Static hedging strategies for Guaranteed Minimum Income Benefits (GMIBs)

Claymore Marshall*

With a deferred variable annuity the policyholder pays an upfront premium to the insurance company, which is then invested in the financial markets for many years (the accumulation phase) until the policyholder decides to convert their investment (often at retirement age) into a stream of variable annuity payments. A Guaranteed Minimum Income Benefit (GMIB) is an option that may be included at inception of a deferred variable annuity contract which, in exchange for small fees charged by the insurer during the accumulation phase, gives the policyholder a right to receive a guaranteed minimum level of annuity payments upon annuitization. A GMIB is an attractive option because it protects the policyholder's investment against poor market performance during the accumulation phase.

This research investigates the effectiveness of simple static hedging strategies for a variable annuity with a GMIB. One approach we explore involves using portfolio optimization techniques to minimize the difference between the GMIB payoff and the hedging portfolio payoff. This talk will present the results from implementing these strategies.

*Ph.D. Candidate, University of Waterloo, Canada, cj2marsh@uwaterloo.ca This is joint work with my Ph.D. supervisors Mary Hardy and David Saunders.