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*Valuation of Equity-Linked Products in the Presence of Policyholder Surrender Using Risk Measures*

Throughout the past couple of decades, the surge in the sale of equity-linked products has led to many discussions on the valuation of surrender options embedded in these products. However, most studies treat such options as American/Bermudian style options. In this presentation, a different approach is presented where only a portion of the policyholders react optimally, due to the belief that not all policyholders are rational. Through this method, a probability of surrender is found and the product is partially hedged by iteratively reducing the measure of risk to a non-positive value. To demonstrate this, the initial value of the partial hedge for an equity-linked product is found under a bivariate equity/interest model with a copula based dependence structure. A numerical example is presented in order to demonstrate some of the dynamics of this valuation method.

This is joint work with Mehran Moghtadai, MSc.