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Effects of Experience Rating on COLI/BOLI Programs

By Matthew B. Schoen and James P. Van Etten

Editor's note: This article originally appeared, with minor differences, as the first article in a three-part series on corporate-owned and bank-owned life insurance (COLI/BOLI) programs. Look for the second article, "Managing Mortality Costs within COLI/BOLI Programs," in a future issue of Product Matters!

This article is designed from the point of view of the purchaser of corporate-owned life insurance (COLI) and bank-owned life insurance (BOLI) policies. It will:

- provide an overview of the differences between experience-rated and non-experience-rated product designs; and
- describe ways to ascertain exposures to excessive mortality-related costs and how to measure the potential extent of those exposures.

Many owners and sponsors of permanent policies have needlessly been exposed to what might best be described as appallingly large exposures to excessive mortality costs. These phenomena raise a few questions: How did this happen? Who is responsible? In this article, we posit a few possible explanations for the prevalence of these vulnerabilities.

PRICING AND RISK

We begin the subject of pricing as viewed from an insurer's perspective with some fundamental concepts. When an insurer writes insurance coverage, there is a risk that claims will be larger than premiums, so there could be losses. Therefore, for the insurance market to function, the insurer must have some capital that will be used to cover claims when there are losses. This capital is at risk. Before an investor will supply this capital, there must be an opportunity for profit, or return on capital.

The amount of capital required and the desired rate of return will depend on, among other factors, the degree of risk.

In light of these principles, we start our discussion of pricing with the premise that insurers will price their products so that the amount charged is sufficient to cover their expenses, including the costs of paying claims, and provide a reasonable return on their capital.

When we look at the simple example of term life insurance, the insurer must cover its operating expenses and life insurance claims costs. The amount of claim payments is not knowable in advance. In our example, the insurer will base its price on the claims it expects to pay, using a mortality table that is based on experience that reflects the risks it is undertaking plus its anticipated expenses, plus a margin for profit. On average, and assuming its table is accurate, the insurer knows that by using this approach it will lose on some insured populations and profit on others in any given time period. The insurer will try to set its pricing factors, including its profit margin, at a level where it can achieve its desired rate of return over the long term.

Many life insurance products have an insurance component and a savings or cash value component, so the insurer must consider the risks related to surrender or withdrawal of cash values in addition to the cost of paying expected claims, or pure insurance risk. Cash value life insurance products typically have mortality charges that are based on expected death claim payments, much like a term life insurance product. If they are offered in the insurer's separate account, it is typical for the investment performance of the separate account, less asset-based charges, to be earned by the policy cash value. If they are offered in the insurer's general account, the insurer incurs investment risk and declares the interest to be credited to the policy cash value on a periodic basis. Different insurers may have a different view of the risks attendant to the different elements of the policy, and therefore, they may develop different pricing factors to cover the risks (and related profit margins). Additionally, insurers may look at external factors; for example, because insurance is offered in a competitive marketplace, the pricing offered by competitors must be considered because it will impact the product's sales results.

For some products, the price is fully defined when coverage is issued. There are also instances where price is determined within defined limits at the issue date, but the insurer reserves the right to reprice within those limits. As one example, an insurer may



define a current schedule of cost of insurance (COI) charges and reserve the right to change rates subject to a guaranteed maximum schedule or table of rates. There are also pricing factors for some products where the insurer is able to reprice with no explicit limits on repricing.

In the rest of this article, we base our discussion on the pricing elements that are related to charges for mortality costs. We also assume that the charges for mortality costs are determined purely on the basis of the costs of paying expected claims, together with related expenses and profit margins, without considering the relationship to other pricing factors or to external factors (such as competitive position) that may influence overall product pricing.

WHEN EXPERIENCE RATING APPLIES

When experience rating applies, the insurer will recognize the experience of the insured population or group being evaluated. When this is done, the insurer typically has a basic table of charges that it applies to all groups, and the company performs a periodic repricing evaluation of the experience of each group. When the experience for a group is favorable to the insurer, a portion of the overcharges are refunded to the policyowner as experience credits and/or the favorable experience results in lower future charges. When the claims for the group have exceeded charges, typically the future charge levels will be increased (subject to guarantees). Because there can be variation in experience from group to group, the insurer will generally charge a higher initial rate for experience-rated business than

it would charge for business that consists of many groups that are not experience rated; this approach increases the probability that the charges for a group will be adequate to cover the claims for that group. The experience-rated customer may see larger charges at the point of sale, but because of experience credits, it may experience lower net charges over the long term.

Different insurers will have different techniques for evaluating experience-rated contracts. Under one technique, the insurer establishes a notional account for the policyowner. Credits to the account occur equal to the mortality charges levied against the contract. Deductions from the account are made at the time the claims are paid. Charges for target profit margins or to cover certain costs are also deducted from the account. Interest is credited to the account balance. From time to time, typically once per year, the insurer will evaluate the size of the balance in the account and its estimate of existing claim liability. Then, it will decide whether to allow an experience credit of net overcharges, increase the basis for future charges because it has not been charging enough to cover claims costs, or let the pricing stand without any adjustments. For these types of contracts, the insurer will generally also make a final determination after all coverage has been terminated and all claims have been paid. If there is a positive balance in the account, it will result in final experience credits. If the account has a negative balance, there will be no experience credits and, in general, the insurer will be unable to recover its net losses. Under experience-rated contracts, the insurer's potential profits from mortality are limited to the profit margins used in determining the balance in the notional account.

As noted earlier, each insurer may have its own variation in techniques. The techniques may involve adjustments in future charges in lieu of determining experience credits. We have seen versions in which the notional account earns separate account performance. For business that is participating, the credits may be in the form of policy dividends. At the time coverage is issued, for experience-rated contracts it is customary for the insurer to provide the policyowner with a description of the approach to be used in repricing, and in general the insurer will make commitments on its future use of this approach. For the remainder of this article, we will refer to the notional account as the “Mortality Reserve.”

WHEN EXPERIENCE RATING DOES NOT APPLY

When experience rating does not apply, the insurer may choose to establish its charges and perform repricing on the experience of a segment of its business or on the business issued in a given time period, or both. For example, it is common for an insurer to use the same pricing for all of its COLI or BOLI business issued on a guaranteed issue basis in a given year or group of years. It may choose to use a technique similar to that used for experience-rated business, but applied to the “pool” of business in the defined segment. As a result of this pooling, the same charges or basis of charges would apply to all insured groups without regard to the experience of each group. Some groups will have lower mortality experience than average and others will have higher mortality experience than average. The insurer is concerned about its aggregate level of charges more than it is concerned with the experience of a single group.¹ Losses it experiences on some groups may be made up by gains it experiences on other groups. At the time coverage is issued, the insurer may make a commitment on the approach to be used in repricing. Absent such a commitment, it may be possible for the insurer to increase its mortality charges, either to increase its profitability or to cover other costs.

CONSEQUENCES WHEN EXPERIENCE RATING APPLIES

Regardless of the mechanics, when an experience-rating technique applies:

- charges for mortality for each group will more closely match the benefits received;
- to the extent mortality claims do not exceed the Mortality Reserve that has been established, profit and loss impacts to policyowners for each claim are minimal² (because the claim cost is charged to the Mortality Reserve that has been established from prior charges);
- the insurer may experience a permanent loss from mortality (for the affected group) because the policyowner can terminate following a period of high claims activity; and

- the degree of risk transfer is reduced compared to a contract that is not experience rated, because losses for a policyowner in one period may be recovered in future periods, in whole or in part, as a result of repricing actions for that policyowner.

CONSEQUENCES WHEN EXPERIENCE RATING DOES NOT APPLY

Regardless of the mechanics, when no experience-rating technique applies:

- policyowner performance is less predictable (i.e., deviations from the policyowner’s expected earnings are larger) because earnings are impacted by each claim as it occurs;
- there is potential for relative gains (or losses) if the policyowner’s mortality claims are higher (or lower) than COI charges, resulting in relatively volatile earnings; and
- any insurer repricing actions (or lack thereof) may be inconsistent with the claims experience of a single policyowner.

ECONOMIC ADVANTAGES OF EXPERIENCE RATING

Provided minimum case size criteria are satisfied, a purchaser can decide whether to seek an experience-rated contract. Some insurers offer experience rating for cases as small as 50 insured lives. So, above a minimum case size, a policyowner can choose whether to use experience rating either by selecting from options made available by one insurer or by selecting a different insurer.

Generally, purchasers do not know in advance whether their mortality experience will be higher or lower than the mortality expected by the insurer when setting its charges. As such, there is a risk that the mortality charges will exceed the benefits received if actual mortality is relatively low. This risk is counterbalanced by the opportunity to receive benefits that are greater than the mortality charges if actual mortality is relatively high. None of the employers we have encountered have ever expressed a desire to profit by employees dying faster than expected. But in the course of evaluating their purchase, many employers have analyzed the impact of employees dying slower than expected. In fact, one of the reasons our clients have sought out experience-rated plans is to reduce the risk of losses that would result if they purchase a non-experience-rated plan and mortality is lower than expected. For a typical well-funded plan, the COI charges represent the equivalent of 100 to 150 basis points in average rate of return over the life of the program; thus, a mismatch of only 10 percent between actual and anticipated benefits may be equivalent to 10 to 15 basis points. Uncertainty of this size is large in comparison to the advantage anticipated in making a purchase decision. This uncertainty is reduced in an experience-rated plan.

For smaller cases, it may take many years before the experience results become statistically significant. In these cases it is likely to take a number of years before any experience credits are earned, so some of the positive benefit from experience rating may be deferred.

EXCESSIVE COSTS DEFINED

We exclude from our definition of excessive COI costs increases in mortality-related charges that transpire solely because of unfavorable mortality experience. Therefore, if mortality experience is substantially worse than “reasonable” expectations set by the actuaries at time of policy issuance, the insurer is entitled to increase COIs accordingly—bearing in mind that the increase should be consistent with future expectations—but only if it is not seeking to use the occasion to disguise increasing overall profitability. What then are we talking about when we say “excessive” COI costs? Although there are several locations in the sand where one could draw a line, we focus on two upper boundaries that should, at minimum, be considered and understood by purchasers. The first, and most egregious, is when the insurer exercises its discretion over mortality-based charges solely to increase its profitability on one or more blocks of policies. The second occurrence is when the insurer increases COI charges to offset non-mortality-related deficits to approximate its original overall profitability targets. The latter instance can be as vexing as the first for policyowners.

Regardless of the source of “excessive COI costs,” the impact is limited under experience-rated plans because most of the increase in COI cost is added to the Mortality Reserve, which is ultimately returned to the policyowner. The exposure is far larger with non-experience-rated plans, because the entire increase in COIs inures to the insurer. In both cases, exposures can be quantified, and it is highly advisable for policyowners to understand the extent of their existing exposures as well as potential exposure under contemplated purchases.

To demonstrate the potential impacts, we modeled a sample case under a number of scenarios. The characteristics of the sample case include:

- 600 lives are insured;
- coverage has been in force for 10 years;
- the policy is no longer premium paying, and the aggregate cash value is approximately 140 percent of premiums paid;
- the aggregate coverage amount is approximately 220 percent of cash value (this is close to a fully paid-up plan);
- the insured population was issued at ages 30 through 60, so the insureds’ ages currently range from about 40 to about 70; and
- the cash value accumulation test is used for compliance with Section 7702 of the Internal Revenue Code.

The sample case was modeled using both a non-experience-rated approach and an experience-rated approach, under scenarios in which the COI rates are continued unchanged as well as scenarios in which COI rates are increased to guaranteed maximum levels. The model incorporated the following assumptions (for simplicity and ease of analysis, the product illustrated has a very streamlined policy charge structure):

- Deaths (at the assumed mortality rate) occur at the end of each month.
- Assumed mortality is at 45 percent of the 1983 GAM table.
- COI charges are deducted from policy value; the rates used vary by scenario; and the baseline COI rates are at 58 percent of the 1983 GAM table for non-experience-rated plans and at 65 percent of the 1983 GAM table for experience-rated plans.
- Investment performance is at 4 percent annually, and it is added to policy value with no asset-based charges. (This is equivalent to a general account product with interest credited at 4 percent annually.)
- For experience-rated plans, interest is credited to the Mortality Reserve at 3.50 percent annually.
- For experience-rated plans, a retention charge of 5 percent of the 1983 GAM table is deducted from the Mortality Reserve each month.³
- For experience-rated plans, the opening (end of year 10) Mortality Reserve is assumed to be \$3.8 million. This is somewhat less than the target reserve level at that time. The target reserve is the greater of (a) two years of COI charges (defined as 130 percent of the 1983 GAM table rate applied to the current amount at risk for each insured), and (b) the sum of the two largest net amounts at risk for the case. If the initial Mortality Reserve exceeds the target, there would be experience credits at the beginning of the illustration, but that did not occur in the examples provided.

The distinctive characteristics and assumptions for each of the scenarios that were run are as follows:

- Scenario 1N provides a baseline for non-experience-rated plans. It used the previously stated assumptions for all plan years.
- Scenario 1E provides a baseline result for experience-rated plans. It also uses the previously stated assumptions for all plan years.
- Scenario 2N is like Scenario 1N except that COI rates are increased to guaranteed maximum levels at the beginning of the illustration (at the beginning of policy year 11).

Figure 1
Internal Rates of Return for Each Scenario

Scenario 1N	Scenario 2N	Scenario 3N	Scenario 4N
3.78%	2.52%	2.57%	2.84%
Scenario 1E	Scenario 2E		Scenario 4E
3.940%	3.937%		3.938%

- Scenario 2E is like Scenario 1E except that COI rates are increased to guaranteed maximum levels at the beginning of the illustration (at the beginning of policy year 11).
- Scenario 3N is like Scenario 2N except that the face amount is reduced to \$1 at the beginning of year 11 (when the COI rates are increased).⁴
- Scenario 4N is like Scenario 3N except that the timing of the increase in COI charges and the reduction in face amount is at the beginning of year 20.
- Scenario 4E is like Scenario 2E except that the timing of the increase in COI charges is at the beginning of year 20, and the face amount is reduced to \$1 at the time the COI rates are increased.

To measure relative performance of the illustrated results under the different scenarios, we use internal rates of return.⁵ The internal rates of return for each of these scenarios are shown in Figure 1.

We make the following observations based on these results:

- Scenario 1N provides a baseline for non-experience-rated plans. The baseline spread, or “frictional cost,” of this product as illustrated is 22 basis points (4 percent credited rate less 3.78 percent rate of return). This spread can be considered to be the cost of investing in the life insurance program. It is equivalent to the difference between COI charges and insurer claims costs assumed, and it can be viewed as representing insurer profits.
- Scenario 1E provides a baseline result for experience-rated plans. The baseline frictional cost of this product as illustrated is 6 basis points (4 percent credited rate less 3.940 percent rate of return). As with Scenario 1N, this is equivalent to the difference between COI charges and insurer claims costs assumed.
- Scenario 2N is like Scenario 1N except that COI rates are increased to guaranteed maximum levels at the beginning of the illustration (at the beginning of policy year 11). The spread increased from 22 basis points to 148 basis points. This shows that if the insurer increases its charges to max-

imum levels, it would have a significant adverse effect on earnings for a non-experience-rated plan.

- Scenario 2E is like Scenario 1E except that COI rates are increased to guaranteed maximum levels at the beginning of the illustration (at the beginning of policy year 11). The spread increase (from 6 basis points to 6.3 basis points) is minimal for this experience-rated plan, primarily because the increase in charges results in increased experience credits.
- Scenario 3N is like Scenario 2N except that the face amount is reduced to \$1 at the beginning of year 11 (when the COI rates are increased). This provides a minor improvement in performance as compared to Scenario 2N (the spread is reduced from 148 basis points to 143 basis points), showing that the policyowner’s right to reduce the coverage amount has limited value in reducing costs.
- Scenario 4N is like Scenario 3N except that the timing of the increase in COI charges and the reduction in face amount is at the beginning of year 20. So an increase in charges many years in the future still has a significant (124 basis points) adverse impact on performance.
- Scenario 4E is like Scenario 2E except that the timing of the increase in cost of insurance charges is at the beginning of year 20, and the face amount is reduced to \$1 at the time the COI rates are increased. As with Scenario 2E, the increase in spread is minimal.

To summarize, the reductions in rate of return associated with the non-experience-rated plans are quite significant, whether the increase is immediate or deferred for nine years. The reduction in face amount to \$1 does not result in much improvement, which shows that even when the policyowner takes action to minimize the net amount at risk, an increase in COI rates is significant. For the experience-rated plans that have a fully funded Mortality Reserve at the beginning of the illustration, the increase in COI charges is added to the Mortality Reserve, resulting in increased annual experience credits, and as a result there is minimal deterioration in rate of return performance.

The next issue of *Product Matters!* will include a follow-up article that will:

- provide guidance regarding when experience-rated designs are more suitable than other designs (and vice versa); and
- enumerate some strategies for minimizing exposures to excessive mortality-related costs. ■

The articles in this series were designed to provide institutional purchasers and sponsors of life insurance with knowledge about the mortality costs, benefits and risks associated with COLI/BOLI programs. Articles in the original series that are not expected to appear in Product Matters! include “Risk Transfer Considerations,” which addresses these considerations from a variety of perspectives, and “Common COLI/BOLI Misconceptions,” which concludes with a discussion that debunks common misconceptions that have been used to criticize the purchase of COLI/BOLI programs. The interested reader can find the entire series at www.mbschoen.com under News and Publications (dated March 1, 2019) in the Resources tab.



Matthew B. Schoen is founder and president of MB Schoen & Associates, Inc. (MBSA) and founding principal of Private Placement Insurance Products, LLC (a FINRA B/D), Concept Hedging, LLC and DC Plan Insurance Solutions, LLC. He can be reached at mbschoen@coliaudit.com.



James P. Van Etten, FSA, MAAA, is managing partner of Van Etten Actuarial Services, LLC. He can be reached at vanetten.jim@gmail.com.

ENDNOTES

- 1 The insurer will want to avoid antiselection. For example, a group that has lower than average mortality may choose to withdraw from the experience by terminating coverage, which may have an adverse effect on the future experience of the pool. The insurer will prefer to avoid antiselection, since it results in reduced earnings or the need to raise prices.
- 2 For an experience-rated plan, all or the majority of the mortality charges are added to the Mortality Reserve, and to this extent there is not an economic loss from the mortality charge. Conversely, when there is a claim on an experience-rated plan, a portion of the claim costs is covered by a charge to the Mortality Reserve, thus reducing the economic gain at the time the claim is processed. As a result, earnings volatility is reduced for experience-rated plans.
- 3 The retention charge on experience-rated plans in the marketplace (illustrated here at 5 percent) is typically smaller than the expected margin for non-experience-rated plans (illustrated here at 13 percent, equal to 58 percent less 45 percent). The authors believe this is partly due to the larger case size typical for experience-rated plans and partly because the insurer has a better chance to recover losses in one period via gains in subsequent periods under experience-rated plans.
- 4 Because the product uses the cash value accumulation test for compliance with the definition of life insurance under IRC Section 7702, reducing the face amount to \$1 causes the death benefit to be equal to the cash value divided by the net single premium, which provides the minimum coverage needed to satisfy the definition of life insurance (under IRC Section 7702). Reducing the coverage amount allows the policyowner to obtain partial relief from the adverse impact of the increase in COI charges.
- 5 The internal rate of return has been determined prospectively from the beginning of year 11 over the remainder of the life of the plan based on pretax cash flows, with the end of year 10 cash value (and end of year 10 Mortality Reserve for experience-rated plans) treated as “invested” at that time. It has also been assumed that coverage on each insured is continued in force until death.