



SOCIETY OF ACTUARIES

Article from:

# The Financial Reporter

September 2001 – Issue 47



# THE FINANCIAL REPORTER

NEWSLETTER OF THE LIFE INSURANCE COMPANY FINANCIAL REPORTING SECTION

NUMBER 47

SEPTEMBER 2001

## Letter from the Editor

by Thomas Nace

This is a busy time of year for our Section! By the time you receive this, the election results for the Society Board of Governors, as well as for the Financial Reporting Section Council should be known. Congrats to all the newly-elected! Thanks to the others who were willing to contribute their time and energy to making our profession better. From that viewpoint, you are all winners.

In addition, there are two Society meetings quickly approaching — the Valuation Actuary Symposium, which will be held in Boston on September 13–14, and the Annual Meeting in New Orleans on October 22–24. In this issue, we preview the latter with two articles. One summarizes the various financial reporting sessions offered and the second describes special financial reporting events scheduled for that meeting.

The Annual Meeting also marks the changing of the guard for the office of Section Chairperson. Our current Chair, Mike Eckman, will relinquish his responsibilities to Barry Shemin, our new Chair. A big round of applause is in order for Mike for a job well done. It has been a pleasure working with Mike on the newsletter and I know all of the members on the Council are grateful for his leadership over the past year.

At the same time, let's congratulate Barry on his new assignment and provide him with all of our support in the coming year to insure that he will have a successful term.

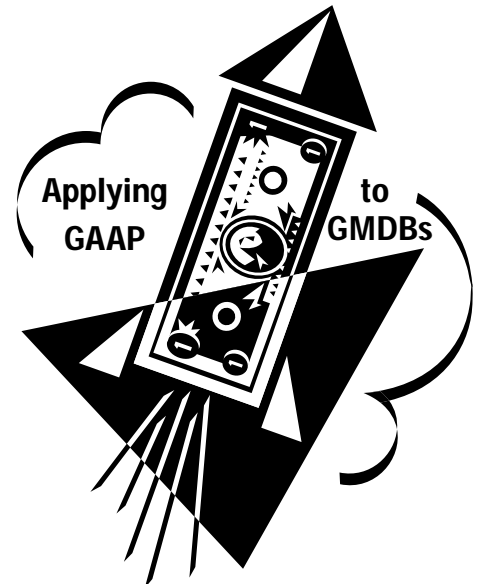
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## Applying GAAP to GMDBs

by Karen Sasveld and David Heavilin

Variable annuities (VAs) are currently one of the hottest products on the market with sales of \$137.5 billion in 2000, up from \$122.9 billion in 1999. The popularity of these contracts has been further boosted by various guarantees that are designed to protect the value of certain benefits provided under the contract. The most common of these is the Guaranteed Minimum Death Benefit (GMDB), which uses one of a variety of mechanisms to enhance the value of the death benefit in the event of weak market performance.

Unfortunately, GAAP guidance has not quite kept pace with the development of these new features. While guidance for statutory reserves is now available in the form of Actuarial Guideline 34, actuaries continue to search existing GAAP guidance for a valid reserving methodology for GMDBs. The issue of reserving for these guarantees is particularly



important because of the disappointing performance in equity markets in 2000. At the end of 2000, the Dow Jones Industrial Average and S&P 500 lost 5% and 9% of their beginning of year values, respectively; the NASDAQ lost a whopping 40% of its year-end 1999 value. As a result, there is the potential for much larger payouts under GMDBs than at any previous time.

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There is great variety among GMDB features currently offered in the VA market. The most typical guarantees are:

1. *Return of premium* – Although this is generally the most conservative option offered, guaranteeing only a return of premiums paid, the insurer is still exposed to some risk as the potential for negative returns in the stock market means that some portion of the premium paid may be lost over time, thereby requiring the insurer to pay out the amount of lost premiums upon death.
2. *Roll-up* – This guarantee pays the premium accumulated at a stated interest rate (usually 3 to 5%) at the time of

4. *Lookback* – This guarantee pays the highest death benefit achieved at any time during the contract period.

These GMDBs are essentially options that are offered by the insurer to the contract holder. As such, we can use terminology that is normally associated with financial options to describe the status of GMDBs. An option is “in the money” if the benefit currently has intrinsic worth to the contract holder, meaning that if the contract holder were to die immediately (thereby exercising the option), an amount in excess of the account value would be paid. An option is “out of the money” if it has no current value upon exercise, but may become valuable in the future.

### Addressing the Risks

There are several potential methods for dealing with the risks inherent in GMDBs, such as hedges, reinsurance or

upon or highly correlated with a single factor — the performance of the U.S. equity market.

This last issue is tied to another complicating factor in the reserving for GMDBs. If a stock market downturn causes one contract’s guarantee to be in the money, it will likely have the same effect on all other contracts issued around the same period and invested in similar funds, thus exacerbating the impact of the downturn. The resulting risk profile is a “cliff-type” profile; insurers who issue GMDBs earn good returns under the large majority of stock market scenarios but can face severe losses under a small number of extreme scenarios.

### Existing Guidance

In looking to existing GAAP literature for guidance on the treatment of GMDBs, it seems reasonable to turn to SFAS 97. However, we begin by reviewing the statutory guidance presented in Actuarial Guideline 34. While this guidance is not applicable to the reporting of GAAP reserves, it offers a useful backdrop against which to review the available GAAP guidance.

#### *Actuarial Guideline 34: Variable Annuity Minimum Guaranteed Death Benefit Reserves*

The need for reserving guidance on the statutory side was clearly addressed by the introduction of Actuarial Guideline 34, which became effective in most states at the end of 1999. The guideline specifically requires that VAs with GMDBs be valued by assuming a specified drop in the value of the assets supporting the contract, followed by a recovery at a specified return rate. The immediate drops and assumed returns vary across 5 asset categories. The guideline also provides a mortality table to be used in the calculation and clearly describes the mechanics of the calculation.

#### *SFAS 97: Accounting by Insurance Companies for Certain Long-Duration Contracts & Realized Gains & Losses on Investment Sales*

SFAS 97 makes an important distinction between insurance and investment

*“Finally, the risks inherent in GMDBs are rarely diversifiable because the risks insured under the benefit are either dependent upon or highly correlated with a single factor — the performance of the U.S. equity market.”*

death. The risks under this type of guarantee are similar in type to those inherent in the basic return of premium, although the degree of risk is greater.

3. *Ratchet* – At regular intervals, the death benefit is ratcheted up to reflect the gains in that period. Under this approach, the death benefit can never decrease from its prior level. Thus, a period of high returns followed by low returns may result in an annuity with a death benefit greatly in excess of the accompanying fund value.

diversification. However, upon closer inspection, each presents certain difficulties. Although it is technically possible to hedge the GMDB risk, hedges are complicated by the fact that exercise of the option is involuntary and depends upon the death of an annuitant.

Additionally, if a hedge is used, frequent rebalancing is required, which may make the hedge prohibitively expensive. Fewer reinsurers are entering the market because of these difficulties, so it may be hard to find reinsurance for these benefits. Finally, the risks inherent in GMDBs are rarely diversifiable because the risks insured under the benefit are either dependent

## Applying GAAP to GMDBs

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contracts. Under the terms of this statement, investment contracts are those that do not incorporate significant insurance risk. Insurance contracts may be of two types. Limited-pay contracts have fixed and guaranteed terms and a premium-paying period that is less than the period over which benefits are provided. Universal life-type contracts are long-duration contracts with terms that are not fixed and guaranteed.

If a VA is deemed to have significant mortality risk, it would generally qualify as a universal life-type insurance contract under SFAS 97. Under paragraph 17 of the statement, the liability for this type of contract consists of four parts:

- i. The balance that accrues to the benefit of policyholders (i.e. the account value);
- ii. Any amounts that have been assessed to compensate the insurer for services to be performed over future periods;
- iii. Any amounts previously assessed against policyholders that are refundable on termination of the contract; and
- iv. Any probably loss (premium deficiency) as described in SFAS 60.

If the cost of the GMDB is assessed as a percentage of account value each period and if the benefit is not currently in the money, then the cost might reasonably be judged to be an amount assessed to compensate the insurer for services (i.e. payment of the excess death benefit) to be performed in future periods. Alternatively, the GMDB could be interpreted as a premium deficiency. As defined in SFAS 60, a premium deficiency exists if existing liabilities and the present value of future gross premiums

are insufficient to cover the present value of future benefits and to recover unamortized acquisition costs. The premium deficiency is recognized either by reducing unamortized acquisition costs or by increasing the policy liability.

### *Upcoming Guidance from the Task Force on Nontraditional Long-Duration Contracts*

The Non-Traditional Long-Duration Contracts Task Force is currently addressing the issue of reserving for GMDBs on VAs. Initial indications suggest that the Task Force will uphold the split between investment contracts and insurance contracts as defined under SFAS 97; further, they may specify a test to determine the significance of mortality risk as measured by a comparison of the present value of expected benefits under the GMDB versus the present value of revenue on the contract. Insurers may be required to measure these present values over a wide range of scenarios. If, based on this test, the contract is judged to be an investment contract, it is likely that no additional reserve will be required or permitted, except for reserves related to incurred mortality events.

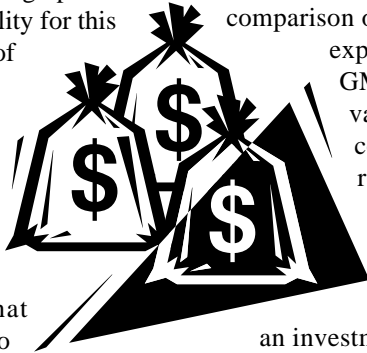
However, if it is judged to be an insurance contract, it is likely that an additional reserve will be calculated consistent with SFAS 97. The reserve would most likely be calculated under sections 17(b) and 17(d) of SFAS 97 (as defined in SFAS 60). The rationale for the additional reserve is that, to the extent amounts assessed exceed an amount proportional to the net amount at risk, a reserve should be held to recognize the portion of such assessments used to fund future benefits.

The recommendation of the Task Force, as outlined here, is tentative. This recommendation must be approved for exposure by AcSEC and the FASB, comments must be received and evaluated, and final guidance must be adopted by AcSEC and cleared by the FASB.

## Current Practice

Insurers are currently using a wide variety of methods for determining what, if any, reserve to hold for GMDBs. Methods currently used in the industry include, but are not limited to:

1. *Zero reserve* – This method has the advantage of simplicity, and it seems to be consistent with existing guidance. However, based on early indications, it is most likely inconsistent with the guidance that will be proposed by the Task Force for those benefits that are in the money.
2. *GAAP = statutory* – Another method is to simply hold a GAAP reserve equal to the statutory reserve for the same contract. Unfortunately, this approach is not consistent with either the existing guidance or the Task Force's expected proposal. Further, the resulting reserve bears no relationship to the economic reality of the risk to which the insurer is exposed.
3. *N-year term reserve* – For benefits that are in the money, it may be reasonable to hold an n-year term reserve, where n may be one year or a longer period. For out-of-the-money benefits, no reserve is held. While this method seems to comply with current GAAP guidance, it is inconsistent with the expected Task Force guidance.
4. *AG34-type reserve with GAAP assumptions* – This approach has the advantage of incorporating a mechanism already in use. The replacement of statutory assumptions with GAAP assumptions removes some of the conservatism inherent in the mortality table required for AG34. However, while the immediate drop and recovery specified in the guideline is useful as a means of defining statutory reserves, it is probably not a best estimate of what will occur in the future, as required for GAAP assumptions by SFAS 97. Indeed, the AG34-style approach is probably too rigid and conservative for suitable application in a GAAP context.



5. *Accumulated historical GMDB charges* – This approach seems to be consistent with paragraph 17(b) of SFAS 97, which requires the insurer to accrue those amounts assessed against policyholders for services to be provided in the future. However, the method does not include any explicit mechanism for release of the reserve over time. Overall, though, the approach may be useful as a stopgap until the Task Force releases their guidance. It is simple to implement and is a reasonable proxy for the economic cost of the benefit.
6. *Canadian approach with some modifications* – The Canadian approach is a stochastic multi-scenario method. Future product benefits are modeled and reserves are held at the 75 CTE (“curtate tail expectation”)

Under this approach, for out-of-the-money GMDBs, the insurer would hold no additional reserve and would simply make a disclosure of the potential risk. However, once the benefit becomes in the money, it would be reasonable to hold a reserve consistent with the guidance under SFAS 97, perhaps in the form of a one-year term reserve. The approach is consistent with existing guidance, but it is unlikely to be consistent with the upcoming guidance released by the Task Force. Further, this approach may increase the volatility of the reported earnings as the benefit moves from being in the money to out of the money and vice versa. Finally, the reserve calculated under this method does not reflect the economic reality of the risk to which the insurer is exposed.

the economic impact of the guarantee on the company’s financial statements better than any other approach discussed thus far. Further, it gives management an improved understanding of the risk at hand. The method has several disadvantages as well. It is definitely more complex than the other methods discussed. It represents a more liberal interpretation of existing guidance. Finally, reserves may be somewhat more volatile under this method. However, for those companies willing to invest the time and cost to implement this method, the method provides valuable benefits in the form of a more economically realistic reserve, better management information and the ability to sensitivity test the reserve.

## In Conclusion

The GAAP treatment of GMDBs is obviously an area ripe for the development of further guidance. The guidance being considered by the task force should certainly help to clarify this issue for future reporting dates and will be a welcome addition to the accounting literature.

While insurers wait for this guidance to be released, there are several approaches that could reasonably be justified under existing guidance. We have suggested three approaches that we believe to be reasonable stopgaps during this period. Each approach has significant advantages and disadvantages, which each company must weigh individually in determining the method that will work best for their block of business.

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level; this means that the most extreme 25% are averaged and held as the reserve. Additionally, capital is held such that reserves plus capital are sufficient at a 95 CTE level.

## Recommendations for Current Practice

Having reviewed the existing guidance, early indications of Task Force suggestions, and current industry practices, there are three approaches to the GAAP valuation of GMDBs that appear to have certain advantages over other methods currently used.

1. ***Zero Reserve for Out-of-the-money Benefits with SFAS 97 Reserve for In-the-money***

### 2. ***Accrue Past Net Cost as Reserve***

As described in the section above on current practices, this approach has several advantages, the main one being that it is a reasonably simple way to approximate the true economic cost of the benefit. However, it is inconsistent with the approach likely to be recommended by the task force.

### 3. ***Stochastic Process***

An alternative approach, which is not currently widely used, is to use a stochastic process to determine the reserve with stress testing performed on the tail of the risk profile curve. This is generally similar to the Canadian method. The main advantage of this approach is that it reflects