

THE CARVE-OUT METHOD FOR OPTIONS

The table below should be used to calculate the market risk requirements for options or warrants on the following: bonds; equities; interest rates and their futures; and swaps; their variants; plus any related hedging positions. These figures may only be used for options with a residual maturity of less than six months; for longer maturity options advice must be sought from the authority.

	Option position	In the Money by more than P% or Q%	In the Money by less than P% or Q%	Out of the Money
Naked	Long Call	NL	NL	NL
	Long Put	NL	NL	NL
	Short Call	NSI	NSI	NSO
	Short Put	NSI	NSI	NSO
Long in Underlying	Long Put	0%	LPI	HO
	Short Call	0%	SHI	HO
Short in Underlying	Long Call	0%	LCI	HO
	Short Put	0%	SHI	HO

In the Money means that the exercise level of a call option or warrant is less than the current mark to market value of the underlying instrument and, for put options or warrants that the current mark to market value of the underlying is less than the exercise level of the put option or warrant.

Out of the Money means those options and warrants that are not In the Money.

- (1) For bond and equity options (where the strike is based upon a price) P% is the sum of the specific and general market risk, under Method 1, for that underlying instrument as if it was the only component in a portfolio.

The capital requirements for price based options and their associated hedges are:

NL The lesser of:

- (a) the market value of the underlying instrument multiplied by P%; and
- (b) the current value of the option on the bank's books.

NSI The market value of the underlying position multiplied by P%.

NSO The market value of the underlying position multiplied by P% minus 0.5 multiplied by the amount by which the option is Out of Money (subject to a maximum reduction to zero)

- LPI The market value of the underlying position minus (1-P%) multiplied by the underlying position valued at the exercise price
- HO The market value of the underlying position multiplied by P%
- SHI The market value of the underlying position multiplied by P% minus the mark to market value of the option (subject to a maximum reduction to zero)
- LCI (1+P%) multiplied by the underlying position valued at the exercise price minus the market value of the underlying position
- (2) For options where the strike price is based on a yield we determine Q%, the "assumed interest rate change" from Table 2 in Annex III of the Directive based upon the life of the instrument underlying the option. Y% is then Q% multiplied by the period of the underlying. Thus, for example, a two year option on a three month rate would have Q=1.00% and Y=0.25%. A three month option on a two year swap would have Q=0.90% and Y=1.80%.

The capital requirements for yield based options and their associated hedges are:

- NL The lesser of:
- (a) the notional amount of the underlying instrument multiplied by Y%;
and
 - b) the current value of the option on the bank's books.
- NSI The notional amount of the underlying position multiplied by Y%
- NSO The notional amount of the underlying position multiplied by Y% minus 0.5 multiplied by the amount by which the option is Out of the Money (subject to a maximum reduction to zero)
- LPI As for SHI below
- HO The notional amount of the underlying position multiplied by Y%
- SHI The notional amount of the underlying position multiplied by Y% minus the mark to market value of the option (subject to a maximum reduction to zero)
- LCI As for SHI above

If a bank is unable to determine whether an option is in or out of the money, then the capital charge is the notional amount of underlying multiplied by Y% .