Danske Bank

Information on interest rate options

This fact sheet contains general information on interest rate options traded through Danske Bank.

Trading in interest rate options gives you either a right or an obligation to buy or sell an agreed interest rate for specified future interest periods, allowing you to hedge against unfavourable interest rate fluctuations.

The buyer of the interest rate option pays a premium to the seller of the option when entering into the contract.

Interest rate options may be traded in an OTC transaction with Danske Bank as the counterparty. See our terms and conditions for currency and derivatives trading.

Types of interest rate options

A borrower's option is an option to hedge against rising interest rates, while a lender's option hedges against falling interest rates.

Options protecting the buyer against changes in future interest rates with a single interest payment date are called options on forward rate agreements (FRA options).
A series of FRA options protecting the buyer against rising interest in several interest periods is called a 'cap', while a series of FRA options protecting the buyer against falling interest rates in several interest periods is called a 'floor'.

In FRA options, the strike price and the reference rate for the upcoming period will be compared at the beginning of each interest period. Where the reference rate exceeds the strike price (borrower's option), or the strike price exceeds the reference rate (lender's option), the seller will have an obligation to pay the interest rate differential to the buyer on the payment date. Payment is made at the beginning of the interest period for interest rate options with a single interest payment date and at the end of the interest period for options with several payment dates. The reference rate is typically set at two trading days before the payment date.

In a 'collar', the interest rate is locked in a specified range. The collar is established by buying or selling a cap and selling or buying a floor. A 'no cost collar' exists if the option premiums on the cap and the floor are identical.

Digital interest rate options are characterised by the buyer receiving an agreed amount (pay-out), if the reference rate determined for an interest period

- exceeds a strike price (when the buyer has hedged against rising interest rates); or
- is lower than a strike price (when the buyer has hedged against falling interest rates).

The agreed amount, which is a percentage of the actual basis of calculation for the contract, will not change regardless of by how much the reference rate exceeds or is lower than the agreed strike price. If the reference rate does not breach the agreed rate, the buyer will not receive any payment for this interest period.

Using interest rate options

Here are some examples of how interest rate options can be used.

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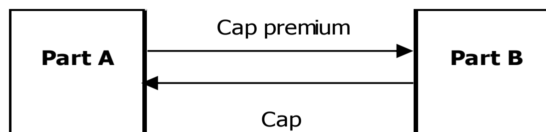
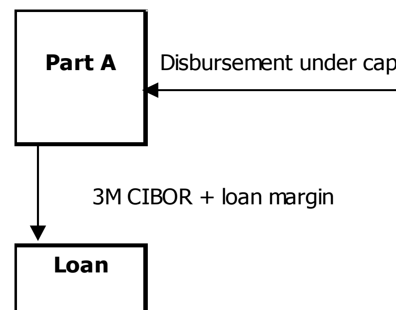
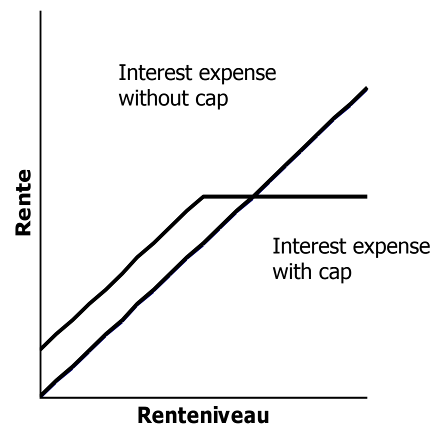
Hedging against rising interest rates on floating rate loans
In the example below, Part A has raised a floating-rate loan in DKK for which the interest rate is fixed every three months. Part A has an single interest payment every three months equal to the CIBOR rate plus a loan margin.

Part A wishes to hedge against rising interest rates but would also like to benefit from the floating interest rate should interest rates go down.

When Part A buys a cap with quarterly interest payments, he will know the maximum interest expense for the hedge period. The maximum interest expense will be the strike price on the cap plus a loan margin and a cap premium.







As shown in the chart, the cap offers effective protection in case interest rates exceed the cap strike price. If interest rates fall, Part A's interest exposure will be reduced accordingly. Should interest rates fall, Part A pays by way of a cap an additional cost relative to having an unhedged position corresponding to the option premium.

A flexible instrument

An interest rate option may be adjusted to suit individual needs. Examples of parameters that can be agreed at the establishment of the agreement include:

- interest period and any settlement profile for interest rate options with more than one interest payment date; and
- the strike price

Pricing

The price (premium) of interest rate options is determined by the following factors:

- option type (borrower's, lender's, digital);

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- the market price of the underlying interest rate which the interest rate option hedges; and

- the strike price.
  The difference between the strike price and the market interest rate impacts the amount of the option premium.

  For 'borrower's options', the lower the intended strike price, the higher the premium. The lower (better) the interest rate you want to pay, the more expensive the hedge. The opposite applies to 'lender's options'. The higher (better) the interest rate you want to receive, the more expensive the hedge.

- the expected risk (volatility) of the underlying interest rate
  If market rates are expected to fluctuate considerably in the future, there is a greater probability that the future interest rates will deviate from the market rates in force at the date of the contract. By extension, this also implies a greater probability that the interest rate option will be of value on the maturity date, indicating a higher option premium. Hence, it will be expensive to hedge an interest rate likely to have large fluctuations.
- the term of the interest rate option
  The term of an option has a large impact on the amount of the premium. The longer the period, the more expensive the option. The term of an interest rate option varies from currency to currency, but is typically up to 30 years.

When the theoretical price has been determined, a client margin is added to the transaction, which results in a negative market value at the date of the transaction. The negative market value corresponds to the present value of the client margin during the entire term of the transaction.

Risk factors

The entering into such transactions 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.
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 interest rate options
For interest rate options, a sale involves the risk that the option must be settled at an unfavourable strike price relative to the market rate at which it is settled. The loss may be

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unlimited and higher than the option premium received.

During the life of the option, the market rate and expected market rate fluctuations will impact the market value of the option. The impact on the market value will depend on the type of option. In the event of early settlement of the option, the seller may suffer a loss equal to the absolute value of the negative market value.

Buying interest rate options
When you buy an interest rate option, the loss is limited to the loss of 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 interest rate fluctuations, prices rise or fall to such an extent that we are unable to provide a price.

Tax
The tax treatment of gains or losses on interest rate options depends on whether you are a private individual or a company.

Due to the complex nature of the tax treatment, 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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