



Long-Term Care News

The Newsletter of the Long-Term Care Insurance Section

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Long-Term Care Insurance Rate Increase Considerations

by Allen J. Schmitz

Consumers, agents, insurers and regulators all have a vested interest in the magnitude and frequency of rate increases. The latest version of the National Association of Insurance Commissioners (NAIC) Long-Term Care (LTC) Insurance Model Regulation (August 2000) was adopted in part to address the issue of "responsible" pricing and to minimize the likelihood of future rate increases.

Though the Model Regulation contains a specific section that addresses rate increase filings, it only applies on a prospective basis to policies written after a given state's adoption date. As of August 2003, approximately 15 states have adopted the rate increase provisions. Additionally, many of the regulation provisions are subject to interpretation and discussions with various regulators reveal differing interpretations.

This leads to the questions, "What should an insurer do about a poorly performing block of business today?" And, "What analysis and considerations should be reviewed to determine if a rate increase is the necessary and appropriate action?"

The first step is to continually monitor emerging experience in order to properly manage the LTC insurance risk. Poor experience needs to be addressed; however, there are several important considerations prior to taking any rate action. These considerations include experience analysis issues, maximum rate increase calculations, business considerations and valuation issues. The inter-relationship of these considerations can be surprisingly complex. This article only scratches the surface of some of these issues.

Experience Analysis Issues

Experience analysis is the first step in determining whether a rate increase is necessary. Historical premium and claim experience is used to project future premiums and claims. Decisions must be made regarding the credibility of experience, ultimate projected morbidity levels and the pooling of various classes of business.

In order to develop a best estimate of future morbidity levels, past experience should be examined to the extent credible. The amount of credibility given to actual experience is often more of an art than a science. Statistical tools may be able to help guide, but often practical considerations, such as discernable actual to expected trends and information from other data sources drive the morbidity assumptions. Classical credibility theory can be used to determine the amount or number of claims necessary for full credibility given a distribution assumption. However, the parameters chosen for this analysis are somewhat arbitrary, the distribution assumption may not be suitable for the LTC risk and the application of partial credibility assumes that the original claim costs assumption was appropriate. A Bayesian approach to credibility addresses some of these issues, but still requires either a distribution assumption or an assumption on the universe of claims. The use of regression techniques offers another statistical tool that can be used to

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Please e-mail your articles as attachments in either MS Word (.doc) or Simple Text (.txt) files. 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.

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Thank you for your help.

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SOCIETY OF ACTUARIES

Chairperson's Corner

LTCI Section Exceeds Expectations in 2003

by James M. Glickman

Welcome to this LTCI section newsletter, my first as your section chairperson for 2004. The LTCI section has made tremendous progress since it was formed just four years ago. Perhaps our most important initial goal was to develop a high quality industry-wide meeting that would provide the latest in educational information together with an unparalleled networking opportunity.

I think most people would agree that we exceeded expectations in this regard with our first three annual Intercompany LTCI Conferences. I would highly recommend our Fourth Annual Intercompany LTCI Conference to be held at the brand new Houston Hilton Americas, February 8–11, 2004, especially for any of you who have not yet had the opportunity to attend one.

This LTCI conference will feature over 60 breakout sessions spread out among eight time slots featuring eight specialty tracks, including actuarial, claims, compliance, group, management, marketing, operations and underwriting. Networking with over 700 of your peers also will be a high priority, with nearly 20 hours of scheduled networking time, including 15 hours in the exhibit hall. Add an unbeatable hotel rate, great food from morning to evening and the getaway

networking session with prize drawings to assure that this will be the best conference yet.

Among my other goals for the LTCI section to accomplish this year (and we can judge our success rate at this time next year) are:

- 1) Increase LTCI section membership more than any other section with an emphasis on increasing the number and participation level of the non-actuarial members.
- 2) Make the LTCI section Web site an indispensable tool for everyone in the LTCI industry with more "hits" than other section Web site.
- 3) Start the process of making the LTCI section the resource of choice for political, educational and research questions regarding LTCI and the LTCI industry.

In order to accomplish these goals, we will need your help. Please contact me, or any of the other section members, if you are willing to participate in LTCI section activities.

Finally, I would like to welcome our newest council members, Bob Yee and Vince Bodnar, as well as congratulate Steve Sperka on being re-elected to the council. ↵



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A Niche Product and Its Marketing –

A Tale of Trials, Tribulations and Potential Rewards

by Steven P. Cooperstein

Niche products, almost by definition, have risks and difficulties, though they can of course also have rewards. Here is a tale of a niche product you may be able to profit from as it is marketed to people at the "at-need" edge of long-term care and has the potential to instruct in bridging the gap for the products now being marketed to people "pre-need."

In 1985 my mother almost landed in a nursing home before she died. My research at the time suggested that more needs to be done in providing long-term care insurance coverage.

Unfortunately, I see others having the same experience today.

Over the next few years I developed several coverage innovations, though only a couple made it modestly to market. Then in 1994, I was talking with a financial planner who liked the seeming win-win appeal portrayed by a life insurance with long-term care rider combo (her feel was that the market didn't want to bite the LTCI bullet, but embedding it in life insurance and a fancy illustration made it win-win!!!). As an aside,

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help determine underlying claims patterns and key claim drivers, but the results often need to be supplemented with practical interpretations.

The development of incurred claims can be heavily dependent on the claim reserve, particularly for more recent incurrals. Therefore, careful examination of the appropriateness of the claim reserve assumptions, including retrospective claim runoff analysis, is necessary.

To develop the ultimate projected morbidity level, the actual to expected trends should be analyzed by as many policyholder and plan characteristics as possible. This data stratification will help in developing an accurate projection of future morbidity, particularly when different “cuts” of the data have different slopes to the morbidity curve. And while every “cut” of the data may not be used because of credibility issues, this level of stratification can help in understanding which segments of the business are driving the rate increase and which segments have good experience. For example, it may help answer questions such as whether or not married business looks better than expected because married policyholders are younger on average, or conversely, if younger age business looks better than expected because more of them are married.

This morbidity analysis will lead to the issue of pooling. There are several key considerations in determining the degree of pooling of various classes of business and/or blocks of business for rate increase purposes. This includes the following, sometimes competing list of issues:

- Policyholder Equity
- Credibility of Data
- Rating Flexibility (regulatory maximums)
- Future Rating Flexibility
- Profitability

Maximum Rate Increase Calculations

After experience is analyzed and a projection of future premiums and claims is created, determination of the appropriate level of rate increase, if any, can be calculated. The determination of the maximum rate increase is based on loss ratios. There are at least two ways to calculate that rate increase, as well as some variations of the two approaches. The first is based on a lifetime loss ratio calculation and the second is based on a future loss ratio calculation. In all formulas below, present value calculations are discounted at 4.5 percent.

Lifetime Loss Ratio Approach – The lifetime loss ratio approach is calculated using the following

formula and solving for the rate increase percentage.

$$\frac{\text{rev PVIC}_{\text{life}}}{\text{orig PVP}_{\text{up to curr}} + \text{orig PVP}_{\text{curr+}} * (1 + \text{RI}\%)} = \text{LR}_{\text{min}}$$

- $\text{rev PVIC}_{\text{life}}$ = Present value of incurred claims over the life of the business under revised assumptions
- $\text{orig PVP}_{\text{up to curr}}$ = Present value of historical premium from issue up to the current duration
- $\text{orig PVP}_{\text{curr+}}$ = Present value of premium from the current duration over the remaining life of the business
- $\text{RI}\%$ = Rate increase percentage
- LR_{min} = Minimum loss ratio or original filed loss ratio

It could be argued that the lifetime loss ratio approach essentially allows an insurer to recoup past losses. However, it should be noted that this is parallel to the approach taken in the NAIC Guidance Manual—though the example given there utilizes the loss ratio requirements of the Model Regulation adopted in August of 2000.

Future Loss Ratio Approach – The second approach solves for the rate increase by setting the future loss ratio equal to the original priced for loss ratio. The formula for this approach is as follows.

$$\frac{\text{rev PVIC}_{\text{curr}}}{\text{orig PVP}_{\text{curr+}} * (1 + \text{RI}\%)} = \text{orig LR}_{\text{future}}$$

- $\text{rev PVIC}_{\text{curr}}$ = Present value future incurred claims starting from current policy duration
- $\text{orig PVP}_{\text{curr+}}$ = Present value of premium from the current duration over the remaining life of the business
- $\text{RI}\%$ = Rate increase percentage
- $\text{orig LR}_{\text{future}}$ = Original future loss ratio from current duration

Note that this produces a much lower maximum rate increase percentage than the lifetime

loss ratio approach. This difference can be dramatic depending on the deviation in experience and average duration of business being analyzed. For example, for a block of business with a 30 percent deviation in experience, average policy duration of six, and average issue age of 65, the lifetime loss ratio approach can yield twice as large of a maximum rate increase as the future loss ratio approach!

One of the potential problems with using the future loss ratio approach is the necessity to have detailed information on the original assumptions. A variation on the future loss ratio approach described below helps avoid that problem.

Variation in Future Loss Ratio Approach – This variation of the future loss ratio approach uses the following formula and solves for the rate increase percentage:

$$\frac{\text{rev PVIC}_{\text{life}}}{\text{orig PVP}_{\text{life}} * (1 + \text{RI}\%)} = \text{LR}_{\text{min}}$$

- $\text{rev PVIC}_{\text{life}}$ = Present value of incurred claims over the life of the business under revised assumptions
- $\text{orig PVP}_{\text{life}}$ = Present value of premium from over the life of the business
- $\text{RI}\%$ = Rate increase percentage
- LR_{min} = Minimum loss ratio or original filed loss ratio

This expression is set equal to the original priced for lifetime loss ratio and solved for the RI percentage. Interestingly, the only difference between this variation of the future loss ratio formula and the lifetime loss ratio formula is the assertion that past premiums were at the new rate increased level. This is a key difference however, since this drives the difference in the maximum increase allowable. This variation will yield the same rate increase as the future loss ratio above if the only change to the original assumptions is a flat percentage change to morbidity.

If the slope of projected morbidity is different than original pricing, or if the termination rate assumption is different than original pricing, the relationship of the lifetime loss ratio, future expected loss ratio and the variation in the future expected loss ratio approaches will change. However, the lifetime loss ratio approach will generally produce a much higher maximum rate increase than other approaches.

Business Considerations

The maximum rate increase allowable may not be the appropriate increase to be filed due to several potential business considerations. These include:

Marketing and Public Relations Impact – Negative public relations will likely result from filing a rate increase. New business sales may also be impacted. As a result, companies need to carefully estimate the extent of any marketing and public relations impact in light of the continued increased scrutiny and negative public reaction of rate increases. For companies not having filed for rate increases in the past, doing so may change their public image and damage their brand name.

Regulatory Environment – The regulatory environment can impact the ability to obtain necessary rate increases. A typical nationwide LTC rate increase filing may include reductions in the requested amount or significant delays in receiving approval. There is also more emphasis recently on premium rate consistency with new business, policyholder disclosure of past rate increases and contingent nonforfeiture provisions.

A rate increase filed today will likely not fall under the provisions of the new model regulation. However, it is prudent for the actuary to examine the provisions of the new model to the extent they are appropriate or to the extent regulators might refer to them in reviewing a filing.

Legal Environment – There have been some large and public lawsuits regarding the issue of rate increases. Some multi-million dollar lawsuits have already been settled, while others are still pending. A company needs to examine the potential legal risk of a class action lawsuit from filing a rate increase.

Other ways to Address Poor Experience – There are other steps a company should consider as potential ways to improve the profitability of an in-force block of business that may allow them to forego part or all of a rate increase filing. These include, improving claims management, more efficient financial management and expense management and potential policyholder conversion programs.

Policyholder Equity Considerations – A key business concern is how a company treats one policyholder versus another. In general, most rate increase filings are for an entire policy form or group of forms. However, there is some latitude

One of the potential problems with using the future loss ratio approach is the necessity to have detailed information on the original assumptions.

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on how a company defines “class” of policyholders. Some rate increases may vary by benefit characteristics or even issue age. Other business considerations such as the regulatory, legal and public relations environment will impact decisions on policyholder equity and pooling of experience.

Shock Lapses – Many people are concerned about “rate spirals” for closed blocks of poorly performing LTC business. These rate spirals are more common in health insurance where the healthy policyholders may leave to purchase insurance elsewhere, and only the poor risks remain. In LTC the healthy policyholders are not as likely to lapse after a rate increase because the steep attained age claim cost curve applied to issue-age rate business generally does not allow the policyholder to purchase less expensive coverage elsewhere. Therefore, companies have experienced very minimal shock lapse from rate increase filings and rate spirals have not materialized.

Profitability – While the maximum allowable rate increase is determined based on morbidity and termination experience, a company’s overall profitability will impact the rate increase decision. Positive investment income or expense management results decrease the necessity for a rate increase.

Implementation Costs – The cost to notify and bill policyholders needs to be estimated, and the effort required to answer questions from policyholders, agents, regulators and the press needs to be considered.

Multiple Increases – If the needed rate increase is large, a company may want to implement two smaller rate increases, one or more years apart. This needs to be communicated to policyholders so they can make an informed decision on whether to keep their policy in-force. The maximum rate increase formulas can easily be adjusted to use this approach.

Cost of Waiting – There is a tradeoff between credibility of experience and cost of waiting to implement a rate increase. Depending on which approach to the maximum rate increase is used, either the profitability of business (due to the inability to recoup past losses) or level of future rate increases can vary dramatically for every year a necessary rate increase is forgone.

Valuation Issues

A rate increase can often be the impetus for closer evaluation of contract (active life) reserves. Should they be strengthened? Should a gross

premium valuation or asset adequacy testing determine what should be done? There are published approaches to reserve changes after a rate increase for other lines of business and various reserve bases other than statutory. Those approaches are summarized and discussed here for LTC statutory reserves, but the issues and concepts apply to other valuation bases as well.

The three approaches that will be defined are static, retrospective and prospective. These naming conventions are chosen in order to be consistent with published work on the subject.

Static – This is the “do nothing” approach. This may well be the most common approach to adjusting statutory reserves after a rate increase, and some may argue is the most appropriate if a gross premium valuation test is satisfied.

Retrospective – This approach assumes that assumptions have been revised from issue. Depending on the degree of the assumption changes, this approach can result in a significant “spike” in the level of reserves.

Prospective – The prospective approach begins with the statutory reserve you are currently holding and calculates a new net premium based on the revised best estimate of morbidity and persistency. The formula for the new net premium is as follows:

$${}_{rev}NP = \frac{{}_{rev}PVIC_{curr+} - {}_{curr-1}V_x}{\ddot{a}_{x+curr}}$$

- ${}_{rev}NP$ = Revised net premium
- ${}_{rev}PVIC_{curr+}$ = Present value future incurred claims starting from current policy duration
- ${}_{curr-1}V_x$ = Current terminal reserve for duration one less than the current duration
- \ddot{a}_{x+curr} = Annuity factor based on the current attained age

This new net premium is then used in a recursive formula starting with the current terminal reserve and revised morbidity and/or termination assumptions.

While the retrospective approach may result in a sharp change in reserve levels, the change can be graded into over time. The prospective approach however, naturally grades into a new reserve

Many people are concerned about “rate spirals” for closed blocks of poorly performing LTC business.

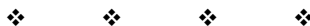
because it is calculated from the current reserve level.

There are many other variations to the aforementioned approaches, some of which include the gross premium and reflect the level of rate increase in the reserve calculation.

It can be argued that neither the retrospective nor the prospective approach is necessary if the business satisfies a gross premium valuation. However, if the reason for the rate increase is a steeper claim cost curve, it may be that the gross premium valuation is satisfied today, but is not expected to be satisfied several years into the future. In this instance, it may be prudent to

gradually strengthen reserves now based on either the retrospective or prospective methods.

As with some of the other rate increase considerations, issues surrounding LTC reserves can be surprisingly complex.



This article attempts to answer the question of what analysis and considerations should be reviewed to determine if a rate increase is necessary and appropriate. While there often are not any easy answers to the issues raised, rigorous analysis and careful thought to all pertinent issues will yield the best results. ↗

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From the Editor

The Possibilities

by Bruce A. Stahl

When you read my accompanying article on return of premium riders, you will understand why I found myself reminiscing about our former president, Ronald Reagan. He maintained an optimism about everything that was good in our nation. Among those things that he saw as good were entrepreneurs, of whom he said that they see “possibilities where others see only problems.”

The LTCI industry grew to what it is because entrepreneurs saw the possibilities inherent in the aging of the baby boomers and their need to have long-term care down the road. They also had the courage to invest capital in something that had little experience. Some will argue that the consumers were the ones who took risks, because many rate increases became necessary. Yet the consumers purchased insurance coverage without premium rate guarantees in order to reduce risk. They may not have eliminated all of the risk, but they certainly reduced a significant part of it. The investors in LTCI were the ones who had the courage to assume the risks that the consumers transferred to them, and they have received a range of rewards, from losses to large gains, for doing so.

Today’s investors in LTCI continue to take a risk, though it is somewhat different than it had been 10 or 15 years ago. With the new model regulation, the investor takes a greater pricing risk though the experience supporting the pricing is much more credible than it was.

In this edition, you will find an article by Jim Robinson on pricing within the context of the greater pricing risk that is within the NAIC model regulation. You will also find an article by Al Schmitz on evaluating the need for rate increases on blocks of business that were issued prior to the current NAIC model regulation when the inherent risk was related more to lack of experience. My article is about a specific pricing mistake, which is a risk that today’s investors ought to be able to minimize when they rely on members of our profession. It is a conceptual error and is not directly dependent on the quality of experience supporting it. Finally, you will see an article by Steve Cooperstein who sees “possibilities where others see only problems,” and who therefore began to develop a policy accordingly. ↗



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The AAA Practice Note in Practice –

Part II of II

by James M. Robinson

Introduction

This is a follow-up to an article included in the April newsletter. At that time, the AAA Practice Note was about to be released and the article presented a case study intended to simulate the environment and issues associated with preparing an initial LTCI rate filing under the 2000 LTCI Model Regulation certification requirements. The case study was to then be the focus of a session at the SOA Spring Meeting in Vancouver in June. Although the discussion was interesting, many questions were unresolved and some new issues were raised. Unfortunately, the case study did not prove particularly helpful in focusing the discussion or providing examples of realistic issues. On the other hand, the discussion was quite interesting and well worthwhile. This article summarizes some of the key aspects of the discussion and reiterates a few outstanding issues.

Vancouver SOA Meeting

At Session 9CS of the June Vancouver meeting, Amy Pahl, Darrell Spell and I conducted a discussion of the issues associated with applying the AAA Practice Note to the problem of preparing the initial rate filing certification. As expected, much of the discussion related to making provision for Moderately Adverse Experience (MAE). On balance, the discussion uncovered more questions than answers. Some additional concerns that arose included:

- How do you define conditions under which management would seek a rate increase, especially when a portion of adverse experience may be covered by “other” sources?
- What are the proper interpretations of the various assumption sets referenced in the regulation and the Practice Note (e.g., “best estimate” versus “pricing” versus “best estimate plus provision for MAE” versus “sensitivity testing assumptions” versus “experience prompting rate increases”)?
- How is provision for MAE defined in the context of pricing cell subsidization?
- How should provision for MAE take into account the level of comfort with the best estimate assumptions?
- How should provision for MAE take into account the lack of experience of new entrants to the LTCI market?
- Can the mechanics of the net-to-gross test be clarified when dealing with conservative valuation assumptions?
- In the net-to-gross comparison, how many pricing cells can “fail” the test and by how much?
- How is proper consideration given to constraints on loss ratios associated with future in-force rate increases when testing experience scenarios for initial pricing?
- What constitutes “management agreement” and will it be binding if in-force rate increases are required in the future?
- Despite the uncertainty in the definition of MAE, how can the actuary clearly present his/her provision for MAE in the filed rates?
- What role should pricing assumptions on prior successful filings play as a comparison base for the reasonableness of future filings?
- How can “gaming” of the filing process be avoided if too much clarity is provided by



regulators regarding filing procedures and standards?

Three major issues were scheduled for discussion at the session—how to make provision for moderately adverse experience, how to interpret the net-to-gross premium comparison and (if necessary) how to measure the likelihood of MAE scenarios. While some of what follows can be attributed to the session discussion, I would characterize most of the following as my own musings on these issues.

Provision for Moderately Adverse Experience

Section 10.B(2) of the 2000 LTCI Model Regulation requires that the actuary must provide:

“...an actuarial certification consisting of at least the following:...(a) statement that the initial premium rate schedule is sufficient to cover anticipated costs under moderately adverse experience and that the premium rate schedule is reasonably expected to be sustainable over the life of the form with no future premium increases anticipated;...”

A strict reading of this language might lead to the following conclusions:

- The first portion, “sufficient to cover anticipated costs under moderately adverse experience,” makes no mention of the need to provide for a profit acceptable to management. In the extreme, this might imply that this condition will be satisfied if the provision for MAE (expressed as a premium loading) is less than the profit margin anticipated under best-estimate assumptions.
- The second portion, “premium schedule is reasonably expected to be sustainable,” makes no mention of MAE, but alludes to reasonable expectations. We might interpret “sustainable” to mean not requiring an in-force rate increase. This might imply that this condition will be satisfied if the profit margin under best-estimate (reasonable) assumptions is sufficient to avoid future management requests for rate increases.
- Given the lack of a clear definition, if the MAE is “conveniently” selected to be less than the best-estimate profit margin, it would seem that both conditions are satisfied. In this extreme interpretation, the actuary makes no certification that rate

increases will not be sought if experience is less than moderately adverse.

Of course, it is unreasonable to assume that this narrow interpretation was what regulators had in mind when they worded the model regulation. Those at the session seemed to agree that this was not in keeping with the intent of the regulation. On the other hand, the fact that the wording is subject to this kind of unintended interpretation would seem, by itself, to call for additional clarification of intent by the authors.

The Q&A within the Practice Note indicates that provision for MAE usually will vary by the actuary’s “interpretation,” “confidence” and “judgment,” as well as the company’s “tolerance.” All of these terms are difficult to define, but seem to indicate again that there may be room for significant differences in how actuaries might reasonably interpret the requirement.

Regardless of the range of possible interpretations of the MAE certification requirement, the implications of the model regulation for actuaries and insurers seeking “unexceptional” in-force premium rate increases are much clearer. Even those who adopt a minimalist attitude with regard to the initial filing certification requirements will agree that a pricing strategy which admits a significant probability for future in-force rate increases is unlikely to be financially viable in the light of the constraints placed on such increases.

Role of the Net-to-Gross Premium Comparison

Section 10.B.(2)(d)(iv) of the 2000 LTCI Model Regulation requires:

“A statement that the difference between the gross premium and the net valuation premium for renewal years is sufficient to cover expected renewal expenses; or if such a statement cannot be made, a complete description of the situations where this does not occur;”

The model regulation language does not explicitly indicate that the comparison must be satisfied. The regulation simply states that additional information may be required if it is not satisfied. Of course, this additional information may lead the regulator to question the appropriateness of the pricing assumptions and, therefore, to question the certification of the provision for adverse experience, but the comparison itself is not an explicit lower bound on gross premiums (on average or by pricing cell).

... given the lack of a clear definition, if the MAE is “conveniently” selected to be less than the best-estimate profit margin, it would seem that both conditions are satisfied.

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The Practice Note provides additional guidance on the interpretation of this regulation. The first discussion of this section of the regulation occurs in the "Documentation" section of the Practice Note (page 8), indicating that,

"In those situations where the actuary cannot make the statement required in the first part of Section 10.B.(2)(d)(iv) of the 2000 Model Regulation, the actuary may want to include a description of the adjustments to the reserving assumptions necessary to modify the net valuation premiums for testing purposes (e.g., an increase in the interest rate from 4 percent to 7 percent for issue ages under 60)."

The Practice Note again discusses this part of the regulation in the Q&A section on page 10:

"How might the actuary address very conservative reserves that do not meet the 2000 Model Regulation's criteria for comparison of gross and net premiums?"

"Some companies may decide to establish conservative reserves, (e.g., with a 0 percent voluntary lapse assumption) such that the comparison required by the 2000 Model Regulation is not directly passed. The 2000 Model Regulation (further amplified in the guidance manual) allows the actuary to adjust any or all of the reserve assumptions to reduce the difference between the reserve assumption(s) and the pricing assumption(s) that include the margin until the comparison is met. Under this approach, the actuary then usually documents the changes along with the reserve assumptions. Regulators may then review the adjusted assumptions as a surrogate for pricing with margins. In the event that the difference produces an assumption that appears too aggressive to the regulator, the actuary may be called upon to supply the detailed work behind the actuarial certification."

This implies again that the role of the net-to-gross premium comparison is to provide additional information to assist the regulator in evaluating the appropriateness of the pricing assumptions, and the comparison is not an additional requirement that must be met even if the certification requirement in Section 10.B(2)(a) is otherwise satisfied.



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Measuring MAE Likelihood

If we argue that a 2 percent drop in interest is a "very" adverse deviation because it will require repricing, can we then characterize a 1 percent drop

in rates as "moderately" adverse because management will not seek a rate increase in that event? Does the required provision for MAE require the actuary to measure the probability of the adverse scenario occurring? Can we state that a 1 percent change in interest rates is moderately adverse without assessing the likelihood of such a change?

Step 3 of the Practice Note calls for testing the margin for MAE using "volatility measures on" ... "probability distribution functions" or "using Monte Carlo simulation." This seems to imply that frequency measurement is at least appropriate, if not recommended.

In Example C of the Practice Note, "the actuary determines the margin sufficient to cover 90 percent of all scenarios tested." This is another indication that the frequency of the adverse deviation is a significant factor.

Suppose then, for the sake of this discussion, that we must consider the frequency of an adverse deviation and that it cannot be considered moderately adverse unless the probability of its occurrence (or something more adverse) is less than or equal, say, to 20 percent. What tools does the actuary have to make such an assessment?

Having spent the past many years in stochastic model-building efforts, I believe efforts to set explicit definitions for "moderate" deviations expressed in terms of probability thresholds will be very difficult to apply consistently. Consider claim cost assumptions pieced together from various general population studies and subjective adjustments for induced demand. How can we estimate the 80th percentile of the claim cost from these data sources?

We might build a micro-simulation model which claims to summarize the risk that actual results will differ from expected results, but how do we factor in uncertainty with regard to the expected claim levels? How do we incorporate provision in the claim cost distribution for lurking trends that may not be apparent in short historical study periods? While I am definitely a fan of continuing to study and model such processes, the current state of actuarial technology will leave much room for reasonable differences in the estimates of these probabilities or distribution percentiles. So, we should not expect much greater clarity or consistency in the definition of MAE merely by posing the question in a probability framework.



I hope this article has been at least interesting, if not thought-provoking. As an LTCI Section Council member, I would be very interested in your thoughts on these and other issues. ↩

“Here We Go Again”

by Bruce A. Stahl

When Congress tried to present too large a budget to former President Ronald Reagan for a second or third time, “The Great Communicator” replied with rising pitch and volume, “Here we go again!” I was reminded of this expression when I started to look at the market’s premium rates for LTCI return of premium riders at death. The industry underpriced many riders in the past, the most memorable likely being the compounded increasing benefits, limited pay options and return of premium riders. While the newer return of premium benefits are normally limited to deaths, they are still well underpriced.

The argument for pricing a return of premium death benefit is often turned around on the actuary. The marketer will state that the return of premium is like a life insurance policy. To this the actuary may reply that the applicant can apply for a life insurance policy at the same time as the LTCI policy. Yet he is confronted with a quick retort, pointing out that the benefit is an increasing one, and that the life insurance policy benefits cannot be reduced by claims that are paid on the LTCI policy. Suddenly the benefit is not like a life insurance policy, though everyone unwittingly continues to speak as though it is.

Furthermore there is another very significant difference between the death benefit in a return of premium rider and a life insurance policy. The premiums for the return of premium rider itself are returned if no policy benefits are paid. This has a very significant impact on the required premiums. For analogy, consider what the cost of a term life insurance policy would be if the premiums were returned to those who did not die during the term (a term policy is used for analogy because a portion of term policyholders will have survived the term, just as a portion of LTCI policyholders will be claim-free until they die). The investment income from the term life insurance policyholders that survive the term, plus the investment income and premium from the term policyholders who die, would need to pay for the expenses of all the policyholders, and for the benefits of those who died. Since the premiums of the survivors would be returned, the death benefits would be paid primarily by the term policyholders who die. Obviously the premiums would be very large.

Most LTCI return of premium rider premium rates look like the premiums that would be charged when only the policy premiums are returned. The modeling is not difficult if one assumes that anyone who has a claim will have



benefits that exceed the premiums that are paid. (This assumption is not precise, yet it serves to demonstrate the point.) The premiums for the rider benefit are based on using lapses, deaths and claim incidence as decrements, and the probability of death as the probability of returned premiums at any given time in the life of the policy. Therefore the survivorship probabilities include only those who are claim, lapse and death free. To calculate the present value of benefits, the “survivors” are to be multiplied by the probabilities of death, the present value interest factors, and the increasing benefits.

If the investment income return is equal to the present value interest, the only way to pay for the benefits of the policy is with the premiums of those that have a claim under the policy rather than the rider. Ignoring the loss of the rider premium to subsidize the insurance pool, a person issued a policy and rider at age 57 may be charged about 27 percent of the policy premium. If the actuary remembers that the insurance pool is lost, the premium would be something like 400 percent instead. The correction is simple: retain the rider premium.

Four hundred percent plus the policy premium is close to four times the normally charged premium for policy and rider! That is larger a discrepancy than the single pay option mistakes that were sometimes off by a multiple of three. Here we go again! ↩



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the financial planner moaned that it was a shame she could not get the combo or any other long-term care insurance for a tax client who was just starting to use a walker. She said the client was ready to buy LTCI (surprise) but the insurers wouldn't cover her. I wondered if substandard might be a possibility, but ended up confirming that nothing was in fact available for this now willing buyer. The care risk was no longer in question, but the longevity risk was still very much open and potentially devastating. This seemed to me like the ingredients of a potential market. Just covering a VERY conservative percentage of those privately paying in a nursing home would be a \$100++ million market. But I wondered—is there a practicable product response? In what form? Could it be “underwritten?” Could it be priced? Was there data?

It quickly became apparent that the product might take the form of a very substandard LTCI policy or a seriously impaired annuity. Policy filing, as well as tax and marketing considerations, tilted towards the impaired annuity route, even though there was serious surplus strain then associated with impaired annuities. We found an underwriter with some data for rate making and underwriting, lined up reinsurers for both the longevity risk and surplus relief and defined a marketing plan with strategic affiliates.

Five years later, after lots of interest by insurers targeted as already in the structured settlement market, unfortunate reorganizations by a company ready to do it in three weeks (!) and finally almost stumbling on a company not involved with structured settlements that saw the product as a strategic marketing, financial and distribution fit, the product was on the market. Well it wasn't quite that easy, but it did get there about four years ago.

Along the way we discovered that a seriously impaired annuity was already being marketed in England. While they had/have universal health insurance, their government opted, similar to ours in forming Medicare, to not cover long-term care. England thus has a comparable market for LTCI as well as this uncovered “at need” market as they call it. Their lead has been helpful, though regulatory, tax and cultural differences, as well as the niche nature of the market, still required/require first-to-market efforts here.

As a market developer, my firm's mission is to not only invent breakthrough products, but to also market them as the opportunities offer. We saw getting a strong leg up on distribution as this product's biggest opportunity, as the niche nature of the market and the product suggested that it would be hard to distribute through brokerage channels at a significant and sustained level. As usual, there were bumps in the road. Significant

for us was that we couldn't negotiate the exclusive marketing arrangement we sought and we lost a major part of the financing for our efforts because of “administrative hitches.” These impediments seriously impaired (pun intended) our marketing, relegating most of our efforts to local “feeling out” the various doors we saw to the market rather than more aggressive marketing and selling. Nevertheless, the results of this feeling out has been instructive and now forms the basis for more extensive marketing by us (the company continues to market the product through its brokerage channel).

Our primary tests have been focused on the various providers in the geriatric care field—nursing homes, assisted living facilities, geriatric care managers, retirement communities, elder law attorneys, as well as accountants, trust departments of banks and some specialized brokerage firms.

Our biggest early disappointment was nursing homes. They had, and continue to have, more major problems, including rampant turnover of administrators, though we are seeing some turnaround there. Assisted living facilities were a pleasant surprise, though some product gaps were experienced. Elder care attorneys and accountants were also not very productive. Geriatric care managers, though, seem to hold some potential. Several new niches have also been developing, among them, a charitable giving play and home care. Direct approaches to the market also seem to hold some promise and as experience is developed both at the customer and center of influence level, there seems to be potential for even greater success. And, as originally anticipated, helping people with these problems opens up trust and cross-selling opportunities—certainly for the LTCI and the investments of the impaired person's offspring.

Moreover, as with the initial development of this product (and others), being in the market uncovers potential for additional product innovations. We are already seeking insurance companies interested in a second stage product and, perhaps more significantly, for refurbishing the basic LTCI package into a much more consumer-friendly offering. As mentioned earlier, I also trust, as I have from the outset, that this work at the other edge of elder needs will be instrumental in bridging the gap beyond the products now receiving attention at the beginning of an elder years' market.

The moral of this tale—stay attuned to changing needs in the market, be persistent, adjust for inevitable bumps in the road, be flexible and remain focused—the niche may revamp the mainstream. ↩

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