Understanding Derivative Warrants

Investors reading this leaflet should also refer to the information in the Derivative Warrant Resource Centre on HKEx website (www.hkex.com.hk) for more details.

Derivative warrant investment involves high risks; investors are strongly advised to have a thorough understanding of the terms and conditions of the derivative warrants being offered and to consult their brokers or professional investment advisers before trading in derivative warrants.

Features of Derivative Warrants

What Are Derivative Warrants?

Derivative warrants are an instrument that gives an investor the right to "buy" or "sell" an underlying asset at a pre-set price prior to a specified expiry date. They may be bought and sold prior to their expiry in the market provided by HKEx. At expiry settlement is made in cash rather than a purchase or sale of the underlying asset. Derivative warrants can be issued over a range of assets, including stocks, stock indices, currencies, commodities, or a basket of securities. They are issued by a third party, usually an investment bank, independent of the issuer of the underlying assets. Derivative warrants traded in Hong Kong normally have an initial life of six months to two years and when trading in the market each derivative warrant is likely to have a unique expiry date.

Types of Derivative Warrants

Derivative warrants are generally divided into two types: calls and puts. Holders of call warrants have the right, but not obligation, to purchase from the warrant issuer a given amount of the underlying asset at a predetermined price (also known as the exercise price) within a certain time period. Conversely, holders of put warrants have the right, but not obligation, to sell to the warrant issuer a given amount of the underlying asset at a predetermined price within a certain time period. Derivative warrants are "exercised" when holders use their rights to purchase or sell the underlying assets. In Hong Kong derivative warrants are usually settled in cash when they are exercised at expiry. In fact most derivative warrants are sold by their holders prior to their expiry dates.

How Do Derivative Warrants Work?

Those who buy call warrants usually hold a bullish view of the price of the underlying asset. To profit from the purchase of a call warrant the holder of the warrant may sell the warrant in the market or wait until the expiry date. At the expiry of a call warrant, if the price of the underlying asset as calculated under the terms of the derivative warrant is higher than the derivative warrant's exercise price, the call warrant will be exercised and the holder will be entitled to the difference in cash, assuming the derivative warrant is cash settled. The cash amount will be equal to the positive difference between the closing price of the underlying asset and the exercise price of the derivative warrant adjusted by the entitlement ratio. The closing price of the underlying asset is calculated by a formula described under the "Settlement Price" section below. If the price of the underlying asset at expiry is less than the exercise price the derivative warrant will expire worthless.

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Conversely, those who buy put warrants usually hold a bearish view of the price of the underlying asset. Like the call warrant, the holder can sell the put warrant in the market or wait until expiry. At the expiry of a put warrant, if the price of the underlying asset as calculated under the terms of the derivative warrant is lower than the derivative warrant's exercise price, the put warrant will be exercised and the holder will be entitled to the difference in cash, assuming the derivative warrant is cash settled. The cash amount will be equal to the positive difference between the exercise price of the derivative warrant and the closing price of the underlying asset adjusted by the entitlement ratio. If the price of the underlying asset at expiry is higher than the exercise price the warrant will expire worthless.

Factors Determining the Price of a Derivative Warrant

Some major factors that affect the theoretical price of a derivative warrant include:

- The price of the underlying asset and the exercise price,
- The volatility of the underlying asset price,
- The time remaining to expiry,
- Interest rates, and
- The expected dividend payments on underlying asset.

Like other securities, the price of a derivative warrant may also be affected by the supply of and demand for the derivative warrant itself. Various mathematical formulae are used by market players to calculate the theoretical prices of derivative warrants and those theoretical prices often differ from market prices.

Intrinsic Value and Time Value

Theoretically, the price of a derivative warrant before expiry consists of two components: intrinsic value and time value.

The intrinsic value of a derivative warrant is the difference between the price of the underlying asset and the exercise price of the derivative warrant. A call warrant is said to be in-the-money if the underlying asset price is above the exercise price and said to be out-of-the-money if underlying asset price is below the exercise price. Similarly, a put warrant is said to be in-the-money if the underlying asset price is below the exercise price and said to be out-of-the-money if the underlying asset price is above the exercise price. A derivative warrant is said to be at-the-money if the underlying price is same as the exercise price.

The time value of a derivative warrant is the difference between its current price and its intrinsic value. An out-of-the-money warrant with no intrinsic value has only time value. The time value of a derivative warrant decays over time and falls to zero at expiry of the derivative warrant.

Volatility

Volatility is an important component in determining the time value of a derivative warrant. Volatility is a measure of the fluctuation in the price of the underlying asset. The higher the price fluctuation the greater the potential for the derivative warrant to trade in-the-money.

There are two types of volatility: historical volatility and implied volatility. Historical volatility is a measure of how the underlying asset price behaved in the past. Implied volatility is derived from the current price of the derivative warrant and indicates the market perception of how volatile the underlying asset price will be over the remaining life of the derivative warrant.

Turnover

High turnover in a derivative warrant should not be regarded as an indication that its price will go up. As mentioned, the price of a derivative warrant is affected by many factors from market forces to technical matters such as the price of the underlying asset, the volatility of the price of the underlying asset, the time remaining to expiry, interest rates and the expected dividend on the underlying asset.

Risks Involved in Trading Derivative Warrants

Derivative warrant trading involves high risks and is not suitable for every investor. Investors should understand and consider the following risks before trading in derivative warrants:

Issuer risk

Derivative warrant holders are unsecured creditors of an issuer and they have no preferential claim to any assets an issuer may hold. Therefore, investors are exposed to the credit risk of the issuer.

Gearing risk

Although derivative warrants may cost a fraction of the price of the underlying assets, a derivative warrant may change in value more or less rapidly than the underlying asset. In the worst case the value of the derivative warrants falls to zero and holders lose their entire investment amount.

Limited Life

Unlike stocks, derivative warrants have an expiry date and therefore a limited life. Unless the derivative warrants are in-the-money, they become worthless at expiration.

Time Decay

One should be aware that other factors being equal the value of derivative warrants will decrease over time. Therefore, derivative warrants should never be viewed as products that are bought and held as long term investments.

Volatility

Other factors being equal an increase in the volatility of the underlying asset should lead to a higher warrant price and a decrease in volatility lead to a lower derivative warrant price.

Market forces

In addition to the basic factors that determine the theoretical price of a derivative warrant, derivative warrant prices are also affected by all other prevailing market forces including the demand for and supply of the derivative warrants. Supply and demand forces may be greatest when a derivative warrant issue is almost sold out and when issuers make further issues of an existing derivative warrant issue.

Other Aspects of Trading Derivative Warrants

Leverage

Derivative warrants usually cost a fraction of the price of the underlying asset, yet the value of a derivative warrant may increase or decrease to a much greater extent than the changes in the price of the underlying asset. This means greater potential profit compared to trading in the underlying asset and also the risk of losing the entire purchase price of the derivative warrant.

Limited Maximum Loss

Although derivative warrants can potentially multiply both gains and losses, the maximum loss to warrant buyers is limited to the initial amount paid for the derivative warrants.

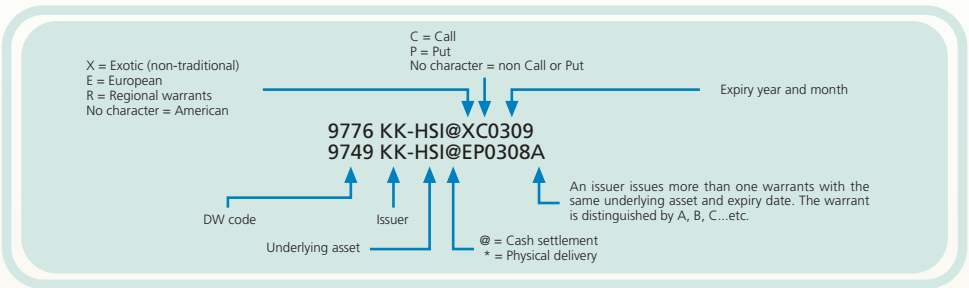
Trading and Settlement

Derivative warrants are traded in HKEx's securities market through the Automatic Order Matching and Execution System (AMS/3). The trading, clearing and settlement arrangements are very much like trading stocks.

Trading Derivative Warrants on the Exchange

How to Read the English Short Name of a Derivative Warrant

Derivative warrants listed on the Exchange can be identified by the English short name which indicates some of the basic features of the derivative warrant (applies to English stock short name only).



The listing document for a derivative warrant contains more details and investors are strongly advised to refer to the listing document for information about a particular derivative warrant or consult their brokers. Listing documents of derivative warrants are available in HKEx website.

Trading Arrangements

Similar to other cash market products, derivative warrants are traded on the Exchange's Automatic Order Matching & Execution System (AMS/3) during trading hours in multiples of board lots and settled on T+2 (T being the transaction day).

Transaction fees of trading derivative warrants include brokerage commission, transaction levy, trading fee and investor compensation levy (currently suspended). Stamp duty is not chargeable on cash-settled or regional derivative warrants, or derivative warrants issued over assets other than equity securities.

Investors should note that the expiry day of a derivative warrant is not the same as the last trading day. To ensure that a trade executed on the last trading day has sufficient time for settlement and registration, there shall be 3 settlement days between the last trading day and the expiry day. Investers can only trade the derivative warrant on or before the last trading day. For example, if a derivative warrant expires on Friday, 23 June, the last day of trading will be Monday, 19 June, assuming all days in between are settlement days.

Settlement Price

For derivative warrants issued on a single stock that is traded on the Exchange, the settlement price of the underlying stock is calculated based on the 5-day average closing price prior to and excluding the expiry day.

For index warrants, the settlement price is usually based on the final settlement price for the corresponding index futures contract of the same expiry month traded on the Futures Exchange. The final settlement price is determined by the average quotations of the index taken at 5 minute intervals during the last trading day.

Liquidity Providers for Derivative Warrants

Derivative warrant issuers are required to appoint a Liquidity Provider to provide liquidity for each one of the their listed derivative warrants. Each Liquidity Provider should have a code of 95XX or 96XX for identification.

Access to Derivative Warrant Information

HKEx website provides a vast amount of information on the derivative warrants traded on the market, such as announcements, listing documents, daily trading summary and Liquidity Provider information. Investors can refer to the Derivative Warrant Resource Centre on HKEx website (www.hkex.com.hk) for more information.