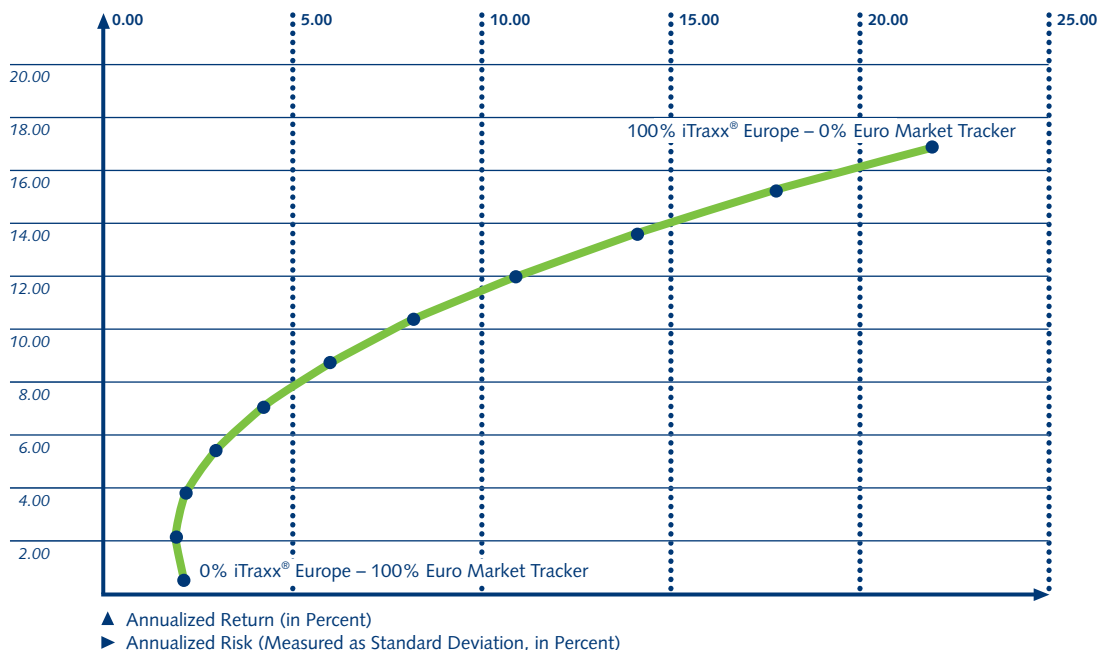


Case Study: Portfolio Overlay Strategy Using Eurex iTraxx® Credit Futures – Introducing More Options in European Fund Management

Eurex's recent launch of the iTraxx® Europe, Crossover and HiVol Index Futures has expanded the exchange's range of products to the credit markets. Combined with Eurex's existing benchmark fixed income futures contracts the new iTraxx® Credit Futures contracts introduce greater opportunities in European fixed income fund management. Byron Baldwin, a member of the Eurex Institutional Investor Sales Team, outlines in the following article how the efficiency of fund management can be increased by using Eurex iTraxx® Credit Futures in portfolio overlay.

The benefit of introducing credit as an asset class within fixed income fund management is underlined in a recent paper by Brian Eales¹. Using data from the September to December 2006 period, Eales looked at the benefits of incorporating credit into a European government bond portfolio. In his study, credit exposure was introduced through the iTraxx® Europe CDS Index, while the Bloomberg/ EFFAS Euro Market 3-5 Year Bond Index was considered as the proxy for a short-term maturity European government bond holding.

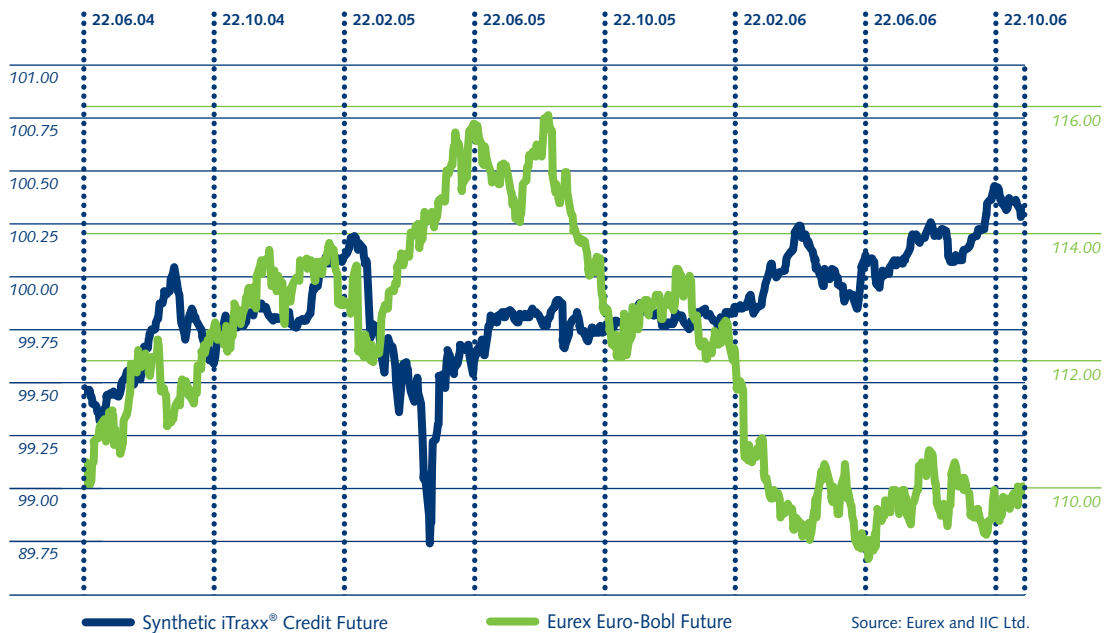
Efficient Frontier: Euro Market Tracker Bloomberg/ EFFAS Euro Market 3-5 Year Bond Index



¹ B. Eales, London Metropolitan University, "The Case for Exchange-based Credit Futures Contracts".

The analysis demonstrated that the inclusion of credit into a bond portfolio reduced risk and increased return. The results showed that a ten percent inclusion of iTraxx[®] reduced risk by 0.19 percent and increased return by 1.63 percent, while a 20 percent holding increased risk by only 0.10 percent but increased return by 3.27 percent. The attraction of augmenting credit within fixed income portfolio management is underlined by the diagram below which looks at the history of a synthetic iTraxx[®] Credit Future and the Eurex Euro-Bobl Future².

Synthetic iTraxx[®] Credit Future and Eurex Euro-Bobl Future



Consider the situation of a European fixed income fund manager who manages a EUR 500 million short maturity European government bond portfolio that has a modified duration of 4.5 years. The fund manager decides to switch 20 percent of the European bond exposure to a European credit exposure using the Eurex Euro-Bobl Futures and iTraxx[®] Europe Credit Futures contracts.

Steps:

1. Calculate Portfolio Basis Point Value (BPV is the price value of an 0.01 change in yield):

$$\begin{aligned} \text{Portfolio BPV} &= \text{Portfolio Modified Duration} \times \text{Portfolio Value} \times 0.0001 \\ &= 4.5 \times \text{EUR } 500 \text{ million} \times 0.0001 \\ &= \text{EUR } 225,000 \end{aligned}$$

2. Calculate the BPV of the Eurex Euro-Bobl Futures contract using the Bloomberg DLV and DUR function:

$$\begin{aligned} \text{BPV of the Eurex Euro-Bobl Futures} &= \text{BPV}_{\text{CTD}} / \text{CF}_{\text{CTD}} \\ \text{BPV}_{\text{CTD}} &= \text{BPV of the cheapest-to-deliver bond (CTD)} \\ \text{CF}_{\text{CTD}} &= \text{conversion factor of the cheapest-to-deliver bond} \end{aligned}$$

² There has also been a study on the relationship between iTraxx[®] CDS Index and equity prices: H. Byström, Lund University, "Credit Default Swaps and Equity Prices: The iTraxx CDS Index Market".

Alternatively, the BPV of a futures contract can be generated very quickly using the Bloomberg FRSK function. For the September 2007 Euro-Bobl Futures contract that is OEU7 <cmdty> FRSK <go> which gives 0.04807 in price terms, 9.614 futures ticks or EUR 48.07 in monetary terms.

3. Calculate the appropriate number of Eurex Euro-Bobl Futures to sell to synthetically reduce the fund managers' European government bond exposure by 20 percent:

$$\text{Number of Euro-Bobl Futures to sell} = (\text{EUR } 225,000 / \text{EUR } 48.07) \times 0.20 = 936$$

4. Calculate the Eurex Euro-Bobl Futures/Eurex iTraxx® Europe Credit Futures ratio:

The BPV of the Euro-Bobl Futures is EUR 48.07 (see second step). The price value of a basis point change in the CDS curve in terms of the iTraxx® Europe Credit Future is EUR 45.25, which can be generated using the Bloomberg FCDS³ screen. Type FEAA <index> FCDS <go> and go to SprdDV01 (there is a small interest rate exposure being long credit futures, but the exposure is minimal, see IR DV01).

Therefore, the ratio is: 1 Eurex Euro-Bobl Futures contract / 1.06 Eurex iTraxx® Credit Futures.

The fund manager sells 936 Eurex Euro-Bobl Futures and buys 992 Eurex iTraxx® Europe Credit Futures to synthetically switch 20 percent of his European bond exposure to a European Credit exposure. By way of this portfolio overlay strategy, the fund manager can quickly switch part of his European bond exposure to a European credit exposure, whilst leaving his existing portfolio intact⁴. When the fund manager feels the out-performance of credit has run its course, he can unwind the short Euro-Bobl/long iTraxx® Europe Credit Futures spread position. The diagram below outlines portfolio overlay using Eurex Euro-Bobl and iTraxx® Credit Futures contracts.

Using iTraxx® Credit Futures in Portfolio Overlay



The Eurex OTC Block Trade Facility (BTF) is extended to iTraxx® Credit Futures and promotes maximum liquidity and trading flexibility for a fund manager initiating portfolio overlay strategies across European credit and bonds. The BTF⁵ allows market participants, trading either for their own account or on behalf of customers, to enter off-exchange transactions in Eurex futures and options contracts and yet still have the transactions cleared by Eurex Clearing AG, the Eurex Clearing House – see below:

³ M. Filippi, Bloomberg, "Eurex CDS Futures in Bloomberg".

⁴ B. Baldwin, "Derivatives: a tool for efficient fund management", Pensions Week, December 2004.

⁵ Detailed information on the Eurex OTC Block Trade Facility on www.eurexchange.com > Trading > Market Model > Wholesale Trading > Block Trades.

Eurex OTC Block Trade Facility

Contract	OTC Block Trade – Minimum Amount of Contracts
iTraxx® Europe Index Futures	2,500
iTraxx® HiVol Index Futures	1,500
iTraxx® Crossover-Index Futures	1,000
Euro-Schatz Futures	4,000
Euro-Bobl Futures	3,000
Euro-Bund Futures	2,000
Euro-Buxl® Futures	500

Conclusion

Using derivatives in portfolio overlay increases the efficiency of fund management by allowing fund managers to quickly move from one asset class to another without disrupting the underlying portfolio. The recent launch of the Eurex iTraxx® Credit Futures contracts introduces a new asset class for this strategy. The iTraxx® Credit Futures contracts offer fund managers a *highly-leveraged* (0.29 percent of underlying margin required for iTraxx® Europe Index Futures; 0.55 percent for iTraxx® HiVol Index Futures and 2.0 percent for iTraxx® Crossover Index Futures) and *cheap* (exchange fees of EUR 0.40 per EUR 100,000) access to credit market “beta”.^{6,7}

Additional articles and academic studies on select topics are available on www.eurexchange.com > Documents > Publications > Selection by Type > Academic Study.

⁶ B. Baldwin: „Successful portable alpha investing with exchange traded derivatives”, Pensions Week, December 2005.

⁷ Eurex: „Complete Your Picture in Fixed Income Fund Management”



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