



SOCIETY OF ACTUARIES

Article from:

# The Financial Reporter

June 2003 – Issue 53

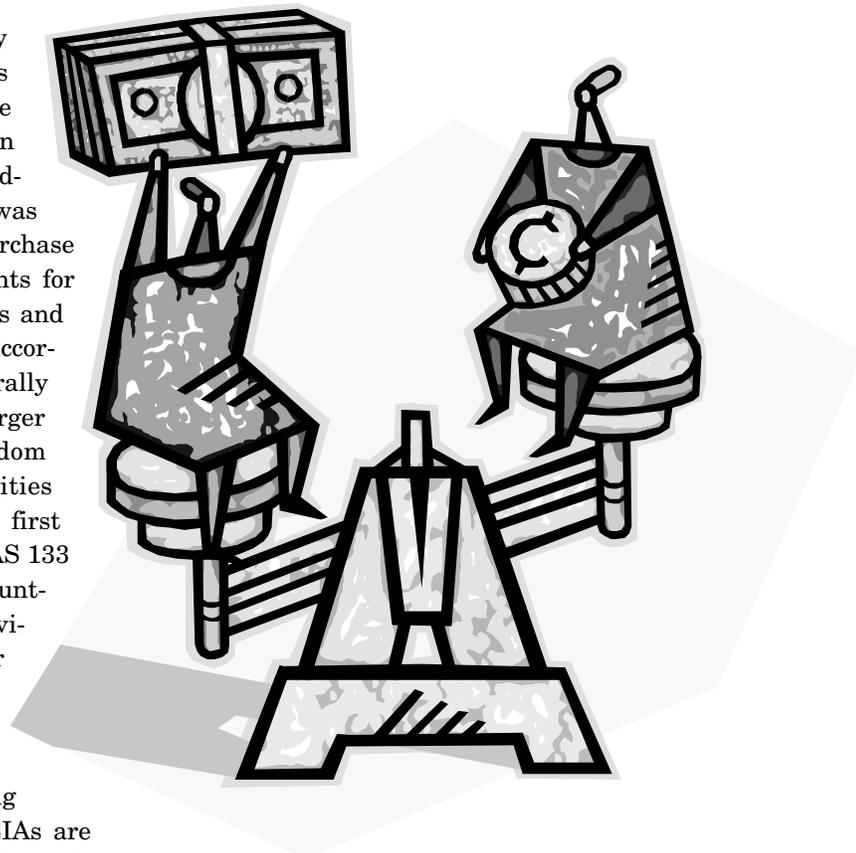
# Purchase GAAP for Equity-Indexed Annuities

by Vincent Y. Tsang

*Editor's Note: The section's GAAP List Serve would be an appropriate forum for discussing concepts in this article.*

The insurance industry in the United States went through an active merger and acquisition era from the late 1980s until the mid-1990s. Accordingly, much guidance was written about how to prepare purchase GAAP (PGAAP) financial statements for SFAS 97 universal life type policies and SFAS 60 traditional life policies in accordance with the United States Generally Accepted Accounting Principles. Merger and acquisition activities seldom involved equity-indexed annuities (EIA), because these policies were first developed in the mid-1990s. As SFAS 133 provides primarily for GAAP accounting guidance for EIA policies, previously established PGAAP rules for SFAS 97 policies may not be strictly applicable to purchased EIA policies. In particular, the most challenging items for preparing PGAAP financial statements for EIAs are (i) the initial PGAAP reserves and (ii) the proper bifurcation of the initial PGAAP reserves into the initial value of the host contract and the fair value of the embedded derivatives of the purchased EIA policies. The first item is essential for preparing PGAAP financial statements at the purchase date. The second item is necessary for determining PGAAP reserves for the purchased EIA policies in subsequent reporting periods.

For illustrative purposes, assume that Company B (the assuming company) purchased a closed block of EIA policies from Company S (the ceding company) using a 100 percent coinsurance treaty. For simplicity, also assume that there is no unearned revenue liability for the assumed EIA policies. For Company B, the initial PGAAP balance sheet of the assumed business may be stated as follows:



<u>Assets</u>	<u>Liabilities and Equity</u>
Invested Assets	PGAAP Reserves (GAAPV)
Deferred Tax Assets (DTA)	Deferred Tax Liabilities (DTL)
Value of Business	
<u>Acquired (VOBA)</u>	<u>Equity (E)</u>
<b>Total Assets</b>	<b>Total Liabilities and Equity</b>

The PGAAP equity at the purchase date is the purchase price. Goodwill is zero, because the purchased block is a closed block and there are no new EIA policies. The value of the invested assets at the purchase date is the market value of the transferred assets. The initial book value of the assets, after the transfer, equals the statutory reserves of the assumed policies. Values of invested assets in future periods will be reported at either book or market, depending on Company B's classifications of these transferred

continued on page 14

assets under SFAS 115. As the value of DTL/DTA depends on the initial PGAAP reserves and initial VOBA, one may complete the initial PGAAP balance sheet of the purchased policies by determining either the initial PGAAP benefit reserves or the initial VOBA.

PGAAP reserve of the assumed EIA policies is determined, it can be shown that:

$$VOBA = \frac{GAAPV - [Invested - Assets - P - Tax Rate * (TaxV - DACTax)]}{1 - Tax Rate}$$

**(I) DETERMINING INITIAL PGAAP RESERVE**

$$DTL = \frac{Tax Rate * (TaxV - DACTax) - Invested Assets + P}{1 - Tax Rate}$$

The Define Initial Reserve Method (DIR) is a widely used method for assumed SFAS 60 policies. The initial PGAAP reserves for assumed SFAS 60 policies are determined in accordance with the assuming company's GAAP assumptions for the assumed policies as of the purchase date. For policies subject to FAS 97, paragraph 17 of SFAS 97 provides specific guidance for determining GAAP reserves for either directly written or assumed universal life type policies. For most cases, the initial PGAAP reserves are the account balances. Thus, one may argue that SFAS 97 also uses the DIR to define account balances as the initial PGAAP reserves for the assumed universal life type policies. The only difference is that the account balances are independent of the assuming company's GAAP assumptions for the assumed SFAS 97 policies.

An EIA is similar to a deferred annuity from an economic perspective. SFAS 133 and issue papers of the FASB's Derivative Implementation Group (DIG) indicate that an EIA is a hybrid contract and that its GAAP reserve is the sum of the value of the host contract and the fair value of the embedded derivatives. This specific point implies that SFAS 97 guidance on GAAP reserves for universal life type policies does not apply to either directly written or assumed EIA policies and that the initial PGAAP reserves for the assumed EIA policies are not necessarily related to their account balances.

As DIR can be used to define initial PGAAP reserves for both assumed SFAS 60 and SFAS 97 policies, DIR may also be considered as a viable method to determine initial PGAAP reserves for assumed EIA policies. If the initial

Where:

- P = Purchase Price
- TaxV = Tax Reserve
- DAC Tax = Unamortized Policy Acquisition Expenses per section 848 of the Internal Revenue Code.

For assumed EIA policies, possible values of the initial PGAAP reserves include, but are not limited to, the following:

- (a) Aggregate account balance of the assumed EIA policies
- (b) Ceding company's GAAP reserves (that is, the sum of the value of the host contract value and fair value of embedded derivatives) of the assumed EIA policies at the purchase date
- (c) Reinsurance premium before ceding commission of the assumed EIA policies at the purchase date, and
- (d) Reinsurance premium net of ceding commission of the assumed EIA policies at the purchase date.

The GAAP reserve for an EIA policy is the value of the host contract plus the fair value of the embedded derivatives. As SFAS 133 does not consider account balance to be an appropriate measure of GAAP liability for any directly written EIA policy, this guidance may imply that the account balances of the assumed EIA

policies are similarly not appropriate for the initial PGAAP reserves.

Using the ceding company's GAAP reserves of the assumed policies at the purchase date as the initial PGAAP reserves has the advantage of reserve continuity. However, there is no GAAP guidance suggesting that the ceding company and the assuming company should have the same GAAP reserves for reinsured EIA policies at the purchase date. In fact, the two companies' senior management teams may have different disciplines in setting future participation rates or caps of the reinsured EIA policies. The changes in senior management's discretion can indirectly affect future policyholder behavior. Accordingly, the ceding and the assuming companies are likely to have different GAAP reserves for the reinsured EIA policies at the purchase date, because they may have different estimates of the fair value of the embedded derivatives.

Even if the two companies have the same disciplines and assumptions to estimate the fair value of embedded derivatives, there is no guarantee that the ceding company's practice to determine GAAP reserves for the reinsured EIA policies at the purchase date is appropriate. If the assuming company wants to use the ceding company's GAAP reserves as the initial PGAAP reserves for the assumed EIA policies, it would be an additional burden on the assuming company to ensure that the ceding company's GAAP reserves for the ceded policies are reasonable. Based on these shortcomings, the ceding company's GAAP reserves of the ceded EIA policies may not be the most appropriate choice for the initial PGAAP reserves.

Using the reinsurance premium before ceding commission as the initial value of PGAAP reserves is comparable with the normal practice of using initial premiums as GAAP reserves at issue for directly written EIA policies. In fact, reinsurance premium before ceding commission equals the sum of statutory reserves for the assumed EIA policies at the purchase date. As reinsurance premium before ceding commission is independent of the ceding company's GAAP assumptions and practice, the initial PGAAP reserves can be determined objectively under this method.



Please keep in mind that statutory accounting principles are based on a solvency perspective and the resulting statutory reserves may not reflect the general principles of GAAP. Using statutory reserves as the initial GAAP benefit reserves, without examining all related GAAP issues, is similar to fitting a square peg in a round hole.

This suggested choice does not imply that a statutory reserve is a substitute for a GAAP reserve. It simply states that the reinsurance premium before ceding commission (that is, the sum of statutory reserves of the assumed EIA policies) is a readily available value that may be used as the initial PGAAP reserves. The overall reasonableness of this method still depends on whether or not the resulting initial value of the host contract and the resulting implied internal rate of return (IRR) are reasonable. In subsequent periods, PGAAP reserves of the assumed EIA policies should not be statutory reserves and should be based on guidance from SFAS 133 (that is, PGAAP reserves equal the sum of the host contracts and the fair values of the embedded derivatives).

For most transactions, the ceding commission is a negotiated value between the buyer

continued on page 16

... it is my opinion that reinsurance premium before ceding commission appears to be a reasonable choice for the initial PGAAP reserves of the assumed EIA policies.

and the seller, and may be materially different from the actuarial appraisal value. If the ceding commission is significant, defining the initial PGAAP reserves as statutory reserves minus ceding commission may artificially reduce the assuming company's beginning PGAAP reserve for the assumed EIA policies to an unreasonable level. This situation is most significant for back-end loaded EIA contracts with a long-term point-to-point design where equity-related interests are not credited until the end of the term.

Among these four choices, it is my opinion that reinsurance premium before ceding commission appears to be a reasonable choice for the initial PGAAP reserves of the assumed EIA policies.

If the sum of statutory reserves is not considered a reasonable measure for the initial PGAAP reserves or the DIR method is not considered acceptable, the assuming company may consider determining the initial VOBA.

## (II) DETERMINING THE INITIAL VOBA

An alternative method to complete the initial PGAAP balance sheet of the assumed EIA policies is to determine the initial VOBA. A common practice is to define the initial VOBA as the present value before tax of statutory profits discounted at a risk-adjusted rate (for example, 12 percent). If the initial VOBA is known, the initial PGAAP reserves and DTL are:

$$GAAPV = \frac{VOBA - [Invested Assets - P - Tax Rate * (TaxV - DACTax)]}{1 - Tax Rate}$$

$$DTL = \frac{Tax Rate * [(TaxV - DACTax) - Invested Assets + P]}{1 - Tax Rate}$$

Under this method, the initial VOBA may be reasonably related to the purchase price. If the initial value of the invested assets equals statutory reserves (SAPV) minus Tax Rate times DAC Tax, the tax reserves equal statutory reserves, and the purchase price equals

VOBA times (1-Tax Rate), the formulae for initial PGAAP reserves and DTL can be simplified to:

$$GAAPV = VOBA + SAPV - \frac{P}{1 - Tax Rate}$$

$$= \text{Statutory Reserve} \\ = \text{Reinsurance Premium before Ceding Commission}$$

$$DTL = Tax Rate * VOBA - Tax Rate * DAC Tax$$

The net PGAAP liability (GAAPV minus VOBA) is then the aggregate statutory reserve minus the present value of projected before-tax statutory profits discounted at a risk-adjusted rate. As the risk-adjusted rate is greater than the assumed investment earned rates, the net PGAAP liability is greater than the gross premium valuation reserve at the purchase date and there is no need for loss recognition, a desirable result.

## (III) HOST CONTRACT AND BIFURCATION BASIS OF ASSUMED EIA POLICIES

So far, we have discussed only the initial PGAAP balance sheet of the assumed EIA policies. Additional steps are needed to report PGAAP reserves of the assumed policies in subsequent periods.

From a GAAP perspective, an EIA is a hybrid contract that must be bifurcated into a host contract and a group of embedded derivatives. Guidance from Issue Paper B6 of the Derivative Implementation Group states that the initial value of the host contract is the difference between the basis of the hybrid contract and the fair value of the embedded derivatives at issue. This guidance is very helpful for direct writers because the basis of the hybrid contract at issue is normally the initial premium paid by the policyholder. The definition of "the basis of the hybrid contract," however, is not as obvious

for assumed EIA policies at the purchase date.

In order to avoid unexplainable GAAP gains or losses at the purchase date, the initial PGAAP reserves of the assumed EIA policies at the purchase date should be the bifurcation basis. Although using the reinsurance premium before the ceding commission as the initial bifurcation basis offers the advantage of being comparable with the practice used by the direct writer, reinsurance premium can be used as the bifurcation basis only if it equals the initial PGAAP reserves.

Regardless of the approach used by the assuming company to complete the initial PGAAP balance sheet of the assumed EIA policies, care must be taken to ensure that the initial value of the host contract and its IRR are reasonable. For example, if the initial PGAAP reserves are adjusted to a level such that the initial value of the host contract (that is, initial PGAAP reserve minus the value of embedded derivatives) is even higher than the guaranteed benefit floor at the end of the EIA term, the host contract can have a negative IRR, a counter-intuitive result. On the other hand, if the initial PGAAP reserves are reduced to a level such that the initial value of the host contract is substantially less than the guaranteed benefit floor, the associated IRR can be higher than the expected earned rates of invested assets, an undesirable outcome.

#### (IV) SUMMARY

Although the initial PGAAP balance sheet can be prepared by determining either the initial PGAAP reserve or the initial VOBA of the assumed EIA policies, it is the net PGAAP liability that really matters. For a closed block of EIA policies, an increase in initial PGAAP reserves for assumed EIA policies would lead to an equal increase in initial VOBA.

The assuming company has many possible ways to prepare the initial PGAAP balance sheet of the assumed EIA policies. The final value of the initial PGAAP reserves should be examined in light of the host contract's initial value and the associated IRR. Ideally, the IRR of the host contract for the assumed EIA policies should be

comparable with the IRR of the assuming company's directly written EIA policies. If the host contract's IRR is either negative or higher than the expected asset yield rates, the associated initial PGAAP reserves should be considered questionable and further reviews are warranted. The alternative approach of determining the initial VOBA is also an acceptable approach, if the initial VOBA is reasonably related to the purchase price of the assumed business.

In my opinion, the reinsurance premium before ceding commission of the assumed EIA policies at the purchase date appears to be a viable candidate for the initial value of the PGAAP reserves for the following three reasons:

1. Reinsurance premium before ceding commission is not an arbitrarily chosen number and is related to the reinsurance transaction,
2. Using reinsurance premium before ceding commission to establish initial PGAAP reserves is comparable to the practice of using initial premiums from policyholders to establish initial GAAP reserves for directly written EIA policies; and
3. Reinsurance premium before ceding commission equals statutory reserves of the assumed policies. If the statutory reserve computation method is either the CARVM-Updated Market Value Method or the Market Value Reserve Method, the resulting statutory reserves are related to the guaranteed benefit floors. Thus, the resulting host contract's IRR is likely to be reasonable.

After the initial PGAAP reserves and initial VOBA are determined, PGAAP reserves and VOBA in subsequent periods should be reported in accordance with guidance from SFAS 133 and SFAS 97, respectively.

This article provides practical suggestions for practitioners to prepare PGAAP financial statements of assumed EIA policies. It may ignite more discussions among actuaries, accountants and other professionals who are



Vincent Y. Tsang, FSA, MAAA, is manager of Actuarial Services at PolySystems in Chicago, Ill. He can be reached at [vtsang@polysystems.com](mailto:vtsang@polysystems.com).