Danske Bank

Information on equity options

This fact sheet provides information on equity options and how to use them. It will also give you examples of investment strategies.

Equity options may be admitted to trading on a regulated marked but may also be traded as OTC transactions with Danske Bank as the counterparty.

Trading in equity options gives you either a right or an obligation to buy or sell an underlying asset at a fixed price at a specified future date. The fixed price is also called the strike price or the exercise price.

The buyer of an equity option pays a premium to the seller of the option when they enter into the contract.

Option types

When you buy an equity option, you get the right, but not the obligation, to buy (call option) or sell (put option) the underlying asset at the strike price at a specified future date.

When you sell equity options, you have an obligation to buy (put option) or sell (call option) the underlying asset at the strike price at a specified future date if the buyer of the equity option exercises his right.

- Buyers of European style equity options can only exercise their buy or sell option on expiry.
- Buyers of American style options may exercise their right at any point until expiry

There is also a distinction between equity options with cash settlement and equity options settled by physical delivery.

An option settled on delivery is an agreement under which the buyer – by exercising the option and against the payment of a premium – has the right to buy (call option) or sell (put option) the underlying asset by making or taking delivery on the settlement date concurrently with payment.

A option settled in cash is an agreement giving the buyer the right – on exercising the option and against the payment of a premium – to receive a settlement amount, which the seller has an obligation to pay, on the settlement date.

The settlement amount equals the difference between

- the market price and the strike price on expiry, provided the market price is higher than the strike price (call option)
- the strike price and the market price on expiry, provided the strike price is higher than the market price (put option)

Options on a share index are typically European style options with cash settlement, whereas options on individual shares are typically American style options settled by physical delivery.

Concepts describing the value of an option

Generally, the value of an option is expressed using one of three concepts:

- "Out-of-the-money" indicates that the strike price of a call option is higher than the

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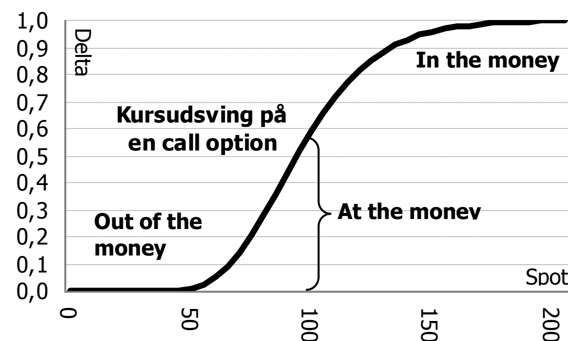
current market price of the underlying asset, while the opposite applies for a put option.
- "At-the-money" indicates for both call options and put options that the strike price of the option is equal to the current market price of the underlying asset.
- "In-the-money" indicates that the strike price of a call option is lower than the current price of the underlying asset, while the opposite applies for a put option.

Generally, options that are in-the-money are exercised on expiry, while options that are at- or out-of-the-money are not exercised.

Price fluctuations on an option are driven by changes in the underlying asset. Option sensitivity, in other words the price fluctuations, depends on the difference between an option's strike price and the market price of the underlying asset.

Let's say that you hold a call option with a strike price of 100. If the market price of the underlying asset is less than 100, the option is out-of-the-money. See the chart.

An increase in the price of the underlying asset from 10 to 20 would have very little effect on the value of the option, as there will still be very little probability of the option price rising to above the strike price of 100.



underlying asset from, say, 190 to 200 would trigger a corresponding increase in the value of the option, because the option will almost certainly end up being in-the-money.

When to use equity options

Equity options may be used to hedge a price risk of a share or a portfolio of shares during periods of strong volatility.

Equity options may also be suitable as investment instruments for the purpose of generating a profit on expected price developments.

Term

The term of an equity option can vary from a single day to several years.

Pricing equity options

The following factors influence the price of an option:

- The difference between the option's strike price and the market price of the underlying asset.
  The lower the strike price relative to the market price of the underlying asset, the higher the value of a call option. Conversely, the higher the strike price relative to the

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market price of the underlying asset, the higher the value of a put option.

- Volatility
  Volatility expresses expected fluctuations in the price of an underlying asset. High volatility implies a high premium, because large price fluctuations increase the probability of the option ending in-the-money.

- Maturity
  The longer the maturity, the greater the probability of the option ending in-the-money.

- Money market rate
  Buying a call option may be an alternative to buying the underlying asset and the extra liquidity can then be placed in the money market. This aspect is priced into the call option and results in a higher price of the option. Conversely, a high interest rate reduces the price of a put option.

- Dividends
  When dividends are distributed to shareholders, the market price of the underlying asset may drop, reducing premiums on call options or increasing premiums on put options.

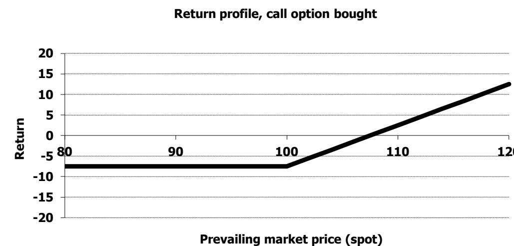
Using equity options

This section provides a number of examples of return profiles that show whether or not a transaction is profitable.

Buying an equity option (call)

A buyer of a call option has a right, but not an obligation, to buy the underlying asset at an agreed price.

If on expiry the market price is higher than the strike price, exercising the option produces a profit.



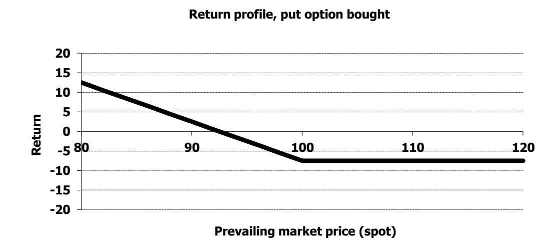
If on expiry the market price is lower than the strike price, the buyer will not exercise the option, because it would be more beneficial to buy the underlying asset in the market.

Buying an equity option (put)

The buyer of a put option obtains a right, but not an obligation, to sell the underlying asset at an agreed price.

If on expiry the market price is lower than the strike price, exercising the option produces a profit.

If on expiry the market price is higher than the strike price, the buyer will not exercise the option, because it would be more beneficial to sell the underlying asset in the market.



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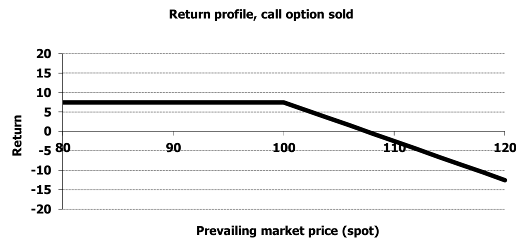
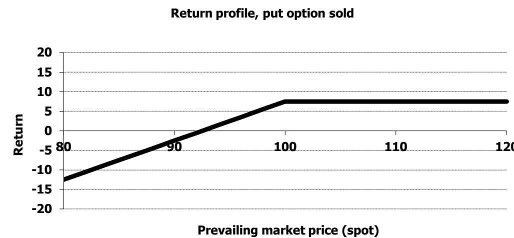
Selling an equity option (call)
The seller of a call option is under an obligation to sell the underlying asset at an agreed price, if, on expiry, the market price is higher than the strike price and the buyer of the option exercises the option.

If on expiry the market price is lower than the strike price, the option will not be exercised, because it would be more beneficial to buy the underlying asset in the market.



Selling an equity option (put)
The seller of a put option is under an obligation to buy the underlying asset at an agreed price, if, on expiry, the market price is lower than the strike price and the buyer exercises the option.

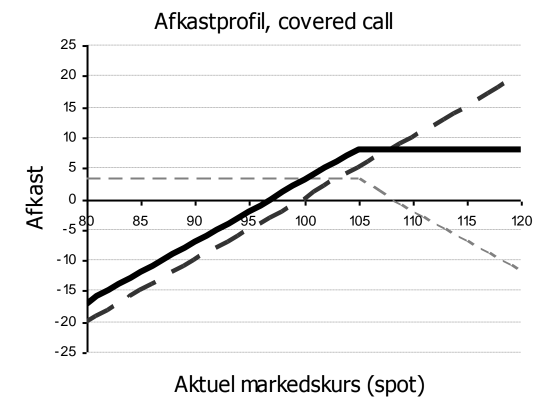
If on expiry the market price is higher than the strike price, the option will not be exercised, because it would be more beneficial to sell the underlying asset in the market.



Examples of investment strategies

Covered call
A covered call is a sold call option with simultaneous ownership of the underlying shares. The obligation to sell the underlying shares can therefore always be met.

The seller receives a premium for selling the call option in return for waiving the right to a potential appreciation gain on the underlying shares in excess of the strike price.



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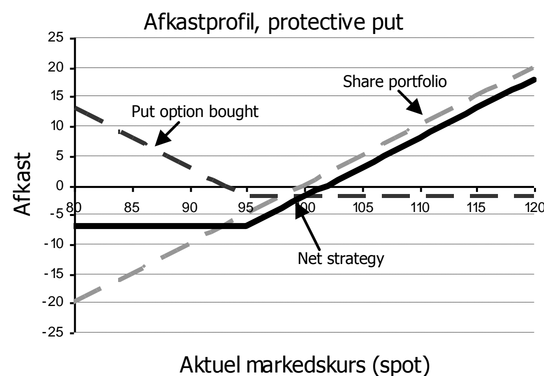
The investor should not expect the return to exceed the strike price plus the premium received, as this marks the break-even point for the strategy.

Protective put
A protective put is a bought put option with simultaneous ownership of the underlying shares. This gives the party the right to sell the underlying shares at the option strike price.

The investor pays a premium in order to buy the put option, while the upside potential of the underlying shares is intact.

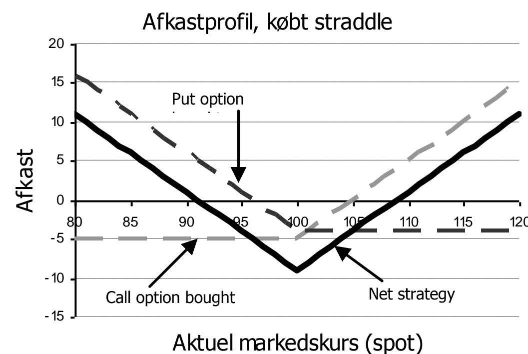


The strategy is used to hedge against depreciation of the underlying shares.

Bought straddle
In a bought straddle, a party buys a call option and a put option at identical strike prices. This gives the party the right to buy and/or sell the underlying shares at the option strike price.

The investor pays a premium to buy the options.

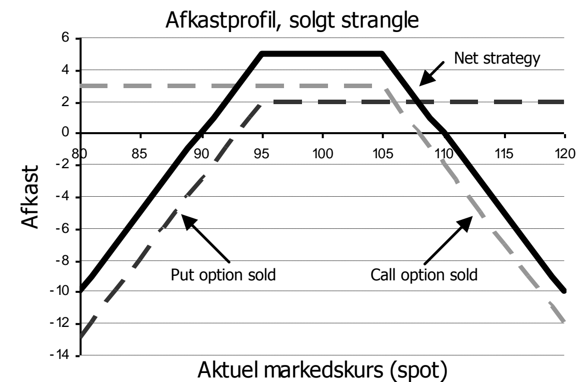
The strategy is used to hedge against an expected appreciation or depreciation in the price of the underlying share.



Sold strangle
In a sold strangle, a party sells a call option and a put option at different strike prices. This gives the party an obligation to sell and/or buy the underlying shares at the option strike price if the buyer exercises the option.

The investor receives a premium for the options sold.

The strategy is used in a situation of expected stable price developments in the underlying share.



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Risk factors
You should be aware that trading in equity options involves substantial risk.

Under the executive order on risk-labelling of investment products, this product type is in the “RED” category.
The “Red” category consists of: “Investment products involving a risk of losing more than the amount invested, or product types which are difficult to understand”.

The risk-labelling categories defined by the Danish Financial Supervisory Authority (“DFSA”) can be found at www.danskebank.dk/risikomaerkning [(in Danish only)].
The risk-labelling system should not form the exclusive decision-making basis of an investment. It is only intended as a supplement to the information you should obtain before making an investment or to the advice you receive from the bank after defining your investment profile.

Selling equity options

For options involving physical delivery, a sale involves the risk of an unfavourable difference arising between the strike price at which the underlying asset must be delivered (call option) or received (put option) and the price at which the underlying asset can be acquired or sold in the market.

For options with cash settlement, a sale involves the risk that the option must be settled at an unfavourable strike price relative to the market price of the underlying asset at the time the option expires and is subsequently settled. In both situations, the loss may exceed the option premium received by the seller.

In a worst-case scenario, the seller of a call option could suffer an unlimited loss.

In a worst-case scenario, the seller of a put option could suffer a loss equal to the difference between the strike price less the premium and nil.

The risk of a loss is increased by the instrument’s leverage component, which is the relationship between the instrument’s underlying value and the amount invested or received.

During the life of the option, the market price of the underlying asset, expected price fluctuations of the underlying asset, dividends and the money market rate will impact the market value of the option. The impact will of course depend on the option type.

In the event of early settlement, the seller may suffer a loss at the early settlement date equal to the absolute value of the negative market value.

Buying equity options
When you buy equity options, you limit your risk to the premium paid.

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Collateral
When you enter into OTC transactions with Danske Bank as the counterparty, we may require that you provide collateral. .
When you enter into contracts with Stockholmbörsen AB as the counterparty, the stock exchange will require that, as a seller of options, you provide collateral through Danske Bank. See the rules of the stock exchange on derivatives trading at www.omxgroup.com.

Special market conditions
Under special market conditions, it may be difficult or impossible to close a position; for example if, during periods of frequent price fluctuations, prices rise or fall to such an extent that we are unable to fix a price or the stock exchange suspends or restricts trading in contracts.

Tax
The tax treatment of gains or losses on equity options depends on whether

- you are trading as a private individual or on behalf of a company;
- the equity options are settled on delivery of the underlying asset or are settled in cash.

Due to the complex nature of this area, we recommend that you consult an accountant or other professional adviser to clarify the tax and accounting consequences to you of engaging in such trading.

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