearing

The main attraction of trading covered warrants is the gearing they provide. Covered warrant investors are only required to invest a fraction of the price that it would cost to purchase the underlying asset directly.

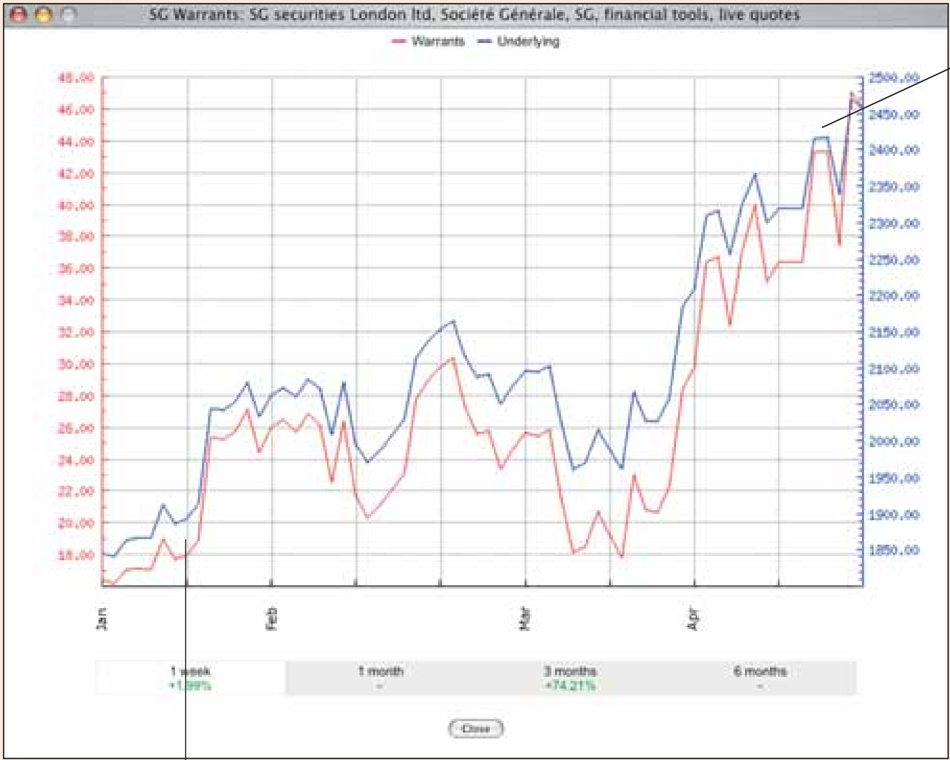
For example, £10,000 invested in a Vodafone covered warrant can equal an exposure of £100,000 invested directly in Vodafone stock.

As covered warrants are geared instruments, they magnify the returns provided by the underlying security.

The example overleaf illustrates the leverage that can be obtained in covered warrant trading. The graph compares movements in the Antofagasta share price and an Antofagasta call warrant. As the stock price increased from January to April by over 20%, the call warrant saw its price increase by 144%. This is due to the fact that it is cheaper to gain exposure to Antofagasta shares through the call warrant than by purchasing the Antofagasta shares directly.

Worked examples

Where examples of calculating warrant prices are given in this brochure, it is assumed that other factors which may impact the warrant price remain unchanged. Consideration of how these other factors can impact a warrant price are given in chapter five.



Beginning of April – Antofagasta shares 2400p (+26%)

Antofagasta warrants 44p (+144%)

End of January Antofagasta share price (blue) 1900p, Antofagasta Call warrant (red) 18p

Speculative trading

The steps behind speculative warrant trading are identical to those for straight forward share dealing:

1. Identify a stock which you think will move either up or down.
2. Determine the timeframe over which this movement will take place.

Trading data shows that the majority of trading is undertaken on call warrants. Call warrants allow investors to take bullish views on the underlying share, index, commodity or currency.

If an investor purchases a call warrant on Vodafone for example, and the Vodafone share price increases, this would cause the call warrant's value to increase.

You would then need to select the appropriate warrant depending on your risk/reward profile. One way of doing this is looking at how geared a warrant is.

Each covered warrants has its own level of effective gearing, which can be found on our website: uk.warrants.com

Examples of effective gearing levels for warrants are shown below:

Underlying	Type	Warrant Price	Effective Gearing
Barclays	Call	60p	6x
FTSE100	Call	10p	13x

In the table above the Barclays call warrant would allow an investor to take a bullish view (i.e. he/she believes the share is going to rise) on Barclays. The effective gearing level of 6x means that if Barclays shares rise by 1% the call warrant would rise by 6%.

The effective gearing for a call warrant is generally between 2x (for a not very geared warrant) and 20x (for a very highly geared warrant).

Example trade

An investor takes the view that, with the FTSE 100 trading at 6,000, the next move will be on the upside. He therefore invests £3,000 in a FTSE 100 call warrant trading at 10p, which has an effective gearing of 13x. Ignoring brokerage costs, the investor buys 30,000 warrants.

First, assume that the investor is correct in his view and the index moves up by 2% the following day. According to the effective gearing, the warrant price should increase by:

Effective gearing of warrant x % change in underlying
= 13 x 2%
= 26%

Taking the warrant price to 12.6p, a rise of 2.6p. The investor then sells his warrant holding, realising a profit of £780 (ignoring brokerage costs). Note, however, that if the FTSE100 had fallen by 2%, then the warrant price should have fallen by 26%.

You should note that the effective gearing of a warrant only gives an indication of the likely change in the warrant price for a 1% movement in the underlying share. If this movement takes place over a longer period or if other factors impact the warrant price, then the returns on the warrant investment may differ from those indicated by the effective gearing calculation.

Limited Life

Each warrant has a fixed lifespan which is set when the warrant is first issued and will not change. A warrant's lifespan is determined by its "expiry date". The expiry date of the warrant is the last day on which the warrant can be traded.

For example a June Vodafone call, could be issued in February, for example, but would no longer be tradable after a set day in June of that year (usually the third Friday of the month).

It is very important therefore that the move in the underlying happens before the warrant's expiry date.

Beginners tend to use warrants with at least 6 months to expiry, to allow for their investment objectives to be realised. Short dated warrants (less than 1 month to expiry) tend to be highly volatile and the most risky.

Among the covered warrant product range there are a variety of expiries to help you choose the warrant that best suits your investment views. You can find short term to longer term warrants with 3, 6 or 12 month expiries.

Although the majority of warrant trades are sold before expiry, many investors chose to hold the warrant to expiry. In this case, the cash value of the warrant is automatically paid out into your broker account with no action required on your behalf.

Limited Liability

Perhaps the most important characteristic of a covered warrant is that a warrant is a strictly limited liability investment, i.e. **you can never lose more than your original investment**. In other words, if you invest £100 in a covered warrant, £100 is the maximum amount you could ever lose on your trade.

Unlike other speculative instruments such as Contracts for Differences (CFD's) and SpreadBets, where investors can lose much more than their original investment, covered warrants offer a completely different take on risk. If you are holding a covered warrant and markets move against you, you can simply hold on to your position and wait for markets to move in your favour, without incurring additional margin calls.

Conclusion

SG warrants are appropriate instruments for short, medium and long term trading. They can offer very high gearing, but strictly limit the maximum losses that can be incurred if the underlying moves against you. Levels of effective gearing for all SG warrants can be found on our website, uk.warrants.com or by phoning our freephone line, 0800 328 1199.

Making money from falling markets

Put warrants

Covered warrants are very flexible instruments in that they allow you to take views on underlyings that you think will rise (calls) but also on those that you think will fall through put warrants. Here we take a closer look at how put warrants work.

Put warrants work just like their call counterparts in that they provide you with leveraged exposure to an underlying stock, index, commodity or currency. Where call warrants would increase in value as the underlying goes up, put warrants increase as the underlying price falls.

Let's take a look at an example on Marks & Spencer shares. You believe that the share is likely to drop in the coming weeks and wish to gain some leverage on the share in case it does.

With Marks & Spencer (MKS) shares trading at 600p, let's assume you can purchase a put warrant with a leverage of 10x for 60p.

Remember that:

Change in warrant's price	=	Effective gearing of warrant	x	% change in underlying

If MKS shares drop by 4% from 600p to 576p following a negative results announcement, the put warrants value would increase by 40% from 60p to 84p (all other factors remaining the same).

Change in warrant's price = 10 X 4% = 40%

Is it important to remember that a warrant's leverage works both ways, i.e. if you were wrong in your anticipation and MKS shares had gone up by 4% instead of down in this case the warrant's value would have decreased by 40%. However, as we have seen previously, with covered warrants you can never lose more than your original investment when markets move against you.

Summary

The impact of movements in the price of the underlying security on the warrant price is straight forward and summarised below.

	Call Price	Put Price
Underlying price increases	↑	↓
Underlying price decreases	↓	↑

Hence call warrants are attractive to bulls (who believe markets will rise) and put warrants attractive to bears (who believe markets will fall).

Which Warrant to Choose?

The SG warrant Traffic Light system

To help investors select the covered warrant that best suits their investment views, SG has introduced a unique system that classifies warrants according to their perceived risk reward profile.

Each covered warrant can be classified into three categories: GREEN, ORANGE and RED.

Green warrants are generally the least speculative products. They generally provide a moderate level of effective gearing typically between 2x and 5x, they have at least one month before expiry and they have tight spreads (i.e. the difference between the bid and ask price is relatively small).

Amber warrants reflect a moderately speculative warrant that falls between both the green and red categories. Investors who invest in amber warrants are willing to take on more risk than those who invest in a green warrant, but this is compensated by a higher amount of leverage and a good sensitivity of the warrants price to changes in the underlying.

Red warrants are highly speculative investment tools that either have a wide spread (bigger than 8%) or a short time left to expiry. They are not suitable instruments for short term trading by all but the most speculative of traders. Even though red warrants have high levels of gearing, a big movement in the underlying price is required to break out of the spread and allow the warrant to lock in a profit.

The traffic light system can be found on the SG website uk.warrants.com.

Investors must make their own assessment of risk, however, as a general rule, investors new to warrants are well advised to stick to "green" warrants only, expanding their range to include "amber" warrants when their understanding of warrant pricing increases. "Red" warrants are not suitable for short term trading strategies and should only be considered as high risk, buy and hold investments, with a high probability of losing the entire investment.

Holding warrants to expiry

The majority of covered warrant deals are undertaken for short term (e.g. three days to three months) trading targets.

However, warrants can be held to expiry and we will take a closer look at what happens in this case below.

All warrants are cash settled instruments. This means that there is no certificate exchanged if you are trading a warrant based on a UK share and you will not receive barrels of Brent oil on your doorstep if you hold Brent warrants to expiry. If you hold your warrant to expiry and it has a positive value, the cash amount will be automatically paid in to your broker account. With no action required on your behalf.

A call warrant's value at expiry is calculated the following way:

Payout formula $= \dfrac{\text{(Price of underlying security – Strike price of warrant)}}{\text{parity}}$

A warrant's strike price (or "exercise" price) therefore represents the minimum value the underlying needs to be at expiry for the warrant to pay out with positive value. The strike price is fixed when the warrant is issued and remains unchanged to expiry. If you plan to hold the warrant to expiry it is therefore a very important value of which to be aware.

A warrant's parity is a fixed divisor that allows the warrant to be quoted in pence rather than in pounds. Warrants on shares will have a parity of 1 or 10, whereas warrants on indices will have a parity of 100 or 1,000. The parity for each warrant is clearly shown on the SG website.

As an example of calculating a warrant's expiry value, let's say that you hold a Vodafone call warrant with a strike price of 100p and a parity of 1. If, at the warrant's expiry, Vodafone shares are trading at 130p, you would receive a positive cash pay-out of 30p per warrant. This amount would be automatically transferred to your broker account.

Vodafone call warrant pay-out at expiry $= \dfrac{130\text{p} – 100\text{p}}{1} = 30\text{p per warrant}$

If Vodafone shares were at 100p or below at expiry, however, the warrant would expire worthless, i.e. there would be no cash payment.

In, at or out of the money

When the market price of a share on which a call warrant is based is **above** the strike price, the warrant is said to have **intrinsic value**. This is because, were the warrant to expire at that moment, there would be a positive cash payout.

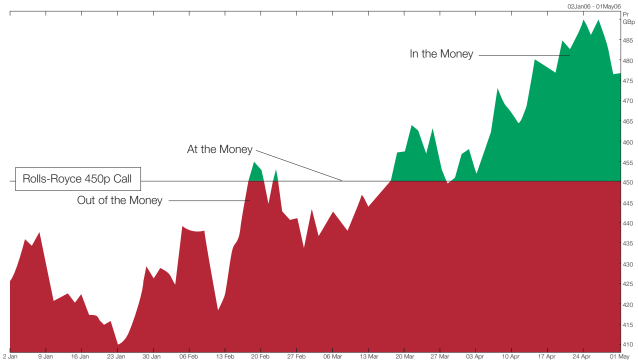
For this reason, warrants which have intrinsic value are described as being "in the money". By the same reasoning, call warrants which have no intrinsic value (i.e. the share price is **below** the strike price) are called "out of the money". If a warrant expires out of the money there is zero cash payout.

A warrant can change from being out-of-the-money to in-the-money as the price of the underlying rises and falls during the warrants life.

Let's consider a 2 year call warrant on Rolls-Royce with a strike price of 450p that was issued when the underlying price was 400p. At this time the warrant was out of the money. Two months later, the underlying price had risen to 450p, meaning the warrant was now at the money. Closer to expiry, the underlying price rose steadily above 470p, meaning the warrant stayed – and expired – in the money.

These price movements are illustrated in the following chart.

Rolls-Royce 450p Call



Source: Reuters

The relationship between the value of an underlying share ('spot' price) and the Strike price of a warrant based on that share can be summarised as follows:

Description	Call warrant	Intrinsic value	Payout at expiry
In the Money	Spot > Strike	Yes	Yes
At the Money	Spot = Strike	No	No
Out of the Money	Spot < Strike	No	No

We can now relate gearing, traffic lights (risk) and the relationship between spot and strike.

Gearing	Warrant	Light
Low	In the Money	Green
Medium	At the Money	Amber
High	Out of the Money	Red

It is now clear why highly geared, red traffic lights are so high risk – they are out of the money and are likely to expire worthless unless the underlying moves up.

Green, in the money, warrants are likely to pay out at least something as they already have some intrinsic value.

Amber, at the money warrants, have medium risk characteristics as they have a 50% probability to pay out a positive value at expiry.

Breakeven Calculation

The breakeven price for a warrant is the price the underlying needs to be at expiry for the warrant trade to make neither a profit nor a loss. For an equity warrant, this is defined as:

Breakeven for a call = exercise price + (warrant price x parity)

Breakeven for a put = exercise price – (warrant price x parity)

Once the breakeven price is determined, you know how far the underlying price would need to rise (for a call warrant) or drop (for a put warrant) for the price of the warrant to be the same at expiry as the purchase price.

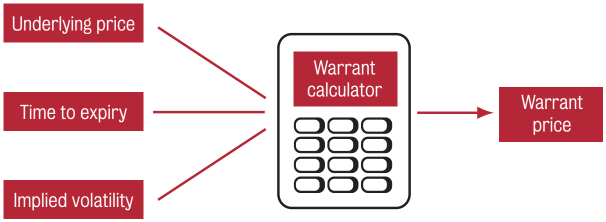
For example, if a BP call warrant with an exercise price of 600p, and a parity of 1 can be bought at 15p, then the warrant has a breakeven of 600p + 15p = 615p. i.e. if BP is 615p at expiry, the payout for the warrant (615p – 600p = 15p) is exactly the same as the amount paid for the warrant in the first instance.

Alternatively, if you buy a FTSE100 put warrant with an exercise price of 6,000 and a parity of 1,000 for 20p, the breakeven level will be 6,000 – (0.20 x 1,000) = 5,800. This means that the index would have to drop to 5,800, at expiry, for you to receive at least the 20p per warrant you first paid.

How warrants are priced

Warrant calculator

Unlike shares, which see their price vary depending on levels of supply and demand, covered warrants are priced using mathematical models. These models are used by all investment banks to price covered warrants and options. An online version of a warrant calculator used by SG is available at uk.warrants.com.



The three most important elements fed into a warrant calculator are:

The **price** of the **underlying security**, the **time to expiry** and market **volatility**. A warrant price is then calculated **automatically** by an options calculator. As such, unlike share prices, warrant prices are not affected by day-to-day changes in supply and demand.

Two things are important to note:

1) Inputs are fed into the warrant calculator directly form the market. This means that warrant prices are automatically generated throughout the trading day with no manual intervention,

2) Each input influences warrant prices independently, so a warrant price can change even if the spot price does not move.

Warrant calculators are easily accessible on the internet – one is available at our website, uk.warrants.com, for instance.

Underlying Price

As discussed before, the impact of movements in the price of the underlying security (the spot price) on the warrant price is straight forward and summarised below.

	Call Price	Put Price
Underlying price increases	↑	↓
Underlying price decreases	↓	↑

Hence call warrants are attractive to bulls (who believe markets will rise) and put warrants attractive to bears (who believe markets will fall).

Time to expiry

If a share on which a warrant is based is exactly the same price tomorrow as it was today, the warrant price itself is likely to be lower – either by a fraction if the warrant has a long life – or by a clearly noticeable amount, if the warrant is short dated.

This phenomenon is known as “time decay”. Time decay is highest for short dated out of the money warrants (red traffic light) and lowest for long dated in the money warrants (green traffic light).

The time decay element can be measured for each warrant. At the SG website you can find time decay data. The table below illustrates how time decay levels can change depending on the time to expiry. It also shows that red traffic lights tend to suffer most from time decay.

Traffic Light	Warrant Type	Expiry	Time Decay/week
Green	Call	6 months	-1%
Amber	Call	4 months	-4%
Red	Call	1 week	-15%

For example, if a warrant worth 10p today has a time decay of -4% and the underlying share is unchanged for a week, the price of the warrant will be 9.6p.

Volatility

Volatility is a measure of how erratic a share's price movements are likely to be. PartyGaming, for example, tends to be a highly volatile stock, whereas a defensive company like Diageo tends to be less volatile.

Generally, for both calls and puts, the higher the anticipated volatility level, the more expensive the warrant. This is because the price of a warrant is a reflection of the probability the warrant will expire in the money (or more deeply so).

SG sources volatility from different market indicators such as the volatility linked to option prices. An indication of volatility is given for each warrant on the warrant's detail page viewable on uk.warrants.com.

Recent volatility levels for warrants are shown in the table below:

Share	Volatility
PartyGaming	68%
FTSE 100	17%
Vodafone	27%

A volatility level of 17%, means that the market believes the FTSE 100 Index is likely to be 17% above or below its current level in a year's time. The figures of 27% and 63% indicate much wider ranges for the two shares.

It is possible that the market's view on the future volatility of a particular security will change during the warrant's lifetime. If a company announces a change of business focus, for example. The movement in the warrant price may be positive or negative depending on whether the impact of the event is expected to increase or decrease future volatility in the stock price.

Conclusion

In summary, it is important to note that while changes in the underlying price are the most important factor for warrants, other variables may lead to a change in warrant price – even if the underlying itself is unchanged.

Finally, it should be noted that for warrants on non UK underlyings (such as Nasdaq 100 or the Nikkei 225 index), a further variable affecting the warrant price is the exchange rate which converts the price of the warrant into sterling. This can have a net positive or negative impact.

SG Website

http://uk.warrants.com

As the world's leading covered warrant issuer, SG has developed a wide range of internet tools and online support to help covered warrant investors enhance their warrant trades.

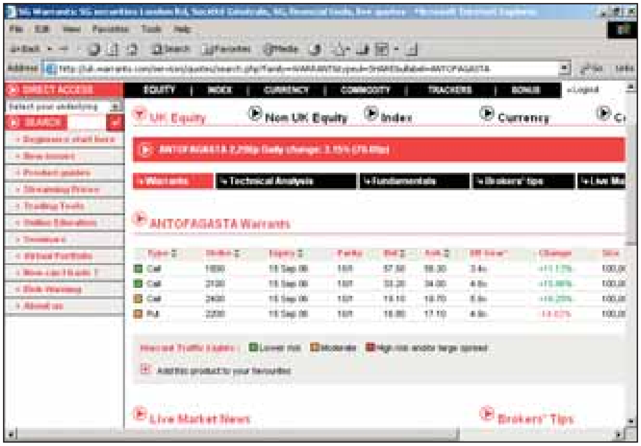
From live prices to warrant trading tools, all facilities on the SG website are free to all registered users. Anyone can register by entering a valid email address and by choosing a password – to access the entire site.

Finding Products and Prices

The SG Warrant website makes following the stock market an easy matter as we provide live quotes for all products at all times. Simply log on and select the corresponding underlying (equity, index, currency or commodity) from the top menu.

In order to clarify your investment views, you can sort the warrant range by type (Call or Put), strike level, expiry date and bid-ask prices. Please note that these prices are refreshed every 3 seconds. For live prices please select the "streaming quotes" option.

The current live price of the underlying is available. The daily change is also shown in percentage terms and in pence. The percentage will allow you to monitor the movements in the underlying.



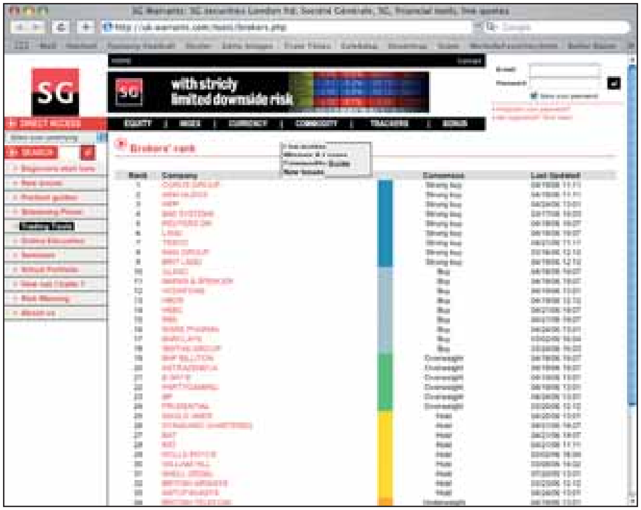
Each covered warrant underlying has a similar price table that provides a wide range of information on both the underlying and the covered warrant. For example the size column indicates the maximum amount of warrants you can trade online through your broker at that price. You can trade above that amount over the phone however.

Finding warrant prices and trading

Broker Views & technical analysis

You will be able to find broker news for SG warrant underlying shares on the SG website. These views are displayed in a ranking where each stock is ranked from the strongest "buy" recommendation to the strongest "sell" recommendation. The ranking results are based on the average of the five most recent broker views.

Please note that the below recommendations are the views of the attributed brokers and not the views of SG. The stated broker will have already published the recommendation to their own clients who may or may not have acted upon the information. The Broker View ranking simply calculates an average of these recommendations and is not a recommendation by SG.



Technical Analysis

Market participants frequently use technical analysis to forecast future price and market movements by examining past prices. It is complementary to both fundamental analysis and is often used by investors to build warrant trading strategies. SG provides both short term and medium term technical analysis on all covered warrant underlyings. This information can be found on the price table page of each underlying or under the trading tool section.

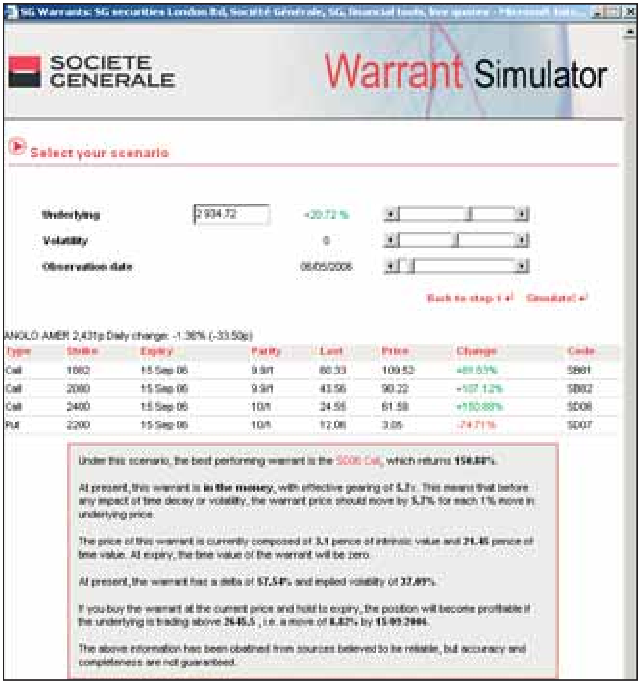
Trading Tools

The Warrant Simulator

One of the most popular tools among investors, the warrant simulator allows you to forecast scenarios on different underlyings, including UK equity, indices and commodities and simulate what will happen to the warrant's value.

The first step is to select the underlying you have a particular view on. You then input the price target you think this underlying will reach and over what time period. By clicking on simulate, you would then be able to view what call warrant and put warrant values would be under the chosen scenario.

This tool is very helpful in assisting investors on which warrant to select depending on their investment view.

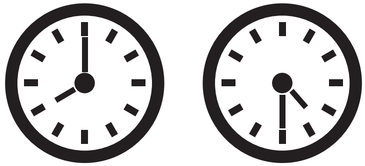


Online Education

An interactive education section is available on the website. Four chapters cover the different aspects of covered warrant trading and pricing in a precise overview. A small quiz at the end of each chapter also allows you to test your knowledge on covered warrants.

Trading Hours

Covered Warrant trading hours



8.00am – 4.30pm
(Monday to Friday)

All covered warrants can be traded from **8.00am Monday to Friday**. Most brokers offer online trading from 8.00am, if not you have the possibility to trade over the phone.

UK equity warrants can be traded from **8.00am to 4.30pm**

All other warrants, i.e. Commodity, currency, foreign indices as well as the FTSE100 warrants can be traded from **8.00am** up until **5.15pm** Monday to Friday.

Société Générale
Exchange House
Primrose Street
London EC2A 2HT

SG Corporate & Investment Banking

SG CIB, the corporate and investment banking arm of the Société Générale Group, serves corporate clients and investors in 45 countries. It is recognised by its clients for its innovation and execution capabilities. Thanks to these qualities, SG CIB ranks among the top ten financial institutions on the euro capital markets and remains the global leader in derivatives.

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