

## ➔ 4. range forward

MIFID complexity

FX 2

### product description

A range forward deal provides more flexibility than a standard forward. Using this product you can fix the future selling rate of a specific currency in a range around the forward rate. In contrast to a forward deal, the rates of the right and the obligation for selling foreign currency are different. You have a limited potential gain in case of HUF strengthening; in return, your company is protected against unfavourable market movements at a rate lower than the forward.

Consequently, your company

- has a right to sell foreign currency at an exchange rate somewhat less advantageous than the forward rate, provided that the spot rate on expiry is below the bottom of the range or between the range, but in this case, the right will not be exercised
- has an obligation to sell your foreign currency at an exchange rate better than the forward rate if on expiry the exchange rate is above the top of the range.

Costs and revenues of the underlying exposure can compensate both the potential gains and losses of the deal, as long as the company assesses its underlying exposure and market situation properly. The deals are made in order to stabilize the results, not to realise standalone financial gain.

**example:** a Hungarian exporter expects to receive a year from now EUR 100 000 in revenues. Let us assume that the current spot rate is 290 EUR/HUF, and the one-year forward rate is 302 EUR/HUF. The company hopes to achieve an exchange rate better than the forward rate on the expiry date, but to secure an appropriate profit margin the EUR/HUF rate should at least be 298. Therefore, the company enters into a one-year range forward deal where the bottom and the top of the range are set at 298 and 306, respectively.

By entering into a range forward deal, the company may have the opportunity to convert its foreign currency revenues at an exchange rate that is better than the forward rate of 302, while at the same time losing the opportunity to benefit from a potential forint weakening beyond the top of the range (306 EUR/HUF). However, the company enjoys protection from any strengthening of the forint at a lower rate than the forward (298 EUR/HUF).

### parameters of the range forward

notional amount	EUR 100 000
currency pair	EUR/HUF
tenor	1 year
expiry date (date of exchange rate monitoring)	2 business days before end of tenor
exchange rate monitoring	EUR/HUF spot rate at 12:00 p.m. (CET) on the expiry date
settlement date	end of tenor
spot rate prevailing at pricing	290 EUR/HUF
1-year forward rate prevailing at pricing	302 EUR/HUF
ATMF volatility	15%
bottom of the range (right to sell)	298 EUR/HUF
top of the range (obligation to sell)	306 EUR/HUF
transaction cost on the trade date	zero

### possible scenarios on expiry depending on the spot market rates at 12:00 p.m. on the expiry date

exchange rate below 298 EUR/HUF	your company has a right to sell EUR 100 000 at a rate of 298 EUR/HUF (better than the market rate).
exchange rate between 298 and 306 EUR/HUF	Neither the right nor the obligation is exercised. Your company can sell euros at the spot rate prevailing on expiry.
exchange rate above 306 EUR/HUF	your company has an obligation to sell EUR 100 000 at a rate of 306 EUR/HUF (better than the forward rate prevailing on the trade date).
best-case scenario (treasury transaction on a standalone basis)	The EUR/HUF spot rate is below 298 on the expiry date. In this case your company has to sell EUR 100 000 at a rate of 298 EUR/HUF.
worst-case scenario (treasury transaction on a standalone basis)	The EUR/HUF spot rate is above 306 on the expiry date. In this case your company has to sell EUR 100 000 at a rate of 306 EUR/HUF. The resulting foreign exchange loss can be unlimited.

**the market value of the position two weeks after the trade date from the customer's perspective**

market value: the cost of closing the position calculated at a given point of time and under the prevailing market terms and conditions (the deal can be closed with profit if the market value is positive)

(assumption: except for the spot market rate, all other factors are unchanged)

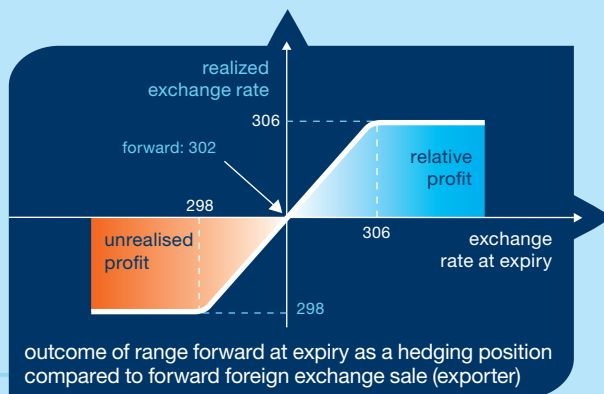
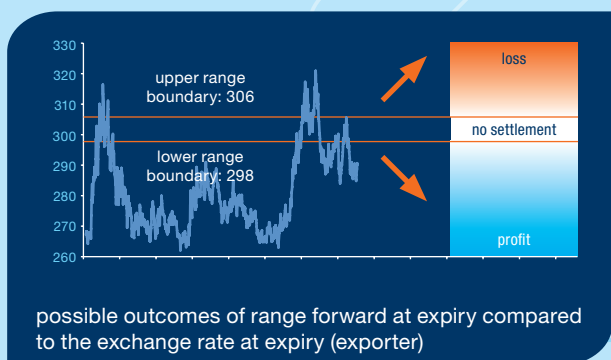
The number of possible outcomes is unlimited, and there may be even more extreme values than the ones presented below.

spot rate in two weeks (EUR/HUF)	market value of the position (HUF)
270	1 740 000
300	- 934 000
330	- 3 573 000

**financial outcome of some possible scenarios on the expiry date**

The number of possible financial outcomes is unlimited, and there may be even more extreme values than the ones presented below.

exchange rate on the expiry date (EUR/HUF)	underlying exposure's financial outcome with no treasury transaction (HUF)	profit / loss of the product on a standalone basis (HUF)	underlying exposure's financial outcome with the treasury transaction, hedged position (HUF)
270	$270 * 100\,000 = 27\,000\,000$	$(298 - 270) * 100\,000 = 2\,800\,000$	$298 * 100\,000 = 29\,800\,000$
300	$300 * 100\,000 = 30\,000\,000$	0	$300 * 100\,000 = 30\,000\,000$
330	$330 * 100\,000 = 33\,000\,000$	$(306 - 330) * 100\,000 = - 2\,400\,000$	$306 * 100\,000 = 30\,600\,000$



The chart illustrates the possible financial outcomes; profit or loss of the transaction may be balanced out by the financial outcome of the underlying exposure. The evolution of the historical exchange rate on the chart only intends to show a comparison between the level(s) of the transaction and the exchange rates prevailing in the past. Future evolution of the exchange rate and exchange rate fluctuations until maturity are unknown in advance, extent of profit or loss depends on the exchange rate level upon expiry. Number of possible outcomes is infinite and there may be even more extreme values than the ones presented below. The chart is not suitable to forecast the market value of the position during the tenor.

### advantages of transaction

- limited profit from rates better than the forward rate
- fixed minimum exchange rate for foreign currency selling transactions in the future (the worst-case scenario is known), therefore the minimum HUF equivalent of your foreign currency revenues can be set in advance
- full protection against a potential forint strengthening
- no cost or separate fee charged
- the bottom, top, and width of the range can be tailored to your expectations, plans, and budget. Changing a parameter entails change in the rest.
- if the hedge is no longer needed, the position can be closed with a counter deal at any time before the expiry date. This may result in profit or loss, depending on the prevailing market conditions.

### risks of transaction

- if upon expiry the spot rate is above the top of the range, your company has to sell foreign currency at the top of the range with unlimited foreign exchange loss potential
- the bottom of the range provides less protection than a standard forward
- if you decide to close your position before expiry by means of a counter deal, you may incur a loss
- The market value of options is determined by the evolution of the spot exchange rate, the interest rate levels of the two currencies for the given tenor, the difference between the interest rates for the given tenor, the number of days remaining until the expiry of the transaction, and the evolution of market volatility. The drop in market liquidity could lead to a bid-offer spread widening, which could also affect the market value of the position negatively.
- the change in market value could lead to an obligation of temporary or permanent increase of collateral which may affect the company's liquidity and solvency negatively. In case of exceptional market circumstances (e.g. money market and other crises) the negative market value of the position from the Client's viewpoint could reach such extreme levels that providing sufficient collateral may cause the company to become insolvent. Moreover, failure to provide additional collateral in time might lead to the closure of open positions thus prompt realization of losses, which may affect the company's liquidity and solvency negatively.
- chapter I/b. entitled "Risk Factors" of "K&H Treasury Handbook of Market Risk Management" lists those risks that do not originate exclusively from the nature of the product described here, but rather, from other factors.

### product structure

The range forward is built up of two plain vanilla options. The section on plain vanilla options of Chapter I/c. entitled "5 Basic Products" of "K&H Treasury Handbook of Market Risk Management" also applies to this product.