



SOCIETY OF ACTUARIES

Article from:

# Product Development News

April 2003 – Issue 55

# GMIB and the Bear Market

by Eric J. Carlson

**T**he bear market of the last three years has had a substantial impact on variable annuities. Consumer focus has shifted from accumulation of wealth to guarantees and protection. The guaranteed minimum income benefit (GMIB) is a product feature that provides protection to the consumer and has become both popular and controversial.

GMIB is a feature that guarantees a minimum stream of income regardless of the performance of the underlying subaccounts. In addition to the contract value, a separate GMIB value is tracked. In a “traditional”



GMIB, this value is generally equal to purchase payments. In an “enhanced” GMIB, this value typically increases through an

annual roll up at a set percentage (usually 5 percent or 6 percent), or it is set to the maximum anniversary value, or the greater of the two. The charge for an enhanced GMIB typically has been 30 to 40 basis points. This charge can be assessed against either the GMIB value or the contract value.

A direct cost, or economic cost, of a GMIB is incurred when the present value of the payout under the GMIB is greater than the contract value, and the policyholder elects the income benefit. This economic cost will vary depending on the utilization rate (the percentage of people who annuitize using their GMIB value). Since GMIB payments are made at the guaranteed payout rate, the utilization rate also varies based on the difference between the current payout rate and the guaranteed payout rate.

Recent changes in capital requirements have had a dramatic impact on the cost and availability of GMIBs. When GMIBs first came out, there was no specific capital requirement other than for regular separate account assets. Capital was held at a fixed rate of about 50 basis points of account value. As GMIBs became more popular, it was recognized that this may not be sufficient. More importantly, holding a fixed percentage of account value meant that capital requirements decreased as account value decreased, which is when the risk is increasing. This is exactly the opposite of the protection capital is supposed to provide. As a result, a C3 working group was established that created interim rules for GMIB capital requirements. The interim rules required 1 percent of account value if the GMIB was out of the money and 2 percent of account value if it was in the money. This better recognized

the risks in the product overall, but it did not look at individual product features and risks.

A C3 phase II working group has proposed GMIB capital requirement changes to go into effect for all inforce products. This proposal is expected to be adopted soon. Companies would be required to do a stochastic projection using a combination of product assumptions and required assumptions. The required reserve plus capital is equal to the 90th conditional tail expectation (CTE). The 90th CTE is an average of the accumulated capital loss for the worst 10 percent of scenarios. What it means is that, at issue, if there is no hedging, the capital requirement for annuities with GMIB could be as large as 8 percent to 12 percent of account value—a very dramatic increase in required capital!

The new requirements from C3 phase II take into account the time to availability of the GMIB and also the difference between the GMIB value and the account value. If the account value has decreased, the required capital will increase on an absolute basis. An interesting capital result occurs if a company invests its capital in equities rather than bonds. If the overall market decreases, such as in the bear market of the past few years, obviously both the account value and the value of that capital will decrease. However, the total required capital will increase. So a company must not only contribute more capital due to the decrease in account value, it must also contribute more capital to replace the decrease in value of the previously held capital.

The corresponding marketplace response to the expected changes in required capital has been predictable. Nearly every company that issues GMIB has made changes in its portfolio. The typical cost now is closer to 70 to 80 basis points. Ironically, increasing the cost does not always reduce capital needs. Since a company must average the required capital over the worst 10 percent of scenarios, and the bad scenarios occur in a down

market, a cost increase aggravates the decline in account value, which increases the required capital. Also, companies are changing the GMIB structure. These changes include lower annual roll up amounts, caps on the available increase, longer deferral periods and others. Many companies have made changes to both the cost and the benefit structure. Some companies have even stopped selling the benefit.

Since GMIBs have been available only since the mid-1990s, the typical required deferral period has not elapsed, so there is no industry experience on the utilization of this benefit. With a traditional annuity, consumers have rarely annuitized. With GMIB, there can be an economic advantage to the consumer to annuitize their benefit, and it is expected that, when in the money, more consumers will choose to annuitize. However, the industry may find that although it is in consumer's best interest from an economic viewpoint, consumers may still not annuitize their contract.

The world of GMIB has changed. In the past few years, variable annuities with GMIB have been extremely popular. This benefit gives the consumer desired protection from a bear market plus the opportunity for growth potential. However, annuitization is required in order to receive a benefit under the GMIB, which consumers have not done historically. With the higher costs and lower benefits due to increased capital requirements, will GMIB continue to be a popular product feature? Stay tuned—only time will tell. □

---

*Eric J. Carlson, FSA,  
MAAA, is an actuary with  
Allianz Life Insurance  
Company of North  
America in Minneapolis,  
Minn. He can be reached  
at [eric\\_carlson@allianzlife.com](mailto:eric_carlson@allianzlife.com).*