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Fixed Index Annuity Return and Risk Analysis with an Enhanced Model

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- This paper examines the risk and return of fixed index annuity (FIA) with an enhanced model framework which takes into account correlations among market variables and a changing participation rate fluctuating with the market moves.

- The FIA business model is discussed to explain the participation rate model.

- Sensitivity analysis of FIA returns is performed for key model assumptions.

- The risk and return profile of the mix (30/70, 40/60, 50/50, 100/0) of the S&P 500 Index and the 1-year Treasury bills is compared with that of the FIAs.

- This study focuses on 2 hypothetical contracts: (10-year) annual reset Point-to-Point (PTP) and Monthly-Averaging (MA) contracts with participation rate but no cap or yield spread.

- PTPs outperformed MAs. They together outperformed the mixes of stock/treasury with comparable risk. Simulated stock index shows higher returns than FIAs most of the time, but FIAs has much less volatilities and much lower tail risk.