

➔ 12. target profit forward – buying of foreign currency

MIFID complexity

FX 3

product description

There is great variety of target profit forward deals. The product description below introduces a frequently applied version as an example. For a non-exhaustive presentation of further versions of the target profit forward deal see the section on target profit forward transactions in Chapter I/c. entitled “5 Basic Products” of K&H Treasury Handbook of Market Risk Management.

The target profit forward deal is a series of forward transactions originally dealt for 12 expiries where the strike (or target profit forward rate) is mostly identical for all expiries. The strike obtainable on the transaction date might be more favourable than the 1-year average forward rate. In exchange for this favourable exchange rate, the company accepts the possibility that the transaction can be early terminated if the predetermined target profit amount has been reached. This means that while in the case of standard forward transactions, the amount of exchange rate gains and losses realised at maturity is unlimited; the target profit forward contract limits the size of potential

exchange gains. However, the amount of potential foreign exchange loss is unlimited, similar to standard forward transactions.

The contract terminates if the cumulated sum of the gains and losses realised by the customer at the individual expiries reaches the target profit. When the target profit is reached, the exchange rate for that maturity is modified accordingly.

The target profit forward transaction, just like the normal forward deal, means a settlement obligation for both parties. Contrary to standard forwards, if the cumulated amount of the profits (determined as a positive number) and losses (determined as a negative number) realised by the customer at the individual maturities reaches a pre-set maximum level (determined as a positive number), no profit exceeding such level will be settled. In this case the target profit forward rate may change and all remaining forward deals – concluded within the framework of the target profit forward transaction – that have not matured yet will cease to exist on the date of expiry when the level of the profit maximum is reached.

Profits and losses are determined in comparison to the European Central Bank's official EUR/HUF exchange rate (ECB fixing) effective on the date of expiry as follows:

ECB fixing > target profit forward rate ⇒ profit

ECB fixing < target profit forward rate ⇒ loss

the target profit forward rate depending on the target profit amount:

total of gains and losses realised by the client < target profit amount ⇒ buying of EUR at the target profit forward rate

total of gains and losses realised by the client > target profit amount ⇒ buying of EUR at the Final target profit forward rate

final target profit forward rate = ECB fixing + (target profit in HUF per EUR – sum of gains and losses realised by the client at earlier maturities in HUF per EUR)

It is important to see that the deal might cease to exist when it would be the most necessary and valuable for the client. As after the termination the client's underlying exposure of the terminated deal remains un-hedged, our Bank does not recommend hedging more than 50% of the treasury limit with products that can terminate before maturity.

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: an importer expects to incur EUR 100 000 expenses each month during the following 1 year (annually EUR 1.2 million). Suppose the current EUR/HUF spot rate is at 290 and the 1-year average forward rate is 296.50 EUR/HUF. As the company has budgeted its revenues at a 289 EUR/HUF exchange rate, therefore it enters into a target profit forward contract at 289 EUR/HUF strike for a monthly EUR 100 000 notional amount (a total amount of EUR 1.2 million).

parameters of the target profit forward	
notional amount	EUR 1 200 000 = EUR 100 000 * 12 expiries
notional amount per expiry	EUR 100 000 / expiry
currency pair	EUR/HUF
tenor	1-12 months
number of expiry dates	12
expiry dates (dates of exchange rate monitoring)	trade date + 1 month, + 2 months, ..., + 12 months
exchange rate monitoring	the European Central Bank's official EUR/HUF exchange rate (ECB fixing) quoted at 14:15 (CET) on each expiry date
settlement dates	2 business days after each expiry date
spot exchange rate prevailing at pricing	290 EUR/HUF
average forward rate prevailing at pricing	296.50 EUR/HUF
ATMF volatility	15%
target profit forward rate	289 EUR/HUF
calculation of cumulated profit/loss	100% * notional amount * (target profit forward rate – ECB fixing)
target profit amount (the maximum profit that the customer can realise)	+ HUF 3 000 000 (+30 HUF per EUR per notional amount per expiry)
termination event	the cumulated sum of the profits and losses realised by the customer reaches the target profit amount on any expiry date
termination	If the termination criteria are met the deal terminates and the remaining expiries are cancelled. The customer buys euros at the final target profit forward rate on the expiry date when the termination criteria are met.
final target profit forward rate	ECB fixing rate – (target profit in HUF per EUR – the sum of the profits and losses realised by the client at earlier expiries in HUF per EUR)
possible scenarios on each expiry date depending on the European Central Bank's EUR/HUF fixing	
ECB fixing rate above 289 EUR/HUF	Your company has a forward buying deal for 100% of the notional amount at a rate of 289 EUR/HUF. If the termination event occurs, the company will have a forward buying deal for 100% of the notional amount, at the final target profit forward rate.
ECB fixing rate below 289 EUR/HUF	Your company has a forward buying deal for 100% of the notional amount at a rate of 289 EUR/HUF.
settlement	gross settlement
transaction cost payable on the trade date	zero
best-case scenario	zero
(treasury transaction on a standalone basis)	Until the target profit amount is reached, the ECB fixing rate is above the target profit forward rate on each expiry date. In this case the company realises only gains before the target profit amount is reached and buys EUR 100 000 at the target profit forward rate at each expiry. After the target profit amount is reached, the deal ceases to exist (on the expiry date when the termination criteria are met, the target profit forward rate may change, see above)
worst-case scenario (treasury transaction on a standalone basis)	The ECB fixing rate is below the target profit forward rate on each expiry date. In this case your company buys EUR 100 000 at the target profit rate at each expiry in a total amount of EUR 1 200 000. The resulting foreign exchange loss can be unlimited.
worst-case scenario (treasury transaction on a standalone basis)	The ECB fixing rate is below the target profit forward rate on each expiry date. In this case your company buys EUR 100 000 at the target profit rate at each expiry in a total amount of EUR 1 200 000. The resulting foreign exchange loss can be unlimited.

the market value of the position two weeks after the trade date from the customer's point of view

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	- 19 559 000
300	144 000
330	1 833 000

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.

ECB fixing on each expiry dates (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	$270 * 100\,000 = 27\,000\,000$	$270 - 289 = -19$ $-19 * 100\,000 = -1\,900\,000$ in total: $12 * -1\,900\,000 = -22\,800\,000$ The deal is live on each expiry date.	$270 - 289 = -19$ $289 * 100\,000 = 28\,900\,000$ The deal is live on each expiry date.
300	$300 * 100\,000 = 30\,000\,000$	$300 - 289 = 11$ $11 * 100\,000 = 1\,100\,000$ $30/11 = 2,72 \Rightarrow$ the deal terminates after 3 expiries	$300 - 289 = 11$ $289 * 100\,000 = 28\,900\,000$ $30/11 = 2,72 \Rightarrow$ the deal terminates after 3 expiries final target profit forward rate: $300 - (30 - 22) = 292$ on the 3. expiry
330	$330 * 100\,000 = 33\,000\,000$	$330 - 289 = 41$ final target profit forward rate: $330 - (30 - 0) = 300$ $30 * 100\,000 = 3\,000\,000$ the deal terminates after the first expiry	$330 - 289 = 41$ final target profit forward rate: $330 - (30 - 0) = 300$ $300 * 100\,000 = 30\,000\,000$ the deal terminates after the first expiry

day	TPF rate	daily fixing price	position's daily value	position's accrued value
1	289	294	5	5
2	289	297	8	13
3	289	293	4	17
4	289	289	0	17
5	289	287	-2	15
6	289	294	5	20
7	289	297	8	28
8	289	299	10	38
9	289			
10	289			
11	289			
12	289			
13	289			

deal terminates for remaining expiries when accrued value is larger than 30

target profit forward:
evolution of the position's value upon reaching the target profit (importer)

day	TPF rate	daily fixing price	position's daily value	position's accrued value
1	289	294	5	5
2	289	297	8	13
3	289	293	4	17
4	289	289	0	17
5	289	287	-2	15
6	289	284	-5	10
7	289	281	-8	2
8	289	277	-12	-10
9	289	271	-18	-28
10	289	274	-15	-43
11	289	273	-16	-59
12	289	269	-20	-79
13	289	267	-22	-101

if target profit is not reached the deal remains open for remaining expiries. The resulting accrued loss may be unlimited!

target profit forward:
evolution of the position's value without reaching the target profit (exporter)

advantages of transaction

- opportunity to obtain an exchange rate lower (more favourable) than the forward rate
- protection against a weakening of the forint until the maximum profit amount is reached
- no cost or separate fee charged
- the notional amount, the number of expiries, the target profit forward rate and the maximum (or target) profit amount 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 final expiry. This may result in profit or loss, depending on the prevailing market conditions.

risks of transaction

- if the ECB fixing is lower than the target profit forward rate at all maturities, the transaction will incur foreign exchange loss at each maturity, i.e. every month for a year. The amount of the foreign exchange loss is, similar to a standard forward, unlimited, whether for one maturity or for all maturities.
- assuming that the ECB fixing rate is below the profit maximised forward rate on all expiries, the following formula can be used to estimate the potential foreign exchange loss:
(target profit forward rate – ECB fixing) * EUR notional amount

example: suppose that the target profit forward rate is at 289.00 EUR/HUF,

notional amount = EUR 1 200 000.

The amount of potential foreign exchange loss with the assumption that the ECB fixing is at 270.00 EUR/HUF at all maturities:

$(270 - 289) * 1\,200\,000 = \text{HUF} - 22\,800\,000$ (monthly: HUF -1 900 000)

The loss actually realised may also be higher or lower than the above value.

- after the maximum profit amount has been reached the transaction will terminate for the remaining expiries
- 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

This product is built up of one single target profit forward deal. The section on target profit forwards of Chapter I/c. entitled "5 Basic Products" of "K&H Treasury Handbook of Market Risk Management" also applies to this product.