



Long-Term Care News

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Managing Restoration of Benefits Provisions in LTCI Policies

by Steve La Pierre

Restoration of Benefits (ROB): the provision of a long-term care policy that allows policyholders to restore their maximum benefit period after they have used some or nearly all of their policy benefits to pay for a covered claim event. This is a provision that should be managed closely.

A large percentage of long-term care insurance policies contain a provision for ROB. These ROB provisions usually specify a period of time, often 180 days, during which an individual may restore their full policy benefits if they a) have recovered from their former claim condition, b) no longer have a condition eligible for coverage, c) have been care-free during this period, d) have not been receiving services during this restoration period, or e) have met other similarly worded requirements. It is not uncommon

for ROB definitions to differ between the policy iterations of one carrier, not to mention the policies of multiple carriers.

As blocks of long-term care insurance business age, the frequency of requests from policyholders to restore their benefits increases. These increased requests have highlighted the need to more effectively manage ROB provisions.

One aspect of the challenge with ROB administration is rooted in the lack of understanding of the ROB policy benefit by policyholders. Many policyholders believe that—although they remain eligible for benefits and continue to receive services—if they stop sending requests for reimbursement to their carrier for a 180-day period, their full benefit period will

What are the Primary Risks that Face LTC Insurers When Issuing a Policy?

by Bruce A. Stahl



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Ten years ago many LTC professionals would have expressed concern that the lapse and mortality assumptions might be misestimated. In contrast, today many LTC policies being issued are priced with such low lapse and mortality assumptions that the profitability is not sensitive to overestimating the decrements. Instead, today the greatest concerns may be investment risk and morbidity misestimation risk.

This issue of *Long-Term Care News* attempts to address how LTC insurers manage investment risk and morbidity misestimation risks. For addressing investment risk, we have reprinted an article by Luke Girard from the February 2001 Investment Section newsletter *Risk & Rewards* as it helps us understand how we might value business with reference to investment risk. For addressing morbidity misestimation risk, we provide two articles: one regards how to manage morbidity factors that are outside the control of the insurance company; the other provides an example of how an insurance company can proactively manage morbidity in accordance with the policy language.

As always, our intent is to provide you with information that is helpful to you and that challenges your thinking about topics related to the health care industry, long-term care in particular, of course. We hope you enjoy this issue of our newsletter and invite you to send in article ideas for us to consider for future editions of this publication. ■

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Building Community

by Mark Costello

The LTC Section Council believes that one of our primary goals is to build community. As I noted last time, I know that our industry is filled with passionate people; and I ended my column with a plea for you to show me your passion. From struggling as an industry to understanding the potential impact of the CLASS Act to struggling to find articles for this newsletter, the need for a passionate LTC community is as strong as ever. However, I know that the pressures and obligations of our personal and professional lives can sometimes hinder our involvement in the LTC community—involvement that many of us want to pursue. The Section Council must find avenues for you to participate in and enjoy this community by addressing these obstacles.

The LTC Section has formed a LinkedIn group that you were all invited to join. If you don't remember the details, just click on the "connect" link at the bottom left corner of the LTC section page of the SOA website. From there, it's a simple click or two to comment on an existing discussion or even start a new one.

Our thought was that this LinkedIn group can provide all of our members with a low-tech, minimally-invasive, yet comprehensive forum for any number of community-building activities. The CLASS Act is a good example. As we were rolling out the site, this subject was hot off the presses. If you visit the site, you'll see a handful of discussions related to the act—how we, as an industry, should respond; discussion of premiums; discussion of value to consumers; and a plug for an upcoming webcast. At that point, we on the council were testing out the site; so, there are many contributions from noncouncil members. But, think of how you as a member could use LinkedIn when a topic like CLASS comes about.

- Don't know about the topic? Check the site and read up on it.
- Have a question? Start a discussion and ask away.
- Have an opinion? Join a discussion.
- Have you read some pertinent information? Post a link.
- Interested in the pulse of the industry? Read the various discussions. You might note that the industry is trending one way or the other.
- Looking for expertise? Read the discussions and see whose comments/opinions seem valuable.
- Want people to learn about your expertise? Join in and contribute.
- Think the topic hasn't been fully covered? Suggest a webcast, a meeting session or newsletter article.
- Want to get to know your peers in the industry? Just browse around.

We also have discussed the use of LinkedIn in connection with this newsletter. More and more of us are probably getting our news online. We see our newsletter potentially moving more toward that format. We discussed the long-term vision of posting articles on the website as they become available (with one hard copy printout at the end of the year). And, then, much like on the newspaper website that you probably use, we would point to LinkedIn to allow direct commentary on all articles posted.

Perhaps most importantly, LinkedIn can give you, the members, an easy way to communicate with section leadership. What can we be doing? What should we be doing? This site provides you with a quick and painless way to drop us a quick note.

We think LinkedIn has great potential; BUT, it will only be as effective as we as an entire community make it. Sure, it may take a little courage to take that first step and throw out an opinion; but, that leap of faith will contribute not only your own thoughts but will also add validity to the site. The more people who contribute, the more vibrant the site, and the more value it adds.

So, please give it a shot.

Here's the URL: http://www.linkedin.com/groups?gid=2768897&trk=myg_ugrp_ovr

Go there. Check it out. Let us know what you think about LinkedIn or anything else that may help us be better communicators and build our community. We would love to hear from you! ■



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automatically restore. Others believe that their full benefit period will restore if they have a family member provide care during the 180-day period instead of a licensed provider.

When evaluating whether a policyholder is eligible for ROB, many carriers conduct a retroactive evaluation of the time period between the last payment on an individual's previous claim and the most recent date of request for claim benefits. This is done to help determine if the individual met the 180-day requirement as detailed in their policy.

This approach, which involves the retroactive collection of medical evidence, may present a number of difficulties. The longer the period of time from the last date of service, the greater the challenge in obtaining meaningful medical records and provider or physician input as to how the policyholder was functioning at the end of the former claim.

A more effective approach to managing the ROB provision includes being more proactive in managing the end of a claim. For example, pay close attention to open claims for which you have not been requested to generate a benefit payment in 30 to 45 days. Routinely follow up with these claimants to confirm that services are still being provided and

the claim should remain open. Taking this proactive step will help identify and resolve those situations when a policyholder believes they are restoring benefits by holding provider invoices. It is best to resolve these situations earlier and avoid an expensive surprise to the policyholder in 180 days.

Additionally, a very important step for home health care claims is to conduct an abbreviated *end-of-claim* functional assessment. These assessments will serve as the basis for communicating to the policyholder that their 180-day restoration period is effectively commencing, or if not, why not. You may discover a policyholder would be placing themselves in a perilous situation by discontinuing care services.

Of course, the use of an *end-of-claim* assessment may be deemed unnecessary for situations where the start and end of a claim are clearly defined, acute claims, post-surgical and rehabilitative claims.

The *end-of-claim* assessment provides a good opportunity to help avoid policyholder confusion related to the ROB provision early in the process, and, together with more proactive contact with open claimants, you will greatly enhance your management of your ROB provisions. ■



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Investment Actuary Symposium Fair Valuation of Liabilities: Theoretical Considerations

by Luke N. Girard



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The valuation method is ... independent of the investment strategy that is being used to fund the liabilities.

Editor's Note: *Luke Girard's article was first printed nearly 10 years ago (Risk & Rewards newsletter, February 2001), summarizing a scientific paper that he had written to address the differences and similarities between the option pricing method (now more commonly known as fair valuation) and the actuarial appraisal method. Attempting to use the article's recommended option pricing method 10 years ago to price LTC products would have appeared daunting. Today, LTC actuaries have better tools available, and they have a better handle on the lapses and mortality anticipated for policyholders. Therefore, two of the previously daunting concerns for using the option pricing method have been largely addressed. Perhaps it is now time for LTC actuaries to consider the advantages of the option pricing method," particularly one that is emphasized in the article. The option pricing method "is also independent of the investment strategy that is being used to fund the liabilities."*

Is it better to be precisely wrong or approximately right? This question is at the center of the battle between historical cost and market value accounting. Current market value is highly relevant, but its accuracy is limited. Historical accounting, on the other hand, is highly accurate, but is of little relevance. The following quote is from Diana Willis at the FASB.

"The old model with its historical-price based measures provides less relevant information than today's dynamic capital markets need, and it cannot cope with today's complex financial instruments and risk-management strategies—much less tomorrow's."

The quote clearly indicates that the FASB has shifted toward increased relevancy. This increased emphasis does not necessarily have to come at the expense of less accuracy, since there have been advances in both valuation methodology and information technology."

The two leading methods for doing a fair valuation of liabilities are the *option pricing method* and the

actuarial appraisal method. While they have wide acceptance, they also appear to contradict each other in many ways. A task force formed by the American Academy of Actuaries coined the term "option pricing method." This task force produced a position paper that catalogued seven possible methods, one of which was the option pricing method.

The option pricing method has also been referred to as the "direct method," since liability cash flow is discounted at the risk-free rate plus a spread. Included in liability cash flow is premium and benefit cash flow along with expenses. This valuation method is consistent with the way assets are valued in the capital markets. If cash flow is certain, the discount rates are the spot rates. If cash flow is uncertain, we need to generate interest rate scenarios, and then, to complete the valuation, we need to probability weight the path-wise present values for each scenario. The option pricing method has many advantages. The valuation method is independent of statutory accounting, risk-based capital and taxes. It is also independent of the investment strategy that is being used to fund the liabilities. Assumptions can be objective if they are derived from the marketplace. For all these good reasons, it is preferred by accountants and corporate finance professionals.

The actuarial appraisal method has also been referred to as the *indirect method* because it is deduced indirectly from an actuarial appraisal. An actuarial appraisal is fundamentally based on discounting free cash flow. Free cash flow is discounted at the cost of capital in order to derive what is called DDE or *discounted distributable earnings*. The fair value of liabilities is deduced by deducting DDE from the market value of the assets. The actuarial appraisal method has many advantages. It is based, of course, on free cash flow, which depends on the important realities of statutory accounting, taxes, and the investment strategy. It is flexible since it can incorporate actuarial assumptions of mortality, morbidity and lapsation. It is generally accepted as a valuation basis in the merger and acquisition marketplace.

As different as these two methods appear to be, they can be reconciled. In fact, it can be shown that they produce exactly the same result if we are careful in applying consistent assumptions in each case. This equivalence is based on pure algebra. To see this, we start with the actuarial appraisal method and define a term called *required profit*. This is the pretax profit that needs to be generated by the product in order to earn the cost of capital. If this profit is generated, the shareholders should be satisfied since the company will earn its cost of capital. Next we define a term called the *liability spread* as the asset spread minus the ratio of required profits over the fair value of liabilities, where the asset spread is the expected return of the assets over the risk-free rate. Note that because this is an actuarial appraisal, the liability spread depends on investment strategy, risk-based capital, statutory accounting, cost of capital and taxes. If we add the liability spread to the risk-free rate and discount liability cash flow directly, we get exactly the same result as the actuarial appraisal method. No new information is being created by doing an actuarial appraisal in this way. In essence, this is a tautology.

The new information is that there is no new information. Critics of this line of reasoning have pointed to the existence of a “circularity” in the derivation of the option pricing method from the actuarial appraisal method. This circularity results from the fair value of liabilities being dependent on the required profit, which is in turn dependent on the fair value of liabilities. While it exists, it does not invalidate the conclusion, although it does make the mathematics somewhat challenging (see Girard 2000-1).

Many practitioners, in declaring that these methods are different, are not being diligent in ensuring that assumptions are being applied consistently between the two methods. Whether assumptions are derived implicitly or explicitly or whether each method uses different assumptions should not be sufficient cause to view these methods as being different. After all, within each method different methods exist for developing assumptions. If this were a sufficient argument to make the two methods different, then we would arrive at the absurd conclusion that each method would be different from itself. Thus, if we make exactly the same assumptions in applying each method, we will get exactly the same result. This makes the two methods equivalent.



Now that we have established that the two methods are equivalent, we are ready to move to the next stage, which is the choosing of assumptions for the valuation or accounting policy. Let's assume that we have perfect markets, as Modigliani and Miller contemplated back in 1958, when they wrote their celebrated paper concerning the cost of capital (see Modigliani and Miller 1958 and 1963).

If we have perfect markets, M&M concluded that we must use a leverage-adjusted cost of capital when discounting free cash flow. M&M derived the leverage-adjusted cost of capital under the assumption of a steady state. This assumption is not appropriate for most fair valuation situations, since fair valuations have finite horizons and cash flow can vary for each period. However, the leverage-adjusted cost of capital can be generalized to accommodate finite horizons and varying cash flow (see Girard 2000-2).

If we assume a leverage-adjusted cost of capital, then the liability spread reduces to or converges to the debt spread. This debt spread is the funding cost for the firm in excess of the risk-free interest rate or, stated differently, the debt spread plus the risk-free rate is the market cost of debt for the firm.

There are many reasons to suggest that it is quite sensible to use a leverage-adjusted cost of capital as the policy when doing an actuarial appraisal. For example, everyone would agree that if you have a riskier investment strategy, you should be using a higher discount rate.

If we assume a leverage-adjusted cost of capital, then the liability spread ... converges to the debt spread. ... The debt spread plus the risk-free rate is the market cost of debt for the firm.

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If the level of risk-based capital is lower, you have more leverage and this should result in a higher discount rate. Also, if the reserve basis is weak, this means higher leverage, which should translate into a higher discount rate. A leverage-adjusted cost of capital has all these desirable attributes. Furthermore, using a “risk-adjusted rate of turn” may be required under the actuarial standards of practice in order to reflect the risk of leverage. At least, appropriate disclosure may be necessary if the discount rate does not reflect all risks (*see section 5.2.2 of Actuarial Standard of Practice No. 19 - Actuarial Appraisals*).

The insurance markets are not perfect. Life insurance policies do not trade in the capital market as treasury bonds do. Therefore, it is quite natural and appropriate to critique this assumption. So, why should we make the perfect market assumption? First, it is a good idea to have an internally consistent valuation process, and the perfect market assumption helps you achieve that consistency. Second, the perfect market assumption is consistent with asset valuation.

This assumption is generally made on the asset side of the balance sheet to value similar risks such as interest rate risk and equity market risk. Third, the assumption is objective; the information used in the valuation process comes from the market and is not subjectively derived by management.

Objectivity is good because it helps to ensure comparability between companies. Finally, the perfect market assumption insures that you have a willing buyer and a willing seller, which is a generally accepted guideline in a fair valuation.

In doing an actuarial appraisal, the assumption is often made that the cost of capital is constant. A more sophisticated assumption would be to assume that the cost capital is equal to the risk-free interest rate plus a spread. These assumptions are usually made when calculating an option *adjusted value of distributable earnings* (OAVDE). The pitfall is that, if you do this, you are implicitly assuming that leverage is constant over both state and time.

However, leverage is not static. It can be quite dynamic. Leverage can be very large, it can be very small, and it can even be negative. The existence of dynamic leverage is problematic when valuing merger and acquisition transactions at one single

corporate hurdle rate or at the risk-free interest rate plus a static spread. Depending on the circumstances, this practice could easily result in mispricing a transaction.

It has been said that it is not the objective of FASB to measure the distributable earnings capacity of the firm. In fact, that is exactly what we are doing when we are calculating fair values by discounting liability cash flows directly at the risk-free interest rate plus the firm’s debt spread. We have also been told that when doing a fair valuation, we should not be discounting liability cash flow at the company’s investment earnings rate less a profit margin. In fact, that’s what we are implicitly doing when we are doing a fair valuation using the option pricing method.

In summary, we started off with the actuarial appraisal method. We reformulated the actuarial appraisal method into the option pricing method format. We then made the assumption that liabilities are freely traded in perfect markets. From all this, we concluded that liability cash flow should be discounted at the risk-free interest rate plus the firm’s debt spread and then we make an adjustment for taxes. ■

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Handling LTC Misestimation Risks

by Bruce A. Stahl

One of the dangers in any sort of modeling, whether for insurance experience or in financial portfolios, is becoming too reliant upon statistics and models, and not keeping reasoned, experienced judgment in sight. This was clearly seen in 2008's financial meltdown, where overreliance on Value at Risk (VaR) modeling—a modeling convention designed to measure short-term risks to 99-percent confidence levels—lulled many financial firms to sleep with a false sense of security. These firms ignored the dangers of events within the remaining 1-percent likelihood of occurring, and they failed to monitor the continuing relevancy of some assumptions in the models.

Just as VaR lulled many financial firms to overconfidence, modeling conventions of long-term care (LTC) insurance risks could also exert a similar lulling effect on LTC insurers. LTC insurance professionals need to consider whether the model assumptions that feed the model distributions are realistic and remain realistic. Insurance professionals may misinterpret the experience of past LTC insurance risk behavior, and future behavior may not agree with the past. If either occurs without being recognized in pricing, the pricing assumptions may be misestimated.

When data is sufficient to identify statistical distributions for the experience, LTC insurance experience will face random fluctuations from period to period. In an ideal world, LTC insurers would have enough data to perform good simulations to calculate statistical confidences. Although normally LTC professionals do not have enough yet because the industry is so young (in its modern form, just 25 years), the LTC professionals still think in terms of statistical confidence levels.

For example, when performing rate stability certifications, the pricing actuary will state with some level of personal (though not necessarily statistical) confidence that premium rates will not need to be increased. That particular level of confidence is described as sufficient for “moderately adverse” experience. In statistical terms, that particular level



of confidence is greater than 50 percent and probably smaller than 99 percent. So despite the lack of statistical modeling and measurement, the pricing actuary has some confidence that no rate increase will be needed over the lifetime of the policy.

Still, actuarial confidence in LTC insurance projections is not so great that LTC policies can be issued with lifetime rate guarantees. LTC insurance professionals must consider the risk of misestimation, and the adverse possibilities that could emerge. Most LTC insurance policies cannot be canceled by the insurance company. If adverse experience develops, however (e.g., if morbidity is higher than assumed), the insurer can implement rate increases for the entire class of policies. This ability is necessary should morbidity rise so high that the insurer's capital would not be able to support it.

Four ways exist to address adverse experience possibilities resulting from misestimation risk: through increasing premium rates; through Provisions for Adverse Deviation (PAD) in the reserves; through the level of capital; or through reinsurance. (The limited payment options available on many LTC policies suggest that at least some actuaries are highly confident that a particular premium level will be sufficient for adverse risks, but presumably these premiums are at a level that would cover much



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more than “moderately adverse” experience, and, hopefully, would cover many more extreme adverse experience scenarios.)

Many causes of morbidity misestimation are easy to discern and address. For example, LTC insurers speak of the male/female mix as a distribution risk. This means that as men are expected to incur fewer claim dollars than women, insurers watch to make sure they do not issue more policies to women than they anticipated when pricing. There is also a regional distribution risk, but that can be addressed in pricing so as to minimize the need to watch geographic distribution. For example, an insurer may note that home health care claims occur more frequently in Florida than they do in other parts of the country. Such an insurer might decide to set premium rates higher in Florida than in other states which would render the distribution risk lower than it would be if an average premium rate were to be used for all states.

Some causes of morbidity misestimation, however, take time to recognize. As LTC is a relatively recent product, its pricing has suffered from lack of substantial historical insured experience. This has been alleviated to some degree by the large number of LTC insurance benefits that have now been paid. However, experience samples remain small compared to other more mature insurance lines, which means future LTC claims experience still runs a greater risk of being misestimated. As the number of data samples increase, lifetime experience should be better estimated and period-to-period performance differences should appear random.

Also, some LTC actuaries may interpret past experience differently from others. A study could show, for example, that the incidence rate for larger lifetime maximums is lower than that for smaller lifetime maximums. Some actuaries could conclude from such a study that the underwriting was stronger for higher benefit levels. Others might decide that the difference could be attributed to lower issue ages for the larger lifetime maximums. Drawing one of these conclusions or any number of other possible conclusions will likely affect the projection modeling.

Even if past experience is interpreted sufficiently well, future morbidity may not be estimated correctly. The misestimation error could be both on the adverse and favorable sides of the line. For

example, the article “NeuroAIDS: An Evolving Epidemic,” published in the May 2009 edition of *The Canadian Journal of Neurological Sciences*, recognized a very favorable response of cognitively impaired HIV-infected individuals to antiretroviral drug therapy. Yet the same paper expressed a concern for adverse hypertension and diabetes effects of continued antiretroviral drug therapy as patients age. Undoubtedly research continues to develop therapies that overcome adverse effects of various illnesses and the drugs that treat them (and perhaps use them in other areas of medical therapy). Still, LTC professionals must prepare for adverse effects as well as recognize favorable progress to date.

As mentioned earlier, highly adverse misestimation can be alleviated through rate increases. Moderately adverse misestimation, however, must be addressed otherwise, perhaps through reserve PAD, through supporting capital, or through reinsurance. PAD to some extent, protects LTC insurers from moderately adverse experience. Yet there may be a gap between the point where an insurer might be willing to implement a rate increase and the maximum point that PAD would address. For example, perhaps the originally projected lifetime loss ratio was 55 percent using a specified interest rate, while the insurance company would only implement a rate increase if a later revised projected lifetime loss ratio exceeded 66 percent using the same interest rate. PAD might address only the first six percentage points of the 11 percent difference, which would mean the remaining five percentage points would have to be addressed by capital or through reinsurance. (For this article, that remaining 5 percent is called a corridor.)

Although a reinsurance contract to cover the 5-percent corridor might not receive reserve credit for statutory purposes, it could help alleviate the strain on an LTC insurer’s economic capital. In the hypothetical example above, the LTC insurance company might be willing to pay 1 percent or 2 percent of its premium each year for a reinsurer to assume the risk for that 5 percent corridor, rather than holding 5 percent of the present value of future premiums in capital to support the risk.

The corridor could be reached due to risks other than morbidity misestimation, but the historical problem of overestimating mortality and lapses is remote because pricing today often recognizes such small decrements that adverse scenarios do not nor-

Even if past experience is interpreted sufficiently well, future morbidity may not be estimated correctly.

mally generate severe enough shifts in the loss ratio. Putting aside asset and reinvestment risks (because this example bases the loss ratio on an assumed interest rate), morbidity misestimation is the most likely source for an adverse lifetime loss ratio.

Morbidity for LTC insurance is composed of incidence rates, continuance assumptions (or claim terminations) and utilization (or paid percentages relative to the daily maximum). For LTC, these assumptions often lack the degree of credibility enjoyed by other more mature insurance products. They are also the likely source for experience causing the corridor to be entered, and the source of the possibility that adverse experience extending into the corridor may not be discerned for the life of the policies, both as active lives and as disabled lives. Therefore this corridor reinsurance needs to be in place for a very long time.

Given the long horizon, perhaps a corridor reinsurance provision is best addressed by coinsuring a portion of the overall risk as well. The reinsurer will thereby have access to how the business is being administered and how the experience is developing.

The corridor reinsurance can then have a periodic accounting where newly projected experience can be used as a basis for corridor experience adjustments through the life of the policies.

Policies with limited payment options will not have a predefined corridor. In such cases, a corridor can be created if the insurer sees the moderately adverse experience as being more pernicious than the possibility of highly adverse experience. This would be possible when the combination of the perceived likelihood for experience in the corridor and the magnitude of corridor losses are greater than the combination of the perceived likelihood of adverse experience and the magnitude of adverse losses. Clearly, the decision depends upon the perceived likelihood of various loss scenarios.

The industry may not face adverse losses due to misestimation of assumptions in the future. Yet the risk exists, and LTC insurers will do well to consider how best to prepare for the possibility. ■

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