

# Currency Options

Currency options give the investor the right, but not the obligation, to buy or sell a currency at a specific rate (called a strike price) on or before a specific date (called the expiration date). Unlike forward contracts, options don't force the investor to engage in the transaction when the contract's expiration date arrives. However, there's a cost for that flexibility in the form of an upfront fee called a premium.

## **Example of a Currency Option Hedge**

Using our example of the investor buying as Japanese asset, the investor decides to buy 10 million CALL USD/YEN (name of the option), each CALL at a price of \$0,00002 to convert the 10 million yen in six months back into U.S. dollars (one option for each yen). The option contract's strike price or exchange rate is 112.00.

This mean that with one option, the investor will have the right to buy one dollar at the price of 112 yens until the expiration date.

In six months, the following scenarios could play out:

- **Scenario 1:** The USD/JPY exchange rate is trading at 120.00, which is above 112.00. The option's strike is more favorable than the current market rate. The investor would exercise the option, and the yen would be converted to dollars at the strike rate of 112.00. The U.S. dollar equivalent would be credited to the investor's account equaling \$89,286.00 (10 million yen ÷ 112.00).
- **Scenario 2:** The USD/JPY exchange rate is trading at 108.00, which is below 112.00. The prevailing rate is more favorable than the option's strike. The investor could allow the option to expire worthless and convert the yen to dollars at the prevailing rate of 108.00 and benefit from the exchange rate gain. The U.S. dollar equivalent would be credited to the investor's account equaling \$92,593.00 (10 million yen ÷ 108.00).

By buying the option, compared to a forward contract (not to scenario 1) the investor made an additional \$3,307 in scenario #2 since the USD/JPY rate moved favorably. Had the investor bought the forward contract at a rate of 112.00, which was highlighted earlier, the investor would have missed out on a \$3,307 gain (minus the costs of the options).

Because the cost per option was \$0,00002, the missed out will have been exactly  $(\$3307 - (10\ 000\ 000 \times \$0,00002)) = \$3107$ .