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GAAP Targeted Improvements—Retrospective Noise

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In its proposed updates to accounting for long-duration contracts, FASB specifies a retrospective method of accounting for assumption changes when calculating liabilities—the same method we use now to value universal life DAC and additional liabilities.

Financial statement users have generally endorsed the retrospective method because, when we change an assumption, they want to see a change in our liability. Considering, however, all of the challenges that companies have faced in explaining DAC unlocking, industry comments were nearly unanimous in recommending a prospective method.

Following the April 19 roundtable, it appears likely that FASB will retain the retrospective method for unlocking liabilities. (DAC unlocking will use a prospective method.)

In this article, I illustrate some likely drivers of unlocking volatility for traditional contracts. In the next issue (if the retrospective method is still alive) I will look at how we might reduce volatility by modifying our approach.

A KEY DRIVER OF UNLOCKING VOLATILITY

One feature of the retrospective method has only an indirect relationship to assumption changes. In what is often referred to as a “retrospective true-up,” actual experience is combined with a current projection to recalculate the net premium ratio.

When we update the calculation for actual experience without changing assumptions, the retrospective method distributes the cost or benefit of any variance between past and future periods in proportion to expected revenue (premium income for traditional contracts). If, among random variations, there happens to be a bias, the deferred costs or benefits will accumulate.

Such bias, if it persists, will eventually lead us to change an assumption. At that time, our revised calculation will similarly distribute the change in projected values between past and future.

Some of the resulting reserve change will essentially be a reversal of past deferrals.

ILLUSTRATIONS

The following illustrations are built from a current estimate cash flow projection of a hypothetical nonparticipating whole life insurance product.

Three different “actual” cash flow patterns highlight the effects of the traditional approach to applying the retrospective method. Though crudely representative of real-world conditions, these are not representative of actual or expected experience for any particular product. To help clarify the effects, random variances are ignored and net income excludes overhead expense and equity income.

Each illustration compares net income under retrospective and prospective assumption update methods to two benchmarks—expected and ideal. For expected, all experience follows original assumptions. For ideal, valuation assumptions are set at inception to equal the actual cash flows. For simplicity, the assumption changes in all illustrations align perfectly with actual experience. In reality, future experience cannot be perfectly divined from the past.

Optimally, actual net income would be close to ideal before and after an assumption change.

Adverse Early Mortality Experience

In Chart 1, adverse experience begins immediately but gradually tapers off. Ultimate experience matches the original assumption. The select mortality assumption is changed in year five.

Prior to the assumption change, prospective net income is clearly closer to ideal than is retrospective. By including actual cash flows in the liability calculation, retrospective effectively spreads the cost of the excess claims over the life of the business.

By the end of year four, accumulated claims are 2,700 greater than expected. Of this, 1,700 (66 percent) has been deferred to be charged against premiums in years five and later. The unlocking adjustment is 2,000. So 1,700 (87 percent) of the 2,000 unlocking adjustment is just to reverse the prior deferral of excess claim costs. The remaining 300 is the portion of increased expected claims that must now be matched with past premiums and immediately added to the reserve.

The prospective method would pass the claim variances directly to net income as they occur. At the time of change, prospective has no unlocking adjustment.

Chart 1
Adverse Early Mortality Experience

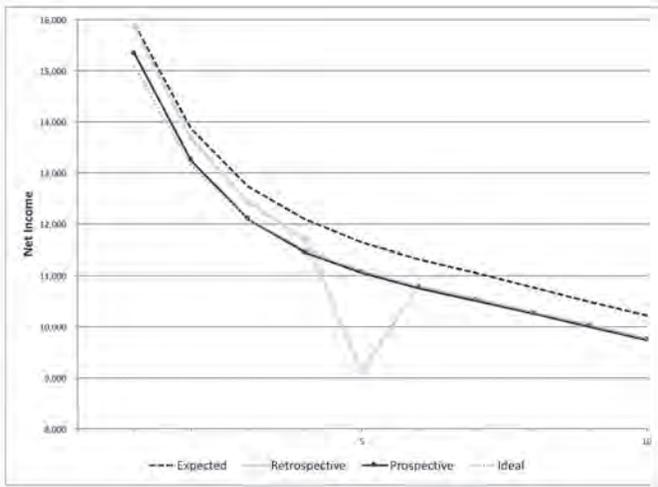
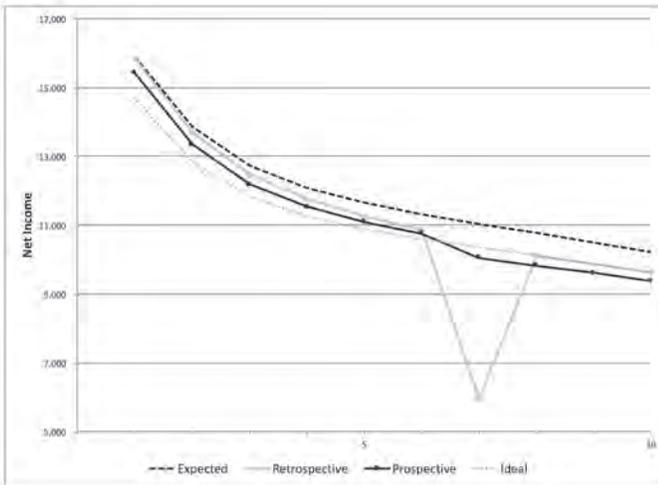


Chart 2
Perpetually Adverse Experience



After the assumption change, net income under both methods is equal or close to ideal.

Perpetually Adverse Experience

In Chart 2, adverse experience begins immediately and is forever worse than originally expected, though by proportionally declining amounts. Here, we change the assumption in year seven.

Under both methods, net income is between expected and ideal prior to the assumption change. Retrospective again spreads the excess costs in proportion to premium, slowing its approach to ideal. Prospective still looks better than retrospective, though not as dramatically as in the first illustration.

By the end of year six, accumulated claims are 3,600 greater than expected. Of this, 1,900 (53 percent) has been deferred to

In real life, we would not know that experience will forever be worse than originally assumed.

be charged against premiums in years seven and later. The unlocking adjustment is 4,400. So 1,900 (43 percent) of the 4,400 unlocking adjustment is just to reverse the prior deferral of excess claim costs. The remaining 2,500 is the portion of increased expected claims that must now be matched with past premiums and immediately added to the reserve.

After the assumption change, retrospective aligns perfectly with ideal. Prospective must also fund the 2,500 that retrospective matches to past premium. Unlike retrospective, however, prospective charges this cost against future premium with a higher net premium ratio, such that subsequent net income would be lower under this method than either retrospective or ideal.

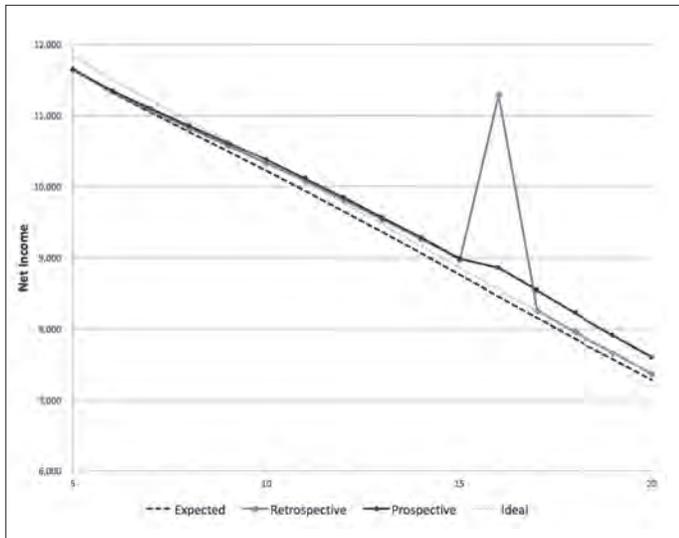
In this illustration, we can see a conceptual tradeoff between the two methods: magnify unlocking by the amount of past claims that had previously been deferred or increase future reserve accruals to gradually make up for the inadequate charges against past premium. In practice, the tradeoff is more muddled.

In real life, we would not know that experience will forever be worse than originally assumed. We might think the adverse experience is a select mortality issue. As a result, our new assumption would be more optimistic than ideal.

Under the retrospective method, we might have unlocking of 2,000 or smaller, depending on how optimistic we are about how soon claims will align with the original assumption. Thus, the adjustment will merely reverse all or part of the 1,900 in accumulated prior deferrals. In fact, since the valuation system accumulates only actual experience, we won't even know the amount of past deferrals. We might conclude that 1,000 or less is a reasonable unlocking amount, thus carrying forward much of the past deferral which, in this illustration, we know must eventually reverse. Subsequent income will be closer to ideal, but still too high.

Since we've changed expected claims for all or part of the remaining select period, it will likely be a while before claims exceed the new assumption by noticeable amounts. On the plus side, that at least means further deferrals will be insignificant for a while. They will, however, continue to accumulate and will eventually have to reverse.

Chart 3
Increasingly Favorable Experience



Under the prospective method, we wouldn't have any deferrals to reverse. We'd be carrying a larger reserve balance than retrospective, possibly even larger than we would have after a retrospective unlocking, and we would increase the reserve accrual rate for future years. Additionally, without any immediate or significant near-term effect of unlocking, we might be more aggressive in changing assumptions than we would under the retrospective method.

Increasingly Favorable Experience

In Chart 3, slightly favorable experience begins to emerge five years after issue. After 15 years, we recognize an acceleration of mortality improvement from about five to 10 years after the business was issued, followed by a return to previously assumed improvement rates. In year 16, we change our assumption accordingly.

Under both methods, the difference from expected net income is almost imperceptible until about 10 years after issue. The difference between retrospective and prospective methods is even smaller.

Before the assumption change, net income continues to improve relative to expected. Retrospective spreads the favorable experience in proportion to premium but, since several years pass from issue until the variances become significant, relatively little is deferred.

By the end of year 15, accumulated claims are 1,900 lower than expected. Of this, only 400 (21 percent) has been deferred, to be matched with premiums in years 16 and later. The unlocking adjustment is 2,700. So this time, only 15 percent (400) of the 2,700 unlocking adjustment is needed to reverse the prior deferral of reduced claim costs. The remaining 2,300 is the portion of decreased future claims that must now be matched with past premiums and released from the reserve. After the assumption change, retrospective aligns perfectly with ideal.

Prospective unlocking would leave the reserve unchanged but reduce future accrual with a lower net premium ratio, such that subsequent net income would be higher than either retrospective or ideal.

This chart highlights another conceptual difference between the two methods—whether the cost or benefit of developments occurring several years after issue should be matched retrospectively to income over the entire life of the business or prospectively to income after the developments are recognized. Many actuaries believe prospective matching to be the better principle. FASB, however, has consistently endorsed retrospective matching in this and other projects.

CONCLUSIONS

Chart 3 makes clear that significant reserve unlocking will be a challenge under some circumstances. Charts 1 and 2, however, suggest that we might reduce the frequency and severity of the challenge if we can find a way to minimize or avoid the deferral and subsequent reversal of persistent, biased variances.

Assuming retrospective unlocking remains the standard for assumption updates, I will present in the next issue some ideas on how we might overcome the problem of deferring and then reversing the effects of actual experience variances. For now, consider something that is implicit in current practice:

With respect to expected future experience, actual experience is given zero credibility until the valuation actuary decides otherwise when updating assumptions. ■



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