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Revenue Recognition for Insurance Contracts – Part 3

By Jim Milholland



Jim Milholland, FSA, MAAA, is a retired partner from Ernst & Young, LLP. He can be contacted at actuary@milholland.com.

This is the third in a series of articles about revenue recognition for insurance contracts. The articles address revenue recognition for those contracts that are measured by the building blocks approach under the emerging new standards for insurance that are being developed by the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) of the United States (collectively referred to as the boards).

The articles illustrate the topics using examples. The examples in this article draw on the illustration of a 20 year endowment contract found in the first article (*The Financial Reporter*, June 2012). As a reminder, the examples use a single (heretofore known as composite) margin, which is consistent with the FASB's proposals, but differs from the IASB's. The IASB favors a combination of a risk adjustment and a residual margin. Furthermore, in the examples, the margin is amortized without reflecting the time value of money, whereas the boards have decided that the amortization should reflect the time value of money. The amortization technique used in the examples was chosen for convenience and may not be in accordance with the final guidance. The conclusions in this article about revenue recognition are not affected by these differences.

The discussions in these articles are the author's views on the boards' direction with respect to revenue recognition for insurance contracts. At the time this is being written, the IASB and the FASB have not made final decisions about revenue recognition and the approach described here may or may not appear in the standards.

Of particular note is one of the differences between the proposals of the IASB and those of the FASB. The FASB does not favor adjusting the margin for the effects of experience differences or of a change in estimate of future cash flows that result from assumption changes. The IASB is in favor of making this adjustment. The examples in this paper illustrate approaches to revenue recognition for which the adjustment to the margin is made. In that regard the paper is aligned with the IASB's thinking. The essential concept that revenue is the amount released from the liability to provide for insurance benefits and expenses is nonetheless applicable to the approach favored by the FASB.

The second article (*The Financial Reporter*, September 2012) shows one possibility for presentation of comprehensive income when benefits differ from those projected. This article shows two additional possibilities and discusses the relative merits of the approaches. The article goes on to show possible treatment of premium differences. A final section of this article discusses the relationship of premiums to revenue.

COMPARISON OF APPROACHES TO PRESENTING THE EFFECTS OF EXPERIENCE DEVIATIONS

As has been the case throughout the series, the initial step in deciding how to treat experience differences is to reconcile the beginning liability to the ending liability, and then to develop the presentation of comprehensive income from the information in the reconciliation.

To reiterate, the purpose of the analysis of the movement in the liability is twofold:

- it shows how the liability progresses over the period, and
- it shows how revenue relates to the measurement of the liability.

Revenue is the amount extracted from the liability to compensate the insurer for the insurance coverage provided during the period. The compensation is the margin that is released plus the amount of expected benefits and expenses.

Table 1 shows a comparison of the movement in the liability under three different approaches for treating differences in experience. The original calculation, for which experience follows assumptions, is also shown for reference. As in the second article, the movement in the liability is separated into the movement in the present value of the cash flows and the movement in the margin.

Column A in Table 1 is the movement in the liability from the second article. The beginning value of future cash flows progresses with the expected elements of the movement, resulting in the amount that was the expected amount for the end of the year. The actual amount, which is calculated from the projection of future cash flows as of the end of the year, is different

Table 1
Comparison of the Movement in the Liability in Year 4

	Original	With Experience Differences		
		A	B	C
	Expected Basis	Expected Basis	Actual Repayments, Expected Deaths	Actual Repayments, Actual Deaths
Movement in the present value of future cash flows				
Beginning PVFCFs	70,947	70,947	70,947	70,947
plus premium	25,144	25,144	25,144	25,144
plus interest credited	4,784	4,784	4,784	4,784
minus expenses	406	406	406	406
minus insurance benefits	505	505	505	253
minus repayments	5,358	5,358	3,209	3,209
PVFCFs moved forward with contributions and withdrawals	94,606	94,606	96,756	97,009
Change in estimate or G/L	0	2,026	-123	-376
Ending PVFCFs	94,606	96,633	96,633	96,633
Margin				
Beginning margin	7,825	7,825	7,825	7,825
margin released	437	437	437	437
change in estimate, or G/L	0	-2,026	123	376
difference in repayments	0	2,150	0	0
Ending value	7,388	7,511	7,511	7,764

from the expected amount because there have been fewer deaths and fewer terminations than had been projected. The difference is characterized as a change in estimate. The margin is adjusted for the change in estimate. There is a further adjustment to the margin for the difference between the actual and the expected repayments. The term “repayments” refers to cash surrenders and maturities, in keeping with the term adopted with the FASB and IASB staffs. The second adjustment is made to avoid recognizing a gain for the difference between actual and expected repayments. The rationale for deferring the gain rests on the belief that there should not be a gain on the deposit element of insurance contracts. Support for the reasonableness

of the adjustment also comes from the observation that the revenue recognized over the life of the contracts appears to be distorted, as compared to the revenue that is recognized in the hindsight calculation.

Perhaps the approach in Column A places too much emphasis on the progression of the model. For example, it makes sense to see that the liability grows with the actual premium payments, not the expected premiums. (Treating the difference between actual and expected premiums is discussed in the next section.) Similarly, the liability should be reduced by the actual repayments, not the expected repayments. The approach in Column B shows the movement in the liability using the actual repayments rather than expected.

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Using actual repayments avoids the appearance of a potentially large gain or loss from differences in actual from expected terminations and obviates the need to make an adjustment to the margin to offset the gain or loss. The adjustment to the progressed number to get the ending PVFCFs is the net gain from experience differences. The insurer has paid less than it expected and is therefore holding onto more cash and the additional liability it needs to provide for the additional contracts is less than the cash value. The difference is the gain for the period.

The issue to be resolved is which presentation is most appropriate to show in the performance statement. Critics of the approach in Column B will state that it obfuscates a potential significant difference between actual and expected cash flows. Proponents of the approach in Column B will counter with the argument that the important differences are those that relate to the insurance component, and that it is only the quantum of the premiums and the repayments that is important, not the difference to expected amounts. The differences can of course be disclosed elsewhere.

As noted, Column B shows the movement in the liability using expected deaths rather than actual deaths. Having argued that the movement in the value of future cash flows should be analyzed with actual repayments, perhaps the movement should show the actual benefits as well. This approach is found in Column C. The effect of showing only actual amounts is that the difference between actual and expected benefits does not affect net income for the period. It is taken to the margin and effectively spread over the remaining periods. This smoothing of the effects of experience differences is not likely to be agreeable to the boards.

ANALYSIS OF THE DIFFERENCES

It is insightful to see how the adjustment to the progressed number to get the PVFCFs can be explained

as something other than simply the difference between two numbers. In the original calculation, the PVFCFs at the end of the period is 94,606. The number of contracts is 7,865, so the value per contract is 12.2867. In Column A, because there have been fewer deaths and fewer terminations than expected, there are 165 more contracts than expected (164.919872 more contracts, to be precise). The value per contract is the same as in Column A because the inputs, or assumptions, are unchanged. So the change in estimate is the difference in the number of contracts times the value per contract. $16.919872 \times 12.2867 = 2,026$.

Column B uses the actual repayments for the progression. Since the liability is different from the cash values, there is a gain from the effects of paying less than expected but keeping only the PVFCFs on the remaining contracts. This gain is the number of contracts leaving (by death or by surrender) times the difference between the cash value per contract and the PVFCFs per contract. This difference is 0.748325 per contract, which when multiplied by 165 makes 123.

The adjustment in Column C is the same as in Column B plus the difference between the actual and expected death benefits.

In all three approaches, the PVFCF is the same at the end of the period. They differ in the path from the beginning value to the ending value. In A and B the margin at the end of the period is the same. In C the margin is different.

Table 2 (right, top) shows a comparison of the performance statement under the approaches.

The approaches in Column A and Column B create the same bottom line. The net income for the period is different from the originally expected amount by the difference in death benefits.

In Column C, this difference in death benefits is taken to the margin and not reported in the current period. The difference is spread over the remaining life of the contracts through the amortization of the margin. Revenue is lower in the current period and somewhat greater each year thereafter.

In all three approaches, the PVFCF is the same at the end of the period.

Table 2
Comparison of the Performance Statement in Year 4

	Original	With Experience Differences		
		A	B	C
	Expected Basis	Expected Basis	Actual Repayments, Expected Deaths	Actual Repayments, Actual Deaths
Revenue	1,348	1,348	1,348	1,095
Investment income	5,299	5,299	5,299	5,299
Benefits	505	253	253	253
Interest credited	4,784	4,784	4,784	4,784
Expenses	406	406	406	406
Net income	952	1,204	1,204	952
Difference to Original	0	253	253	0

Total revenue is the same over the life of the contracts for all three of the approaches to experience differences.

PREMIUM DIFFERENCES

Up to this point the experience differences considered in the examples have been differences between actual and expected benefits or actual and expected repayments. The next example addresses the possibility that premiums actually paid are different from expected.

This example considers the possibility that less premium is paid, but the lower payments do not result in any contract terminations; i.e., the number of contracts terminating is the same as originally expected. Contracts do not terminate for nonpayment of premiums, for example, when policyholders elect paid-up options, when they use premium loans, or when they take advantage of the flexible-premium feature found in universal-life type contracts. In fact, for the last possibility, premiums can be greater than expected, although this possibility is not considered in the examples.

The examples use the approach in Column B of the first example for treating the difference in experience. This approach has the greatest appeal to the author because it shows the effect of a difference in premiums and repayments experience as a net gain or loss that is

deferred by an adjustment to the margins, and allows the difference between actual and expected insurance benefits to affect net income for the year.

Consider the case when half of the policyholders pay 90 percent of the expected premium in the fourth year. The number of contracts is not affected by the lower payment, but the cash values are less that they would have been if the expected amount of premium had been paid. There is no difference between the actual and expected number of deaths and cancellations. The lower premium payment does affect benefits because there is a larger net amount at risk for the contracts that pay the lower premium than for the contracts that pay the amount of the initial premium each year throughout the life of the contracts.

Table 3 (pg. 18) shows a comparison of the movement in the liability for the fourth year for the contracts that pay only the full premium each year (the original scenario), the movement in the liability for the case when there is less premium in the fourth year than expected (the revised scenario), and the movement in the liability if it had been known from inception that half of the policyholders would pay 90 percent in the fourth year (the hindsight scenario).

The revised scenario shows that the lower premium results in less interest credited, a slightly larger death

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benefit, and smaller repayments. The net effect is a loss on experience, which is deferred by an adjustment to the margin.

In the previous example (Table 2), revenue is not affected by the experience difference. In this example, there is an effect on revenue. The difference results from the assumed timing of the difference and, accordingly, from the gain or loss on experience. The model has taken the customary approach for analyses of these

types that premiums are paid at the beginning of the year and benefits and repayments occur at the end of the year. When the experience difference relates to a difference in the amount of premium that is paid from that which was expected, the gain or loss occurs at the beginning of the year. The margin is adjusted as of the beginning of the year and hence revenue for the year is affected. In practice actuarial models reflect that premiums are paid throughout the year and that benefits and repayments can occur at any time, not just at year end.

Table 3
Comparison of Movement in the Liability in Year 4 When There are Premium Differences

	Original	Revised	Hindsight
Movement in discounted cash flows			
Beginning value	70,947	70,947	71,063
plus premium	25,144	23,887	23,887
plus interest credited	4,784	4,727	4,727
minus expenses	406	406	406
minus insurance benefits	505	506	506
minus repayments	5,358	5,296	5,296
Progressed value	94,606	93,353	93,469
gain or loss on experience	0	116	0
Ending value	94,606	93,469	93,469
Margin			
Beginning margin	7,825	7,825	7,742
margin released	437	429	431
gain or loss on experience	0	-116	0
Ending value	7,388	7,280	7,312
Total liability	101,994	100,749	100,781

Table 4
Comparison of net income when there are premium differences

Year 4					
	Original	Revised	Hindsight	Rev. - Orig.	Hind. - Rev.
Revenue	1,348	1,340	1,342	-8	2
Investment income	5,299	5,236	5,236	-63	0
Benefits	505	506	506	1	0
Interest credited	4,784	4,727	4,727	-57	0
Expenses	406	406	406	0	0
Net income	952	938	940	-14	2
Year 5					
	Original	Revised	Hindsight	Rev. - Orig.	Hind. - Rev.
Revenue	1,395	1,388	1,390	-7	2
Investment income	6,445	6,382	6,382	-63	0
Benefits	540	541	541	1	0
Interest credited	5,905	5,848	5,848	-57	0
Expenses	385	385	385	0	0
Net income	1,011	996	998	-15	2
Total					
	Original	Revised	Hindsight	Rev. - Orig.	Hind.- Rev.
Revenue	23,706	23,636	23,652	-70	16
Investment income	218,054	216,962	216,962	-1,092	0
Benefits	8,761	8,807	8,807	46	0
Interest credited	203,347	202,405	202,421	-942	16
Expenses	6,050	6,050	6,050	0	0
Net income	23,602	23,336	23,336	-266	0

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Table 5
Movement in the liability in Year 4

Movement in discounted cash flows	
Beginning value	70,947
plus premium	25,144
plus interest credited	4,784
minus expenses	406
minus insurance benefits	505
minus repayments	3,209
change in estimate	-123
Ending value	96,633
Margin	
Beginning margin	7,825
margin released	437
change in estimate	123
Ending value	7,511
Total liability	104,144

Table 6	
Premium	25,144
minus change in liability	25,372
plus Interest credited	4,784
minus repayments	3,209
Revenue	1,348

THE RELATIONSHIP BETWEEN PREMIUMS AND REVENUE

One of the criticisms of the presentation of comprehensive income as it has been illustrated in this series of articles is that it does not show the amount of premium that has been received for the accounting period. Premium income and growth in premiums are important to the evaluation of insurers.

It is possible to show the relationship of premiums to revenue. Table 5 (left, top) refers back to Column B of Table 1 and shows the movement in the liability for year 4 when there has been an experience deviation.

Revenue is the sum of the margin released and the expected benefits and expenses. The complementary pieces in the movement of the liability are the premiums added, the interest credited and the repayments. With this in mind, one can reorder the movement in the liability and show revenue as the amount of premium in excess of the increase in the liability and the repayments, as shown in Table 6 (left, bottom).

The net of the change in the liability and the interest credited to the liability can be characterized as the amount that is added to the liability to provide for future benefits. Obviously, this number is sometimes negative, in which case it is the amount that must be withdrawn from liabilities to provide for future claims and repayments. This view is shown in Table 7 (right).

The analysis in Table 7 shows the premium information that users of financial statements have told the boards that they desire. It also makes clear whether the insurer is adding to liabilities or drawing on liabilities to make repayments and to compensate itself for the insurance coverage.

While there are benefits to showing this information, there are drawbacks as well. The analysis can lead the user to think that revenue is a part of the premium for the period. Revenue is not a part of the premium for the period, as is most clear for single premium contracts, for which the top line in this analysis is zero after the first year. It is important to keep in mind that revenue is the amount taken from the liability to compensate the insurer for the insurance coverage for the period. It can be seen as the amount of contribution to the liability

(the sum of premiums collected and interest credited) allocated to the period to provide for insurance benefits, as was discussed in the second article. Revenue in any period does not bear any necessary relationship to premiums collected in that period.

The analysis in Table 7 may be useful. On the other hand, it may be redundant if the analysis of the movement in the liability is disclosed, as is proposed by the boards. And, as noted, it may be misleading if it allows the user of the financial statement to conclude that revenue should be seen as a part of the current period's premiums.

Table 7	
Premium	25,144
less amounts added to (withdrawn from) the liability to provide for future (current) claims and repayments	20,588
less repayments	3,209
Revenue	1,348

SUMMARY AND CONCLUSIONS

At the time this is being written there has been interest expressed by the IASB in the approach to revenue recognition that has been presented in these articles. Its appeal lies in the broad consistency with revenue recognition as it is defined in the emerging standard on that subject and in its linkage to the measurement of liabilities in the evolving insurance standard. It is nonetheless apparent that this approach is very different from approaches currently in use and it will take some getting used to. The approach is an improvement over current practices because it conveys better information about how insurers are compensated for the insurance benefits provided in contracts that cover multiple years or include significant deposit components.

The starting point of these papers has been that the presentation of comprehensive incomes is a function of the analysis of the change in the liability. Because this analysis is almost certainly going to be a required disclosure, the approach to the performance statement represents very little additional effort to actuaries and accountants preparing the financial statements. The argument that it is impractical and requires a significant additional amount of work is not valid. ■