Danske Bank

Information on commodity options

This fact sheet contains information on commodity options traded through Danske Bank.

Commodities are unprocessed or semi-processed goods traded for the purpose of being manufactured into an end product. Most commodity contracts traded on a regulated market are for future delivery.

A very broad selection of commodities are traded in the various regulated markets, but they can generally be divided into:

- Agricultural products
- Metals
- Energy products

Commodity options may be traded as OTC transactions with Danske Bank as the counterparty. The transactions are based on standardised contracts admitted to trading on a regulated market ("reference contracts").

The contract size, settlement date, specification of commodity quality and type of settlement of a reference contract are defined by the individual regulated market.

Commodity options traded through Danske Bank are settled by delivery of the underlying future contract.

For commodity options with delivery of the underlying commodity future (and such future involves delivery of the underlying commodity at expiry), you must close the transaction not later than three business days before the commodity future expires. If you do not, Danske Bank will be entitled to close the transaction on your behalf. A transaction is closed at expiry by way of an off-setting transaction on the basis of prevailing market prices with a term to maturity corresponding to the term to maturity of the original futures contract. All other terms should be identical to the original terms.

What is a commodity option?
Trading in commodity options gives you either a right or an obligation to buy or sell an underlying commodity 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 a commodity option pays a premium to the seller of the option.

Option types

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

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

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 current market price of the underlying commodity future, 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 commodity future.
- "In-the-money" indicates that the strike price of a call option is lower than the current

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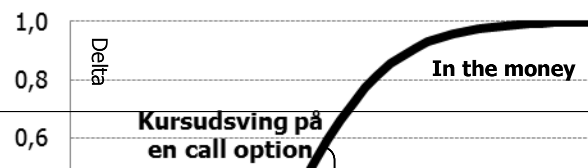
price of the underlying commodity future, while the opposite applies for a put option.

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 price changes in the underlying commodity future. 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 commodity future.

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

An increase in the price of the underlying commodity future 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.



Similarly, an increase in the price of the underlying commodity future contract 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 commodity options
Commodity options can be used by manufacturers and consumers to hedge a price risk on a commodity.

They may also be used as investment instruments for the purpose of generating a profit on expected price developments.

Term
The term of commodity options varies from a single day to several years depending on the terms and conditions of the underlying future contracts. The contracts will typically be settled on a specific day of the month.

Pricing

The following factors influence the price of an option:

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

- Volatility

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Volatility expresses expected fluctuations in the price of the underlying commodity future. 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 commodity future 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.

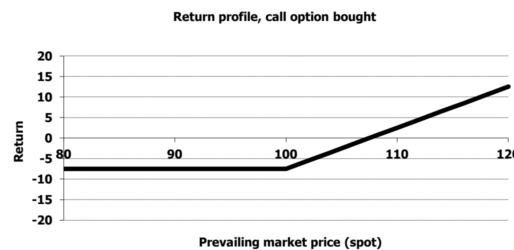
Using commodity options

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

Buying a commodity option (call)

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

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



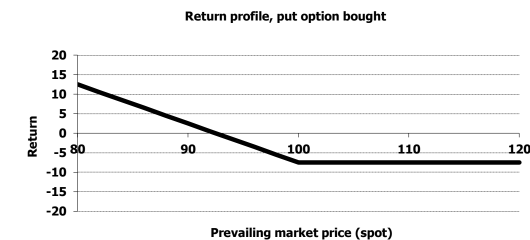
If on expiry the market price is lower than the strike price, the buyer will not exercise the option, because it would be more beneficial to buy the underlying commodity future in the market.

Buying a commodity option (put)

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

If on expiry the market price of the commodity future 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 commodity future in the market.



Selling a commodity option (call)

The seller of a call option is under an obligation to sell the underlying commodity future at an agreed price, if, on expiry, the market price is

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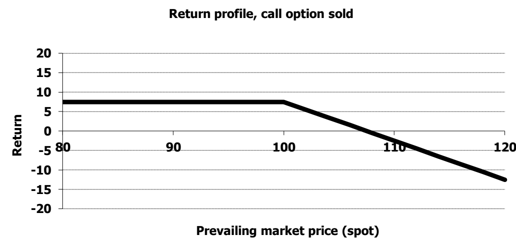
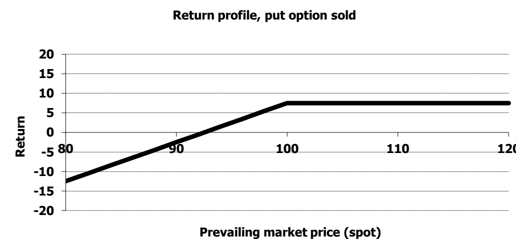
higher than the strike price and the buyer of the option exercises the option.

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 commodity future in the market.



Selling a commodity option (put)
The seller of a put option is under an obligation to buy the underlying commodity future 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 commodity future in the market.

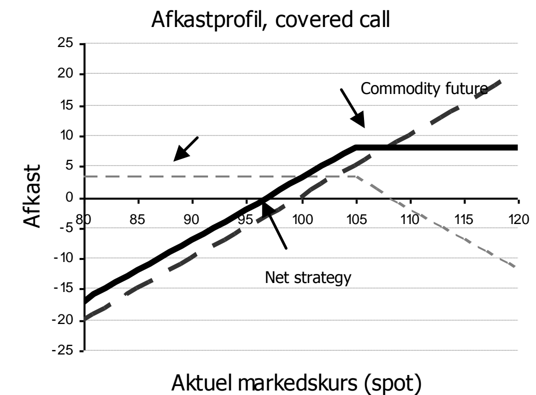


Examples of investment strategies

Covered call
A covered call is a sold call option with simultaneous ownership of the underlying commodity future. The obligation to sell back the underlying commodity future 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 commodity future in excess of the strike price.

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 commodity future. This gives the party the

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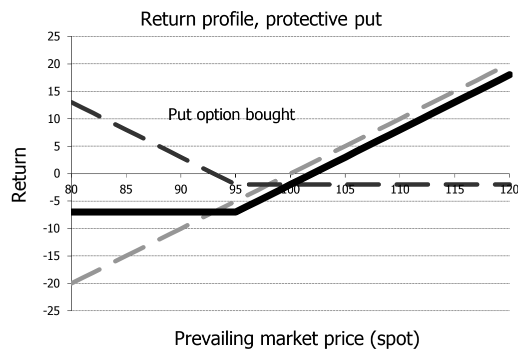
right to sell back the underlying commodity futures at the option strike price.

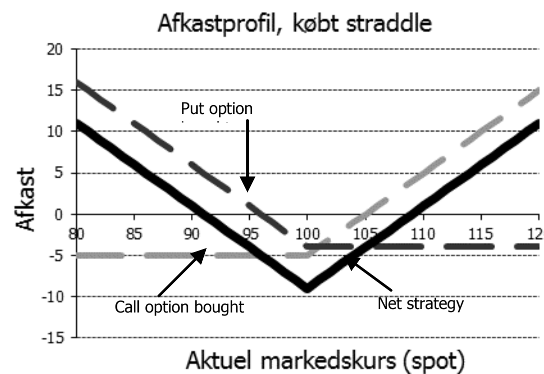
The investor pays a premium in order to buy the put option, while the upside potential of the underlying commodity futures is intact.
The strategy is used to hedge against depreciation of the underlying commodity futures.



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 commodity futures at the option strike price.

The investor pays a premium to buy the options.

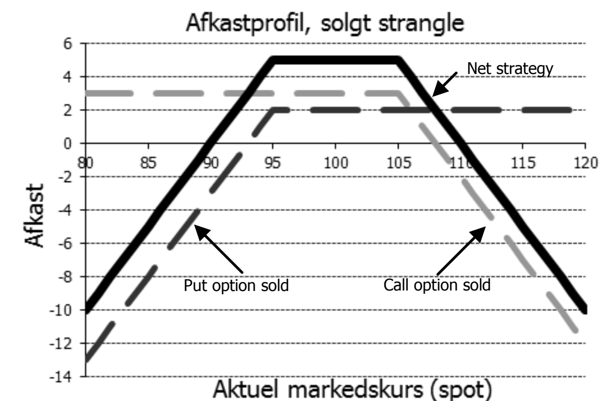
The strategy is used to hedge against an expected price increase or price fall in the underlying commodity future.~~The strategy is used to hedge against an expected appreciation or depreciation in the exchange rate of the underlying commodity future.~~



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 future contracts at the option strike price if the buyer exercises one of the options.

The investor receives a premium for the options sold.

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



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Risk factors
You should be aware that this type of transaction 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 commodity options

When selling options on commodity futures, a sale involves the risk that the option must be settled at an unfavourable strike price relative to the market price of the underlying commodity future at the expiry date. 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.

During the life of the option, the market price of the underlying commodity future, expected price fluctuations of the underlying commodity future 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 commodity options
When you buy commodity options, you limit your risk to the premium paid.

Collateral
When you enter into transactions with Danske Bank as the counterparty, we may require that you provide collateral.

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 commodity options depends on whether you are

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trading as a private individual or on behalf of a company.

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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