Financial Derivatives

What is a derivative?

Derivatives are so called because their value is derived from an underlying investment. These include shares, indices, bonds and currencies as well as commodities such as oil and metals. An investor can gain exposure to an underlying investment without having to own it directly. This can reduce expenses and ease administration. A derivative based on the FTSE 100 index would allow investment in the FTSE 100 without having to buy each constituent share.

Derivatives can add risk but also reduce it. Many fund managers now use them as a matter of course to gain exposure to investments in a cost effective and easily administered way.

What are the advantages of derivatives?

The use of derivatives, rather than buying the underlying asset directly, offers a number of advantages:

- Transaction costs are lower
- Derivative contracts are often more liquid than the market for the underlying asset
- Transactions can be executed more rapidly
- Short positions (benefiting from falling prices of assets you don't own) can be achieved

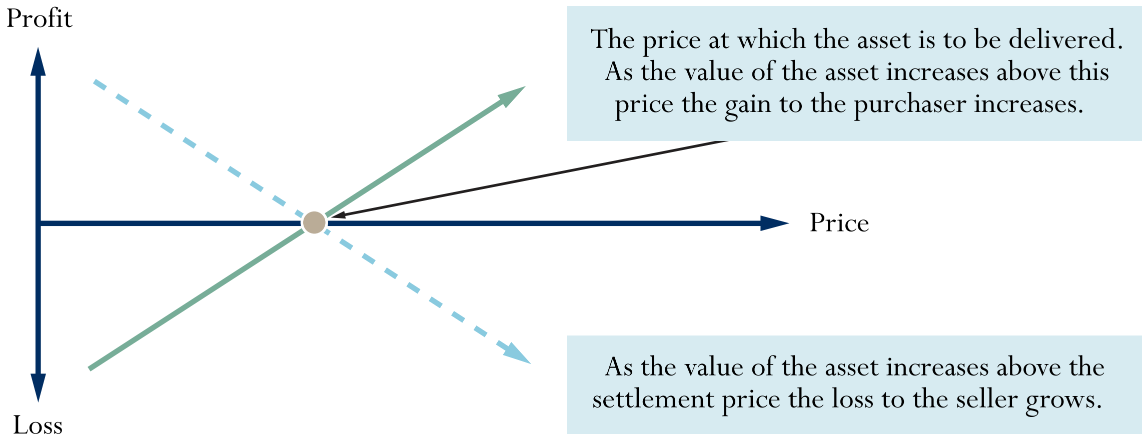
Typically there are two kinds of derivatives traded in markets, futures and options.

What is a Future?

A future is a contract to buy or sell an asset at a future specified date for a specific price.
Each futures contract will specify the amount of the asset to be exchanged. Futures contracts are non-negotiable, i.e. they are an obligation.

The buyer of a futures contract is taking a 'long' position and is seeking to make a gain if the value of the asset rises above the specified maturity price.

Increasing Value of the Underlying Asset



The seller of a futures contract is said to have taken a 'short' position as they will make a gain if the value of the asset falls or doesn't reach the specified price. They will have a guaranteed selling price above the market value.

What are the Margining System and Clearing House?

In order to ensure the credibility and liquidity of the futures market an independent body is required to oversee and facilitate transactions. The clearing house satisfies this requirement by guaranteeing the fulfilment of each contract.

The clearing house requires each trader to make a deposit, known as the initial margin, to cover the maximum likely daily loss from each futures contract.

At the end of each trading day the clearing house will collect payment from those traders who have made a loss and pay those who have made a profit. This daily amount is known as the variation margin. In the event of a trader not being able to pay this margin the clearing house has the deposit or initial margin to fall back on and does not lose out.

Less than 2% of futures contracts result in delivery of the underlying asset. Most contracts are settled by cash payment. This is known as 'closing out'. In a large number of cases the positions are closed out before maturity. Leveraging is possible since traders only need to find the initial and variation margins, not the full cost of the contract.

What is an option?

An option contract gives the holder the right to buy or sell an asset at a specified price (the exercise or strike price) by, or on, a specified date. However, as the name suggests, the holder is not obligated to buy or sell the asset and may let the option lapse. Options may be European style, which can only be exercised on a specific maturity date, or American style, which may be exercised any time before or on the maturity date.

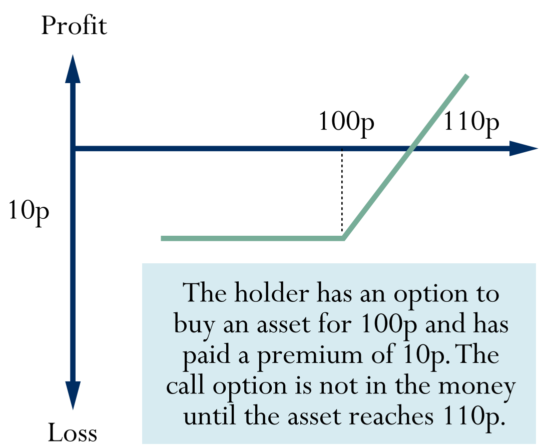
When buying an option the price paid is known as the premium. This represents the maximum profit for the writer (seller of the option) and the maximum loss the buyer will experience if the option is not exercised.

What are Put and Call options?

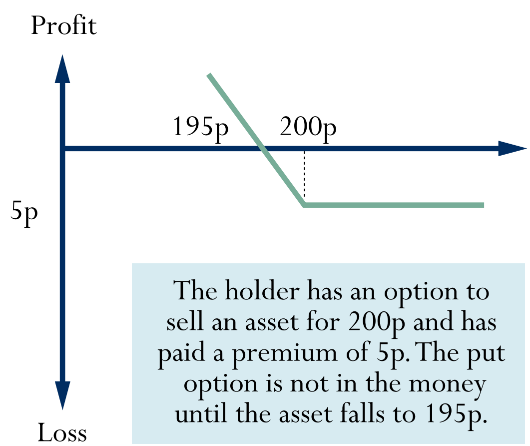
A call option gives the holder the right to buy an asset from the option writer. A put option gives the right to sell an asset to the option writer.

A holder of a call option expects the value of the asset on which the option is based to rise above the exercise price plus premium. When it achieves this it is said to be 'in the money'. The higher the value rises above this the greater the profit made. The holder is able to buy the assets from the writer and sell them in the market to make the profit. If the underlying value does not rise above this the option is 'out of the money' and the option holder will let the option lapse and will only have suffered the premium.

Profit or loss on a call option



Profit or loss on a put option



Conversely the buyer of a put option is expecting the value of the underlying asset to fall below the exercise price minus the premium. The further the value falls below this the greater the profit. If the value does not fall sufficiently the holder will not exercise the put option and only lose the premium.