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SOA RESEARCH IN PROGRESS: INTEREST RATE SWAPS EXPOSED

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The SOA's Research Department coordinates a broad range of useful analysis and exploration of topics relevant for investment actuaries. Check it out at <http://www.soa.org/content.aspx?id=3429>. One project in the works explores the inherent risk in interest rate swaps. This work will be completed in 2012, so watch for it! The contact for the project oversight group is Steven Siegel (ssiegel@soa.org) at the Society of Actuaries.

The project abstract runs as follows:

Vanilla interest rate (IR) swaps may be viewed as very simple interest rate derivatives, but the implications of entering into such contracts may not be so readily apparent. Specifically, investment managers and asset/liability managers in the insurance industry are often presented with such contracts from investment banks as hedging solutions; however, the potential downside of such deals is not

always clarified in the corresponding proposals. In this article, we will take a look at plain-vanilla IR swaps under various interest rate regimes and analyze the potential exposure to losses on such swaps as a result of the swaps being used for speculative purposes, or upon counterparty default. We also discuss some issues surrounding the use of IR swaps in hedging. To perform this analysis we use stochastic yield-curve simulation via the Black-Karasinski model. Significant time is spent discussing both the theory and implementation of such stochastic IR scenario generators. The potential exposure to counterparty default will be explored by calculating both the concepts of expected future exposure (EFE) and potential future exposure (PFE). Further, similar stochastic techniques will be used to illustrate the exposure upon using such swaps for speculative purposes, as in the notorious cases of Proctor & Gamble, and the Alabama public schools. ☀

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