

MANAGING BOND PORTFOLIO RISK EXPOSURE

Fast Facts

What is it?

Euro Swapnote[®] is an on-exchange futures contract referenced to the European interbank curve.

Who is it for?

Euro Swapnote[®] futures are for anyone who wishes to gain or hedge exposure to the European interest rate swaps curve via a centrally cleared contract.

What does it provide?

Euro Swapnote[®] provides an open and efficient means of gaining euro swap market exposure in a contract that already meets new regulatory requirements.

Swapnote[®] futures contracts fundamentally represent the value of a series of future cashflows. Consequently, Swapnote[®] futures have an implied duration and yield risk.

Portfolio managers can therefore use Swapnote[®] futures to manage the overall duration and yield risk of their bond portfolios by adding long or short Swapnote[®] futures positions to their portfolio.

For example, a €25.00m nominal value bond portfolio has a market value of €39,278,750 and a modified duration of 7.0. The portfolio manager believes that long term interest rates are going to experience heightened volatility and wishes to reduce the duration of her portfolio until markets stabilise. The portfolio manager wishes to target a modified duration of 3.5.

Scenario 1 — Buy Two Year Euro Swapnote[®] futures:

- Portfolio nominal value: €25.00m
- Portfolio market value: €39.28m
- Portfolio duration: 7.01

- 2 year € Swapnote[®] price: 110.105
- 2 year € Swapnote[®] implied spot modified duration: 2.17
- 2 year € Swapnote[®] nominal market value €110,105

Here, the Swapnote[®] nominal market value =
Swapnote[®] price x Tick Value / Tick Size

The number of Swapnote[®] futures to buy or sell to adjust the modified duration of the portfolio is calculated as follows:

$$\text{Average duration} = \frac{(\text{Portfolio value} \times \text{Portfolio duration}) + (\text{Lots} \times \text{Swapnote}^{\text{®}} \text{ nominal market value} \times \text{Swapnote}^{\text{®}} \text{ duration})}{\text{Portfolio value} + (\text{Lots} \times \text{Swapnote}^{\text{®}} \text{ nominal market value})}$$

Re-arranging to give:

$$\text{Lots} = \frac{\text{Portfolio value} \times (\text{Portfolio duration} - \text{Average duration})}{\text{Swapnote}^{\circledR} \text{ nominal market value} \times (\text{Average duration} - \text{Swapnote}^{\circledR} \text{ duration})}$$

$$\text{Lots} = (39,278,750 \times (7.01 - 3.50)) / (110,105 \times (3.50 - 2.17)) = 941.01$$

Therefore the net portfolio duration can be adjusted to the target value by purchasing 941 2 Year € Swapnote[®] futures.

Scenario 2 — Sell Five Year Euro Swapnote[®] futures:

This process could equally have been carried out by selling 5 Year € Swapnote[®] futures.

- 5 year € Swapnote[®] price: 122.07
- 5 year € Swapnote[®] implied spot modified duration: 4.70
- 5 year € Swapnote[®] nominal market value: €122,070

$$\text{Lots} = (39,278,750 \times (7.01 - 3.50)) / (122,070 \times (3.50 - 4.70)) = -939.59$$

Therefore the net portfolio duration can be adjusted to the target value by selling 940 5 Year € Swapnote[®] futures.

Further Information

Interest Rate Derivatives

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