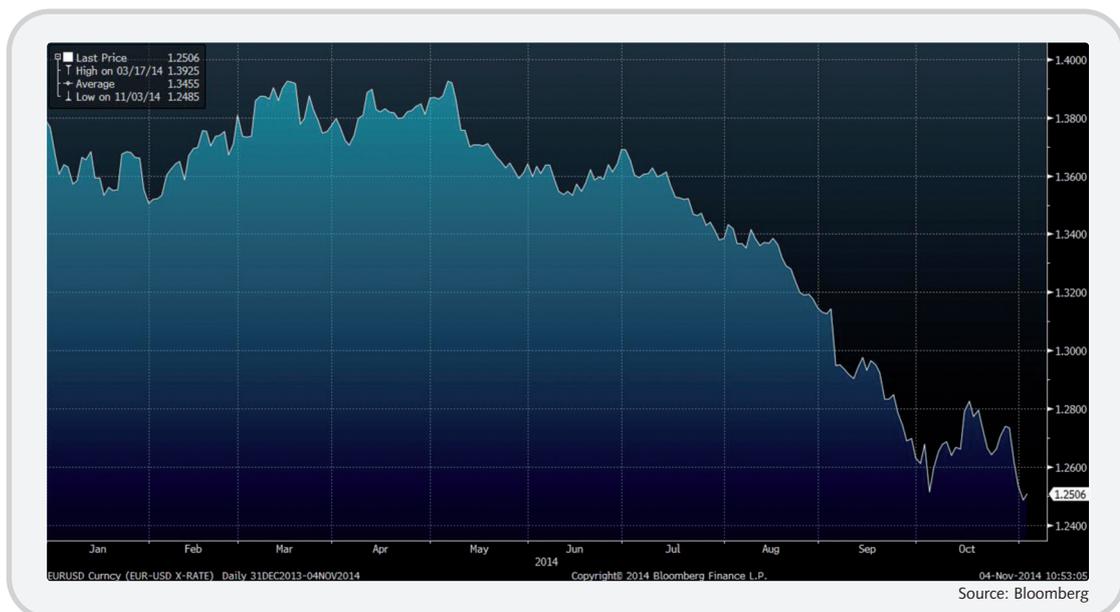


FX derivatives: hedging currency risks of an exporter

Motivation

The treasurer of an industrial manufacturer located in the Eurozone and exporting to the U.S. expects cash inflows in U.S. dollars in March 2015. He wants to hedge against unfavorable exchange rate movements.

Specifically, he is looking to eliminate the potential negative effects resulting from fluctuations of the EUR/USD currency pair – to achieve a firm calculation basis, and especially given his expectation of a rising euro exchange rate against the U.S. dollar. A higher euro (and thus a lower U.S. dollar) would diminish the euro value of the expected USD inflows, compared to the exporter's original calculations.



The treasurer is mainly concerned about the short-term market outlook for the next three to six months, as the USD receivables are due around the middle of March 2015. Ideally, the hedge should not involve any premium payment.

Therefore, the treasurer decides to use Eurex Exchange futures contracts on EUR/USD (product ID FCEU) to establish a hedge against fluctuations in this currency pair. Since he will need to sell U.S. dollars in March, he needs to buy EUR/USD Futures (thus buying euros against selling U.S. dollars at maturity). The March contracts will protect the company through the binding exchange rate agreed upon for the maturity date.

Strategy

The treasurer needs to set up a hedge covering a nominal amount of USD 10 million, using EUR/USD futures contracts to establish the strategy. To lock in a forward exchange rate of 1.2770, he enters into a long futures position:

Purchase: 78 FCEU MAR15 @ 1.2770

At the forward exchange rate of 1.2770, each contract with a nominal value of EUR 100,000 will have a countervalue of USD 127,700, leading to a hedge ratio of 78 contracts ($\text{USD } 10,000,000 / \text{USD } 127,700 = 78.31$).

If the EUR/USD exchange rate increases, the FCEU contracts will offset the losses in value of the receivables paid in USD.

Profit and loss scenarios

The futures contracts will be settled by exchanging EUR against USD, at the final settlement price determined on the last trading day. The change in value of the futures contracts is settled on a daily basis, through variation margin.

Scenario 1: EUR has risen against the USD, to 1.3500

At maturity, the value of the receivables has diminished by EUR 423,446.16 (EUR 7,830,853.56 at a rate of 1.2770 compared to EUR 7,407,407.41 at a rate of 1.3500). At the same time, the futures contracts have generated a profit of USD 7,300 per contract – a total of USD 569,400 or EUR 421,777.78 at the prevailing market level. This profit virtually neutralizes the loss incurred on the underlying exposure.

Scenario 2: EUR/USD has remained almost unchanged, at 1.2750

At maturity, the value of the receivables has increased only marginally, by EUR 12,283.69. Likewise, the futures contracts have only generated a loss of USD 200 per contract – a total of USD 15,600 or EUR 12,235.29 at the prevailing market level. Again, the profit on the underlying exposure is virtually neutralized by the loss incurred on the futures position.

Scenario 3: EUR has depreciated against the USD, to 1.2000

At maturity, the value of the receivables has risen by EUR 502,479.77 (EUR 7,830,853.36 at a rate of 1.2770 compared to EUR 8,333,333.33 at a rate of 1.2000). The futures contracts have incurred a loss of USD 7,700 per contract – a total of USD 600,600 or EUR 500,500 at the prevailing market level. The gain on the receivables is thus eroded by the loss on the futures position.

Economically, the exchange rate of 1.2770 has been locked in, (almost) regardless of the market level at maturity. The minor difference between the changes in value of the underlying exposure and the futures position is due to the fact that the hedge ratio is rounded from 78.31 to 78 contracts.

Key benefits

- Exchange-traded markets provide the highest possible transparency and a level playing field for all market participants. Users always obtain the best available price in the market, without mark-ups, markdowns or other added spreads. This direct market access also means that existing positions can be closed out without having to rely on one particular bank or broker – trades are executed on the market, at the best available price.
- It is also important to note that Eurex Clearing remains the central counterparty to each trade throughout its lifetime – right through to final settlement. This not only effectively removes counterparty credit risk, but also settlement risk.
- Finally, our contracts are designed in line with OTC market conventions and provide you with the best practice solution in a regulated and safe market:
 - A uniform size of 100,000,
 - an attractive term structure (three serial, three quarterly and four semi-annual expirations of up to three years) and
 - a minimum price movement of a half pip.

Margining

The treasurer needs to take into consideration that he needs an account with a Eurex Clearing Member, and has to deposit margin for the futures contracts.

Also, profits and losses on the futures position are settled on a daily basis. The level of margin collateral required is optimized through cross-margining effects against other positions.

Variations

Of course, this strategy is not restricted to the EUR/USD currency pair – Eurex Exchange offers derivatives on a total of six currency pairs (EUR/USD, EUR/CHF, EUR/GBP, GBP/USD, GBP/CHF, USD/CHF).

To prevent opportunity losses (as indicated in scenario 3 above), the treasurer might consider using currency options instead of futures. Using options, he would retain flexibility whether or not to exchange currencies under the derivative contract (but would have to pay an option premium). We will look at this in more detail in one of the next “Trading Corners”.

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Further information

[FX derivatives – overview contract specifications](#)
[FX Futures and Options at Eurex Exchange \(factsheet\)](#)
[FX Futures & Options: FX derivatives at Eurex Exchange \(presentation\)](#)



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