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Variable Annuity DAC: A Survey of Current Practice

by Laura J. Hay and Elizabeth Rogalin

A “hot topic” in the variable annuities area is the effect of negative equity market returns on the DAC unlocking process and loss recognition testing. Numerous equity analysts sounded an alarm in July, with doomsday predictions of anticipated DAC writedowns for large VA writers. Certain companies have been singled out as especially vulnerable to writedowns, based on their DAC methods, mix or age of business or lapse experience. Most of the analysts cite recoverability of the DAC balance as a driver; while others dwell on “unrealistic” assumed returns, either in terms of growth rates or time horizons. In September, as part of a comprehensive review of the industry sparked by recent adverse performance in the investment markets, Fitch lowered their financial strength ratings on more than 35 life insurance groups. As reported in the press, key reasons for the reevaluation include the decline in insurers’ investment portfolios and the plummeting value and popularity of variable products (both annuities and life insurance). In this environment, it seems appropriate to survey current practice among life insurers writing variable annuities, and to view the effect on reported DAC of common techniques. Note that the authors cannot comment on the appropriateness of a specific technique below for an individual company; such an assessment must be based on the company’s particular facts and circumstances.

BACKGROUND

Let’s start with a quick review of DAC unlocking in a FAS 97 environment. Deferred acquisition expenses (DAE) are capitalized, and are amortized in proportion to the present value of estimated gross profits (EGPs). The amortization rate (or “k

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Articles Needed for the Reporter

Your ideas and contributions are a welcome addition to the content of this newsletter. All articles will include a byline to give you full credit for your effort. *The Financial Reporter* is pleased to publish articles in a second language if a translation is provided by the author. For those of you interested in working in further depth on *The Financial Reporter*, several associate editors are needed. For more information, please call Jerry Enoch, editor, at (765) 477-3220.

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PREFERRED FORMAT

In order to efficiently handle files, please use the following format when submitting articles:

Please e-mail your articles as attachments in either MS Word (.doc) or Simple Text (.txt) files to the newsletter editor. We are able to convert most PC-compatible software packages. Headlines are typed upper and lower case. Please use a 10 point Times New Roman font for the body text. Carriage returns are put in only at the end of paragraphs. The right-hand margin is not justified. Author photos are accepted in .jpg format (300 dpi) to accompany their stories.

If you must submit articles in another manner, please call Joe Adduci, 847-706-3548, at the Society of Actuaries for help.

Please send articles via e-mail or in hard copy to:

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Thank you for your help.



SOCIETY OF ACTUARIES

Letter From the Editor

by Jerry Enoch

Just a day or two before the December edition of *The Financial Reporter* is sent to Chicago for publication, I find myself writing this column for the first time, having just succeeded Tom Nace as editor of *The Financial Reporter* after a short apprenticeship. It may take me a while to feel at home in this position, but I hope that our readers don't suffer in the meantime.

I want to begin by expressing my appreciation for Tom Nace. Tom was editor of *The Financial Reporter* for three years. During that time, Tom recruited many articles and edited many more. If we multiply those articles by the number of readers, we recognize that Tom had a large influence on our section and profession. Many people owe Tom a debt of gratitude. Personally, Tom has been very helpful to me in my apprenticeship, and I expect to call on Tom's experience as I get accustomed to this role. For these, and other acts of service of which we are unaware, thank you, Tom!

Although I consider myself a generalist, the scope of the Financial Reporting Section is much broader than any individual I know. That being the case, I'm trying to determine how to best supplement my limitations to make this newsletter the best I can. I'll start with the obvious and proceed to the less obvious.

WRITE AN ARTICLE

Tom has previously expressed gratitude for actuaries who contacted him and said, "Would you like an article about...?" (the answer is usually, "Yes"). I have witnessed this in my limited experience, and the articles have been good. Don't assume that writing an article is beyond you, or is too difficult. Articles need not be long. You can simply say what you have to say and then quit! Most of us prefer to read shorter articles, anyway. And you can think of the editor as someone who is here to help you bridge any gap between your thoughts and the reader. Furthermore, from a professional standpoint we are all in the same boat: we have some experience; we lack some experience; we share knowledge to be more efficient.

SUGGEST AN ARTICLE

Writing an article might be difficult. Suggesting an article is not. If you find yourself wishing there were an article about a particular topic, simply write a message to jenoch@llic.com. In a few months, you just might see the article you hoped for. Unfortunately, there are many good articles that could be written that I won't think to ask for. Suggesting an article may be an easy and valuable service.

BE A HEALTH ACTUARY

Well, there's a little more to it than that. I have very little health insurance experience. I'd like a health actuary to volunteer to help me see that the needs of health actuaries are properly served by making sure that I recognize the needs of health actuaries and the opportunities to serve them. This should take very little work or time — I hope it would be fun. But it could be a big service.

BE A CANADIAN

Another of my limitations is that my work is confined to the United States, so this opportunity/need parallels the need for a health actuary. Having a Canadian to help me see that the needs of Canadians are met could be a great service to a segment of our membership.

The Financial Reporter is one of the greatest assets of our section. It multiplies the effort that is put into it. Let's make good use of this leverage.

In closing, I would like to thank the authors with whom I have had the opportunity to work so far. They have been very cooperative and a pleasure to work with, and I have benefitted from my involvement with their papers. I look forward to many other good experiences. ☒

- Jerry



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factor”) used is determined at inception as the present value of DAE divided by the present value of EGPs. Future EGPs are projected using best estimate assumptions. At subsequent valuation dates, the DAC balance is “trued up” to reflect actual EGPs for the current and historical periods, and current in force. In addition, future EGPs may be re-projected using revised best estimate assumptions. A new k-factor is calculated, and the resulting difference in the DAC balance (reflecting both of these processes) is the “unlocking adjustment” or “DAC catch-up.” The DAC balance at each period can be expressed as follows:

	DAC at beginning of period
+	Interest accrued on DAC
+	New capitalized DAE
–	DAC amortization
+/-	DAC unlocking
=	DAC at end of period

VARIABLE ANNUITIES

All of the above applies to any FAS 97 business, but variable annuities have unique characteristics. First, assets backing variable annuities are primarily invested in separate accounts with large equity exposure. Second, EGPs for variable annuities generally consist of M&E charges, less expenses. M&E charges are typically defined as a percentage of fund value. Therefore, the actual level of current account values, and the projected future levels (if used to project future M&E charges), impact the EGPs. In a down market environment (as today), variable annuity business experiences a double hit: lower account values today, and potentially lower account values in future periods. If the EGPs are modeled as a fixed percentage of the account value, then EGPs will be lower in both current and future periods. A lower total present value of EGPs will result in a higher k-factor, leading to a larger (negative) DAC catch-up. The result is counter-intuitive: higher DAC amortization occurs in periods when EGPs are lower.

The scenario above assumes that a lower current account value leads automatically to lower

future account values. That is, it assumes that the future market growth rate will be the same as previously assumed. But actuaries have devised various techniques to derive revised assumptions about the future market growth rate and to calculate the resulting DAC. These techniques have sometimes been portrayed as an attempt to mitigate the volatility of the DAC amortization, but they may also be seen as capturing a “best estimate” of the future, in which variations in market returns are assumed to reverse.

CURRENT PRACTICES

So what methods are companies actually using to calculate VA DAC? While all of the methods employed seem to fit the general FAS 97 framework described above, the techniques vary widely, and may be used in combination as well. Generally speaking, however, some broad categories can be identified.

Stochastic

First, techniques can be classified as either stochastic or deterministic. Stochastic techniques involve projecting many series of future returns, randomly generated, each of which is then used to calculate EGPs and DAC. The DAC may be selected as a fixed percentile of the resulting DACs, or as a value within a predetermined “corridor.” For a detailed description of stochastic techniques, and the selection of an appropriate DAC value, refer to “Stochastic DAC Unlocking for Variable Annuity Products” in the March 2001 edition of *The Financial Reporter*.

Traditional

Although a number of companies are evaluating stochastic techniques, many have not yet adopted them for general use. Instead, they apply deterministic techniques, which use a single set of assumed future returns. The base technique in this group can be called “traditional” or “point-to-point.” This technique uses current account values as a starting point. Future fund values (and related EGPs) are calculated using a best estimate assumption of future return, which would usually be a single level rate (for example, 8 percent in all future years). The traditional method

Although a number of companies are evaluating stochastic techniques, many have not yet adopted them for general use.

is the same as that used for general account products.

Mean Reversion

Other deterministic techniques can be identified as “mean reversion.” This term actually refers to an approach to setting assumptions, in which the future investment return is expected to “return to the mean” over some period. Therefore, future assumed returns are modified based on a formula specified by the company. The formula may use a cumulative average from a specified “anchor year.” The company could specify the circumstances under which the anchor year will be reset, for example if the calculated DAC falls outside of a range. Alternately, the company may use a “look-back,” “look-forward” or both of x years (for example, the last three or five years, or the next three, five or 20 years). The formula may also incorporate a floor (e.g. 0 percent) or a cap (e.g. 15 percent), and specify additional adjustments to the formula, accordingly. If the company chooses to use a look-back or look-forward formula, then projected future returns may vary for different issue years; in order to avoid the apparent inconsistency, the company may use a weighted average of the various projections to obtain a single calendar year assumption. Given that the term “mean reversion” is commonly applied to all such variations, it is important in any discussion to determine the specific technique or formula being applied.

Corridor

A corridor technique may be used on a stand-alone basis or in combination with the methods above, in calculating the unlocked DAC balance. A corridor is defined around one DAC value. The corridor may be stated as a percentage of the DAC balance, a fixed dollar amount or some other parameter. Another DAC value is used as a “marker.” New DAC balances are calculated at each valuation date, and then compared. If the “marker” DAC balance (however specified) is within the corridor, the company will use that value as the reported DAC. If the “marker” DAC balance is outside the corridor, a different value will be used as the reported DAC. Depending on the combination of specific techniques being applied, the company may at this point adjust its



mean reversion formula, update the anchor year or revert to a point-to-point DAC balance. An example of the corridor approach is illustrated below. The underpinning for the corridor approach is a stochastic mindset, which contemplates a range of reasonable possibilities.

Long Term EGP

Finally, other companies use techniques that can be loosely grouped and identified as “long term EGP” or “credibility” methods. These techniques project future EGPs at issue. Then, at succeeding valuation dates, historical EGPs are “trued up.” Projected future EGPs are evaluated, but typically they are left unchanged under the assumption that these still remain the company’s best estimate of future EGPs. That is, the EGPs are viewed as an absolute amount, rather than an assumed return applied to the current account value. Alternately, the company could choose to weight or blend these “absolute EGPs” with an updated projection of EGPs based on the assumed future return applied to the current account value.

A potential criticism leveled at the Long Term EGP method can be the apparent disconnect between the current and projected account values. Under this method, the future EGPs are viewed as the assumed return applied to the originally assumed account values, rather than to the actual current account value. However, as the projected future EGPs are “fixed” in absolute terms, this is essentially equivalent to using the actual current (lower) account value and assuming a higher future

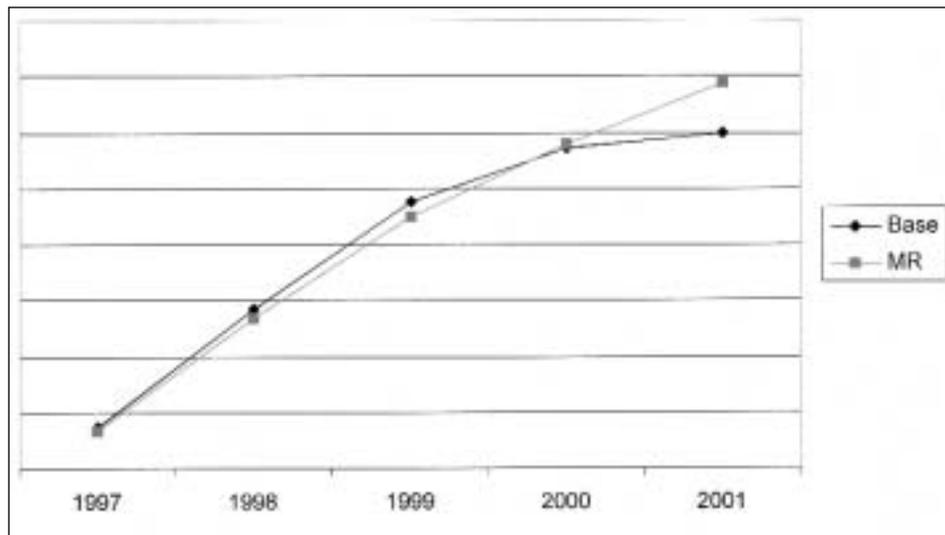
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Table 1						
	Actual Return	Projected Returns Using Mean Reversion				
		1997	1998	1999	2000	2001
1995	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
1996	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
1997	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
1998	8.00%	4.75%	8.00%	8.00%	8.00%	8.00%
1999	10.00%	4.75%	4.42%	10.00%	10.00%	10.00%
2000	-6.00%	4.75%	4.42%	3.45%	-6.00%	-6.00%
2001	-12.00%	7.00%	4.42%	3.45%	8.01%	-12.00%
2002		7.00%	7.00%	3.45%	8.01%	15.00%
2003		7.00%	7.00%	7.00%	8.01%	15.00%
2004		7.00%	7.00%	7.00%	7.00%	15.00%
2005		7.00%	7.00%	7.00%	7.00%	7.00%
>2005		7.00%	7.00%	7.00%	7.00%	7.00%

Table 2				
	Base (no MR)	Unlocked w/MR	Difference	% Diff
1997	77,335	76,498	836	1%
1998	98,332	96,884	1,448	1%
1999	117,659	114,979	2,680	2%
2000	127,044	128,003	(959)	-1%
2001	129,977	138,721	(8,744)	-7%

Comparison of DAC with and without Mean Reversion

Graph 1



return (to arrive at the same absolute amount of EGP). In this sense, the technique can be considered equivalent to the mean reversion techniques above; the implicit future return based on the current account value could be calculated, and could be significantly higher than recent past returns.

NUMERICAL EXAMPLE

Assume a block of VA business, with a \$1 million deposit in each of years 1995-2001, and the following characteristics:

- M&E charge of 1.5 percent of the account value
- Deferrable commission of 3 percent
- Expenses of 1 percent of the account value
- Static DAC discount rate of 7 percent
- Withdrawals (as annual percent of account value) of 5, 7, 9, 11, 13, 15, 16, 17, 18, 19 and 20 percent thereafter

The tables on page six and seven compare the base technique to a mean reversion technique, and then consider the effect of a corridor on the

reported DAC balance. The base technique is traditional, or point-to-point, and assumes a 7 percent net return (market growth rate less M&E). The mean reversion formula uses 1995 as the anchor year, with a three year forward reversion period, and a cap of 15 percent and floor of 0 percent. The formula also assumes a long term net return of 7 percent.

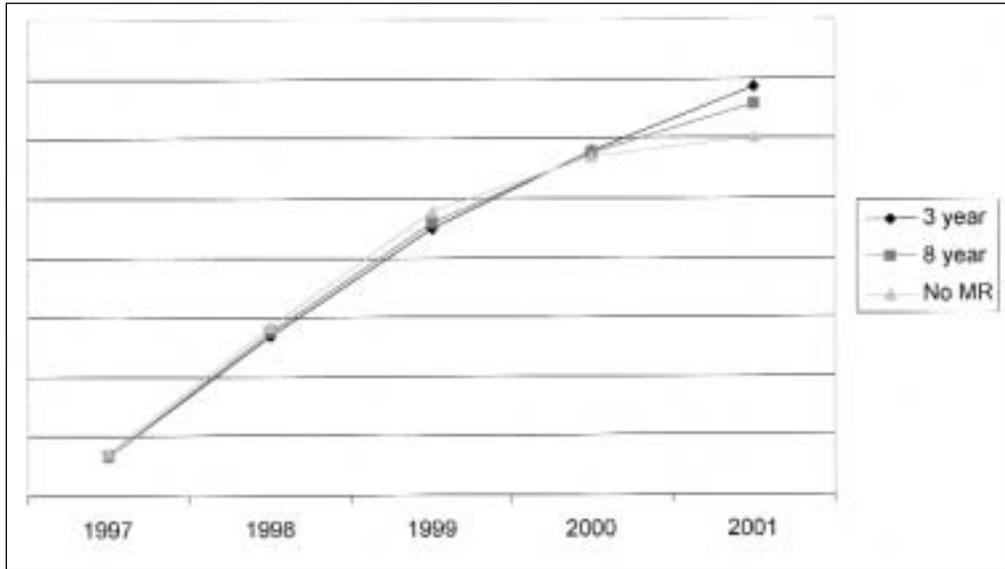
Using these parameters, the actual and projected returns are as shown in Table 1 on page six. The years shown in the left column indicate the calendar year, while the years shown across the top row indicate the valuation year. For example, in the column titled "1998," actual calendar year returns are used from the anchor year (1995) through 1998. The mean reversion formula is used to calculate the expected return for the following three years (of 4.42 percent), after which the expected return reverts to the long term assumption of 7.00%. (Note that in 2001, the calculated mean reversion return is capped at 15%.) These returns are then used to calculate DAC balances, using the base and mean reversion techniques, as shown in Table 2 and in Graph 1.

	Actual Return	Projected Returns Using Mean Reversion				
		1997	1998	1999	2000	2001
1995	12.00%	12.00%	12.00%	12.00	12.00%	12.00%
1996	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
1997	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
1998	8.00	6.14%	8.00%	8.00%	8.00%	8.00%
1999	10.00%	6.14%	6.02%	10.00%	10.00%	10.00%
2000	-6.00%	6.14%	6.02%	5.66%	-6.00%	-6.00%
2001	-12.00%	6.14%	6.02%	5.66%	7.38%	-12.00%
2002		6.14%	6.02%	5.66%	7.38%	10.04%
2003		6.14%	6.02%	5.66%	7.38%	10.04%
2004		6.14%	6.02%	5.66%	7.38%	10.04%
2005		6.14%	6.02%	5.66%	7.38%	10.04%
2006		7.00%	6.02%	5.66%	7.38%	10.04%
2007		7.00%	7.00%	5.66%	7.38%	10.04%
2008		7.00%	7.00%	7.00%	7.38%	10.04
2009		7.00%	7.00%	7.00%	7.00%	10.04%
2010		7.00%	7.00%	7.00%	7.00%	7.00%
>2010		7.00%	7.00%	7.00%	7.00%	7.00%

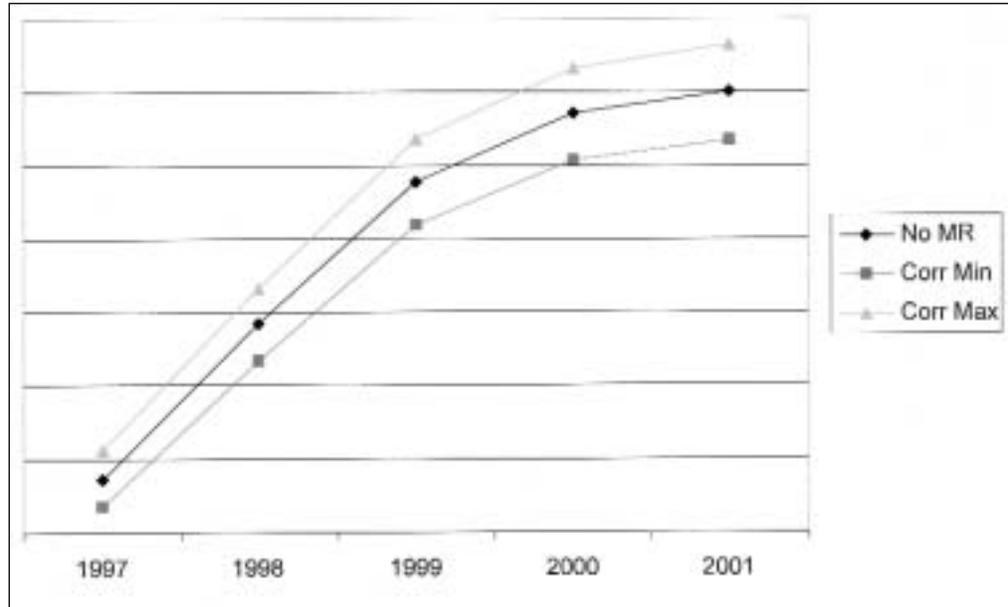
Actual and Assumed Growth Rates using Eight year Forward Reversion

continued on page 8

Graph 2 - Comparison of DAC with Three Year and Eight Year Forward Reversion



Graph 3



COMPARISON OF DAC WITH AND WITHOUT MEAN REVERSION

An alternate mean reversion technique can be applied, using an eight year forward reversion period. This produces the expected returns shown in Table 3 on page seven.. A comparison of

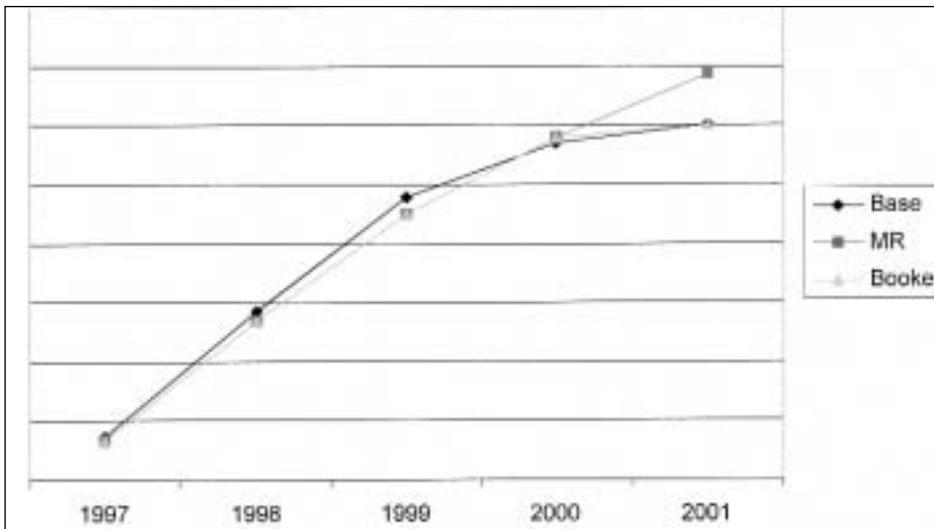
the mean reversion DAC balance using the three year and eight year forward periods is shown in Graph 2 on page eight. Note that the eight year forward reversion period always results in a DAC closer to that calculated without mean reversion (as the projected earned rates are closer to the long term assumption of 7 percent).

Table 4

	Base (No MR)	Unlocked W/MR	Corridor Min	Max	Booked	Booked less Unlocked w/No MR	% Diff
1997	77,335	76,498	73,468	81,201	76,498	(836)	-1%
1998	98,332	96,884	93,415	103,249	96,884	(1,448)	-1%
1999	117,659	114,979	111,776	123,542	114,979	(2,680)	-2%
2000	127,044	128,003	120,692	133,396	128,003	959	1%
2001	129,977	138,721	123,478	136,476	129,977	-	0%

Corridor Calculations

Graph 4



continued on page 10

A corridor technique may also be combined with the mean reversion technique. Returning to the original example using a three year forward reversion period, the corridor has been defined as the base DAC (without mean reversion), plus or minus 5 percent, as shown in Graph 3. At the valuation date, if the mean reversion DAC lies within this corridor, then the mean reversion DAC is booked. If the mean reversion DAC lies outside the corridor, then the company books the base DAC (i.e. traditional, without mean reversion), and the current date becomes the new anchor date. (Note that other approaches are also possible.) The resulting DAC balances are shown in Table 4 and in Graph 4 on page nine.

EFFECT OF THE CURRENT ENVIRONMENT

Although the theoretical basis supporting mean reversion continues to evolve, the general approach has been widely accepted in the actuarial community. However, the negative returns experienced recently, combined with a mean reversion formula, sometimes create questionably high projected returns, in some cases approaching or exceeding a previously specified cap. The use of questionably high values raises questions about the appropriateness of the underlying model. It has also captured the attention of analysts, who state that companies may need to reevaluate assumptions, and possibly incur DAC writedowns, in the near future.

Therefore, companies are evaluating their projected returns, and even their continued use of the mean reversion method. Under FAS 97, the EGPs used to calculate the DAC balance are defined as "best estimate." This implies that regardless of how the component assumptions are derived (whether a level assumption or a mean reversion calculation, for example, in the case of market returns), the EGPs thus calculated should represent management's best estimate of those future gross profits. This may require additional work (including appropriate documentation) in the current environment. New requirements that management certify their financial statements can only increase the scrutiny of a company's EGP projection. Companies should also evaluate loss recognition testing closely, and consider sensitivity

or stress testing, to obtain a better understanding of where the limits may fall. That is, management may find it very useful to understand what will cause the current model to "fail" (whether that failure is defined as loss recognition, increased DAC amortization beyond a certain amount or other criterion). Companies must also consider whether any changes constitute a change in methodology for GAAP reporting purposes.

A side debate can arise over the merits and drawbacks of a mechanical (formula) approach. The use of a formula such as mean reversion can be seen as limiting the application of the actuary's (and management's) judgment (normally implicit in the term "best estimate"). However, it can also be viewed as evidence that management is not "manipulating earnings." Various definitions of earnings management exist, but it could generally refer to an action affecting (generally improving) earnings, which is not justified by events or conditions occurring at the time. In this context, a mean reversion formula (for example) could be considered to use current market conditions as a basis for a change in assumptions (and related financial statement balances).

In general, as in other areas of GAAP, the selection (or updating) of assumptions and future EGPs requires a "balancing act," in that a company's best estimate must take appropriate recognition of both current conditions and an ultimate, or long term view. Earnings recognition should be neither accelerated nor delayed.

CONCLUSIONS

In the current environment, increased attention is focused on variable annuity DAC unlocking. While the effects will vary, depending on each company's investment approach and experience, techniques employed, and assumptions derived, certain "hot buttons" can be identified. Actuaries should carefully evaluate their projected EGPs against the FAS 97 requirement of "best estimate." They should be fully prepared to defend (and document) the techniques and assumptions used. Finally, actuaries should invest more effort in evaluating loss recognition testing and alternate scenarios, to better understand the inherent sensitivities in their selected DAC techniques. ☒



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A Letter from the Chairman...

The Financial Reporting Actuary: A Play Maker

by John Bevacqua

This being my first article as incoming chairperson of the Financial Reporting Section Council, I would like to begin by thanking Barry Shemin for his outstanding leadership of this group during the past year, as well as outgoing council members David Rogers and Jim Greaton for their extensive and important contributions to the section for the past three years. During my tenure on the section council, I have been amazed at the council's ability to consistently serve the section with a sustained level of enthusiasm and commitment. I look forward to working with the council, including newly elected council members Dan Kunesh, Tom Nace and Barbara Snyder, in what I am sure will be yet another outstanding year.

This has been an unprecedented year in the world of financial reporting and corporate governance. Accounting scandal after accounting scandal has rocked the corporate world, and we have seen the "Big Five" accounting firms become the "Final Four." As I have watched these events unfold, I have found myself renewing my professional vows to serve my clients and those that both directly and indirectly rely upon my work with the highest level of professionalism. It has been my observation that actuaries are well-versed in their ethical obligations, primarily to the members of the financial programs that they are responsible for managing — including members of defined benefit pension plans as well as policyholders of life insurance companies. This should not be too surprising, as our work has historically centered on the design and management of these programs to ensure that they operate in a financially sound manner, to the benefit of their members. However, the financial reporting actuary also has an obligation to investors and potential investors in the organizations that employ them or otherwise retain their services. The current environment highlights the importance of respecting the interests of these stakeholders, and the importance of serving this interest with the same level of professionalism that we have served policyholders. Therefore, such tasks as developing DAC amortization schedules and building actuarial appraisals — exercises that are a step removed from the interests of policyholders — must be performed with the same level of integrity as, say, reserving and pricing.

As regulators and other interested parties revisit how corporate America serves the interests of investors, a fundamental question that will be posed is whether investors are being provided with information that allows them to understand the financial condition, or change in financial condition, of a corporation. When I ponder this current state, it reminds me

of my days as an athlete when my football coach would ask "when the game is at stake, do you hope for a chance to make a play or do you hope that somehow someone else will make a play?" I often look at the financial reporting system within which our industry must operate and question whether the results reported by this system really communicate the financial state of a life insurance company to an end user. Recent breakdowns in the U.S. accounting model certainly confirm that it is not a perfect system, meaning that there is opportunity for improvement.

Who will "make the play" in this tumultuous world of financial reporting? Well, as I walk through the corridors of my employer and take notice of the black U.S. GAAP textbook on the shelves of my CPA colleagues (usually with numerous page markers protruding), it is clear to me that actuaries will need to step up and lead the way in developing information that will help investors better understand the financial condition of an insurance enterprise. Some specific opportunities that exist in the near term include:

Evolving U.S. GAAP Standards: The AICPA is currently addressing a number of GAAP issues relating to life insurance. A draft SOP on non-traditional long duration life insurance contracts was released earlier this year and, as of the writing of this article, is currently receiving comments. Other active working groups are assessing such issues as appropriate accounting for internal replacements and purchase accounting. Actuaries must play a significant role in these dialogues and continue to educate others about the underlying economics involved in these issues. Hopefully, this will help produce a result that will successfully communicate these economics to a reviewer of a financial statement.

International Accounting Standards: The International Accounting Standards Board has embraced a fair value model for reporting the financial performance of an insurance enterprise. This shift toward a prospective model will clearly result in an increased demand for actuaries, especially those knowledgeable in this area. Given today's climate, I cannot think of a more appropriate time to revisit the current U.S. GAAP financial reporting model, which should increase the likelihood that the IASB's model will become an accepted accounting model.

Will you "pass" on these opportunities, and hope someone else will make the play? I hope not. I encourage you to be heard and to take an active role in shaping the future financial reporting model for the U.S. life insurance industry — the investing public is depending upon it! ☒



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Highlights of the September 2002 NAIC Life and Health Actuarial Task Force Meeting and Other NAIC Topics

by Ted Schlude

I attended the Fall NAIC meeting held September 9-12, 2002 in New Orleans. Summarized below is what took place at the Life and Health Actuarial Task Force meeting and selected other NAIC working group meetings.

LIFE AND HEALTH ACTUARIAL TASK FORCE (LHATF)

Summarized below are the topics considered by LHATF.

1. New CSO Mortality Table and Model Regulation: LHATF adopted the New CSO Model Regulation and forwarded it to the Life A Committee, which I understand also adopted the model regulation. The mandatory effective date of the model regulation was pushed back one year to January 1, 2009. Companies electing to use the new table will be required to submit an actuarial opinion which reflects a Section 8 asset adequacy analysis. The mortality tables themselves will appear in the Second Quarter 2002 Proceedings of the NAIC. The Proceedings will include ALB and ANB tables as well as gender blended tables at 100 percent, 80 percent, 60 percent, 50 percent, 40 percent, 20 percent and 0 percent male/female content. The final model eliminated language that would have required submission of mortality experience data to the state, because it was unworkable.

2. Variable Annuities with Guaranteed Living Benefits (VAGLB) — Interim Actuarial Guideline MMMM: The working group discussed a draft developed by the Academy which takes an accumulation of charges approach to the VAGLB reserve, with an asset adequacy analysis required for the VAGLB reserve at the VAGLB benefit level as an overall test of adequacy. The current draft would be an interim guideline, pending completion of the C-3 Phase II project. Discussion focused on several aspects of MMMM including:

- Point at which the minimum cash value floor comes into play. The VAGLB reserve will be held on top of a basic CARVM reserve calculation that has been subjected to a cash value floor.

- Requirement for an imputed charge and making clear that the valuation actuary is not put into a position of second guessing the pricing actuary.

- Asset Adequacy Analysis Requirement: The working group cleared up any ambiguities in the language used to describe the Asset Adequacy Analysis, which historically has been an aggregate test.

It is hoped that the timeline will result in Life A Committee adoption one-month prior to, and adoption by the Executive/Plenary Committee at, the Winter 2002 NAIC meeting.

The Academy indicated that it anticipated that the C-3 Phase II project will be completed by December, 2003. It is anticipated that the VAGLB interim guideline would be effective for December 31, 2002, December 31, 2003, and possibly December 31, 2004, until a complete Reserve/RBC framework is adopted based on the results of the C-3 Phase II project.

3. Non-Forfeiture for Universal Life and Variable Life Products with Secondary Guarantees: Frank Dino's current draft dated August 9, 2002 was discussed. It was noted that there were no new comments pertaining to the draft that have not already been considered in the August 9, 2002 version.

An individual from The Hartford presented an alternative to the draft model regulation which uses a UL Model Regulation approach to define the minimum non-forfeiture benefit under a UL or VUL policy with secondary guarantees. In the minimum non-forfeiture calculation, valuation mortality would be scaled down to reflect the underlying pricing levels on an approximate basis.

Because the Hartford presentation and materials did not receive wide distribution prior to the meeting, these proposals will be considered and discussed in a conference call prior to the December, 2002 NAIC meeting.

4. General Non-forfeiture Project: LHATF reviewed minutes from an August 29, 2002 conference call. The Academy had already provided a report to regulators on industry practices with respect to non-guaranteed elements. Focus still revolves around using disclosure as the effective mechanism for nonforfeiture. Regulators asked the ACLI and AAA to prepare summary recommendations in bullet form for the structure of a new non-forfeiture law. Finally, Doug Bennett will survey regulators to develop information with respect to what regulators feel the goals and principles of non-forfeiture should be.

5. Annuity Non-forfeiture: Several documents pertaining to annuity non-forfeiture were considered by LHATF including a draft Academy report related to alternative bases for minimum non-forfeiture interest rates tied to an index (leaning toward a swap curve less 150 bps).

Next, the ACLI presented its annuity non-forfeiture proposal, which ties the non-forfeiture minimum interest rate to the five year Treasury less 2.5 percent (with a 1 percent minimum and 4 percent maximum rate). Regulators were generally uncomfortable with the level of implicit load allowed by the ACLI draft. One state included written comments stating that loads for any products (Single or Flexible Premium) should not exceed 10 percent of premium. There was also significant discussion related to the possibility of negative interest credits. The ACLI argued that disclosure and competition will serve to limit the load and the extent that prior credits could be forfeited.

Finally, the ACLI indicated that fifteen states have adopted the 1.5 percent minimum interest guarantee on a temporary basis. About two-thirds of these states have sunset provisions (typically July 1, 2004) which would kick the rate back up to 3 percent after a certain number of years.

LHATF plans to have several conference calls focused on an index rate prior to the December 2002 NAIC meeting.

6. 2003 GRET Factors: LHATF adopted the factors and moved the 2003 GRET proposal to the A Committee for adoption. A summary of the 2003 factors proposed by the Academy was exposed in March, 2002. Generally there were relatively small changes in the factors since the 2001 factors.

7. Moody's Indices: A Merrill Lynch paper discussing alternative sources of interest rates for discounting insurance liabilities was reviewed in a conference call prior to the meeting. Moody's index is no longer readily available to the NAIC for use in valuation rate determination. LHATF decided to defer work on this project until other higher priority projects have been completed.

8. Revisions to the Standard Valuation Law: LHATF discussed minutes from a conference call, a draft valuation law (Dino, Hartnedy) that attempts to simplify the valuation process for the opining actuary, and an Academy report on a long term solution to statutory valuation. The conference call notes outline the major areas of change that are being contemplated in the draft valuation law:

- Allowing a state of domicile opinion provided 1) asset adequacy analysis is performed, 2) the state of domicile is accredited and 3) the company's RBC ratio is 150 percent or higher (based on Company Action Level RBC).
- Eliminates deficiency reserve requirements.

The Academy then gave a brief report on its reorganization with respect to valuation, RBC and the examination function. The Academy is moving in a direction that would promote more accountability on the part of the actuary, the regulator and company management.

9. SSAP Working Group Referrals: A draft response to the SAP Working Group related to Issue Paper No. 117, Accounting for Demutualizations, MIHC's, etc., was discussed. Regulators would support a policyholder dividend obligation (PDO) being established if closed block assets exceed closed block liabilities. The response was exposed for comment.

continued on page 14

10. Modco Treatment in RBC: The LHATF and Life RBC Working Group will jointly study modco treatment in RBC. This issue was originally brought up as part of a study performed by Illinois to identify C-1 risk passing from direct writers to reinsurers under modco agreements.

11. Mortality Assumptions Reflected in Sales Illustrations: LHATF received a letter from Northwestern Mutual related to a project LHATF may consider regarding old age mortality assumed in sales illustrations, and the use of the 1975-80 table compared to the 1990-1995 table. Arguments presented were that use of the older table appears to build in a rather aggressive mortality improvement assumption, compared to the slope inherent in more recent tables at issue ages of 55 and over.

12. 2003 Charges: Charges (objectives) for 2003 were adopted. One charge related to statutory valuation guidance for substandard, guaranteed issue and simplified issue mortality may be added.

13. Revised AOMR Adopted by Statutory Accounting Principles Working Group: Finally, LHATF will begin to consider the effect that adoption by the Statutory Accounting Principles Working Group of the revised AOMR at the September, 2002 meeting could have on year-end 2002 financial statements. In particular, the implications of SSAP No. 1 – Disclosure Requirements will be reviewed, given that no state has officially adopted the revised AOMR, but it will be effective in codification for year-end 2002, which normally would be considered as requiring disclosure in the financial statements.

NAIC ACTIVITIES

Notes with respect to other meetings I attended are provided below.

1. Viatical Settlements: The working group discussed the model regulation and buyer's guides. Part of the discussion focused on recent state policy form filings where the policy form itself forbids the policy owner from viaticating the policy.

Regulators are considering whether these provisions are acceptable from a public policy standpoint.

Discussion about the viatical settlements model regulation revolved around the responsibilities of the company and the broker in terms of the minimum standards and suitability.

2. Reinsurance Task Force: The Reinsurance Task Force continues to discuss collateral requirements, use of an approved reinsurers list, working trusts and credit for retrocessions. Small workgroups were established to study practices in Bermuda, France, Germany, Switzerland and the U.K.

Documents distributed at the meeting include: 1) a comparison of U.S. Regulatory requirements to those of the U.K., E.U., and Bermuda; 2) a report from Stroock & Stroock & Lavan LLP on the importance of non-U.S. reinsurer collateral requirements. Representatives from Germany, the U.K., France and Switzerland will be in attendance at the Winter NAIC meeting to present their viewpoints.

The Reinsurance Association of America also presented an updated report on penetration by alien insurers into the U.S. reinsurance market.

Finally, it was noted that the International Association of Insurance Supervisors will be meeting in Denmark to discuss a standard for reinsurance supervision.

3. Life RBC Working Group: The Life RBC Working Group adopted minutes from prior meetings and conference calls and then proceeded to discuss the following topics:

- Academy Modco Report: The American Academy of Actuaries presented a modco report dealing with the dividend liability. When the modco revisions to incorporate recognition of C-1 and C-3 risk transfer were made two years ago, no consideration had been given to the dividend liability. One half of the dividend liability is included in the total adjusted capital (TAC) calculation. This proposal would adjust the dividend liability to recognize modco

Discussion about the viatical settlements model regulation revolved around the responsibilities of the company and the broker in terms of the minimum standards and suitability.

reinsurance in the TAC calculation. The report was exposed for comment, and, if it moves forward, might be effective for 2004 RBC calculations.

- **Affiliated Investments:** Study will continue related to different treatment accorded affiliated investments under the Life, P&C and Health formulas.

- **Deferred Tax Asset Survey:** The Academy discussed an informal study of DTA's filed in the 2001 year-end statutory financial statements. Generally 30-40 percent of the total DTA's were admitted at 2001 year-end. Three major contributors to DTA balances are statutory/tax reserve differences, DAC proxy taxes and non-admitted assets (write-offs appear to create a significant DTA until the asset is actually sold and the DTA is realized).

- **Worker's Comp Carve Out and Guaranteed Separate Accounts Projects:** The working group received an oral report, and there is hope for a formal recommendation at the December, 2002 NAIC meeting.

- **Fraternal:** Regulators discussed a project which would apply Life RBC to fraternal companies (currently fraternal are not subject to any RBC filing requirements). There will be a conference call to discuss the project and a letter to states explaining the work being done in this area.

- **Modco (continued):** A more comprehensive project related to Modco reinsurance and RBC was discussed. The discussion included:

- **Unauthorized Reinsurers:** Use of letters of credit or funds withheld to support reinsurance credits for RBC.
- Review rules related to marking assets to market for trust or escrow agreements. Check for consistency with book value accounting generally.
- Consider reflecting the transfer of credit risk in the determination of bond size and asset concentration factors.

- Consider recommending that NAIC staff begin including information on RBC modco and coinsurance funds withheld worksheets in the RBC database.

4. COLI Working Group: The focus of this group relates to providing protection to employees covered under COLI plans (insurable interest, consent and opt-out provisions, transparent understanding of the coverage and benefits, etc. are all under consideration).

5. Life Insurance (A) Committee: It should be noted that the Life (A) Committee took the following actions:

- **Adopted New CSO Model Regulation:** Will be forwarded to Executive/Plenary for adoption in December 2002.

- **Adopted Liquidity Risk Working Group Report:** This report requires disclosure information in the footnotes to the financial statements relative to an insurer's exposure to stress liquidity risk.

Finally, Actuarial Guideline AXXX was adopted by the NAIC in September 2002. This guideline has retroactive applicability, except for shadow account products, where it would apply to new issues on or after January 1, 2003.



The next NAIC meeting will be held December 5-10, 2002 in San Diego, California. ☒



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Revisions to the Actuarial Opinion and Memorandum Regulation

by Keith A. Dall

The second major change to the AOMR is to provide for restricted use of actuarial opinions based on the law of the state of domicile.

The NAIC has already adopted the revisions to the Actuarial Opinion and Memorandum Regulation (AOMR). Now, it is up to the individual states to approve the new regulation. This article provides a summary of the four major revisions to the AOMR, the changes to the Actuarial Standards of Practice and the different methodologies for asset adequacy testing.

MAJOR REVISIONS TO AOMR

Elimination of Section 7 Opinions

The most controversial change to the AOMR is the elimination of Section 7 opinions. The prior AOMR split companies into two groups based on whether their assets exceeded \$500 million. Those with assets of at least \$500 million were required to perform asset adequacy analysis, while those below were further split into subgroups by asset amount. Each of these subgroups was exempted from performing this analysis as long as certain additional criteria were met. For those exempted from asset adequacy analysis, Section 7 of the AOMR described what form the actuarial opinion was to take. In the revised AOMR all actuarial opinions must be based on asset adequacy analysis.

Restricted State of Domicile Opinions

The second major change to the AOMR is to provide for restricted use of actuarial opinions based on the law of the state of domicile. The original AOMR required a statement to the effect that the reserves and related items meet the requirements of the insurance laws and regulations of the state in which the statement is filed or of the state of domicile, and are at least as great as the minimum aggregate amounts required by the state in which the statement is filed.

This satisfied each state's desire to remain independent and free to set insurance regulations that they considered to be in their best interest and to impose solvency standards for companies domiciled in their state without giving unfair advantage to companies domiciled elsewhere. However, the insurance industry preferred a state of domicile filing, because of the added expense of

trying to understand and comply with all of the individual states' regulations. A compromise was reached to permit a state to accept a company's state of domicile opinion.

The revised AOMR allows the commissioner to make one or more of the following approaches available to the opining actuary:

1. A statement that the reserves "meet the requirements of the insurance laws and regulations of the state of domicile and the formal written standards and conditions of this state for filing an opinion based on the law of the state of domicile."
2. A statement that the reserves "meet the requirements of the insurance laws and regulations of the state of domicile and I have verified that the company's request to file an opinion based on the law of the state of domicile has been approved and that any conditions required of that request have been met."
3. A statement that the reserves "meet the requirements of the insurance laws of the state of domicile and I have submitted the required comparison as specified by this state."

Regulatory Asset Adequacy Issues Summary

The third change is the requirement that a "Regulatory Asset Adequacy Issues Summary" be prepared. This will increase the efficiency with which the actuarial opinion and memorandum are reviewed. The required content of the confidential summary is detailed in Section 7 (C.) of the AOMR. The summary should include a description of the scenarios tested, the sensitivity tests, changes to prior year assumptions, amount of reserves, results, methodology and that the actuary is satisfied that the options whether explicit or embedded in any asset or liability have been appropriately considered.

Required Interest Rate Scenarios

The fourth major revision to the AOMR was to eliminate the required interest rate scenarios. The new AOMR allows the appointed actuary to

exercise judgment, guided by the Actuarial Standards of Practice.

ACTUARIAL STANDARDS OF PRACTICE

Along with the revised AOMR, actuaries received revised Actuarial Standards of Practice (ASOP) No. 7 and No. 22. ASOP No. 14 (*When to Do Cash Flow Testing for Life and Health Insurance Companies*) was eliminated. The changes to the standards of practice coincide with the changes to the AOMR.

ASOP No. 7 — *Analysis of Life, Health or Property Casualty Insurer Cash Flows* provides guidance to actuaries analyzing asset and liability cash flows. The standard of practice lists reasons for cash flow testing, how to perform the analysis and offers guidance on documenting the analysis.

ASOP No. 22 — *Statements of Opinion Based on Asset Adequacy Analysis* provides guidance to actuaries and offers statements of actuarial opinion relating to the adequacy of a life or health insurers' reserves and other liabilities in light of supporting assets when providing statements of opinion to satisfy applicable law. The standard of practice lists the main steps in asset adequacy analysis and discusses the different methodologies.

ANALYSIS METHODS

The available methods have not changed from the original AOMR, but since some companies will be completing the asset adequacy analysis for the first time it is worth noting them. Cash flow testing is the most widely used method of asset adequacy analysis, but there are other possible methods that may be appropriate. These other methods can be used when moderately adverse deviations in the investment rate-of-return risk assumptions are not likely to have a material effect on the prescribed value of the combined asset, policy or other liability cash flows.

The five additional methods are as follows:

1. A gross premium reserve test where the policy and other liability cash flows are sensitive to moderately adverse deviations in the actuarial assumptions underlying the cash flows. The example given is a block of term insurance backed by noncallable bonds.

2. Demonstration of great conservatism in the reserves and other liabilities such that moderately adverse deviations in the actuarial assumptions underlying the policy and other liability cash flows are covered. The example given is a block of AD&D insurance.

3. Demonstration that product risks have been limited by policy design and investment strategy such that these risks are not subject to material variation and that moderately adverse deviations in actuarial assumptions underlying the policy and other liability cash flows are covered. The example given is a block of variable annuities with no guarantees and no unamortized expense allowance.

4. Use of risk theory techniques, namely testing the effect of a small number of large individual claims over a short-term period, to measure the risks in short-term products backed by short-term assets.

5. Loss-ratio methods when the asset and liability cash flows are all of short duration. An example of where this may apply is short-term health insurance contracts.

The appointed actuary will need to weigh carefully the responsibility to use an appropriate method against any desire to avoid full-blown cash flow testing.

CONCLUSION

In summary, for some companies the most significant effect of the new AOMR will be the requirement to perform asset adequacy analysis. For other companies the biggest adjustment will be coping with various requirements to provide an opinion based on requirements of the state in which the statement is filed. For most companies, preparation of the Regulatory Asset Adequacy Issues Summary will not be a challenge. The elimination of the required interest rate scenarios will provide opportunities for some companies. For all companies, the new Actuarial Opinion and Memorandum Regulation means that it will not be "business as usual" for valuation actuaries. ☐



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The Use of Reliance in Actuarial Opinions

by Frank S. Irish

... reliance is a way for appointed actuaries to avoid the impossible burden of taking responsibility for everything in the company that might have a bearing on the formation of reserve opinions.

When appointed actuaries of life companies file their annual statement reserve opinions, it is quite normal for those opinions to state reliance on others for various inputs that were used in the work. It is important to properly utilize reliance and to recognize the limits on how much reliance is allowed to appointed actuaries.

The Need for Reliance

On the one hand, reliance is a way for appointed actuaries to avoid the impossible burden of taking responsibility for everything in the company that might have a bearing on the formation of reserve opinions. It is quite normal for other company employees to prepare the required listings of inforce, the listings of assets for cash flow testing and, quite frequently, the projection of asset cash flows under various scenarios.

Appointed actuaries may claim reliance on these other people. In Actuarial Standard of Practice (ASOP) No. 22 (the revised edition of which became effective on April 15, 2002), this is spelled out quite clearly. The relevant paragraph is section 4.3, which reads as follows:

Reliance on Others for Data, Projections and Supporting Analysis – The actuary may rely on data, projections and supporting analysis supplied by others. In doing so, the actuary should disclose both the fact and the extent of such reliance. Such disclosure may be prescribed in applicable law. The accuracy and comprehensiveness of data, projections and supporting analysis supplied by others are the responsibility of those who supply the data, projections and supporting analysis. When practicable, the actuary should review the data, projections and supporting analysis for reasonableness and consistency, and disclose such a review. For further guidance, the actuary is directed to ASOP No. 23, *Data Quality*.

Note that the standard suggests that the “reasonableness and consistency” of the information should be reviewed by the appointed actuary where practicable, but does not place the burden for complete accuracy on the appointed actuary. And when there is this kind of reliance, it should be disclosed. Although the standard does not explicitly say where this disclosure should be made, there is no doubt that the disclosure should be in the statement of actuarial opinion filed with the state. When the standard says that, “Such disclosure may be prescribed in applicable law,” the obvious reference is to the *Actuarial Opinion and Memorandum Regulation* (AOMR). The model AOMR not only requires such disclosure in the statement of opinion but even suggests language to be used in reporting reliance.

Limitations on Reliance

On the other hand, appointed actuaries should not rely completely on others in forming their opinions. Thus, if we go on to Section 4.4 of ASOP 22, we read:

“Opinions of Other Actuaries – When more than one actuary contributes to forming an opinion, supporting memoranda from the other actuaries may be included in the actuary’s memorandum. The actuary should review the contributions of these other actuaries. The actuary should then form an overall opinion without claiming reliance on the opinions of other actuaries. The use of the work product of other actuaries should be described in the supporting memorandum.”

A clear distinction should be recognized between the permissive language of Section 4.3, which allows the actuary to rely on “data, projections and supporting analysis supplied by others,” and the language of section 4.4, which says that the actuary should not rely on “the opinions of other actuaries.” The distinction may be a very fine one, but it is important.

An example illustrates this distinction. It often happens that the opinions of other actuaries, who are not the appointed actuary, are very authoritative and dependable. Typically, appointed actuaries in companies that have a variety of products face the problem of knowing less about those products than actuaries who spend all their time on one product. The product line actuary is far better equipped for the analysis. The nature of the products, the choice of conservative assumptions and the choice of cells to model, are all very much dependent on a detailed knowledge of the product. In such cases, the product line actuaries may do the projections and supporting analysis, and even bring the work all the way to the point where the opinion is obvious. Nonetheless, the appointed actuary may not simply reference the opinion of another actuary, but must review the work of the other actuary and form an independent opinion. The intensity of that review is a matter left to the judgment of the appointed actuary.

As it is the appointed actuary who has to take the ultimate responsibility for forming an opinion, the appointed actuary should usually be involved in the processes that go on in the product lines. At the very least, the appointed actuary should do enough to understand the process so that the opinion can be rendered knowledgeably, without complete reliance on the opinion of the product line actuary. More than that, the appointed actuary usually brings to the process a broader knowledge of how asset adequacy testing is done and can advise on modeling methods, lapse rate responsiveness to modeled conditions and the like. In the end, the appointed actuary should have a sound basis for feeling that the testing was appropriate and supports the opinion that is being given to the state.

As a corollary, it is usually assumed that the responsibility for the opinion cannot be divided; that is, that there should only be one appointed actuary per company. The actuarial standard of practice has little to say on this point, but the model regulation and the Standard Valuation Law seem to imply that there should only be one. (For example, they refer to “. . . the opinion of a qualified actuary . . .” and to “. . . the opinion of an Appointed Actuary . . .”) But it is beyond the scope of this article to interpret the law. Let us

simply state that actuaries should be aware of this issue, and be sure of their ground if there is any implication that the opinion is anything other than the responsibility of the one appointed actuary. For example, if the filing consists of the opinions of several product line actuaries stapled together for submission to the state, one might expect questions to be raised.

Reinsurance raises some sticky questions in this regard. The appointed actuary of the ceding company should not rely completely on the reinsurer for reserve adjustments. It is the net liability that is important, and it is that liability for which the appointed actuary of the ceding company is responsible. Actuarial Standard of Practice No. 11 sets forth the basic principles of this matter.

SUMMARY

In the end, appointed actuaries must determine the degree to which they rely on others to do their work. But they should take care to rely on others only where law, regulation and/or standards of practice say it is appropriate to do so. Furthermore, they must disclose their reliance in the proper form and in the proper place. Note that, in addition to the statement of opinion, the supporting actuarial memorandum should also contain disclosures of reliance, probably in greater detail than in the opinion itself. All such disclosures should respect the distinction between “forming an opinion,” which is wholly within the discretion of the appointed actuary, and “data, projections and supporting analysis,” which may be carried out by others. ☐



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Adopting U.S. GAAP for Pre-Need Plans in the Philippines

by Frank J. Buck

Editor's Note

Please refer to the Appendix at the end of this newsletter for the tables mentioned in this article.

INTRODUCTION

Significant amounts of pre-need plans are sold in the Philippines. The benefits are designed to meet a number of known future events such as education fees, memorial benefits and payments upon retirement. In return for premiums paid, benefits are guaranteed. In some cases, inflationary increases are covered as well. Surrender values may be available for early terminations. The benefits payable on early death are, in general, modest.

This paper discusses approaches for reporting pre-need plans under the generally accepted accounting principles of the United States ("U.S. GAAP"). It provides an example of applying principles with which U.S. actuaries work daily in situations very different from those with which they are familiar.

BACKGROUND

A pre-need contract, as defined in the pre-need regulations, is "a contract which provides for the payment and/or performance of future service(s) or monetary considerations at the time of actual need, payable in cash or installment by plan holders at stated prices, with or without interest or insurance coverage." While the majority of life insurers consider pre-need products to be life insurance, the industry is currently regulated by the Securities and Exchange Commission and not by the insurance commissioner. However, there is a proposal to place the regulation under the jurisdiction of the latter, implying the reclassification of pre-need plans from securities to insurance.

Initially, pre-need companies sold memorial plans that guaranteed the payment of interment services. Now pre-need contracts are classified into three major categories: life, pension and education. Some pre-need companies also sell plans that pay for medical expense, travel, weddings and even business expansion.

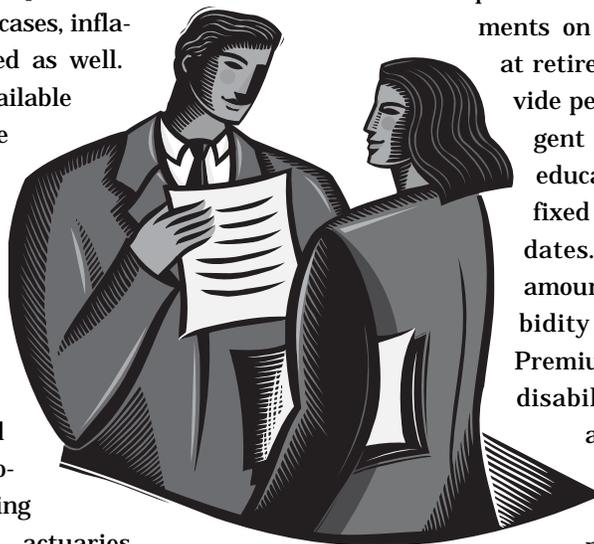
Pension plans normally provide fixed payments on specific dates, usually at retirement. They do not provide pension payments contingent upon death. Likewise, education plans provide for fixed payments on specific dates. In both cases the amount of mortality and morbidity cover is small. Premium waiver on death or disability is common, but additional payments on death are usually limited to a return of premiums.

The industry has achieved phenomenal growth since the 1980's. It has consistently outpaced the life insurance industry by a wide margin. Throughout the 80's, the annual growth rate was in excess of 30 percent, more than double the growth rate of the life insurance industry. By 1996, the number of pre-need organizations increased to 83. It is now down to 50 following the failure of several companies.

The total annual premium income for pre-need plans is about 30 billion Philippine Pesos (19 million U.S. dollars).

U.S. GAAP ACCOUNTING

Products sold by life insurers in the United States are classified into various types and accounted for according to the relevant statement of financial accounting standard ("SFAS") issued by the Financial Accounting Standards Board ("FASB").



SFAS 60 was the first life insurance accounting standard. It covers traditional business and distinguishes between short-term and long-term products. SFAS 97 modifies the approach to limited payment contracts and deals with investment contracts and Universal Life-type contracts. SFAS 120 addresses participating business sold by mutual life insurers where policyholder dividends are paid in accordance with the contribution principle.

There are accounting standards addressing reinsurance, taxation and investments; and there is other guidance in the form of practice bulletins, statements of accounting concepts, emerging issues task force pronouncements, etc. General industry practice has developed over time.

The approach to accounting for life insurance products is to issue standards and guidance, but not to set out rigid rules. There are areas of interpretation, especially with products that are unusual in the United States.

ACCOUNTING FOR PRE-NEED POLICIES

Each plan should be considered on its merits and classified according to the appropriate accounting standard. Pre-need contracts are normally of long duration. Contract terms are normally fixed, both in terms of premium payments and benefits, so that it is unlikely that SFAS 97 Universal Life would be appropriate. If there is a significant mortality or morbidity element, SFAS 60 or SFAS 97 limited pay would probably apply. If the mortality or morbidity risk is not significant, the contract should be accounted for as an investment contract under SFAS 97.

Although SFAS 97 paragraph 7 states that “a mortality or morbidity risk is present if, under the terms of the contract, the enterprise is required to make payments or forego required premiums contingent upon the death or disability of an individual or group of individuals”, paragraph 40 states that “A nominal mortality risk — a risk of insignificant amount or of remote probability — is not sufficient to permit that a contract be accounted for as an insurance contract.” There is no rule which determines whether a mortality risk is significant or not. It is a matter of judgement.

If the plan has significant mortality or morbidity, it should be accounted for under SFAS 60 or SFAS 97 limited pay. This treatment is standard and well defined. However, if the mortality risk is insignificant and SFAS 97 investment contract is appropriate, the methodology is less well defined. The balance of this paper describes approaches for reporting under SFAS 97 — investment contract methodology.

INTERPRETING SFAS 97 — INVESTMENT CONTRACTS

SFAS 97 paragraph 15 says that investment contracts should be “accounted for in a manner consistent with the accounting for interest-bearing, or other financial instruments.” Further guidance is available in Practice Bulletin 8 issued by the American Institute of Certified Public Accountants. Paragraph 7 states that the FASB 97 UL method for amortizing acquisition costs should be used if there are significant surrender charges or if the contracts yield significant revenues from sources other than the investment of contract holder funds. This approach is normally used where there is a clearly defined account value (for example, SPDA contracts).

Paragraph 7 also says that the alternative to the FASB 97 UL method for amortizing acquisition costs is to use an accounting method that recognizes acquisition and interest costs as expenses at a constant rate applied to net policy liabilities, which is consistent with the interest method under FASB Statement No.91.

SFAS 91 was designed for non-refundable fees and costs associated with loans. The examples in Appendix B of the statement make it clear that the methodology is to: (1) project future cash flows, (2) calculate the equivalent yield such that the present value of future cash flows equals the initial cash outflow, (3) use this interest rate to calculate the carrying amount (equivalent to the “net liability” in insurance terms) at subsequent reporting dates and (4) set the unamortized net fees equal to the difference between the remaining principal and the carrying amount.

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Applying this to long-duration contracts subject to SFAS 97 — Investment Contracts leads to the following: (1) project future cash flows, (2) calculate the equivalent yield such that the present value of future cash flows equals the initial cash outflow, (3) use this interest rate to calculate the net liability at subsequent reporting dates and (4) set the unamortized DAC equal to the difference between the benefit reserve and the net liability. The difficulty is in calculating the benefit reserve where there is no obvious account value.

EXAMPLE OF A PRE-NEED CONTRACT

The appendix contains an example of a pre-need policy. Using an education plan, the appendix illustrates many of the concepts described above. The assumptions are set out in Table 5, with some explanation in the following paragraph.

The plan has a twenty-year duration and provides four years of education benefits and a maturity value. Level premiums are payable for five years. Benefits are payable whether the policyholder (usually the parent) is alive or dead. In addition, there is a benefit of the return of

premiums upon the death of the policyholder. There is a cash value that grades into 50 percent of premiums paid, but it is assumed that it is collected by only 30 percent of those who lapse through non-payment of premium. Historically, the cash value has not been the emphasis of sales and it is often difficult to maintain communication with lapsing policyholders.

The reserves are estimated and are based on Philippine statutory reserves. The mortality rates are from the 1973-78 Philippine Intercompany Table posted on the SOA Web site. These are for illustration purposes only.

The policy pricing on a statutory basis is shown in Table 6. Net present values of the various cash flow items are calculated. The net present value of the additional death benefit is 1.5 percent of the net present value of the premiums and the net present value of the waiver of premium on death is 0.5 percent of the present value of premiums. In many examples of materiality under U.S. GAAP, a level below 5 percent tends to be considered insignificant. This suggests that the mortality benefit is not significant and that this should be treated as an investment policy. It could also be argued that the substance of this contract is to provide education and maturity benefits and that the death benefit is a minor selling point.

The internal rate of return is calculated in Table 7. If the earned interest rate were replaced with the break-even rate, the present value of gross profits in Table 6 would be zero. This internal rate of return is used in Table 8 to calculate the net liability. This will provide the basis for the U.S. GAAP projections.

CALCULATION OF THE BENEFIT RESERVE AND DAC

For other products under U.S. GAAP, the benefit reserve and DAC are calculated relatively independently and the net liability is the difference between the two. For investment contracts, the net liability is calculated first and the DAC becomes the balancing item between the benefit reserve and net liability.



One approach is to apply the SFAS 91 methodology to the cash flows excluding deferrable expenses. Table 9 shows the calculation of the internal rate of return for the cash flow excluding deferrable expenses. The resulting benefit reserve calculation appears in Table 10. Given the amount of deferrable expenses, the resulting DAC starts at a reasonable level.

The U.S. GAAP income statement that would result is shown as Table 11. It should be noted that the investment income is based on the GAAP net liability, as opposed to the statutory reserves in Table 6. It should also be noted that the present value of gross profit is unchanged. The difference is the emergence of profits.

USING A PROXY ACCOUNT BALANCE

An alternative approach is to calculate a proxy account balance for the benefit reserve. One method could be to look at the policy from the point of view of a policyholder who keeps the policy in force. This approach is shown in Appendix 2 (Tables 12 and 13). The GAAP earnings are unchanged, but the benefit reserve and DAC are lower.

USING SFAS 60 / SFAS 97 LIMITED PAY

If it could be argued that there was a sufficient mortality benefit, the appropriate GAAP treatment would be the same as for a traditional plan. Appendix 3 (Tables 14 and 15) shows how this approach would work. DAC would be written off over the premium paying period and, as the premiums are payable over a period less than the benefit period, an unearned revenue reserve would be established. In this example, profits would emerge approximately in proportion to the in force and, although the total profits would be the same, would be higher in the early years.

PRODUCT CLASSIFICATION

The pre-need business consists of education plans, pension plans and life plans. The current sales are split 60 percent pension plans, 35 percent

education plans and 5 percent life plans. Our initial review of current business suggests that there is minimal mortality benefit in the pension plans, a small mortality benefit in the education plans and significant mortality in the life plans. This suggests SFAS 97 investment contract treatment for the pension plans, SFAS 60 / SFAS 97 limited pay for the life plan, and probably SFAS 97 investment contracts for the education plans.

In order to classify products appropriately, a study should be made of the amount of mortality/morbidity covered by each contract. In the example given in Appendix 1, the present value of mortality benefits, including waiver of premium on death, was 2.0 percent of the present value of premiums. If waiver of premium for disability were added, this would change to 2.2 percent, still an insignificant amount. However, at other ages or in different plans the level could be higher.

SUMMARY AND CONCLUSIONS

Reporting pre-need plans under U.S. GAAP will require a careful review of the amount of mortality/morbidity benefit provided. For most education and pension plans, we believe that the mortality/morbidity benefit is minimal and that these contracts should be classified as investment contracts. The life plans do, in general, contain significant mortality/morbidity benefits and would be classified at traditional (SFAS 60 or SFAS 97 — limited pay), but they account for a small part of the business.

Investment contracts without a defined account balance, such as these pre-need plans, are rare in the United States; however, the authoritative literature points to the equivalent yield method of SFAS 91, which in turn, shows how to approach the calculation of the net liability.

The GAAP benefit reserve should be set equal to the account balance, if one is readily determinable; otherwise, the approach described above, where a second equivalent yield is used to obtain the benefit reserve, is the suggested approach for these contracts. ☒



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Pan-American Actuarial Congress

by Edward L. Robbins

The Fifth Pan-American Actuarial Congress took place in the beautiful city of Buenos Aires, Argentina, during September 11 through 13. Sponsorship was by the *Consejo Profesional de Ciencias Economicas de la Ciudad Autonoma de Buenos Aires (Professional Council of Economic Sciences of the Autonomous City of Buenos Aires)*. The Council is an Argentine organization that consists primarily of accountants, economists and actuaries practicing in the Buenos Aires area. There were over 200 attendees from about 15 countries. The subject matter was wide-ranging, covering product development, social insurance, regulation, private pensions and accounting issues.

Several members of the Society of Actuaries were speakers, including Bob Collett, Harry Panjer (our president-elect), Paul McCrossan (president of the International Actuarial Association), Joshua Bank and myself. Bob Collett discussed the regulatory framework for actuaries, with emphasis on significant professional risk issues that actuaries are facing around the globe, the likelihood of those trends arriving in Latin America and what actuaries may do to manage those risks. Harry Panjer spoke about the use of models in actuarial management, and Josh Bank spoke about pension and social insurance issues.

Paul McCrossan and I shared a panel discussion with Dr. Ignacio Gonzalez, an Argentine public accountant and president of the Commission of Auditing Studies of the Council. Mr. Gonzales discussed the theory and practice of auditing. Paul and I dealt with a financial reporting topic of significant current interest: the forthcoming international accounting standards. Many accounting and actuarial professionals throughout the world believe that a comprehensive uniform accounting system worldwide is vitally important in today's global economy.

Paul gave a history of the migration towards international accounting standards, to provide a picture of how we got to the current situation. He gave an especially interesting discussion of the implications of probabilistic prospective accounting that go far beyond insurance. That said, he emphasized that events may overtake the IASB before they can get a new system of international accounting in place.

I followed up with a technical analysis of the Draft Statement of Principles (DSOP), as drafted

in November 2001 under the auspices of the International Accounting Standards Board (IASB). The DSOP is critically important at this time for several reasons.

First of all, it reflected the thinking of the IASB at the time of its promulgation. Second, it represents a significant departure from current accounting practice throughout the world. Finally, the timeframe could be very tight for a complex change, and there is still a possibility that it is on a very fast track, for such a complex and significant departure in methodology. A summary of the high points of the DSOP follow.

The DSOP recommends rules for insurance *contracts*, not insurance *entities*. Thus many elements of an insurance entity's balance sheet do not fall under the DSOP, but rather under existing or proposed International Accounting Standards. Similarly, a non-insurance entity holding an insurance contract as an asset, such as an employer who is a group pension policyholder, will need to use an equivalent valuation approach.

The recommendation, insofar as recognition and measurement of insurance contract values is concerned, is effectively to move to fair value accounting. As it turns out, the concept of "entity-specific" value, a concept close to fair value, appears to be more likely than a pure "fair value" approach. The difference in concept is that, while entity-specific value reflects the value of an insurance contract to the entity (for example, using the entity's experience for policyholder experience factors and expense assumptions) pure fair value more closely reflects the "value in settlement" with a counterparty (the liability of one equaling the asset of the other).

There is much controversy surrounding the concepts in the DSOP, and while the date proposed therein for mandatory compliance was year end 2005 for companies publicly traded in the European Union, it appears that this timetable is going to be delayed.

Those interested in a more in-depth description of the discussions that took place at the Congress with respect to international accounting standards as they apply to insurance contracts, or those interested in the entire proceedings of the conference, including audiovisual materials, can access the Web site: www.cpeccf.org.ar. ☒



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Appendix

Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 5 - Assumptions for Sample Education Plan

Year	Cash Value	Additional Death Benefit	Reserve	Commission	Lapses	Education Benefit	Maturity Benefit	Fixed Expenses	% Premium Expenses	Death Benefit Expenses	Mortality per 1000
Male	35		Annual Premium			11,500 payable	5 years				
Interest Rate	12.0%	Inflation Rate	8.0%	Percentage claiming surrender value in premium paying period	0.75%						30.0%
VAT	10.0%	SEC Registration Fee	0.1%	Other Taxes							
1	2,300	11,500	5,750	65%	40%			1,200	2.5%	500	2.26
2	6,900	23,000	12,650	25%	25%			300	2.5%	540	2.33
3	13,800	34,500	21,275	5%	20%			324	2.5%	583	2.42
4	23,000	46,000	30,475	5%	10%			350	2.5%	630	2.54
5	28,750	57,500	39,675	5%	5%			378	2.5%	680	2.68
6	28,750	57,500	44,275					408	2.5%	735	2.86
7	28,750	57,500	50,025					441	2.5%	793	3.05
8	28,750	57,500	56,925					476	2.5%	857	3.26
9	28,750	57,500	64,400					514	2.5%	925	3.49
10	28,750	57,500	73,600					555	2.5%	1,000	3.76
11	28,750	57,500	82,800					600	2.5%	1,079	4.04
12	28,750	57,500	94,300					648	2.5%	1,166	4.35
13	28,750	57,500	106,950					699	2.5%	1,259	4.68
14	28,750	57,500	121,900					755	2.5%	1,360	5.03
15	28,750	57,500	138,000					816	2.5%	1,469	5.43
16	28,750	57,500	128,800		0%	28,750		881	2.5%	1,586	5.87
17	28,750	57,500	112,700		0%	34,500		952	2.5%	1,713	6.37
18	28,750	57,500	88,550		0%	40,250		1,028	2.5%	1,850	6.94
19	28,750	57,500	53,475		0%	46,000		1,110	2.5%	1,998	7.58
20	28,750	57,500	-		0%		57,500	1,199	2.5%	2,158	8.30

Assumes Premiums and expenses are at start of year
 Surrender Benefits and Maturity benefits are at the end of the year
 Education and death benefits are in the middle of the year
 Mortality is 1973-78 Philippine Intercompany Table -(Source SOA Website)
 Statutory reserves are approximate

Appendix Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 6 - Pricing For Sample Education Plan

Year	In Force	In Force for Benefits	Total Premium Income	Investment Income	Total Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Gross Initial Expenses	Gross Renewal Expenses	Commission	Total Pre-Need VAT & Duties Payable	Other Taxes	Increase in Reserve	Total Expenses	Gross Profit	Premiums Waived on Death	
1	1.0000	1.0000	11,500	117	11,617	276	26	-	-	1,200	589	7,475	1,162	86	3,450	14,263	(2,646)		
2	0.5977	0.6000	6,874	897	7,771	309	32	-	-	-	366	1,719	694	52	2,243	5,414	2,357	26	
3	0.4469	0.4500	5,139	1,166	6,305	370	37	-	-	-	286	257	519	39	1,967	3,474	2,831	36	
4	0.3564	0.3600	4,099	1,302	5,401	246	42	-	-	-	238	205	414	31	2,215	3,390	2,011	41	
5	0.3199	0.3240	3,679	1,527	5,206	460	49	-	-	-	223	184	372	28	2,338	3,653	1,552	47	
6	0.3030	0.3078	-	1,446	1,446	174	50	-	-	-	134	-	-	-	1,143	1,502	(55)		
7	0.2961	0.3016	-	1,583	1,583	170	52	-	-	-	142	-	-	-	1,433	1,797	(214)		
8	0.2893	0.2956	-	1,753	1,753	166	54	-	-	-	150	-	-	-	1,703	2,073	(320)		
9	0.2826	0.2897	-	1,957	1,957	162	57	-	-	-	158	-	-	-	1,792	2,169	(213)		
10	0.2759	0.2839	-	2,171	2,171	159	60	-	-	-	167	-	-	-	2,194	2,579	(408)		
11	0.2694	0.2782	-	2,433	2,433	155	63	-	-	-	176	-	-	-	2,099	2,492	(59)		
12	0.2629	0.2727	-	2,683	2,683	151	66	-	-	-	185	-	-	-	2,621	3,024	(340)		
13	0.2565	0.2672	-	2,996	2,996	147	69	-	-	-	195	-	-	-	2,809	3,220	(224)		
14	0.2502	0.2619	-	3,332	3,332	144	72	-	-	-	206	-	-	-	3,276	3,698	(367)		
15	0.2439	0.2566	-	3,723	3,723	140	76	-	-	-	217	-	-	-	3,423	3,857	(133)		
16	0.2377	0.2515	-	3,711	3,711	-	80	7,230	-	-	228	-	-	-	(2,314)	5,225	(1,514)		
17	0.2363	0.2515	-	3,347	3,347	-	87	8,677	-	-	245	-	-	-	(4,049)	4,960	(1,613)		
18	0.2348	0.2515	-	2,774	2,774	-	94	10,123	-	-	264	-	-	-	(6,074)	4,406	(1,632)		
19	0.2332	0.2515	-	1,958	1,958	-	102	11,569	-	-	283	-	-	-	(8,821)	3,132	(1,174)		
20	0.2314	0.2515	-	1,571	1,571	-	110	-	14,461	-	304	-	-	-	(13,449)	1,426	145		
NPV @	12.0%		26,990			1,688	403	5,400	1,499	1,200	2,237	9,477	2,726	202			2,157	124	
							1.5%										8.0%		0.5%

Assumes Premiums and expenses are at start of year
Surrender Benefits and Maturity benefits are at the end of the year
Education and death benefits are in the middle of the year

Appendix Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 8 - Calculate Net Liability

Year	Total Premium Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Ongoing Expenses	Deferrable Expenses	Cash Flow	Net Liability
1	11,500	276	26	-	-	915	9,597	687	787
2	6,874	309	32	-	-	418	2,413	3,702	4,983
3	5,139	370	37	-	-	324	776	3,632	9,539
4	4,099	246	42	-	-	268	619	2,924	13,770
5	3,679	460	49	-	-	251	556	2,363	17,839
6	-	174	50	-	-	134	-	(358)	19,295
7	-	170	52	-	-	142	-	(364)	20,895
8	-	166	54	-	-	150	-	(370)	22,651
9	-	162	57	-	-	158	-	(377)	24,580
10	-	159	60	-	-	167	-	(385)	26,697
11	-	155	63	-	-	176	-	(393)	29,023
12	-	151	66	-	-	185	-	(402)	31,578
13	-	147	69	-	-	195	-	(412)	34,383
14	-	144	72	-	-	206	-	(422)	37,465
15	-	140	76	-	-	217	-	(433)	40,851
16	-	-	80	7,230	-	228	-	(7,539)	37,116
17	-	-	87	8,677	-	245	-	(9,009)	31,452
18	-	-	94	10,123	-	264	-	(10,480)	23,662
19	-	-	102	11,569	-	283	-	(11,953)	13,524
20	-	-	110	-	14,461	304	-	(14,875)	(0)

Internal Rate of Return **10.26%**

Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 9 - Calculate Internal Rate of Return Excluding Deferrable Expenses

Year	Total Premium Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Ongoing Expenses	Cash Flow excluding Deferrable Expenses
1	11,500	276	26	-	-	915	10,283
2	6,874	309	32	-	-	418	6,115
3	5,139	370	37	-	-	324	4,408
4	4,099	246	42	-	-	268	3,543
5	3,679	460	49	-	-	251	2,919
6	-	174	50	-	-	134	(358)
7	-	170	52	-	-	142	(364)
8	-	166	54	-	-	150	(370)
9	-	162	57	-	-	158	(377)
10	-	159	60	-	-	167	(385)
11	-	155	63	-	-	176	(393)
12	-	151	66	-	-	185	(402)
13	-	147	69	-	-	195	(412)
14	-	144	72	-	-	206	(422)
15	-	140	76	-	-	217	(433)
16	-	-	80	7,230	-	228	(7,539)
17	-	-	87	8,677	-	245	(9,009)
18	-	-	94	10,123	-	264	(10,480)
19	-	-	102	11,569	-	283	(11,953)
20	-	-	110	-	14,461	304	(14,875)

Internal Rate of Return

4.81%

Appendix Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 10 - Calculate Benefit Reserves and DAC

Year	Total Premium Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Ongoing Expenses	Cash Flow excluding Deferrable Expenses	Benefit Reserve	Net Liability	DAC
1	11,500	276	26	-	-	915	10,283	10,791	787	10,005
2	6,874	309	32	-	-	418	6,115	17,735	4,983	12,752
3	5,139	370	37	-	-	324	4,408	23,226	9,539	13,687
4	4,099	246	42	-	-	268	3,543	28,069	13,770	14,299
5	3,679	460	49	-	-	251	2,919	32,501	17,839	14,662
6	-	174	50	-	-	134	(358)	33,698	19,295	14,403
7	-	170	52	-	-	142	(364)	34,946	20,895	14,052
8	-	166	54	-	-	150	(370)	36,248	22,651	13,597
9	-	162	57	-	-	158	(377)	37,605	24,580	13,025
10	-	159	60	-	-	167	(385)	39,018	26,697	12,321
11	-	155	63	-	-	176	(393)	40,491	29,023	11,468
12	-	151	66	-	-	185	(402)	42,025	31,578	10,448
13	-	147	69	-	-	195	(412)	43,623	34,383	9,240
14	-	144	72	-	-	206	(422)	45,287	37,465	7,821
15	-	140	76	-	-	217	(433)	47,019	40,851	6,167
16	-	-	80	7,230	-	228	(7,539)	41,556	37,116	4,440
17	-	-	87	8,677	-	245	(9,009)	34,325	31,452	2,873
18	-	-	94	10,123	-	264	(10,480)	25,240	23,662	1,578
19	-	-	102	11,569	-	283	(11,953)	14,209	13,524	685
20	-	-	110	-	14,461	304	(14,875)	(0)	(0)	0

Internal Rate of Return 4.81%

Appendix

Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 11 - US GAAP Income Statement

Year	Total Premium Income	Investment Income	Total Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Initial Expenses	Renewal Expenses	Commission	VAT, duties and other taxes	Increase in Reserve	Increase in DAC	Total Expenses	Gross Profit
1	11,500	117	11,617	276	26	-	-	1,200	589	7,475	1,248	10,791	10,005	11,600	17
2	6,874	578	7,452	309	32	-	-	-	366	1,719	746	6,943	2,747	7,368	84
3	5,139	1,081	6,220	370	37	-	-	-	286	257	558	5,491	935	6,064	156
4	4,099	1,528	5,627	246	42	-	-	-	238	205	445	4,843	612	5,406	221
5	3,679	1,994	5,673	460	49	-	-	-	223	184	399	4,432	363	5,384	289
6	-	2,122	2,122	174	50	-	-	-	134	-	-	1,197	(260)	1,815	307
7	-	2,295	2,295	170	52	-	-	-	142	-	-	1,248	(351)	1,963	332
8	-	2,486	2,486	166	54	-	-	-	150	-	-	1,302	(455)	2,126	360
9	-	2,696	2,696	162	57	-	-	-	158	-	-	1,357	(572)	2,306	390
10	-	2,926	2,926	159	60	-	-	-	167	-	-	1,414	(704)	2,503	423
11	-	3,179	3,179	155	63	-	-	-	176	-	-	1,473	(853)	2,719	460
12	-	3,457	3,457	151	66	-	-	-	185	-	-	1,534	(1,020)	2,956	500
13	-	3,762	3,762	147	69	-	-	-	195	-	-	1,598	(1,208)	3,217	544
14	-	4,097	4,097	144	72	-	-	-	206	-	-	1,664	(1,418)	3,504	593
15	-	4,465	4,465	140	76	-	-	-	217	-	-	1,732	(1,654)	3,819	646
16	-	4,449	4,449	-	80	7,230	-	-	228	-	-	(5,463)	(1,727)	3,803	645
17	-	3,914	3,914	-	87	8,677	-	-	245	-	-	(7,231)	(1,567)	3,345	568
18	-	3,147	3,147	-	94	10,123	-	-	264	-	-	(9,085)	(1,295)	2,690	457
19	-	2,125	2,125	-	102	11,569	-	-	283	-	-	(11,031)	(893)	1,815	310
20	-	1,580	1,580	-	110	-	14,461	-	304	-	-	(14,209)	(685)	1,351	229
NPV @		12%													2,157

Appendix Adopting U.S. GAAP for Pre-Need Plans in the Philippines

**Table 12 - Calculate Policyholder's Internal Rate of Return
Policy remains in force**

Year	Total Premium Income	Education Benefit Outgo	Maturity Benefit Outgo	Cash Flow	Benefit Reserve	In Force at End	Benefit Reserve	DAC
1	11,500	-	-	11,500	12,477	0.6000	7,486	6,693
2	11,500	-	-	11,500	26,013	0.4500	11,706	6,708
3	11,500	-	-	11,500	40,700	0.3600	14,652	5,087
4	11,500	-	-	11,500	56,634	0.3240	18,349	4,544
5	11,500	-	-	11,500	73,921	0.3078	22,753	4,869
6	-	-	-	-	80,200	0.3016	24,192	4,849
7	-	-	-	-	87,012	0.2956	25,722	4,777
8	-	-	-	-	94,402	0.2897	27,348	4,645
9	-	-	-	-	102,421	0.2839	29,078	4,445
10	-	-	-	-	111,120	0.2782	30,917	4,165
11	-	-	-	-	120,559	0.2727	32,872	3,794
12	-	-	-	-	130,799	0.2672	34,951	3,319
13	-	-	-	-	141,909	0.2619	37,161	2,725
14	-	-	-	-	153,963	0.2566	39,511	1,997
15	-	-	-	-	167,040	0.2515	42,010	1,115
16	-	28,750	-	(28,750)	151,282	0.2515	38,047	894
17	-	34,500	-	(34,500)	128,197	0.2515	32,241	760
18	-	40,250	-	(40,250)	97,161	0.2515	24,436	754
19	-	46,000	-	(46,000)	57,500	0.2515	14,461	928
20	-	-	57,500	(57,500)	-	-	-	0

Internal Rate of Return

8.49%

Appendix

Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 13 - US GAAP Income Statement

Year	Total Premium Income	Investment Income	Total Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Initial Expenses	Renewal Expenses	Commission	VAT, duties and other taxes	Increase in Reserve	Increase in DAC	Total Expenses	Gross Profit
1	11,500	117	11,617	276	26	-	-	1,200	589	7,475	1,248	7,486	6,699	11,600	17
2	6,874	578	7,452	309	32	-	-	-	366	1,719	746	4,220	24	7,368	84
3	5,139	1,081	6,220	370	37	-	-	-	286	257	558	2,946	(1,610)	6,064	156
4	4,099	1,528	5,627	246	42	-	-	-	238	205	445	3,697	(533)	5,406	221
5	3,679	1,994	5,673	460	49	-	-	-	223	184	399	4,404	334	5,384	289
6	-	2,122	2,122	174	50	-	-	-	134	-	-	1,439	(17)	1,815	307
7	-	2,295	2,295	170	52	-	-	-	142	-	-	1,530	(69)	1,963	332
8	-	2,486	2,486	166	54	-	-	-	150	-	-	1,627	(130)	2,126	360
9	-	2,696	2,696	162	57	-	-	-	158	-	-	1,730	(199)	2,306	390
10	-	2,926	2,926	159	60	-	-	-	167	-	-	1,839	(279)	2,503	423
11	-	3,179	3,179	155	63	-	-	-	176	-	-	1,955	(371)	2,719	460
12	-	3,457	3,457	151	66	-	-	-	185	-	-	2,079	(476)	2,956	500
13	-	3,762	3,762	147	69	-	-	-	195	-	-	2,210	(595)	3,217	544
14	-	4,097	4,097	144	72	-	-	-	206	-	-	2,350	(732)	3,504	593
15	-	4,465	4,465	140	76	-	-	-	217	-	-	2,499	(887)	3,819	646
16	-	4,449	4,449	-	80	7,230	-	-	228	-	-	(3,963)	(227)	3,803	645
17	-	3,914	3,914	-	87	8,677	-	-	245	-	-	(5,806)	(143)	3,345	568
18	-	3,147	3,147	-	94	10,123	-	-	264	-	-	(7,805)	(15)	2,690	457
19	-	2,125	2,125	-	102	11,569	-	-	283	-	-	(9,975)	164	1,815	310
20	-	1,580	1,580	-	110	-	14,461	-	304	-	-	(14,461)	(937)	1,351	229
NPV @		12.0%													2,157

Appendix Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 14 - SFAS 60 Calculations

Year	Total Premium Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Deferrable Expenses	Ongoing Expenses	In Force	Benefit Reserve	DAC	Unearned Revenue Reserve	Maintenance Reserve
1	11,500	276	26	-	-	9,597	915	1,000	3,987	4,467	735	254
2	6,874	309	32	-	-	2,413	418	0.5977	6,686	3,950	1,262	581
3	5,139	370	37	-	-	776	324	0.4469	8,996	2,486	1,742	859
4	4,099	246	42	-	-	619	268	0.3564	11,315	1,239	2,212	1,118
5	3,679	460	49	-	-	556	251	0.3199	13,533	0	2,713	1,380
6	-	174	50	-	-	-	134	0.3030	14,930	0	2,594	1,395
7	-	170	52	-	-	-	142	0.2961	16,497	0	2,471	1,404
8	-	166	54	-	-	-	150	0.2893	18,252	0	2,343	1,405
9	-	162	57	-	-	-	158	0.2826	20,220	0	2,209	1,397
10	-	159	60	-	-	-	167	0.2759	22,425	0	2,070	1,378
11	-	155	63	-	-	-	176	0.2694	24,895	0	1,923	1,347
12	-	151	66	-	-	-	185	0.2629	27,661	0	1,768	1,301
13	-	147	69	-	-	-	195	0.2565	30,760	0	1,604	1,238
14	-	144	72	-	-	-	206	0.2502	34,231	0	1,429	1,156
15	-	140	76	-	-	-	217	0.2439	38,118	0	1,243	1,052
16	-	-	80	7,230	-	-	228	0.2377	34,955	0	1,043	923
17	-	-	87	8,677	-	-	245	0.2363	29,876	0	822	759
18	-	-	94	10,123	-	-	264	0.2348	22,649	0	576	554
19	-	-	102	11,569	-	-	283	0.2332	13,016	0	303	304
20	-	-	110	-	14,461	-	304	0.2314	0	0	(0)	0
NPV	26,990	1,688	403	5,400	1,499	13,163	2,680	3.522				
Benefit Net Premium			33.3%			NPV 5		2.347				
DAC Net Premium			48.8%									
Maintenance Expense N P			9.9%									
Excess Premium			17.1%									

Appendix

Adopting U.S. GAAP for Pre-Need Plans in the Philippines

Table 15 - US GAAP Income Statement

Year	Total Premium Income	Investment Income	Total Income	Surrender Benefit Outgo	Additional Death Benefit	Education Benefit Outgo	Maturity Benefit Outgo	Initial Expenses	Renewal Expenses	Commission	VAT, duties and other taxes	Increase in Reserve	Increase in DAC	Total Expenses	Gross Profit
1	11,500	117	11,617	276	26	-	-	1,200	589	7,475	1,248	4,975	4,467	11,322	295
2	6,874	544	7,418	309	32	-	-	-	366	1,719	746	3,554	(516)	7,242	176
3	5,139	1,032	6,172	370	37	-	-	-	286	257	558	3,068	(1,464)	6,040	132
4	4,099	1,476	5,575	246	42	-	-	-	238	205	445	3,048	(1,247)	5,470	105
5	3,679	1,951	5,629	460	49	-	-	-	223	184	399	2,981	(1,239)	5,535	94
6	-	2,096	2,096	174	50	-	-	-	134	-	-	1,293	0	1,652	445
7	-	2,250	2,250	170	52	-	-	-	142	-	-	1,452	0	1,816	434
8	-	2,423	2,423	166	54	-	-	-	150	-	-	1,629	0	1,999	424
9	-	2,618	2,618	162	57	-	-	-	158	-	-	1,826	0	2,203	415
10	-	2,836	2,836	159	60	-	-	-	167	-	-	2,046	0	2,431	405
11	-	3,080	3,080	155	63	-	-	-	176	-	-	2,292	0	2,685	395
12	-	3,354	3,354	151	66	-	-	-	185	-	-	2,566	0	2,968	386
13	-	3,660	3,660	147	69	-	-	-	195	-	-	2,872	0	3,284	376
14	-	4,003	4,003	144	72	-	-	-	206	-	-	3,214	0	3,636	367
15	-	4,388	4,388	140	76	-	-	-	217	-	-	3,596	0	4,030	358
16	-	4,396	4,396	-	80	7,230	-	-	228	-	-	(3,492)	0	4,047	349
17	-	3,890	3,890	-	87	8,677	-	-	245	-	-	(5,465)	0	3,544	347
18	-	3,147	3,147	-	94	10,123	-	-	264	-	-	(7,677)	0	2,803	344
19	-	2,139	2,139	-	102	11,569	-	-	283	-	-	(10,156)	0	1,797	342
20	-	1,592	1,592	-	110	-	14,461	-	304	-	-	(13,623)	0	1,252	339
NPV @	12.0%														2,157



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