Analysing the Swiss Re Kortis Bond: Update using data to 2013

Andrew Hunt and David Blake

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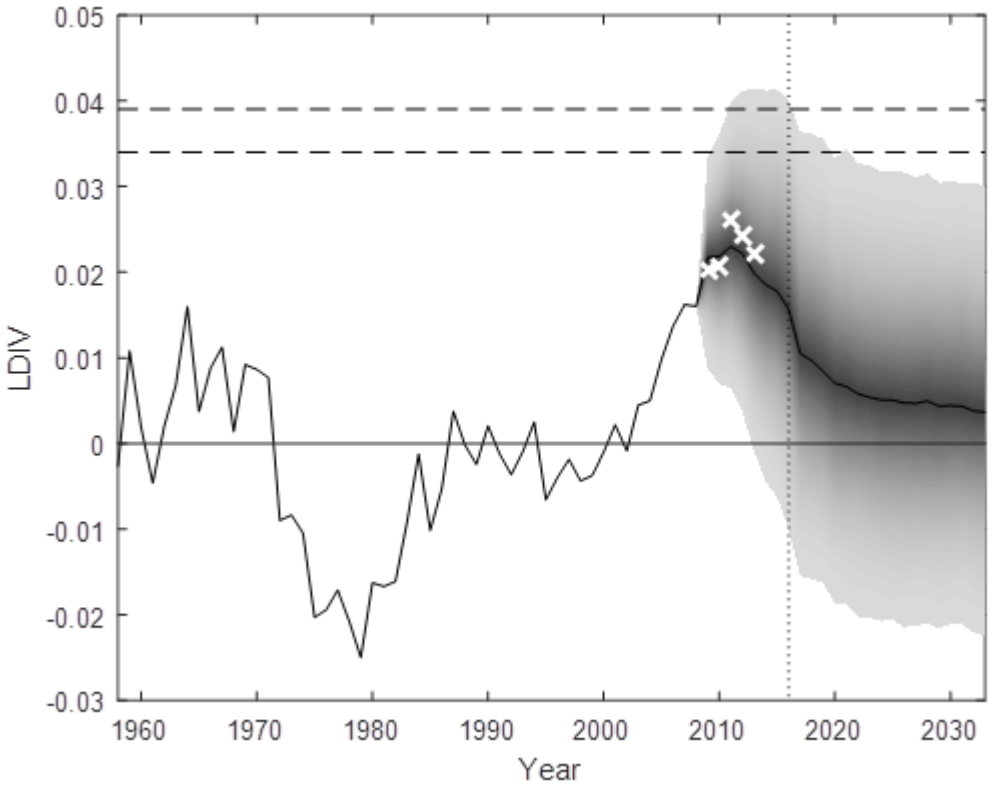
The Kortis bond was the first longevity trend bond, issued by Swiss Re in 2010 and designed to hedge the extreme basis risk of mortality rates decreasing far more rapidly in England & Wales compared with the USA. In "Modelling longevity bonds: Analysing the Swiss Re Kortis Bond", we were the first to analyse the bond by developing suitable modelling approaches and discussing many of its design features.

The analysis in that study used data to 2008 to reflect the information available when the bond was issued in 2010. However, new data to 2013 has subsequently become available for England & Wales and the USA from the Human Mortality Database. The graph below updates Figure 8 in our study to show the observed values of the index the Kortis bond is linked to for the period 2009 to 2013 (as white crosses), compared with what our model predicted based on data to 2008 (the grey fan chart).



The first thing we see is that the observed index values lie close to the centre of our fan chart. This supports our modelling approach, especially because our approach predicts the observed peak of the index in 2011. Since this peak is caused by the sensitivity of the Kortis bond to cohort effects in the data, as discussed in our study, these findings underline the importance of using sophisticated techniques to detect and model these effects. Simple models, however, often have difficulty detecting cohort effects robustly, or omit them entirely, and so are not able to accurately forecast the index for the Kortis bond.

The second thing to note is that the observed index values do not approach the point of attachment for the bond at 3.4%, let alone the point of exhaustion at 3.9%. The final redemption payoff of the Kortis bond will depend on the index value in 2016 (data for which will only be available in 2018 or later), and so we can fairly confidently predict that the Kortis bond will be redeemed at par.

Should the bond be redeemed at par, its investors will have received a return of LIBOR plus 5% p.a., assuming they held it from inception, which is particularly attractive in the current low interest rate environment. We therefore hope that these findings encourage demand for longevity-linked securities such as the Kortis bond and help further the development of a widely traded market in longevity risk.

Ref:

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