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Features

Lower Statutory Valuation Interest Rates for Life Insurance

by Brian Sprawka

Thanks to lower interest rates in the past year, the maximum statutory valuation rate for long duration life insurance products issued in 2006 will be 4.0 percent, marking the first change in 11 years. The reduction in the statutory valuation interest rate also causes the maximum nonforfeiture interest rate to decrease from 5.75 to 5.00 percent. However, there is a one-year grace period before nonforfeiture interest rate changes are mandatory. This article provides background information on the calculation of the interest rates and a brief discussion on the effect that changing interest rates will have on some typical life insurance products.

Explanation of Interest Rate Calculations

Maximum statutory valuation interest rates depend on the values of "reference interest rates." The "reference rate" for the long duration life insurance rate for 2006 is the minimum of the 12-month and 36-month arithmetic mean of the Moody's Corporate Bond Yield Average (MCBYA) for the period ending June 2005. The current 12-month average of the MCBYA is 5.78 percent and the 36-month average is 6.25 percent. The final "reference rate" is adjusted through a formula (which varies by product guarantee) and is rounded to the nearest multiple of 0.25 percent.

Life insurance rates only change if the newly calculated rate is at least 0.50 percent different from the previous year's rate. This requirement will make it difficult for the long duration life insurance rate to change again in the near future. For example, the long duration life insurance valuation rate will not change again in 2007 as long as the average MCBYA from July 2005 to June 2006 is between 4.78 percent and 8.74 percent. Changes in the statutory valuation interest rate also affect the nonforfeiture interest rate because the nonforfeiture rate is equal 125 percent of the valuation interest rate rounded to the nearest multiple of 0.25 percent.

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Effects on Typical Life Insurance Products

In general, lowering interest rates cause reserves, cash values and deficiency reserves to increase, which in turn lowers profitability when measured by return on investment. While the precise effects depend on the product type and the specific design features, we can generalize about the effects on a typical design for three standard life insurance products: term, whole life and universal life.

For a typical term product, the valuation interest rate change will only result in a minimal increase in basic reserves. The effect on deficiency reserves could be more pronounced because the lower interest rate results in higher valuation net premiums and the existing premium deficiencies are discounted at the lower rate. For typical whole life products, the reserves and nonforfeiture values could increase significantly.

The impact on universal life varies significantly depending on the design of the product. For products with secondary guarantees, stipulated level premium designs have the highest deficiency reserves and are therefore the most affected while the impact on shadow fund and ART designs may be less pronounced. For cash accumulation universal life products with surrender charges, a 4 percent maximum valuation rate may increase the alternative minimum reserves.

The increases in reserves and cash values may incent companies to develop new products if profits are affected too adversely. Furthermore, companies may

Product Development Section Sponsored Research

by Ronora Stryker

Two new exciting research projects are currently underway to help meet the educational needs of product development actuaries. The first project examines the various product guarantees available in today's individual life insurance and annuity markets. In addition to the familiar mortality, expense and interest rate guarantees, new features have emerged such as no lapse/secondary guarantees included in universal life products and guaranteed minimum death benefits found in variable annuity contracts. Understanding these new features and their associated risks is important for product developers and the risk managers with whom they work.

The project, "Analysis of Product Guarantees," identifies the life insurance and annuity product guarantee features currently being sold and provides solutions to the following questions:

- What methods do product development actuaries use to analyze and quantify these various product designs?
- What are the insurance company risks associated with each of the product guarantee features?
- How are these risks being managed?
- How does each product guarantee feature impact policyholder behavior?

The Product Development Section has contracted with Victoria Pickering and John Glynn of Carstens, Glynn, and Pickering to perform the research. In addition to an extensive literature search, they surveyed individual life insurance and annuity companies to understand the pricing techniques and risk management practices utilized by the industry. They have compiled the results of their research and are finalizing a report expected to be available this summer on the SOA Web site.

As a result of a growing interest in offering annuities on an underwritten basis, the second project, "Substandard Annuities," evaluates the current substandard annuity market and assesses the likelihood of market expansion. Other issues to be researched include, but are not limited to:

- Examining the risks and pricing implications related to offering substandard annuities.
- Identifying implications of an expanding substandard annuity market to current substandard annuity risk management and reserving methods and standards.
- Analyzing substandard annuity underwriting practices and comparing the substandard annuity practices to that of traditional life insurance.
- Identifying possible arbitrage opportunities between substandard annuities and life insurance.

Work is scheduled to begin soon with LIMRA International and Ernst & Young carrying out the research.

For more information on these projects, please contact Ronora Stryker, SOA Research Actuary, at *rstryker@soa.org*. ☐

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need to redraft product forms if the cash values change when the nonforfeiture rate decrease becomes mandatory. It is important that companies proactively attend to these issues and the other effects of decreasing statutory valuation and nonforfeiture rates. ☐