

INTEREST RATE OPTIONS

Definition

Interest-rate options are agreements on an upper or lower limit to interest rates or an option for interest rate swaps. They are used either

- 1) for hedging purposes or
- 2) for speculative trading to realise a gain.

Interest-rate options are either calls or puts. Common variants are caps, floors, swaptions, etc.

With the cap, the buyer secures for himself an upper interest rate limit (= strike price) for future borrowings. In case of the speculative trading, the value of a cap increases along with the rise of interest rates.

The sale of the cap is used as a speculative instrument only. The seller receives a premium and undertakes to compensate the buyer for any difference in interest rates.

Floors secure the buyer a certain minimum interest rate on a future investment. In speculative trading, the value of the floor increases along with the fall of rates.

ad 1 hedging purposes:

Depending on the agreed reference maturity periods, the current three-month or six-month market interest rate is compared against the agreed strike price every three or six months. If the market rate is higher than the strike price, the holder of the cap will be compensated for the difference.

ad 2 speculative trading to realise a gain:

The value of the cap increases as interest rates rise. However, it is not compared to current interest rates, but with forward rates (future interest rates traded today).

The same applies, in the opposite direction, to the purchase or sale of a floor. The buyer of a floor secures for himself a lower limit of interest rates, while the seller holds a speculative position.

A swaption is an option on an interest-rate swap (IRS = agreement to exchange interest obligations).

There are two basic types of swaptions: payers swaptions (right to pay fixed interest rates) and receivers swaptions (right to receive fixed interest rates). Both variants can be either bought or sold.

A further distinction is made between two different types of performing a trade in different risk profiles:

Swaption with Swap Settlement.

The purchaser becomes a party to the swap at the time of exercise of the swaption.

- The buyer of a Payers Swaption acquires the right to make fixed interest payments at the strike price on a notional principal amount at the delivery date and to receive variable interest payments in return.
- The seller of a Payers Swaption undertakes to receive fixed interest payments at the agreed strike price on a notional principal amount at the delivery date and to make variable interest payments in return.

- The buyer of a Receivers Swaption acquires the right to receive fixed interest payments at the agreed strike price on a notional principal amount at the delivery date and to make variable interest payments in return.
- The seller of a Receivers Swaption undertakes to make fixed interest payments at the agreed strike price on a notional principal amount at the delivery date and to receive variable interest payments in return.

Swaption with Cash Settlement.

At the time of exercise of the swaption, the buyer receives the difference between the cash value of the swaps and swaption interest rate or current market interest rate.

Return

The holder of an interest-rate option will realise a gain if on the exercise date the interest rate on the market is higher than the strike price of the call or lower than the strike price of the put. In the case of swaptions, a return can be achieved if on the exercise date the interest rate level on the market is above the agreed strike price (with payers swaptions) or below the agreed strike price (with receivers swaptions). The option premium received stays with the seller, regardless of whether or not the option is exercised.

Interest risk

The interest-rate risk results from the possibility of future interest rate changes on the market. The buyer or the seller of an interest-rate option may incur a price loss if interest rates rise or fall. This risk is all the higher, the more pronounced the increase or decrease in interest rates is. This results in a virtually unlimited potential of loss.

The premium of the interest-rate option depends on the following factors:

- volatility of interest rates
- agreed strike price
- the amount of time remaining until maturity
- level of interest rates on the market
- current financing cost
- liquidity.

This means that the price of an option may remain unchanged or decrease even though investors' expectations as to the movement of interest rates have been met.

Credit risk

The credit risk to which the buyer of an interest-rate option is exposed derives from the possibility of counterparty default, due to which the buyer must perform more expensive covering transactions on the market.

Risk of complete loss at the purchase

The maximum loss in the case of buying an interest rate option is the amount of the premium, which must be paid irrespective of whether or not the option is exercised.

Special conditions for interest-rate options

Interest-rate options do not have standardised terms, but are customised investments. It is therefore very important to obtain full information on the exact terms and conditions of such options, in particular:

Style of exercise:

Is the option exercisable at any time during its life (American option) or only at expiry (European option)?

Exercise:

Delivery of the underlying instrument or cash settlement?

Expiry:

When does the option right expire? Please note that the bank will not exercise an option unless specifically instructed by you to do so!