

### Introduction 引言

Through different media channels, we always hear about financial products such as futures, options and warrants, and all these financial products are normally referred to as "Derivatives". This training can help you know more about derivatives, and understand their nature, types, applications, as well as their related risks. However, different derivatives have different natures, when investing in these financial products, it is advised to consult your professional investment advisor for further information before you invest.

在日常生活中,不同的传媒都会经常提及期货、期权、及认股权证等金融产品,而这些金融产品均被称为「衍生产品」。以下的课程内容主要解释衍生产品的性质、常见种类、用途以及相关之风险,以增加投资者对衍生产品的认识。由于衍生产品的种类众多,而且各有特性,建议投资者在投资衍生产品前,须先向有关专业投资顾问查询有关衍生产品的特性及相关之风险,清楚了解后才做出投资决定。

### Introduction to Derivatives 衍生产品简介

In the financial market, derivatives are usually derived from spot market products (e.g. currency, stocks, gold etc.), which are called the "Underlying Assets". As derivatives are based on their underlying assets, their values will definitely be influenced by the underlying assets. Apart from this, derivatives' values can also be affected by other market factors such as interest rate changes and economic environment etc.

在金融市场中,衍生产品通常由现货市场产品(如外币、证券或黄金)演变而成。相关的现货市场产品称为「相关资产」。衍生产品的价值会受相关资产的价值升跌而有所波动,此外,衍生产品亦都会受到很多其他市场因素,如利率改变及经济环境等而影响其价格。

"Warrant" is an example of derivative products; its value is directly related to the movement of its underlying stock price. As derivatives and spot market products are closely related, and derivatives evolved from spot market underlying asset, so these financial products are called "Derivatives".

以认股权证(俗称「窝轮」)为例,它便是一种衍生产品,与现货市场的相关股票价格之波幅有直接的关系。由于衍生产品和现货市场产品关系密切,而衍生产品是由现货市场的相关资产衍生出来,因此,这类金融产品会被统称为「衍生产品」。

"Spot market products" are those products that can be settled between buyers and sellers in a very short time. In the financial market, investor can settle the trade for currencies or stocks, usually within a day or a very short period. Thus, those products are called spot market products.

「现货市场」是指产品可以在短时间之内,让买家和卖家进行交易,买家付出金钱,而卖家就以现货做交收。于金融市场上,买卖外币或股票一般亦可在即日或短时间内交收,故这些产品被称为现货市场产品。

Normally, the difference in settlement times is a way to differentiate spot market products and derivative products. In addition, if the prices drop rapidly after investor bought spot market products, investor would not have immediate losses unless investor realizes the holding. But, if investor bought derivative products, which must be settled before a specific future date (e.g. a month later); when the prices drop rapidly, investor would bear the risk of losses.

一般而言,不同的交收时间亦是其中一样现货市场产品有别于衍生产品之特征。若投资者已购买现货市场产品,即使其价格大幅下跌,只要不将持有之产品卖出,都不会有实时的损失。相反,若已购买衍生产品,由于须在指定日期交收,当相关资产价格大幅下跌时,往往有机会承受损失。

### Common Types of Derivatives 衍生产品常见种类

There are various types of derivatives in the market. Two of the most common derivatives are (1) "Futures" and (2) "Options".

市面上的衍生产品种类繁多,一般投资者较常见的有两大类,分别是(1)「期货类」及(2)「期权类」。

#### (1) Futures 期货类

"Futures" refers to contracts between a buyer and a seller, who mutually agreed to trade underlying assets like stocks, currencies, gold etc. on a specified future date (e.g. one month later) at a specified price. On the designated date, both the buyer and seller have to follow the arrangements in the contract, including the price and the quantity of the underlying assets. That means, the buyer has to pay the exact amount as defined in the contract for the seller's underlying assets. Similarly, the seller has to abide by the agreed price as specified in the contract when selling the underlying assets to the buyer.

「期货类」产品是要求买卖双方承诺在某个指定日期(例如一个月后),按一个指定价格,买卖双方买入或沽出相关资产(如证券、外币、黄金等)之一份合约。在双方指定交收的日期(即一般称的「到期日」),双方必须履行合约所订之安排,按照合约上指定的价格及资产数量进行交易,即合约的买家要按指定的价格买入相关资产,而合约的卖家须按指定的价格将相关资产卖给买家。

In addition, "Futures" can also be further classified into two types: "Exchange Traded" and "Non-Exchange Traded".

至于「期货类」产品大致可分为两种:一种是在「交易所买卖」的,而另一种是在「非交易所买卖」的。

Those exchange traded futures products are called "Futures Contracts", where the "Hang Seng Index Futures" is an example of futures contracts traded on the exchange. For those that are not traded on the exchange, they are called "Forward Contracts". A pair of forward contracts (i.e. two forward contracts) being combined, that is buying and selling two different forward contracts at the same time, is called a "Swap", such as "Currency Swap" or "Interest Rate Swap". Using a swap product, investor could exchange two different currencies or interest rates at specified prices and dates.

在交易所买卖的期货类产品一般称为「期货合约」,例如「恒生指数期货」就是在交易所买卖的期货合约之一。而在非交易所买卖的期货类产品,就称为「远期合约」。倘若由一对(即两张)远期合约组成,即同一时间买入及卖出不同的远期合约,便称为「掉期」,例如「外汇掉期」及「利率掉期」等。利用掉期产品可让投资者在指定的日期及价格进行两种不同货币或利率的交换。

For example, assume that investor wants to exchange his/her Hong Kong Dollars into Australian Dollars two days later, and then set them aside as a fixed deposit to earn interest. When the fixed deposit matures, investor would like to convert the Australian Dollars back into Hong Kong Dollars at a pre-determined exchange rate. Investor can buy and sell two different forward contracts at the same time today, so to lock-up the exchange rate now to avoid the impact of future fluctuations in the foreign exchange rates.

例如投资者希望于两日后将港币兑换成澳币,然后叙做定期外汇存款以赚取利息,并预期到期时,以一个预定的外汇价格将澳币转回港币。投资者便可以在今日同时买入及卖出两张澳币远期合约,锁定兑换价,避免外汇价格波动。

Concerning futures contracts that are traded on the exchange, they have a common characteristic, which is called the "Standardized Contract". For example, each index point of the Hang Seng Index Futures is priced at \$50 by the exchange. That means, when any investor trades the Hang Seng Index Futures, all other investors use the same formula of one point equaling \$50. This is the feature of the "Standardized Contract".

在交易所买卖的期货合约都有一个相同的特征,就是「标准化合约」。例如交易所已经订定恒生指数期货的每一点子价值为50元,即每一位参与买卖恒生指数期货的投资者,都是以指定的50元为一点子的价格计算,这就是标准化合约的特征。

Non-exchange traded forward contracts are unlike exchange traded forward contracts (i.e. Futures Contracts). Non-exchange traded forward contracts are not "Standardized Contracts". Settlement prices and trading amounts can be customized according to the needs of individual investor. If the contract is not traded on the exchange, we call it an "Over-the-Counter" or OTC contract. A "Currency Forward Contract" is a common example of OTC contracts, where investor makes a currency forward contract with a financial institution based on his/her particular needs. The investor can negotiate the contract details, such as settlement prices and settlement dates, with the financial institution.

至于非交易所买卖的远期合约则有别于交易所买卖的期货合约。非交易所买卖的远期合约之价格及交易金额都可以按买卖双方的需要而制订。如果某产品不是在交易所进行买卖,该产品会被称为「场外交易市场」产品。较为常见的例子为「外汇远期合约」,客户可以按自己的需求与金融机构制订一份外汇远期合约。

#### (2) Options 期权类

An "Option" is a contract, involving a buyer and a seller, which gives the buyer a right, but not an obligation, to buy or sell the underlying asset with the seller of the option. The underlying asset's quantity, price and the contract period are fixed at the time when the contract is made. If the buyer exercises the option, the seller must follow the contract specifications for settlement of the underlying asset.

「期权」是一种涉及买卖双方的合约,合约赋予买家权利而非非责任,从卖家买入或向卖家卖出相关资产。合约在订立时就已经厘订了相关资产的数量、价格及期权的有效期。如买家行使期权,卖家就必须根据合约的细则进行交收。

Within option products, investor should know the difference between a "Call Option" and a "Put Option". A "Call" means buying the underlying asset, while a "Put" is selling the underlying asset. Call warrants, one of the common products, are a kind of "call option" products. Further, there are news that senior management of listed companies receives stock options from the companies, which are also "call option" products.

在期权类产品中,投资者必须要认识「认购期权」和「认沽期权」两者之间的分别(「认购」,就代表买入相关资产的意思;而「认沽」,就代表沽出或卖出相关资产的意思)。日常生活所看到的「认股权证」,均属认购期权产品。另外,在报章上报导一些企业的高级管理层有可能得到一批由个别企业分发的股票认购权,这亦属于「认购期权」产品。

In the market, investor can act as the buyer or seller of an option. The buyer has the right to buy or to sell the underlying assets, but he/ she has to pay the "Option Premium", in exchange for that right. The seller will earn the "Option Premium", but, at the same time, he/she also must bear the risk of possible losses resulting from market price fluctuations.

在市场上,投资者可以选择做合约的买家或卖家。合约的买家有权买入或沽出相关资产,买家需要支付「期权金」(Option Premium)以换取权利;而合约的卖家就会收取「期权金」作为回报,但同时亦须承受市场价格波动而有机会亏损的风险。

Although there is a chance of losing money, investor would still want to be an option seller. Firstly, no one can precisely anticipate the price after one month; secondly, the option contract seller will receive a specified amount from the buyer as the price of buying the contract. This is the foresaid "Option Premium", which can be viewed as a cost of buying a right. While the seller receives the Option Premium, he/she may potentially enhance his/her returns.

但是,即使合约的卖家有亏损的风险,但他们仍愿意参与交易,原因包括:

- 没有人能准确预测相关资产一个月后价格的上涨;
- 合约卖家向买家收取一个金额作为买合约的价钱,就是上文所述的「期权金」,即买入权利之成本,亦都是最主要原因。期权合约的卖收到这些期权金,从而可以提高其潜在回报。

Investment products that consist of different derivatives are often called "Structured Products". "Equity-Linked Notes", "Currency-Linked Notes" and "Credit-Linked Notes" are common examples of "Structured Products".

由不同衍生产品组合而成的投资产品称为「结构性产品」。常见的结构性产品包括「股票挂钩票据 / 股票链接票据」、「外汇挂钩票据 / 外汇链接票据」或「信贷挂钩票据 / 信用链接票据」。

Most of these structured products consist of derivatives; that is, a combination of different derivatives, some of which are "principal-protected", and some of which are "non-principal-protected". Therefore, when investing in "Structured Products" which are mixtures of derivatives, investor must have a clear understanding of the detailed contract provisions, for example, whether it is "principal-protected" or "non-principal-protected". Of course, when trading structured products, investor is always required to bear in mind the risk of possible losses resulting from market price fluctuations.

结构性产品大多数都包含了衍生产品在內,即由不同衍生产品结合而成,当中有些是「保本」,有些是「非保本」的,所以投资者购买这些包含了衍生产品的结构性产品时,必须清楚查询有关条款,理解其性质。当然,买卖结构性产品始终要承受市场价格波动而有机会亏损的风险。

Except that, there are also many examples of these derivatives in the market, including the "Exchange Traded products" and "Non-Exchange Traded products". Warrants, or the Callable Bull/Bear Contracts, are common examples of "Exchange Traded products", which are a kind of options. "Non-Exchange Traded products", such as equity-linked notes or currency-linked notes, are commonly available at any bank or financial institution.

除此之外,市面上亦有许多衍生产品的例子,如交易所买卖的认股权证及牛熊证等,这些均属期权类产品。而较常见的非交易所买卖的产品,就如透过金融机构买到的股票挂钩票据 / 股票链接票据及外汇挂钩票据 / 外汇链接票据等。

Take an equity-linked note as an example for a further explanation. Its structure contains an equity option, which means that the investor who buys the equity-linked note acts as the option seller, who sells the right in exchange for option premium. If the underlying stock price does not fall below a specified price, referred to as the "Exercise Price" in the option; the investor can earn the option premium and thereby enhancing his/her potential return. On the other hand, the investor also has to bear the downside risk resulting from market movement of the underlying stock.

以股票挂钩票据 / 股票链接票据为例,这种产品的结构包含一个期权产品在內;购买了股票挂钩票据 / 股票链接票据的客户,等同于一个期权合约的卖家(即卖方会收取期权金)。如果挂钩的有关股票之价格未低过一个指定的价格,即「行使价」,投资者就可以赚取到这个期权金,从而增加投资者的回报,当然,投资者同时亦要承受市场价格波动而有机会亏损的风险。

### **Applications of Derivative 衍生产品的用途**

There are many applications of derivatives. They are usually used for the following four purposes:

衍生产品用途广泛。主要用途有四种:

- (1) Speculation – Yield Enhancement 第一种:投机活动 - 提高收益;
- (2) Access to Different Asset Classes 第二种:可以参与不同类别的资产;
- (3) Leverage Effect 第三种:杠杆效应; and 及
- (4) Long / Short Exposures & Risk Hedging 第四种:可以看涨,亦可以看淡以作为风险对冲。

#### (1) Speculation - Yield Enhancement 投机活动 - 提高收益

Suppose an investor has an insight that the stock market will not drop significantly in the coming month, and even if certain stocks drop below a certain price, the investor is willing to buy those stocks at that price. If so, the investor can use the equity-linked note by selling a put option. If the stock price does not fall below a certain level, the investor can enhance his/her investment yield by receiving the option premium and he/she does not have to actually buy the stock. But if the market drops, then the investor needs to buy the stock at a price higher than the market price, and if the stock price falls sharply, there will be a greater risk of loss.

假设某投机者有一投资的想法,认为股市未来一个月不会大跌,即使跌低于某一个指定价格,该投资者都愿意用这个指定价格买入这批股票。如果这样,该名投资者便可以利用股票挂钩票据 / 股票链接票据成为一个认购期权的卖家。如果有关的股票价格没有跌低过指定价格,就可以在不需要买入股票的情况下收取期权金,提高其投资收益,但如果有关的股票价格跌低过指定价格就需要以高于市价买入股票,若股票大幅下跌,就会有大幅亏损的风险。

#### (2) Access to Different Asset Classes 可以参与不同类别的资产

"Access to Different Asset Classes" means that investor can participate in, or buy and sell, different assets like stock and foreign currency through derivatives. As an example, the "A-share" market in Mainland China is a market that foreigners could not participate in; however, through Synthetic ETFs, investors can indirectly participate in the "A-share" market. These Synthetic ETFs make use of derivatives to track (or replicate) the performance of a market index as the main investment objective. Through the Synthetic ETFs, although investor cannot hold "A-shares" directly, the performance of "A-shares" can be reflected by the Synthetic ETFs the investor holds.

投资者可以透过衍生产品来参与或者买入或沽出各种不同类别的资产。举例来说,国外人士无法参与A股市场,但透过一些「合成交易所买卖基金」就可以间接参与A股市场。这些合成交易所买卖基金运用衍生产品跟踪或仿真某市场指数的表现为主要投资目标,透过这些合成交易所买卖基金,投资者虽然不能直接持有A股,但相关A股的表现却可以反映于投资者持有的合成交易所买卖基金內。

#### (3) Leverage Effect 杠杆效应

Buying a board lot of shares in the stock market may cost a number of tens thousands dollars, which may put pressure on cash flow; but if the investor chooses to buy a warrant, it may only cost a few thousand and the investor can achieve the same effect as buying a board lot. This is called the "Leverage Effect". The investor can invest in the same board lot of shares at a lower cost. But, by doing this, investor must be aware of risk of losses due to the market price fluctuation because he/she is trading derivatives, but not the stocks themselves.

由于投资者买入一手股份或需要数万元,故对现金流可能造成压力。但如果投资者选择购买认股权证,所需的成本只是数千元,便可以相对的买入一手股票,此做法就称为「杠杆效应」,即投资者在成本上不用提供十足金额以购买一手股票。然而,因为买卖的是衍生产品,并不是股票,投资者一定要注意因市场价格波动而带来的风险。

#### (4) Long / Short Exposures & Risk Hedging 可以看涨,亦可以看淡以作为风险对冲

Investor can buy a call warrant when he/she expects the market to rise or buy a put warrant when he/she expects the market to fall. Put warrants can help investor to hedge against the downside risk of the market. For example, if investor holds some stocks, he/she can buy a put warrant when he/she anticipates that the market will fall. If the stock price does fall, the put warrant can provide an extra yield to compensate for some of the losses from holding the stocks.

投资者可以在市场买入一种看涨市场的认购权证,或可以买入一种看淡市场的认沽权证。认沽权证产品可以帮助投资者对冲一些市场下跌的风险。例如,若投资者拥有一些股票及看淡股市,可以买入一个认沽权证,如果市场价格真的下跌,其购入的认沽权证就可以带来额外的收益,以补偿其持有股票的部分损失。

### **Key Risks Associated with Derivatives 衍生产品所涉及的风险**

#### (1) Counterparty Risk 交易对手风险

Derivatives are issued by third parties, such as listed companies or financial institutions, which are collectively referred as "issuers". If these issuers encounter financial problems and this leads to a decrease in their credit rating, or if they collapse because of solvency problems, the derivatives' values will be affected and may even lose all value.

衍生产品可以由上市公司或金融机构等第三者发行,统称为「发行商」。倘若发行商的财政状况出现问题而导致其信贷评级被调降,或因偿付能力出现困难,甚至倒闭时,衍生产品的价格都会受到影响,甚至失去全部价值。

#### (2) Investment Risk of the Underlying Asset 相关资产风险

Derivatives' prices depend on the value of their underlying assets. Normally, fluctuations in the underlying assets prices will affect derivatives' prices directly. This is the Investment Risk of the Underlying Asset.

如上文所述,衍生产品的价格取决于相关资产之价格。一般情况下,相关资产的价格波动,都会直接影响该衍生产品的价格,这就是相关资产的风险。

**(3) Early Redemption & Potential Capital Loss Risk 提早赎回与潜在损失资本的风险**

Regardless of whether the investor chooses to redeem early, or the issuer has to terminate the products because of early redemption, these actions may cause the investor to lose money because he/she may receive an amount less than what he/she has invested. Therefore, investor should pay attention to the early redemption provision, and consider if it would affect the amount he/she invests.

无论是投资者选择提早赎回,或是发行商选择提早终止产品,有关的提早赎回行动或者会令投资者收取少于最初投资的金额而蒙受损失,故投资者须注意有关提早赎回条款,确认是否会影响其投资金额。

**(4) Liquidity Risk 流通风险**

There may be a risk that the derivatives cannot be easily sold or converted into cash with low cost. Before the expiry, some derivatives may be harder to sell and convert into cash. If it is not possible to sell them, investor will have to wait until the derivatives expire before he/she can get his/her funds back.

衍生产品或会出现因不能在二级市场沽出难以变现或变现成本昂贵的风险。有些衍生产品在到期前或会比较难套现。如果未能成功沽出,投资者的资金可能须要于衍生产品到期时才会有机会取回。

**(5) Interest Rate Risk 利率风险**

Interest rate and the values of all derivative products are closely related. Any derivative will ultimately be exchanged for an "asset" and "money", or exchanged between two currencies. The fact is that "money" is necessarily linked to interest rates; therefore, interest rate changes will definitely affect the values of derivative products.

「利率」和所有衍生产品价格都有密切关系。由于任何衍生产品最后也会将「资产」和「金钱」交换、或者涉及两种货币的交换,而「金钱」就一定与利息有关,故利率的变化会影响衍生产品的价格。

**(6) Leverage Risk 杠杆风险**

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 assets. In the worst case the value of the derivative warrants may fall to zero and holders will lose their entire purchase price.

尽管衍生产品价格远低于相关资产的价格,但衍生产品价格涨跌的幅度亦远较相关资产的为大。在最差的情况下,衍生产品可跌至零,投资者会损失最初投入的全部资金。

The above risks are common ones, and because of the rapid changes in the financial markets, when investor trades derivatives, he/she should make sure he/she is aware of the specific provisions and risks of each.

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