Information on Interest rate caps and floors

This fact sheet contains general information on interest rate caps and floors traded through Danske Bank. Interest rate options may be traded in an OTC transaction with Danske Bank as the counterparty.

WHAT IS INTEREST RATE CAPS AND FLOORS?

Trading in interest rate caps and floors gives you either the right or the obligation to enter an agreement on short interest rates, allowing you to hedge against unfavourable interest rate fluctuations.

The buyer of the interest rate cap/floor pays a premium to the seller of the cap/floor when entering into the agreement.

See our terms and conditions for currency and derivatives trading.

TYPES OF INTEREST RATE CAPS/FLOORS

Buying a cap enables the buyer to hedge against rising short-term interest rates. Buying a floor enables the buyer to hedge against falling short-term 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 agreed strike rate 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 rate the buyer of a cap will receive a payment from the seller compensating for the interest rate differential.

The reference rate (fixing rate) is typically set at two trading days before the payment date.
Where the reference rate is below the strike rate, the buyer of a floor will receive a payment from the seller compensating for the interest rate differential.

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 a fixed amount (pay-out), if the reference rate determined for an interest period

- exceeds a strike rate for a digital cap
- is lower than a strike rate for a digital floor

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 is one example of how interest rate options can be used.

Hedging against rising interest rates on floating rate loans
In the example below, Part A has raised a floating-rate loan in EUR for which the interest rate is fixed every three months. Part A has a single interest payment every three months equal to the Euribor 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 stay low/go down.

When Part A buys a cap with quarterly interest payments, Part A will know the maximum interest expense for the hedge period. The maximum interest expense will be the strike rate on the cap plus the loan margin (if the loan margin is not committed, the loan margin can vary over the hedging period) and the cap premium.

The cap offers effective protection in case interest rates exceed the cap strike rate. If interest rates fall, Part A's will continue to pay floating rate. Should interest rates fall, Part A pays by way of the cap premium an additional cost relative to having an unhedged position.

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 rate

PRICING

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

- option type (cap, floor, digital etc.)
- the market price of the underlying interest rates and
- the strike rate

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

For caps, the lower the intended strike price, the higher the premium. The opposite applies to floors.

- the expected 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 current market rates. 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 generally more 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.

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.

RISK FACTORS

The entering into such transactions involves substantial risk.

Selling interest rate options
For interest rate options, a sale involves the risk that the option must be settled at an unfavourable strike rate relative to the market rate at which it is settled. The loss may be unlimited and higher than the option premium received.
During the life of the option, the market rate and expected market rate fluctuations (volatility) 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, rates may move 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.