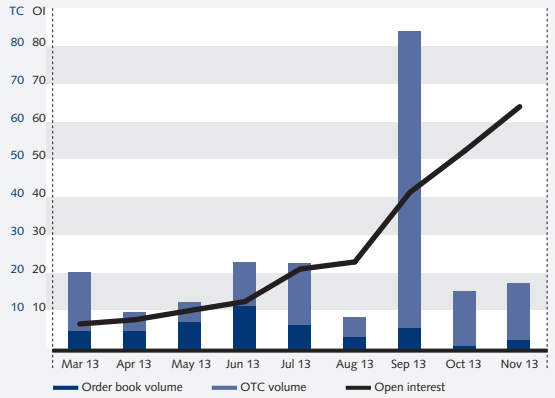
Trading corner

Portfolio hedge using a collar on the MSCI World Index

Fund managers have been using equity index options for many years – be it for pure risk management, yield enhancement, or as a means to adapt their portfolio to their individual market views.

MSCI derivatives at Eurex Exchange –
Traded contracts und open interest in thousands



Exchange-traded futures and options on the family of MSCI indexes are a relatively recent addition to the range of equity index instruments available. Although MSCI options have been traded over the counter for a few years, interest for listed contracts grew over the last 12 to 18 months – not least against the background of recent changes to the regulatory environment and a higher awareness of counterparty risk exposure. Eurex Exchange launched MSCI futures and options in March and extended twice since then.

Liquidity in MSCI contracts grew steadily since launch: A total of 220,000 contracts have been traded and open interest exceeded 70,000 contracts already in December. To some extent, this may reflect the broader index base of the underlying indexes, as well as the lower tracking error compared to "proxy" indexes with less constituents.

Motivation

The manager of a broadly-diversified global equity fund wants to lock in the recent price gains since he does not expect the market to rise much further. In contrast, he fears a setback, should the U.S. Federal Reserve (and other central banks) start to exit their policy of quantitative easing.

He is mainly concerned about the short-term market outlook for the next three to six months, which is why he does not want to sell any securities from his portfolio. Ideally, the hedge should not involve any large premium payment.

Therefore, the fund manager decides to use options on the MSCI World Index to establish a hedge against falling equity prices.

Strategy

The fund manager wants to set up a hedge covering a nominal amount of USD 20 million, using options on the MSCI World Index (Eurex product ID: OMWO) to establish the strategy. He combines a long put and short call position, whereby the premium received on the sold call is used to finance the cost of the put option required to hedge the underlying equities position:

Purchase:	506 P OMWO DEC13 3950 @ USD 15.20	USD 76,912.00*
Sale:	465 C OMWO DEC13 4300 @ USD 17.30	USD 80,445.00
Net premium received:		**USD 3,533.00**

*One MSCI World Index point has a value of USD 10.

Through the put option, the hedged portion of the portfolio is protected against a fall in market prices below an index level of 3,950 – approximately 5.3 percent below the prevailing market index level of 4,170 points. The hedge is financed by giving up the potential for any performance above 4,300 index points – which the fund manager does not expect in the first place.

Note that this strategy may involve basis risk due to diverging performance of the reference index (the MSCI World Index) and the hedged portfolio.

Trade entry

Strategies such as this one can be entered as a single transaction via the **Order Entry** window in the Eurex Trader GUI. Please refer to the Eurex Trader GUI manual.

Profit and loss scenarios

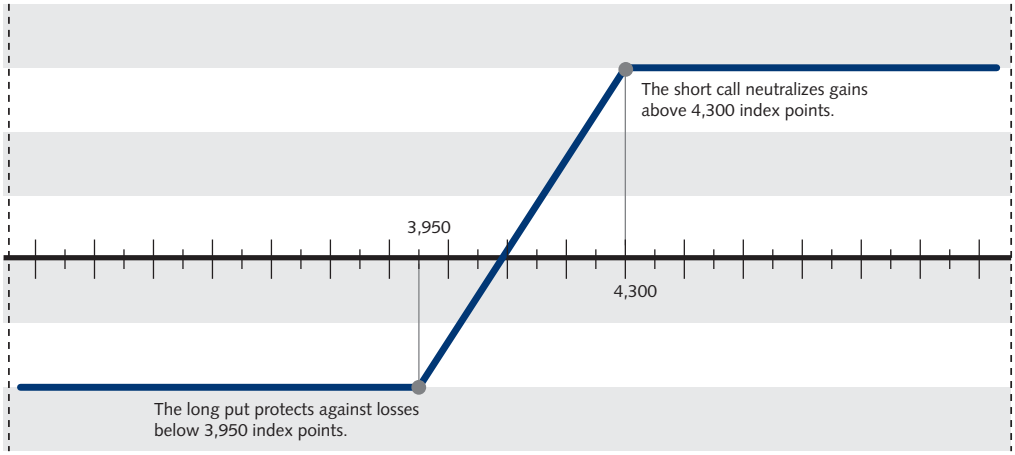
Depending on the market level at options expiration in December, the results look like this:

Scenario 1: The MSCI World Index has fallen to 3,500 points.
The fund manager exercises the put option, to receive a cash settlement of USD 2,277,000.00 ((3,950 – 3,500) × 506 contracts × USD 10), which – together with the net premium received – partially offsets the loss in value on the underlying portfolio (using the index value as a proxy, the portfolio lost approximately USD 3.2 million). Note that the option hedge covers the part of the loss below an index level of 3,950 points, which is roughly equivalent to USD 2.2 million. The sold call option expires worthless.

Szenario 2: The MSCI World Index has risen slightly, to 4,050 points.
Both options expire worthless; the fund manager cashes in the net premium received (USD 3,533).

Scenario 3: The MSCI World Index has risen to 4,500 points.
The sold call option is exercised against the fund manager, who is obliged to pay a cash settlement of USD 930,000 ((4,500 – 4,300) × 465 contracts × USD 10). This payment neutralizes price gains on the portfolio above an index level of 4,300 points (using the index value as a proxy, the portfolio gained USD 1.580.000). The bought put option expires worthless.

Profit/loss profile: Collar hedge strategy using options on the MSCI World Index



▲ Profit/loss
► MSCI World Index at expiration

Variations

Of course, this strategy is not restricted to the MSCI World Index – in principle, it can be applied to any equity index, provided the contracts based on that index have sufficient market liquidity. Eurex Exchange offers a total of ten options on various MSCI Indexes.

Users of this strategy may choose to sell a lower quantity of call options, or sell calls with a higher exercise price, in order to preserve additional upside potential. In this case, the hedge will be more expensive since the premium received on the sold calls will be lower than in our example.

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Further information

MSCI index derivatives – product information
Global offering of MSCI indexes at Eurex Exchange – factsheet
MSCI index derivatives: Suspension of trading and clearing fees

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