Information about Barrier swaps

This fact sheet provides general information about barrier swaps that can be traded through Danske Bank. Barrier swaps can be entered into as an OTC transaction with Danske bank as counterparty.

WHAT IS A BARRIER SWAP?

A barrier swap is an agreement between two parties to swap interest rate payments in the same currency as long as the floating rate is below a certain barrier.

When entering into a barrier swap, the parties agree to swap a floating rate for a fixed rate, or vice versa, given that the floating rate is below a certain barrier. If the floating rate is above the barrier the barrier kicks in and the customer is a net payer of the floating rate as if it had no swap contract.

When entering into an agreement to trade a barrier swap, the two counterparties will typically agree on the following parameters:

- the start and end date;
- the currency and notional amount;
- the profile of the notional amount during the term of the transaction;
- the interest rates to be swapped and their day-count convention;
- the resetting frequency for floating rates;
- the frequency for interest rate payments
- the barrier above which the subsequent payment is altered, and
- whether payments should be paid in advance or in arrears.

The day-count convention determines the actual interest rate payments. In other words, there is a difference whether the payment is calculated on the basis of a 360-day interest year or the actual number of days in the calendar year.

The profile of the notional amount can be a so-called bullet profile, for which the notional amount is not amortized during the term of the transaction. An alternative is a serial profile, for which the notional amount is amortized by equal amounts during the term. The profile can also be completely customized to suit individual needs.

Taking the above terms into consideration,
the two parties will agree on a fixed rate and a barrier level. The floating rate is determined relative to a reference rate in the respective currency, which for e.g. Danish kroner is CIBOR.

Payments are determined according to the notional amount agreed upon for every interest rate period and paid on the pre-agreed dates.

If the floating rate is below the barrier the barrier swap is equal to an ordinary interest rate swap. I.e. on each predefined fixing date the following payments are carried through

- If the floating interest rate amount is below the fixed interest rate amount, the party paying the fixed amount will pay to the other party the difference between the two.
- If the floating interest rate amount is greater than the fixed interest rate amount, the party paying the fixed amount will receive from the other party the difference between the two.

If the floating rate is above the barrier the customer both pays and receives a fixed rate that nets each other out. Hence the customer is left paying (or receiving) floating rate.

If an interest rate is negative, the party receiving the corresponding interest rate amount will instead pay that amount and vice versa.

USING BARRIER SWAPS

The following is an example of how barrier swaps works

Customer A has a floating rate loan that it wants to hedge with a float to fixed barrier swap with barrier X and fixed rate Y with Danske Bank. On each fixing date the following payments are carried through

1. If the floating rate is above the barrier the customer pays fixed and receives float in the swap. However, because the floating rate is above the barrier it also pays float and receives fixed in a combination of two swaps (a digital cap and a cap) thus the net cash flow in the barrier swap in this period, for the customer, is zero.

2. If the floating rate is below the barrier Customer A pays fixed rate Y to Danske Bank and Danske Bank pays the floating rate to the customer.

To summarize; the barrier swap is a partial hedge against rising floating rates on Customer as debt. As long as the floating rate is below the barrier X the customer pays a fixed rate Y. However, as the customer will pay floating rates if the floating rate is higher than the barrier X it is only a partial hedge.

Even if the floating rate is above the barrier on one fix date, the floating rate can be below the barrier on the next fixing date. If that is the case, the customer pays fixed rate for this period.

PRICING BARRIER SWAPS

As for all derivatives, the basic principle of determining the price of barrier swaps is that the values of the two cash flows (with addition of a possible upfront payment) should be identical so that the transaction has no market value when it is entered into.

As a barrier swap only is a partial hedge against rising rates, the fixed rate that balances the cash flows on the two legs is lower than for a swap without a barrier. How much lower depends on the expected volatility of the interest rates in the tenor of the barrier swap. Higher expected volatility would lead to a bigger difference between the fixed rate in a barrier swap and the fixed rate in a plain vanilla interest rate swap.

TERM

The term of a barrier swap varies from currency to currency but is typically up to 30 years.

If a transaction is terminated prior to its scheduled maturity, the market value may be negative. The party to whom the transaction has a negative market value must compensate the other party by an amount equal to the absolute value of the negative market value.

RISK FACTORS

The risk of a barrier swap relates to the future development in short and long-term interest rates.

The greatest risk for a payer of fixed interest in a barrier swap is a shift to higher floating rates so that the floating rate is consistently above the barrier and offers no hedge to a further increase in rates.

COLLATERAL

Danske Bank may require you to provide collateral when you enter into a transaction with us as counterparty.

TAXATION

The tax treatment of a gain or a loss on a barrier swap depends on whether you are dealing as a private individual or on behalf of a company.

Due to the complex nature of the relevant tax rules, we recommend that you consult an accountant, tax advisor or other professional adviser to clarify the tax and accounting consequences.