



The Financial Reporter

ISSUE 89 JUNE 2012

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Presentation of Comprehensive Income Takes Center Stage

Illustrations of the application of the emerging standard on accounting for insurance contracts

By Jim Milholland

While not ignoring the income statement, the discussions of accounting for insurance until now have emphasized the measurement of liabilities. Presentation in the statement of comprehensive income is now taking center stage. This paper provides illustrations of an approach to presentation of income and expenses that may be applied to long duration contracts, i.e., those that are measured by the building blocks approach for the emerging new standard on insurance contracts. The paper reflects the author's view of the direction of the Financial Accounting Standards Board and of the International Accounting Standards Board (FASB or IASB respectively, or the boards collectively) at the time it is written. Until the standard is adopted, it is not possible to know if the approach in this paper will in fact be compliant with the standard.

As the examples show, the key to the presentation of profit and loss is to analyze the movement in the insurance liability and to recognize:

- as revenue, those amounts that are released from the liability that relate to performance under the insurance features; and
- as expense, the actual benefits and costs incurred in the period.

The starting point then is to understand the measurement of insurance liabilities and how they are reconciled from the beginning of the accounting period to the end of the period.

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Published by the Financial Reporting Section
Council of the Society of Actuaries

This newsletter is free to section members. Current issues are available on the SOA website (www.soa.org). To join the section, SOA members and non-members can locate a membership form on the Financial Reporting Section Web page at www.soa.org/fr.

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Chairperson's Corner

By Rob Frasca

The special interest sections in the Society of Actuaries are grass roots organizations formed by actuaries with a common interest and the desire to advance that interest through collaboration with other actuaries (and related professionals) around the world. The sections started in 1981, with the formation of the Health Section, and the number has grown over the years to the 19 special interest sections in existence today.

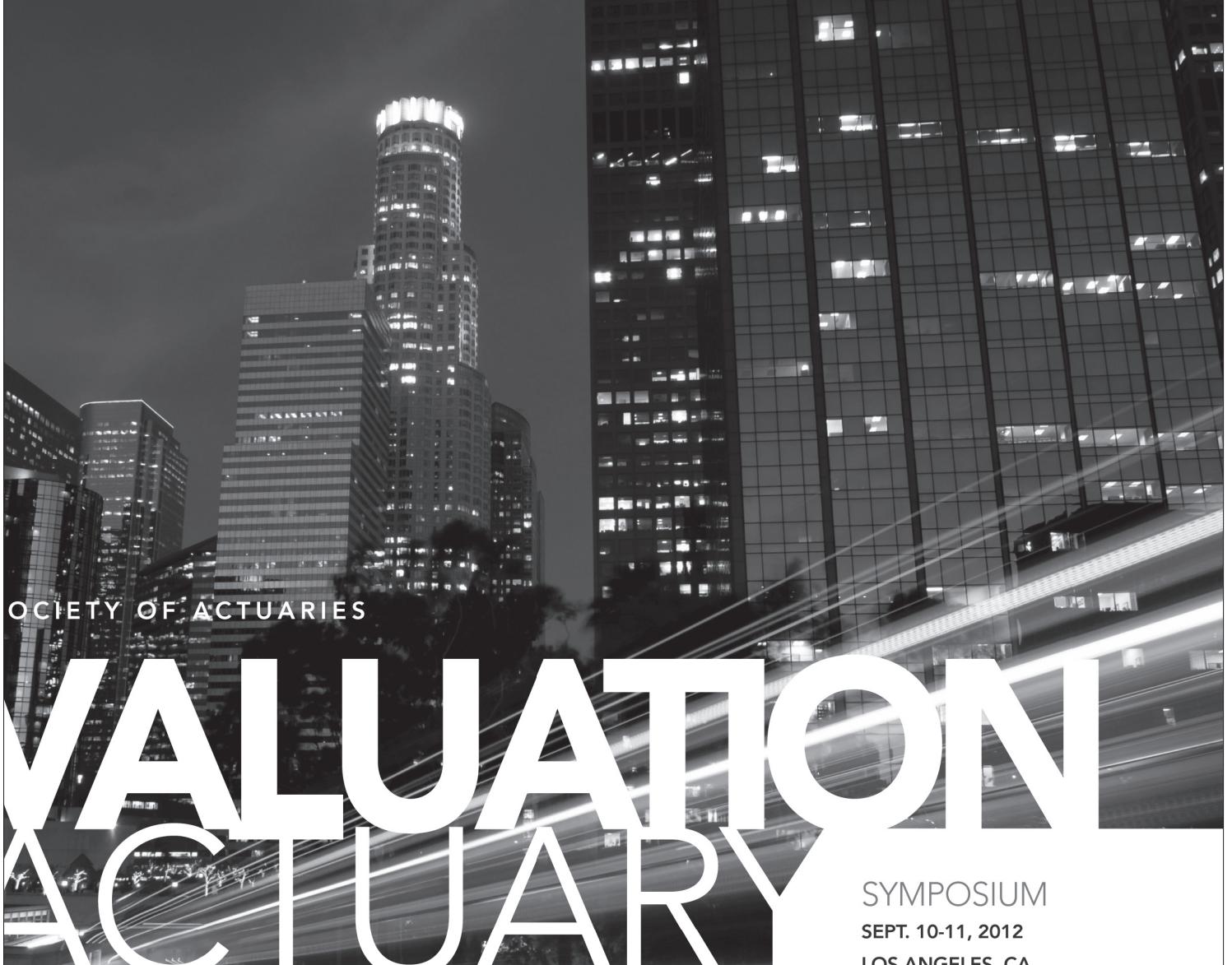
The Financial Reporting Section was one of three sections formed in 1982 (the Pension Section and the Product Development Section were the other two), and it has grown in time to become the largest section, currently with more than 3,800 members. From its start, the Financial Reporting Section has sought to provide a forum in which actuaries interested in financial reporting could organize and communicate, to develop the means of addressing the needs unique to their specific area of interest. Out of this shared interest arose many of the educational activities that support the financial reporting actuary today. Financial reporting specialty seminars, the financial reporting sessions at actuarial meetings, the *US GAAP for Life Insurance* textbook and the periodic webcasts on emerging financial reporting issues are all products of the Financial Reporting Section. In addition, the Financial Reporting Section has funded research in a wide range of emerging areas, from fair value reporting to model efficiency to financial statement disclosure. Through its education and research activities, the contribution that the Financial Reporting Section has made to the financial reporting actuary, and to the actuarial profession in general, is evident.

Yet, as the Financial Reporting Section prepares to celebrate its 30th birthday, we must recognize how its role continues to evolve in the face of a changing world and a changing profession. The boundaries between actuarial interests, as represented by the various sections, continue to shift and to overlap, requiring us to collaborate more closely with other sections in order to address our members' needs. Financial reporting issues are becoming more global, requiring us to expand our reach beyond the United States and Canada to include the range of relevant perspectives. Even the definition of what an actuary does continues to shift, requiring us to reach out to other professions (accountants, economists and information technologists, for example) to cover aspects of financial reporting issues that actuaries need to appreciate but cannot understand fully on their own. All of these developments will require the Financial Reporting Section to change and to adapt.

Although the details of how it fulfills its goals may change, the fundamental mission of the Financial Reporting Section remains the same—to provide a forum in which financial reporting actuaries may communicate, exchange ideas, obtain education and conduct research in order to advance their distinct corner of the actuarial universe. While it may seem odd to consider a 30-year-old organization with close to 4,000 members as a grass roots movement, it is important for us all to consider the value that we as members of the Financial Reporting Section bring to our profession and to recommit to the sharing of knowledge and the development of research into financial reporting topics that brought us together as an organization in the first place. ■



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The examples are intended to allow the reader to understand the concepts and the issues by visualizing the presentation. The paper addresses many important topics, such as discount rates and risk margins, only to the extent necessary to show how they factor into the measurement of liabilities and in turn affect comprehensive income. This limited scope means that there is no attempt to explain how to determine, for example, a discount rate that meets the requirements of the standard.

The margin in this paper is a composite margin, as is favored by the FASB. The IASB favors a two-part margin comprising a risk adjustment and a residual margin. The approach in this paper would work as well for a measurement with a risk margin or a margin (composite or residual) amortization technique that differs from the examples.

This paper introduces the approach with an example of a five-year term product. It then shows a more realistic example of a 20-year endowment product, to illustrate the approach when there is a significant investment component. The policyholder's value (referred to herein as the cash value) that is paid on cancellation, maturity or death is treated like a withdrawal or maturity of accumulated deposits and is referred to as a repayment. This treatment emphasizes the financial nature of the investment component and is similar to accounting for financial instruments.

The approach in the examples is like the expanded margin approach that has been presented in various staff papers from the boards, except that here the revenue is based on the expected benefits in the movement of the liability, not the actual benefits. The IASB's exposure draft *Insurance Contracts* of July 2010 (the ED) proposed something different, namely a summarized margin approach for presentation in the statement of comprehensive income. The FASB's discussion paper *Preliminary Views on Insurance Contracts* of September 2010 (the DP) also considers, among other possibilities, a summarized margin approach. The difference between a presentation using a summarized margin and one using an expanded margin is discussed in the first example.

At the same time that the boards are re-deliberating the ED and the DP, they are nearing completion of a joint project on revenue recognition. In their respective exposure drafts on revenue recognition, which are substantially the same, the boards articulate the principle that revenue is recognized as performance in a contract with a customer. Hence revenue relates not to activity, but rather to satisfying a performance obligation by delivery of goods or services. Entering a contract creates a performance obligation. As performance occurs, the performance obligation is reduced by the proportional value of the services provided or goods transferred to the customer. Revenue is recognized accordingly as the liability for the performance obligation decreases.

Insurance contracts are not in the scope of the proposed standard for revenue recognition. Nonetheless, as the examples illustrate, the idea that revenue is recognized in relation to the performance and the corresponding decrease in the liability can be applied to insurance contracts. The examples demonstrate that the concepts underlying the measurement of insurance liabilities and of revenue recognition are compatible. Anticipating the decisions of the boards, the examples show premiums as deposits. The liability is the accumulated deposits less benefits, administrative costs and repayments. Revenue is associated with the release of those elements of the liability that provide for insurance benefits and costs.

Remeasuring the margin and the possibility of actual experience differing from expected are topics for a later paper. The possibility that comprehensive income may be split between profit and loss and OCI will also be part of those discussions.

As is often the case when values are rounded to whole numbers, the tables that follow have differences attributable to rounding effects.

THE FIRST EXAMPLE – A FIVE-YEAR TERM LIFE INSURANCE PRODUCT

The essential concepts are illustrated by considering a five-year level-premium term life insurance contract.

There is no investment component in this contract. The expected cash flows are shown in Table 1.

Table 1: Cash Flows						
Year	1	2	3	4	5	
Premiums - beginning of year	120	120	120	120	120	
Benefits - end of year	50	75	105	140	180	
Investment income @ 5%	6	10	13	14	14	
Net cash flow	76	55	28	-6	-46	
Cumulative cash flow = invested assets	76	131	158	152	106	

Amounts are not realistic, but they do reflect the nature of life insurance in that a level premium charged for an increasing benefit is a common structure. For simplicity, the first example does not consider either the possibility that some policyholders will cancel their contracts or decrements to face value due to death. The first example does not consider acquisition costs, administrative costs or cancellations. Benefits are short-tailed, so the possibility of recognizing revenue in part as claims develop is not considered here.

THE LIABILITY

To illustrate how the movement in the liability gives rise to the presentation in the statement of comprehensive income, the insurance liability is first calculated and then reconciled from the beginning of the year to the end of the year.

Table 2 shows the calculation of the liability.

Table 2: Measurement of the Liability						
Year	Inception	1	2	3	4	5
PV Benefits	463	436	382	297	171	0
Margin	83	66	50	33	17	0
PV Premiums	546	447	343	234	120	0
Liability	0	55	89	95	68	0

CONTINUED ON PAGE 6

Because the present value of premiums exceeds the present value of benefits, there is a margin in the contract. The margin forms part of the initial liability and is systematically released over the term of the contract. The margin in this example is released pro-rata. However, it is not the illustration's intent to suggest how the initial margin should be released or to imply that there should be a composite margin (FASB) rather than a combination of a risk adjustment and a residual margin (IASB).

The movement in the liability is shown in Table 3 below.

In this reconciliation of the beginning and ending liability, the premium is in effect a deposit to the liability account. Interest credited is on the beginning liability minus the margin and plus or minus cash flows for the

year. The margin released each year in the example is simply one-fifth of the initial margin. The liability is reduced by the expected benefits. To be sure, the analysis of the movement in the liability is made simple by the assumption that actual experience is the same as expected. As already stated, the complications arising from experience differing from assumptions are subjects for a later paper.

Note that at the time this paper is being written, it is uncertain if the release of the margin would consider the time value of money. Considering the time value of money would slow the release of the margin and may have a significant effect on the pattern of revenue and of comprehensive income.

PRESENTATION IN COMPREHENSIVE INCOME

The movement in the liability (Table 3) provides the elements for presentation in comprehensive income. The contract revenue comprises the amounts of liability released as the insurance coverage is provided, namely the expected insurance benefits and costs (none in this example) together with the margin released for the period.

Table 4 (left, bottom) shows the statement of comprehensive income. Contract revenue is taken from the movement in the liability found in Table 2. Investment income is the interest on net cash flows from Table 1.

The contract revenue in year one is the margin released of 21 plus the expected benefits of 50. The boards may decide that the components of contract revenue should be shown separately.

Table 5 (pg. 7, top) shows an analysis of comprehensive income that shows that income is the sum of:

- the excess of interest earned over interest credited, and
- the margin released.

Although the earned rate is the same as the credited rate, there is an excess of interest earned over interest credited because:

- the margin is backed by invested assets that earn interest, but the margin is not credited with interest; and
- after the first year, there are surplus assets earning interest.

Table 3: Movement in the Liability

Year	1	2	3	4	5
Beginning liability	0	55	89	95	68
plus premium	120	120	120	120	120
plus interest credited	2	5	8	9	9
minus expected benefits	50	75	105	140	180
minus margin released	17	17	17	17	17
Ending liability	55	89	95	68	0

Table 4: Comprehensive Income

Year	1	2	3	4	5
Revenue					
Contract revenue	67	92	122	157	197
Investment income	6	10	13	14	14
Total revenue	73	101	134	171	210
Expenses					
Benefits	50	75	105	140	180
Interest credited	2	5	8	9	9
Total expenses	52	80	113	149	189
Comprehensive income	21	21	21	21	22

For this term contract, comprehensive income is driven by the release of margin. The ratio of comprehensive income to contract revenue is declining, although, in this example at least, the ratio of comprehensive income to premium is fairly level. In other words, the patterns of revenue and relationships to net income are different from those in US GAAP.

If the statement of comprehensive income were to use the summarized margin approach, it would appear as shown below in Table 6 (Right, bottom).

The bottom line comprehensive income is not affected by the choice between a summarized margin presentation and an expanded margin presentation. The two approaches present different views on profitability. The summarized margin approach treats all amounts released from liabilities, other than margins, as repayments of deposits. A profit is made if the amount of margin released together with investment income exceeds the sum of deviations in actual cash flows from those expected plus interest credits. This presentation is very different from conventional approaches (US GAAP, for example), which present the amounts of benefits and expenses in the statement of comprehensive income. The expanded margin approach treats amounts released from liabilities that relate to insurance benefits and costs as revenue and presents actual benefits and administrative costs as expenses. A profit is made if the insurance revenue for the period plus the investment income exceeds benefits and costs for the period. For the remainder of this paper, the expanded margin approach is used.

In reality there would be other sources of comprehensive income. Differences in actual benefits and costs from the expected amounts would affect comprehensive income. Potentially the most significant additional contributor to profit results from the difference between the rate earned on investments backing liabilities and the discount rate. Changes due to re-measurement may also affect comprehensive income.

THE SECOND EXAMPLE – A 20-YEAR ENDOWMENT PRODUCT

This example illustrates liability measurement and presentation of comprehensive income for a product that

Table 5: Analysis of Comprehensive Income

Year	1	2	3	4	5
Interest earned less interest credited	4	4	5	5	5
Margin released	17	17	17	17	17
Total income	21	21	21	21	22

Table 6: Comprehensive Income, Summarized Margin

Year	1	2	3	4	5
Revenue					
Margin released	17	17	17	17	17
Investment income	6	10	13	14	14
Total revenue	23	26	29	31	30
Expenses					
Deviation of actual from expected cash flows	0	0	0	0	0
Interest credited	2	5	8	9	9
Total expenses	2	5	8	9	9
Comprehensive income	21	21	21	21	21

contains a significant cash value. The product is cancellable and surrenders are considered in the example. The example uses realistic mortality rates to keep the insurance component and the financial component in realistic proportions. The assumed cancellation rates are 10 percent of contracts in the first year and 5 percent of remaining contracts each year thereafter. Cancellations are assumed to occur at the end of the year. The contracts mature at the end of the 20th year for an amount equal to the death benefit.

The face amount is level and the cash values are fixed. The amount paid on death is the face amount, which is the sum of the cash value and the net amount at risk (NAR). The payment of the cash value on death is treated in the Statement of Comprehensive Income as repayment to the policyholder of accumulated deposits. The insurance benefit is based on the net amount at risk. Unlike the term example, the insurance benefit is not level, it is decreasing.

CONTINUED ON PAGE 8

This example considers administrative costs. As with the first example, acquisition costs are not considered.

Table 7 shows the contract values and parameters.

Table 7: Contract Values and Parameters

Year	1	2	3	4	5	...10	...15	...20
Face amount/unit	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
CV/unit (Beginning of year)	29	59	91	124	159	362	622	952
CV/unit(End of year)	30	62	95	130	167	380	653	1,000
NAR/unit	970	938	905	870	833	620	347	0
Withdrawal rates	0.1	0.05	0.05	0.05	0.05	0.05	0.05	1.0
Contracts								
Lx - beginning	10,000	8,997	8,543	8,111	7,700	5,926	4,538	3,448
Deaths	3	4	5	6	6	9	13	17
Cancellations	1000	450	427	405	385	296	226	3,431
Lx - ending	8,997	8,543	8,111	7,700	7,309	5,621	4,299	0

Table 8: Cash Flows

Year	1	2	3	4	5	...10	...15	...20
Premium collected 000's	31,000	27,890	26,483	25,144	23,870	18,370	14,069	10,689
Death benefits 000's	339	396	467	505	540	556	464	0
Rewards								
-on death	11	26	49	76	108	342	872	1,716
-on cancellation	3,023	2,788	4,070	5,283	6,428	11,253	14,765	343,101
Total rewards	3,034	2,814	4,119	5,358	6,537	11,595	15,637	344,817
Administrative costs	500	450	427	406	385	296	227	172
Net contract cash flows	27,127	24,231	21,470	18,875	16,408	5,922	-2,259	-334,300
Interest on cash flows	1,525	2,805	4,087	5,299	6,445	11,297	14,910	17,544
Net cash flow	28,652	27,035	25,557	24,174	22,853	17,219	12,651	-316,756

Table 8 (below, bottom) shows the expected cash flows. The premium is 31 per unit paid at the beginning of each year.

Table 9 (below, top) shows the movement in the liability. The elements of movement are the same as for the term product with the added element of the repayments. The present value of premiums is 266,582 and the present value of benefits, expenses and repayments is 257,686, so the initial margin is 8,895. The margin has

been set to a constant percentage of the present value of insurance benefits and expenses.

Table 10 (below, bottom) shows the statement of comprehensive income.



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Table 9: Movement in the Liability

Year	1	2	3	4	5	...10	...15	...20
Beginning liability	0	27,883	54,107	78,772	101,994	198,951	268,904	318,033
plus premium	31,000	27,890	26,483	25,144	23,870	18,370	14,069	10,689
plus interest credited	1,080	2,338	3,597	4,784	5,905	10,607	14,029	16,420
minus administrative costs	500	450	427	406	385	296	227	172
minus insurance benefits	339	396	467	505	540	556	464	0
minus margin released	324	344	403	437	470	527	517	153
minus repayments	3,034	2,814	4,119	5,358	6,537	11,595	15,637	344,817
Ending liability	27,883	54,107	78,772	101,994	123,836	214,953	280,158	0

Table 10: Comprehensive Income

Year	1	2	3	4	5	...10	...15	...20
Revenue								
Contract revenue	1,163	1,190	1,297	1,348	1,395	1,380	1,208	326
Investment income	1,525	2,805	4,087	5,299	6,445	11,297	14,910	17,544
Total revenue	2,688	3,994	5,384	6,647	7,840	12,677	16,117	17,870
Expenses								
Benefit costs	339	396	467	505	540	556	464	0
Interest credits	1,080	2,338	3,597	4,784	5,905	10,607	14,029	16,420
Administrative costs	500	450	427	406	385	296	227	172
Total Expenses	1,920	3,183	4,491	5,695	6,829	11,460	14,720	16,592
Comprehensive income	769	811	893	952	1,011	1,217	1,397	1,277

CONTINUED ON PAGE 10

Contract revenue is the total amount released from the liability for obligations provided for, namely insurance benefits and expenses, plus the margin released, taken from Table 9. For the first year, this is shown below.

Item	Amount
Insurance Benefits	339
Expenses	500
Margin released	324
Total	1,163

The amount of contract revenue grows for a number of years and then declines. The decline is a result of the combination of cancellations and reducing net amounts at risk. The pattern of contract revenue is different from premium income patterns associated with traditional life insurance, but it is fairly similar to contract revenue for universal life type contracts.

Table 11 shows an analysis of comprehensive income.

Table 11: Analysis of Net Income

Year	1	2	3	4	5	...10	...15	...20
Interest earned less interest credited	445	467	490	515	541	690	881	1,124
Release of margin	324	344	403	437	470	527	517	153
Comprehensive income	769	811	893	952	1,011	1,217	1,397	1,277

Another possibility for presentation would be to treat payments of cash values as insurance benefits. In this case the statement of comprehensive income would show a greater amount of revenue and a greater amount of benefits. The amounts are substantial. The amounts of the repayments in the example are 3,034 in the first year and rise to 15,637 in the 15th year, at which time they exceed premiums. The biggest conceptual issue with including the repayment of the investment component in expenses is that it seems inconsistent with accounting for financial liabilities. By comparison to accounting for financial instruments, revenues and expenses would appear inflated.

It should be noted that the cash values are not equal to the liabilities. A difference between actual and expected cancellation rates creates a gain or loss that must be reflected in comprehensive income. Despite the fact that repayments are not shown in the presentation of comprehensive income, it cannot be said that comprehensive income is not affected at all by the investment component. As already stated, the topic of experience deviations is saved for a later paper.

It is also important to note that premiums are not a part of revenue and that, regardless of whether repayments are shown in revenue or not, contract revenue does not follow a pattern associated with traditional products. Contract revenue typically is substantially less than premiums for many years.

SUMMARY

The analysis of the movement in the liability is key to preparing the statement of comprehensive income under the new standard on accounting for insurance contracts. The examples in this paper illustrate the presentation of comprehensive income and address several important topics. There are at least a few conclusions that can be reached from considering just these two examples.

- Patterns of revenue recognition and of net income may be very different from those in current accounting regimes.
- Amounts of revenue and benefits may be much less than the amounts that have been recognized under current accounting regimes, especially for contracts with significant investment components.
- Actuarial models are more important than ever to financial reporting. Contract revenues will come from models rather than from transaction accounts. To say the least, models must be very robust and must operate in a strong control environment.
- The boards' upcoming decisions about the release of margin are critical to the patterns of revenue and of comprehensive income. ■

NAIC Impact Study Provides Early Look at Potential Impacts of New VM-20 Life Reserving Standard

By John Dieck and Todd Erkis

The National Association of Insurance Commissioners (NAIC) sponsored a study conducted by Towers Watson on the impact of proposed principle-based reserves for life insurance products (VM-20). On Feb. 9, 2012 we released our report entitled "Presentation and Analysis of Results of VM-20 Impact Study on Principle-Based Reserves for Life Insurance Products," to the Life Actuarial Task Force (LATF) of the NAIC for public comment. The report summarizes the VM-20 results submitted by the 35 insurance companies who participated in the study with Towers Watson's observations and recommended changes to VM-20. The VM-20 Impact Study was sponsored by the NAIC and we worked closely together with the participating companies to implement the draft VM-20 standard with assistance from the American Academy of Actuaries and the American Council of Life Insurers as issues arose. We were asked by the NAIC to focus on 14 specific objectives to assist in their understanding of the expected impact on reserve levels and the issues that companies will face when adopting this new life insurance valuation methodology for the first time. Selected objectives and our observations are summarized in Table 1. (Right)

WILL RESERVES INCREASE OR DECREASE UNDER VM-20?

The short answer is, "it depends on a number of factors." The results reported for one year of issues of the tested Universal Life with Secondary Guarantees (ULSG) products are shown below in Chart 1 (pg. 12, top) (Chart 5.3 in the report). The Impact Study participants were instructed to calculate the VM-20 reserves under two alternatives (shown as Alt 1 and Alt 2 in Chart 1) for determining future expected asset cash flows on reinvestment assets in the stochastic and deterministic reserve calculations. Based on the preliminary findings of the Impact Study and comments received from industry, LATF adopted a modified version of Alternative 2 in January 2012. The adopted spreads, which are lower than the Alternative 2 spreads presented in the study, would have produced reserves between Alternative 1 and Alternative 2.

As the results in chart 1 show, product design and company assumptions and margins have a very large impact on the level of the reserves under

TABLE 1

**Selected NAIC Objectives
for the VM-20 Impact
Study**

Towers Watson's Observations

1. The level of VM-20 reserves as compared to the current formula-based reserves	The VM-20 reserve level for the term and Universal Life with Secondary Guarantees (ULSG) varied widely from company-to-company as compared to current formula-based reserves.
2. The effectiveness of the exclusion tests	The exclusion tests were generally effective
3. The effectiveness of the Net Premium Reserve as a floor for the minimum reserve	The study found that the Net Premium Reserve was not effective as a floor for the minimum reserve. The ACLI is working on potential changes.
5. The impact of reinsurance on the level of the principle-based reserves	Inclusion of reinsurance did not generally change the direction of the VM-20 reserve relative to current formula-based reserves.
6. Determination of assumptions and margins	Setting the overall margins was reported by the participants as being difficult. Also, blending company mortality with the industry table added considerable margin in many cases.
8. Number of scenarios modeled	About one-half of the companies (and three-quarters of the companies modeling ULSG) ran 1,000 scenarios (no company ran more). The number of scenarios varied greatly by product and was primarily determined by time and resource constraints.
12. Ease of implementation of VM-20	Implementing VM-20 for the study was a significant exercise. The largest challenges reported were interpreting VM-20, developing margins and modifying the financial modeling software.
13. Areas where further refinements or changes are needed or suggested	The report lists several suggested changes and modifications suggested by the study participants.

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Chart 1 – Universal Life with Secondary Guarantees Results by Participant – One Year of Issues at Duration 1

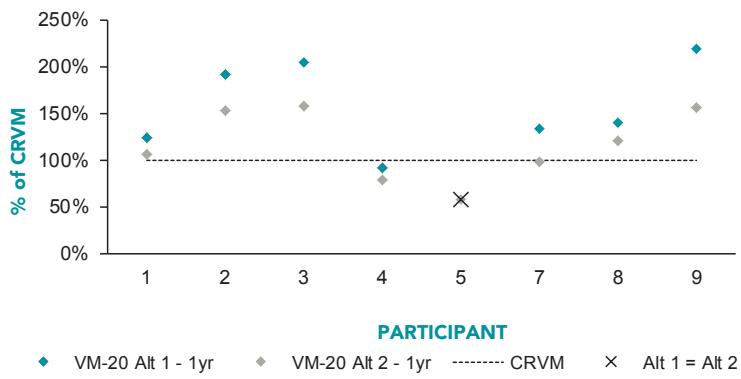
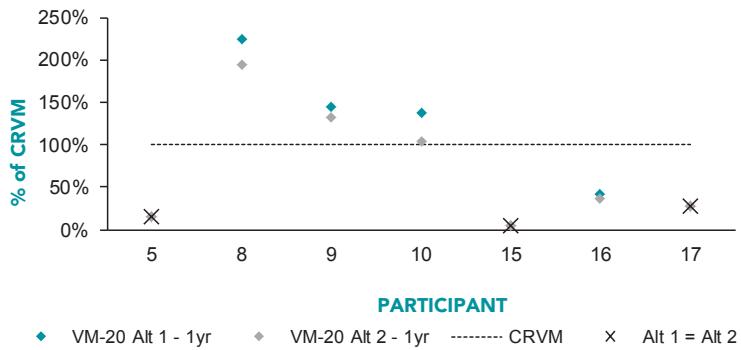


Chart 2 – Aggregate Term Insurance Results by Participant – One Year of Issues at Duration 1



VM-20. While this was an expected result, there was quite a range in the reported results with Alt 1 ranging from 58 – 219 percent of CRVM and Alt 2 ranging from 58 – 157 percent of CRVM.

As shown in Chart 2 (above, bottom) (Chart 5.8 in the report), the range of aggregate term insurance results also varied significantly relative to current CRVM reserves for one year of issues

It should be noted that these results are based on a sample of products using certain simplified assumptions and may not be representative of what happens

in actuality. Also, the results shown in Charts 1 and 2 may be impacted if the Net Premium Reserve (NPR) calculation is revised from what was defined in the draft of VM-20 used for the Impact Study. However, it is clear that the level of reserves will likely vary from company-to-company under a VM-20 approach.

All of the other products that were part of the Impact Study (Simplified Whole Life, Traditional Whole Life, Universal Life without Secondary Guarantees and Variable Universal Life) had reserves that were equal to current CRVM except for a small number of exceptions. Most products passed the exclusion tests and only the NPR calculation was required (the NPR was assumed to be equal to the current rules-based CRVM reserve in the Impact Study for these products)

LESSONS LEARNED FROM IMPLEMENTING VM-20

In assisting the companies through the implementation of VM-20, we received quite a bit of feedback that it was a challenge to implement VM-20 for the Impact Study (and this was just for one or a few products not their entire life new business). This was true even for those products that defaulted to the NPR reserve as there was work involved in calculating the exclusion test values required in VM-20. There were a number of questions about how to interpret the VM-20 language, but companies reported that most of the work was in setting assumptions and margins, running the stochastic models and in understanding the calculated results.

Assumptions and Margins

VM-20 requires anticipated experience assumptions to be determined based on expectation of future experience for a risk factor given available, relevant information pertaining to the assumption being estimated. Many companies performing the calculation used available experience studies in setting anticipated experience assumptions. This highlighted the need for up-to-date studies and for understanding how the experience studies were performed to make sure they were used appropriately in setting assumptions as part of the VM-20 calculations. Companies performed sensitivity testing as part of the Impact Study and the results showed that some of the results were quite sensitive to changes in assumptions. For example, the minimum

term insurance reserve under VM-20 increased an average of 33 percent if the mortality assumption was only increased by 10 percent (see Table 12.2 of the report).

The determination of the mortality assumption and margin was very complex and added significant margin to the ULSG and term calculations. LATF and industry are currently working on modifying the way the mortality assumption and margins are set and it is likely some modifications will be made. In any event, it is clear from the study that the setting of assumptions and margins under VM-20 is a very important part of the process and has a large impact on the level of reserves ultimately required (unless the products are excluded from the stochastic and deterministic calculation and are required to only hold the NPR reserve where the assumptions are specified in VM-20).

Model Management and Run-Time

Although most companies used their cash flow testing models as the starting point for the VM-20 work, many modifications and enhancements were necessary to properly calculate VM-20 reserves. The calculation requires companies to hold the maximum of three values: the stochastic reserve, deterministic reserve and the NPR (some calculations can be omitted if the exclusion tests are passed). This will require new valuation processes for some companies as the values may be determined using different systems (e.g., some companies may use valuation systems for the NPR calculation and modeling systems for the stochastic and deterministic reserves). And of course, using models to determine statutory liabilities will require more documentation, enhanced controls, auditability and reproducibility of the calculated values.

Many of the participants reported that they would have run more scenarios if not for run time and resource constraints. We expect companies to enhance their computing capabilities, which may include installing or adding computing power to their computer grids and/or bursting to the cloud to support the demands of performing principle-based calculations.

Understanding the Results

The valuation process will include not just the base valuation projections, but sensitivities and other required

analysis to understand how the reserves change each period. As we have seen with the variable annuity principle-based reserve standard, AG 43 or VACARVM, results can be volatile and the reasons why the values change is not always readily apparent. This will be an additional challenge for the valuation actuary, particularly under the pressure of reporting deadlines.



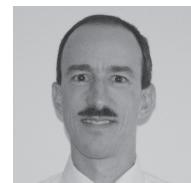
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WHAT DOES VM-20 MEAN FOR PRODUCT DEVELOPMENT?

The good news is that VM-20 will apply only to products issued after the effective date of the regulation. This gives companies some time to understand the level of statutory reserves required for their products and to make changes if necessary. The Impact Study demonstrated that product features can have a significant impact on the level of required stochastic reserves. As the level of reserves are very important to overall profitability of life insurance products (in particular ULSG and term products), we expect companies will want to understand how their future products will fare under VM-20 and analyze various product features that impact the level of reserves. Our experience helping companies price new variable annuity products has shown that projecting the stochastic element of principle-based reserves can be especially challenging in a pricing context, requiring a nested stochastic calculation, or use of other modeling techniques.

CONCLUSION

Although VM-20 is not finalized and there is still the legislative process to complete prior to adoption, VM-20 has significant momentum and appears to be much closer to becoming a reality. The VM-20 Impact Study revealed that there is a significant amount of work for companies to do in order to get ready for life principle-based reserves. Participants in the study have a head start on the work ahead, but realize it will be quite a challenge to be ready to value all of their life insurance new business as well as potentially repricing these products. Planning for the new principle-based reserve standard today will give companies time to get everything in place and be prepared for VM-20 when it becomes effective. ■



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AG38 Update

By Keith Bucich



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In late 2010, the New York State Insurance Department questioned the reserving practices of some companies with universal life products that have a no lapse guarantee. The New York State Insurance Department had concerns with the method used by companies for determining gross premiums for shadow account no lapse guarantees for the purpose of computing reserves. The New York State Insurance Department had meetings with companies over the following months to gain a better understanding of how these companies were determining reserves for their shadow account universal life products. The New York State Insurance Department observed that some companies were using gross premiums in the reserve calculations that were higher than the gross premiums a policyholder would be required to pay to keep the policy in force. In September 2011, the Life Actuarial Task Force (LATF) of the NAIC circulated a letter for comment suggesting Actuarial Guideline 38 (AG38) was being misapplied, specifically in the area of the determination of gross premiums being used for reserves. Given the significance of the financial impact of using lower gross premiums in reserves and a lack of consensus among state insurance departments, an NAIC joint working group was established to address the issue.

JOINT WORKING GROUP

The Joint Working Group of the Life Insurance and Annuities Committee and the Financial Condition Committee (Joint Working Group) was created to address the issues surrounding reserving for universal life products with no lapse guarantees. The reserving practice first identified by the New York State Insurance Department was found to exist throughout the industry and the Joint Working Group was tasked with developing an approach for reserving that would

1) satisfy the industry's concern that LATF's interpretation of Valuation of Life Insurance Policies Model Regulation (Regulation XXX) and AG38 produces overly conservative reserves, and 2) satisfy regulator concerns that reserves for products with a no lapse guarantee are inadequate.

The approach put forward by the Joint Working Group is to have one set of valuation requirements for in-force business and a different set of requirements for new business. The requirement for in force is for companies to continue to use their current statutory reserving approach subject to standalone asset adequacy testing. The asset adequacy testing requirements could differ from the asset adequacy testing requirement in AG38 as it could apply to all issue years subject to Regulation XXX/AG38 and the testing could be subject to additional rules and oversight.

The requirement for new business would be to hold reserves subject to the LATF interpretation of Regulation XXX/AG38, with possible refinements to address what are viewed as overly conservative provisions. The cutoff date that decides which business is new business has not been decided, but business sold prior to finalization of the approach will likely be part of the in force block. It is expected that reserves will eventually be determined by principle-based methods, which could be made retroactive to some universal life no lapse guarantee business.

AG38 CONTROVERSY

The current AG38 controversy involves the gross premiums that are used to calculate reserves. The determination of gross premiums is also a Regulation XXX issue because these gross premiums (also referred to as specified premiums) are used to calculate the Regulation XXX Section 7B (base) and Section 7C (deficiency) reserves that are used in AG38. In general, the higher the gross premiums used for reserves, the lower the likelihood of deficiency reserves. LATF has objected to the practices of some companies when determining gross premiums for reserves when the gross premiums are higher than the gross premiums a policyholder would need to pay to satisfy the conditions of the no lapse guarantee.

The current AG38 controversy involves the gross premiums that are used to calculate reserves.

The concept of a specified premium was first introduced in Regulation XXX, which states that specified premiums are to be used for gross premiums when calculating reserves for policies with a specified premium no lapse guarantee. Regulation XXX does not say how specified premiums are to be determined, only that the “smallest specified premium” be used. AG38 clarifies that shadow account type no lapse guarantees are specified premium type no lapse guarantees by saying that the “minimum gross premiums (determined at issue) that will satisfy the secondary guarantee requirement” are the specified premiums to be used in the Regulation XXX items used in AG38.

A common method of determining specified premiums is to calculate the minimum amount a policyholder must pay in a year such that the no lapse guarantee provision is satisfied for that year. For a shadow account product with increasing cost of insurance schedules, this will result in an increasing scale of specified premiums. It is important to note that this method is not prescribed in Regulation XXX or AG38, but appears to be common practice for calculating specified premiums for no lapse guarantee products that do not have an explicit no lapse guarantee premium requirement. Although Regulation XXX describes a method for calculating premiums such that the *account value* is 0 at the end of each year (Regulation XXX Section 7A4), this is in conjunction with a different type of secondary guarantee in which there are cost of insurance guarantees that could result in a one year gross premium that is less than the one year valuation net premium. For policies with this type of secondary guarantee, this series of one year minimum premiums that results in 0 account value at the end of the year are used as gross premiums for reserves. Although this premium calculation method is not directed at policies with a specified premium type secondary guarantee, it is a commonly used method for determining specified premiums for policies with a no lapse guarantee.

The distinction between this method being common practice on the one hand, but not prescribed by Regulation XXX or AG38 on the other, is important as some companies have designed their no lapse guarantees to result in higher specified premiums when the



shadow account is 0 at the start of a policy year. This is usually done by having a condition where a higher shadow account cost of insurance charge is applied in the following year if the ending shadow account value from the previous year is 0. These higher shadow account cost of insurance charges are designed to produce specified premiums that do not create Regulation XXX segment breaks and are always higher than valuation net premiums (to avoid deficiency reserves).

This practice has been described by some as exploiting a loophole. This would be accurate if this method for calculating specified premiums was applicable to policies with a specified premium no lapse guarantee. In contrast, an earlier controversy involving products that charged a higher shadow account premium load on premiums in excess of a certain amount to reduce the AG38 funding did exploit a loophole as companies were explicitly following AG38 when determining the

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single premium to satisfy the remaining no lapse guarantee. The wording in AG38 was later revised to close this loophole.

The fact that the premium method used by most companies to calculate specified premiums is not an explicit requirement of Regulation XXX or AG38 is likely news to some companies. This also makes it harder to defend their current reserving practice by saying they are following the letter of AG38. Perhaps Regulation XXX/AG38 could have contained an explicit formula for calculating specified premiums instead of conditions that the “smallest specified premiums” or “minimum gross premiums” be used. Companies elected to focus on what was presumably believed to be a prescribed methodology for calculating specified premiums and not on the more general requirements. LATF’s concerns do not appear to be with the general specified premium methodology, but rather that the specified premiums used to calculate reserves are not consistent with the guarantees in the policy.

NEXT STEPS

The proposed bifurcated approach for in force and new business is a compromise between those who believe 1) companies should be holding reserves consistent with the letter and intent of Regulation XXX/AG38, and 2) holding the LATF Regulation XXX/AG38 reserves would impose too high a financial burden on companies. Both groups generally agree that the LATF Regulation XXX/AG38 reserves are conservative and holding lower reserves does not necessarily present a solvency risk

As the final reserving regulations for these products are being agreed, companies with shadow account type no lapse guarantee products are likely investigating alternative product offerings, in the case the ultimate reserve requirements result in a product that is not sufficiently profitable. This is another example of how the regulatory environment influences insurance companies’ product offerings. ■

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Caesar Salad Accounting

By Henry Siegel

Many years ago a friend asked me for a simple recipe he could make for his date. Knowing he was not experienced in culinary arts, I gave him a recipe for Caesar Salad. I told him it was a very simple recipe and I was sure he could handle it.

The next day, I asked how the meal had gone. "It was a disaster," he said. "Your recipe was awful!"

"What happened? Did you follow the recipe?"

"Well, mostly. The store didn't have any romaine so I used iceberg lettuce. And they didn't have any croutons or anchovies so I used bread crumbs and sardines."

"Well, that shouldn't have been too bad. Anything else?"

"Well, the recipe called for two cloves of garlic. I looked on the shelf and found cloves so I put in two."

This is, of course, an accounting allegory. If you don't get the punch line, ask a chef.

Many years ago, the industry and the International Accounting Standards Board (IASB) agreed on a basic recipe for insurance accounting. The recipe called for a liability equal to the present value of future expected cash flows with a margin, set at inception to eliminate any gains at issue, that would run off as the business ran off. All that was left was to agree on the details.

And based on the results of the last quarter, we're still looking for the garlic. Consider the following discussions.

JANUARY

The IASB continued its discussion on insurance contracts by holding an education session to discuss:

- the eligibility criteria for applying the premium allocation approach (PAA),
- whether discounting and accretion of interest should be required for the liability for remaining coverage, and
- the treatment of acquisition costs.

The board asked the staff to prepare a short supplement to agenda paper 2A outlining a proposal for eligibility criteria that would:

- state a principle that the PAA could be used when the results would be similar to those produced by using the building block approach,
- permit contracts that have a coverage period of approximately 12 months or less to be eligible for the PAA, and
- provide application guidance on when the PAA and the building block approach would produce similar results based on the criteria being developed by the staff in agenda paper 2A.

Because this was an education session, no decisions were made.

FEBRUARY

The IASB and Financial Accounting Standards Board (FASB) continued their discussions on the insurance contracts project by considering: eligibility criteria and mechanics for the PAA; following the education sessions of the previous month; measurement of liabilities for infrequent, high-severity events; onerous contracts; unbundling goods and services components; and financial instruments with discretionary participating features.

Eligibility Criteria for the Premium Allocation Approach

The IASB tentatively decided that:

- a. Contracts should be eligible for the PAA if that approach would produce measurements that are a reasonable approximation to those that would be produced by the building block approach.
- b. A contract should be deemed to meet the condition in a. without further work if the coverage period is one year or less.
- c. Application guidance would provide that contract measurements are not a reasonable approximation to the building block approach if, at the contract inception date:
 - i. it is likely that, during the period before a claim is incurred, there will be a significant change in the expectations of net cash flows required to fulfill the contract; or
 - ii. significant judgment is required to allocate the premium to the insurer's performance obligations for each reporting period. This



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may be the case if, for example, significant uncertainty exists about:

1. the premium that would reflect the exposure and risk that the insurer has for each reporting period; or
2. the length of the coverage period. The IASB noted that it would review whether it will need to update these criteria after its future discussions on the building block approach.
- d. An insurer should be permitted, but not required, to apply the PAA to contracts that are eligible for that approach. This was important to the industry because some companies didn't want to use the PAA on a small piece of a large portfolio.

The FASB tentatively decided that:

- a. Insurers should apply the building block approach rather than the PAA if, at the contract inception date, either of the following conditions is met:
 - i. it is likely that, during the period before a claim is incurred, there will be a significant change in the expectations of net cash flows required to fulfill the contract; or
 - ii. significant judgment is required to allocate the premium to the insurer's obligation to each reporting period. This may be the case if, for example, significant uncertainty exists about:

1. the premium that would reflect the exposure and risk that the insurer has for each reporting period; or
2. the length of the coverage period.

On a seemingly simple issue, the boards could not reach an agreement.

- b. A contract should fall within the scope of the PAA without further evaluation if the coverage period is one year or less. Four FASB members supported this decision and three opposed it despite how natural the decision might seem.
- c. The PAA should be required for contracts that qualify for that approach.

Again, the boards disagreed and this time the industry and FASB were in disagreement.

Mechanics for the Premium Allocation Approach

The boards tentatively decided that discounting and interest accretion to reflect the time value of money should be required in measuring the liability for remaining coverage for contracts that have a significant financing component, as defined according to the characteristics of a significant financing component under the revenue recognition proposals. However, as a practical expedient, insurers need not apply discounting or interest accretion in measuring the liability for remaining coverage if the insurer expects at contract inception that the period of time between payment by the policyholder of all or substantially all of the premium and the satisfaction of the insurer's corresponding obligation to provide insurance coverage, will be one year or less.

The boards also tentatively decided that:

- a. the measurement of acquisition costs should include directly attributable costs (for the FASB, limited to successful acquisition efforts only); this is consistent with the decision made for the building block approach. This difference confirmed positions the boards had previously taken despite efforts to reach consensus.
- b. insurers should be permitted to recognize all acquisition costs as an expense if the contract coverage period is one year or less. This was a gift to the non-life companies.



The boards also agreed to explore an approach in which acquisition costs would be netted against the single/residual margin applying the building block approach, and netted against the liability for remaining coverage applying the PAA. That amount could be separately presented from the present value of expected cash flows (plus a risk margin for the IASB).

Measurement of Liabilities for Infrequent, High-Severity Events

The boards tentatively decided to provide application guidance to clarify that an insured event (for example, an infrequent, high-severity event such as a hurricane) that was impending at the end of the reporting period, does not constitute evidence of a condition that existed at the end of the reporting period when it occurs or does not occur after that date. Consequently, such an event is a non-adjusting event, to which IAS 10 *Events after the Reporting Period* applies, and a non-recognized event to which Topic 855-10-25 *Subsequent Events Overall Recognition* in the FASB Accounting Standards Codification® applies.

The industry and its actuaries were extremely concerned that a hurricane that had not yet hit land would have to be considered in setting the IBNR for the quarter end, and so were pleased at the eventual outcome.

Onerous Contracts

- The boards tentatively decided that the measurement of the liability for onerous contracts should be updated at the end of each reporting period.
- The IASB tentatively decided that a risk adjustment should be considered when identifying onerous contracts and that the measurement of an onerous contract liability should include a risk adjustment.
- The boards tentatively decided that if an insurer elects not to discount the liability for incurred claims that are expected to be paid within 12 months, the insurer should use an undiscounted basis in identifying whether contracts are onerous and in measuring the liability for onerous contracts.

Unbundling Goods and Services Components

The boards tentatively decided on the following criteria for unbundling goods and services:

- a. An insurer shall identify whether any promises to provide goods or services in an insurance contract would be performance obligations as defined in the exposure draft *Revenue from Contracts with Customers*. If a performance obligation to provide goods or services is distinct, an insurer shall apply the applicable IFRSs or US GAAP in accounting for that performance obligation.
- b. A performance obligation is a promise in a contract with a policyholder to transfer a good or service to the policyholder. Performance obligations include promises that are implied by an insurer's customary business practices, published policies, or specific statements if those promises create a valid expectation by the policyholder that the insurer will transfer a good or service. Performance obligations do not include activities that an insurer must undertake to fulfill a contract unless the insurer transfers a good or service to a policyholder as those activities occur. For example, an insurer may need to perform various administrative tasks to set up a contract. The performance of those tasks does not transfer a service to the policyholder as the services are performed. Therefore, those promised setup activities are not a performance obligation.
- c. Except as specified in the following paragraph, a good or service is distinct if either of the following criteria is met:
 - i. The insurer regularly sells the good or service separately.
 - ii. The policyholder can benefit from the good or service either on its own or together with other resources that are readily available to the policyholder. Readily available resources are goods or services that are sold separately (by the insurer or another entity), or resources that the policyholder has already obtained (from the insurer or from other transactions or events).
- d. Notwithstanding the requirements in the previous paragraph, a good or service in an insurance contract is not distinct and the insurer shall therefore account for the good or service together with the

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The IASB and FASB continued their discussions on insurance contracts by considering the unit of account and separation of investment components from the insurance contract.

insurance component under the insurance contracts standard if both of the following criteria are met:

- i. The good or service is highly interrelated with the insurance component and transferring them to the policyholder requires the insurer also to provide a significant service of integrating the good or service into the combined insurance contract that the insurer has entered into with the policyholder.
- ii. The good or service is significantly modified or customized in order to fulfill the contract.

Financial Instruments with Discretionary Participation Features

The IASB considered the applicable standard for financial instruments that are not insurance contracts but that have discretionary participation features similar to those found in many insurance contracts. The discussion was not held jointly with the FASB because of the different considerations for each board.

The IASB tentatively decided that the forthcoming insurance contracts standard should apply to financial instruments with discretionary participation features that are issued by insurers. It should not apply to any financial instruments issued by entities other than insurers.

MARCH

The IASB and FASB continued their discussions on insurance contracts by considering the unit of account and separation of investment components from the insurance contract.

Unit of Account

The IASB tentatively decided that:

1. A portfolio of insurance contracts should be defined as contracts that are:

- a. subject to similar risks and priced similarly relative to the risk assumed, and
- b. managed together as a single pool.

2. The unit of account used to determine the residual margin and perform the onerous test should be the portfolio.
3. The unit of account used to release the residual margin should not be prescribed. However, the release of the residual margin should be performed in a manner consistent with the objective of releasing the residual margin over the coverage period to the period(s) in which the service is provided.

The FASB tentatively decided that:

1. A portfolio of insurance contracts should be defined as contracts that are:
 - a. subject to similar risks and priced similarly relative to the risk assumed, and
 - b. have similar duration and similar expected patterns of release of the single margin.
2. The unit of account used to determine and release the single margin, and perform the onerous contract test should be the portfolio.

Separation of Investment Components from the Insurance Contract

The IASB and FASB tentatively decided that:

1. An investment component in an insurance contract is an amount that the insurer is obligated to pay the policyholder or a beneficiary regardless of whether an insured event occurs.

This definition raises significant problems. For instance, does a 10-year-certain life annuity have an investment component? The insurer pays if the annuitant lives and pays the certain part if the annuitant dies. So it sounds like there is no investment component. Yet, if you look at it differently, the entire certain payments could be considered an investment component. Still another way to look at this is that only the payments in the event of death are an investment component. The boards do not agree on how to interpret this.

In addition, this definition is intended to include cash values on traditional whole life products including participating contracts. This would result in showing less than the total premium in

the income statement. Furthermore, the treatment of policyholder dividends is difficult to handle since they can be considered returns of premium.

2. In the statement of financial position (i.e., balance sheet), insurers should not be required to present investment components separately from the insurance contract. However, insurers should disclose both:
 - a. the portion of the insurance contract liability that represents the aggregated portions of premiums received (and claims/benefits paid) that were excluded from the statement of comprehensive income, and
 - b. the amounts payable on demand.

In addition, the IASB tentatively decided that insurers should exclude from the aggregate premium presented in the statement of comprehensive income the present value of the amounts that the insurer is obligated to pay to policyholders or their beneficiaries regardless of whether an insured event occurs, determined consistently with measurement of the overall insurance contract liability.

The FASB did not vote on this issue.

Both boards directed the staff to consider whether any investment components (as defined) are sufficiently distinct from the insurance component that they should be recognized separately and measured applying the financial instrument standard, rather than the insurance contracts standard.

Reviewing all of the above discussions, I am struck by how detailed the discussions are. Everyone would be better off if most of these discussions were left to our profession to establish guidance to meet the general requirements. International Financial Reporting Standards are supposed to be more principle-based than US GAAP; this level of discussion is not about principle, but about the rules for applying those principles. This is another example of why ...

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Implementation of ASU 2010-26

By Thomas W. Fineis, Jeffrey R. Lortie, and Kathryn M. Nelson



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This article provides a discussion of the manner in which actuaries have implemented the Financial Accounting Standards Board's (FASB) Accounting Standards Update (ASU) 2010-26, *Accounting for Costs Associated With Acquiring or Renewing Insurance Contracts*, for purposes of disclosure statements in conjunction with the Dec. 31, 2011 US GAAP financial statements, implementation for financial reporting on a post-ASU 2010-26 basis as a normal course of business starting in 2012, and an evaluation of the impact on unamortized deferred policy acquisition cost asset balances as of Dec. 31, 2011. Our focus is on the retrospective implementation of the ASU as that presents more considerations than the prospective application. This article does not, nor does it intend to, provide accounting guidance.

In October 2010, the FASB approved ASU 2010-26, which modifies the definition of deferrable expenses to include only direct, incremental costs related to successful contract acquisition efforts. This ASU is effective for fiscal years beginning on or after Dec. 15, 2011.

Before the issuance of the ASU, ASC 944-30-20 defined acquisition costs as follows:

“Costs incurred in the acquisition of new and renewal insurance contracts. Acquisition costs include those costs that vary with and are primarily related to the acquisition of insurance contracts.”

The revised guidance contained in the ASU establishes a higher threshold at which costs meet eligibility for deferral, and therefore will generally result in fewer cost deferrals than in the past as ASU 2010-26 allows for the capitalization of only those costs incurred in the successful acquisition of new and renewal insurance contracts. The items that are likely to be impacted include unamortized deferred policy acquisition cost balances (DAC), deferred tax assets or liabilities (DTA/Ls), shadow DAC balances, shadow DTA/Ls, and the deferred profit liabilities associated with limited pay contracts.

The ASU allows for prospective or retrospective application to prior periods. The expectation is that future deferrals will be less under ASU 2010-26 and, if the retrospective application is elected, that historical DAC balances will decrease with less amortization expense through income on the existing in force in the future.

PRACTICAL CONSIDERATIONS

Upon electing the retrospective application of ASU 2010-26, companies have had to consider several matters related to the implementation:

1. What historical point in time should be used as the starting point for retrospective application?

In order to apply the ASU retrospectively, historical information is required. The issue is how far back in time there is sufficient historical information available to adjust prior year deferrals and to determine a uniform timeframe for different products and lines of business. Technical Inquiry Service (TIS) Section 6300.38 published by the American Institute of Certified Public Accountants (AICPA) further addresses the accounting issues for selecting the historical starting point, to which we direct the interested reader.

2. Can a company use estimates in determining the restatement effects of the ASU?

The issue is to what extent a company can incorporate estimates to determine the impact of ASU 2010-26 for those years in which historical data is not available. Paragraph BC16 of the Background Information and Basis for Conclusions section of the ASU offers guidance as to reasonable estimates, to which we direct the interested reader. In our experience, most companies appear to have applied some degree of estimates based on adequate support to determine the effect of ASU 2010-26.

3. If retrospective adoption is elected, how do companies compute the impact on unamortized DAC balances?

Requirements of Retrospective Adoption

The retrospective adoption of ASU 2010-26 requires more than just quantifying the impact on the unamortized DAC balance as of Dec. 31, 2011. The impact on prior year-end financial statements, and other additional disclosures, may need to be provided. The required number of years for which the ASU impact should be disclosed is out of the scope of this article. In particular, it is required that companies:

- Reflect, “in the carrying amounts of assets and liabilities as of the beginning of the first period presented,” the cumulative effect of the change on periods before the periods presented.
- Make an offsetting adjustment, if any, “to the opening balance of retained earnings (or other appropriate components of equity or net assets in the statement of financial position) for that period.”
- Adjust the “[f]inancial statements for each individual prior period presented … to reflect the period-specific effects of applying the new accounting principle.”

Hindsight Is Not Always 20/20

Evaluating the disclosure impact on prior year-end financial statements raises some practical considerations. For example, in determining the impact on unamortized DAC balances as of a valuation date prior to the earliest period presented on the consolidated

financial statement, it is important to consider the analysis in absence of any hindsight that could be applied. In particular, restated DAC balances as of a prior reporting date ideally would be based on the “view of the world” at that prior date, including assumptions that were in effect as of those periods (i. e. , excluding any subsequent unlocking and/or true up for actual gross profits for ASC 944-20-05 (formerly FAS 97), or gross margins for ASC 944-20 (formerly FAS 120)).

Consider the following example of a single premium deferred annuity issued in 2008 with a five-year amortization period and a 5 percent discount rate. At issue, the unamortized DAC schedule is based on \$100 of acquisition expense and \$40 per year of estimated gross profits (EGPs), and is determined in column (8) of the table below.

In 2008, the actual gross profit (AGP) equaled the 2008 EGP. In 2009, the AGP deviated from expectation (\$20 versus \$40, see column (9)), though the deviation is expected to be temporary, and no adjustment is made to future gross profits. As such, the unamortized DAC is re-determined in column (10). In 2010, profits were again trued up, and prospective assumptions are now less favorable such that EGPs were reduced in future years, as seen in column (11). The unamortized DAC is re-determined in column (12). In 2011, experience is consistent with expectation, and there is no change anticipated to the 2012 EGP.

(1) Calendar Year	(2) Deferral	(3) 2008 EGP	(4) DAC(t-1)	(5) DE	(6) Int	(7) Amort	(8) 2008 DAC(t)	(9) EGP(2009)	(10) DAC(2009)	(11) EGP(2010)	(12) DAC(2010)
2008	100	40.00	-	100.00	5.00	(23.10)	81.90	40.00	79.20	40.00	65.28
2009		40.00	81.90	-	4.10	(23.10)	62.90	20.00	70.26	20.00	48.68
2010		40.00	62.90	-	3.15	(23.10)	42.95	40.00	47.97	18.00	33.24
2011		40.00	42.95	-	2.15	(23.10)	22.00	40.00	24.57	18.00	17.02
2012		40.00	22.00	-	1.10	(23.10)	0.00	40.00	0.00	18.00	0.00

Shaded cells are actual reported balances

CONTINUED ON PAGE 24

... the method employed by the actuary to determine the impact of ASU 2010-26 is dependent upon the granularity of the ASU-updated deferrals ...

Question: If acquisition expense deferrals are reduced by 20 percent as a result of ASU 2010-26, what is the 2009 DAC balance to be disclosed?

Answer: Without proper care, the answer could be determined as 80 percent of \$48.68, or \$38.94, which may not be viewed as correct since the assumptions used to determine this amount are not consistent with the view of the world at the end of 2009, at which point future profits were assumed to be \$40 in all years. The intent of the historical disclosure is to report the financial results in such prior years had the ASU been in effect, and presumably not to benefit from perfect hindsight. The correct answer requires reference to the then-current unamortized DAC balance schedule: 80 percent of \$70.26, or \$56.21. If any financial statements were restated in past years due to errors, it would be appropriate to determine the ASU-adjusted DAC using the corrected amounts. Any new errors discovered as part of ASU implementation should be discussed with the company's external auditor for proper resolution.

Choice of Platform for Determining the Impact

In practice, the method employed by the actuary to determine the impact of ASU 2010-26 is dependent upon the granularity of the ASU-updated deferrals (in most cases, the actuary is a recipient of analysis performed by the company's accounting department to determine portions of prior deferrals considered direct and incremental), and the manner in which DAC is calculated (e. g., seriatim factors for FAS 60 vs. issue year cohort for FAS 97). In preparation for the estimated effects on adoption in 2012, companies took different approaches in performing the necessary quantifications in the 2011 financial statements, as described in the chart at the top of page 25.

a) Spreadsheet methods

We have observed several companies that employ a spreadsheet model for products that are subject to less complex guidance, such as FAS 60, and less complex deferral structures (e. g., all deferred expenses occur in year one of the contract). For example, we observed companies that split their FAS 60 factors between commission DAC and non-commission DAC to use a pro-rated non-commission DAC factor as the ASU only impacted non-commission DAC. The ratio of eligible deferrals to historic deferrals applied was either determined by year of issue, or on a more aggregated basis based upon a supportable explanation as to why the ratio did not vary significantly by issue year.

For certain products, a simple ratio approach might be appropriate, as long as the following conditions hold:

- i. No loss recognition events or other events have occurred in the past that resulted in adjustments to the unamortized DAC balance other than changes in assumptions or the passage of time.
- ii. The slope of deferrals is not materially affected.

Abiding by the concept that hindsight is excluded from the calculation, the ratio would be equal to PV(deferrals under ASU 2010-26)/PV(original deferrals), applied to the unamortized balance.

Some conditions may require a more exact approach, in particular if the slope of the deferrals is altered. For example, suppose that the ASU-allowable deferrals are 50 percent of first year commissions and acquisition expenses, and 0 percent thereafter, as seen in column (3) of the table below. Without proper care, one might apply a ratio adjustment factor against the original DAC balances, such ratio computed as the present value of revised deferred expenses (column (3)) divided by the present value of original deferred expenses (column (1)). In this example, the ratio would be \$50 (revised deferred expenses) divided by \$152.67 (the present value of the original \$180 deferred expenses), or 32.75 percent.

(1) Original Def. Exp.	(2) Premium	(3) Revised Def. Exp.	(4) DAC(t-1)	(5) Def Exp (t)	(6) Amort (t)	(7) Int(t)	(8) DAC (t)	(9) Orig. DAC (t)	(10) Ratio x Original	(11) Difference
100	100.00	50	0	50	13.79	2.35	38.56	61.75	20.27	-47.43%
20	84.90	-	38.56	-	11.71	1.75	28.60	45.83	15.05	-47.38%
20	76.30	-	28.60	-	10.52	1.17	19.25	30.88	10.14	-47.34%
20	72.37	-	19.25	-	9.98	0.60	9.87	15.84	5.20	-47.29%
20	71.52	-	9.87	-	9.87	0.00	0.00	0.00	0.00	-

Applying our previous example, we see the difference (column (11) chart above) that arises between the correct post-ASU DAC (column (8)) and what would be computed from applying a ratio adjustment factor against the original DAC balance (column (10)), per the table above.

For products subject to unlocking (e.g., deferred annuities under FAS 97), a plausible manner in which to determine the impact of ASU 2010-26 on prior DAC balances is to adjust the net amortization expense by the ratio of PV(deferrals under ASU 2010-26)/PV(original deferrals) if the slope of deferrals does not change materially over time as a result of DAC unlock-

ing or as a result of the ASU implementation. The net amortization expense for these purposes is defined as the sum of the amortization due to gross profits, any unlocking effect, and interest accrual. If the facts and circumstances are conducive to this technique, this approach expedites the historical restatement of DAC while adhering to prior periods' "view of the world" without having to resurrect old DAC models and assumptions. An illustration of the adjusted net amortization expense is illustrated in the table below and follows the scenario fact pattern of our single premium deferred annuity described above. Note that the only expenses capitalized occur in year one.

Calendar Year	(1) BOY DAC	(2) Deferral	(3) = (4) - (1) - (2) Net Amort	(4) Pre-ASU EOY DAC	Calendar Year	(5) BOY DAC	(6) Deferral	(7) = (3) * (6) / (2) Net Amort	(8) Post-ASU EOY DAC
2008	0.00	100.00	(18.10)	81.90	2008	0.00	50.00	(9.05)	40.95
2009	81.90	-	(11.64)	70.26	2009	41.00	-	(5.82)	35.13
2010	70.26	-	(37.02)	33.24	2010	35.10	-	(18.51)	16.62
2011	33.24	-	(16.21)	17.02	2011	16.60	-	(8.11)	8.51
2012	17.02	-	(17.02)	0.00	2012	8.50	-	(8.51)	0.00

CONTINUED ON PAGE 26

b) Full model recalculations

For various reasons, including complexity/granularity of deferral adjustments and the desire to avoid a temporary solution for the annual disclosure at year-end, only to revert to the current-state valuation model, many companies generated results using the same platform upon which the US GAAP valuation is performed. Additional benefits included a head start on the process used for ongoing financial reporting, as well as the removal of any potential noise with respect to timing differences (e. g., monthly in the valuation system, but quarterly or annual in the spreadsheet to save rows and/or columns).

Consideration of past loss recognition events

Certain scenarios may lead to past loss recognition events that create additional complexity in the application of ASU 2010-26. Of particular interest are those situations in which the relationship between the Gross Premium Valuation reserve (GPV) and the net GAAP liability (benefit reserve less DAC) changes when applying ASU 2010-26.

Consider a 10-year term life product issued on Jan. 1, 2007 with the schedule of benefit reserves and DAC over a five-year period (through end of 2011) shown in the table below (top). In 2009, the company performed a loss recognition analysis, and the gross premium valuation was \$160, so the DAC was written down from \$80 to \$40.

Now, consider the ASU which dictates that 25 percent of the original deferral is allowed. In looking at 2009, when the loss recognition occurred prior to implementing ASU 2010-26, we see that there would not have been a loss recognition event had ASU 2010-26 been in place. As such, the 2009 and later financial statements would be restated, and it would be necessary to use 25 percent of the original schedule, not 25 percent of the schedule that included the reduction due to loss recognition. (See bottom table below)

WHAT HAS BEEN THE IMPACT FROM ADOPTION?

After having offered commentary on the various methods and considerations companies used to quantify the impact of ASU 2010-26 per the above, it is worthwhile to comment on the observed practices and estimated financial impacts across companies. We selected 25 insurance companies based on the availability of SEC filed 10Ks at the time our research was conducted. These companies represent life and multi-line (life and property and casualty) insurers with a range of product types with assets ranging from \$4 billion to more than \$700 billion. We make the following high-level, broad-based observations from our inspection of companies' 2011 SEC 10K footnotes:

Calendar Year	Benefit Reserves	DAC	GPV	Loss Recognition Event?	DAC Post-Loss Recognition
2007	0	100			
2008	100	90			
2009	200	80	160	Y	40
2010	300	70			35
2011	400	60			30

Calendar Year	Benefit Reserves	DAC	GPV	Loss Recognition Event?	DAC Post-ASU
2007	0	25			
2008	100	22.5			
2009	200	20	160	N	20
2010	300	17.5			17.5
2011	400	15			15

- Although early adoption of ASU2010-26 was permitted, we noted the majority of companies elected to adopt the provisions effective Jan. 1, 2012. We identified only one of the 25 companies surveyed that implemented during 2011. For the company that early adopted, no explanation for the early adoption was made in its 2011 disclosure.
- As noted above, the guidance allows for either retrospective or prospective adoption, but 21 of the

25 companies we surveyed adopted the guidance retrospectively. The companies using the retrospective method plan to apply the impact of ASU-2010 in an adjustment to the opening balance sheet of the earliest period presented in the 2012 financial statements. Once again, there was no reason provided in the 2011 disclosure for the selection basis.

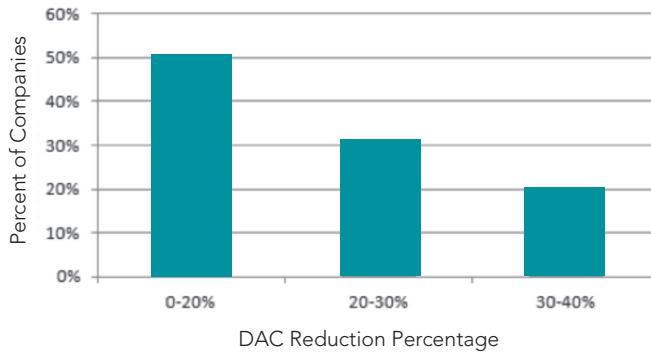
- In the footnotes, the level of detail provided on the financial impact that the retrospective adjustment would have on prior year-end financial statements ranged from a point estimate to a detailed breakdown by year. The majority of the companies we surveyed simply disclosed the estimated cumulative effect the retrospective adoption would have on financial statements as of Jan. 1, 2012. Of the 21 companies adopting the ASU retrospectively, 11 companies disclosed the impact the standard would have on the DAC balance. Of those companies, we observed a fairly wide range of impact on the DAC balance. Depending on the type of business sold, the reduction in DAC balances companies reported for their aggregated business ranged between 12 percent and 36 percent. We have summarized the distribution of DAC reduction in the histogram to the right.
- Each company's footnotes provided a varying level of detail and, as noted, not all companies provided a quantification of the ASU's impact on the DAC balance. Another commonly disclosed item, though, was the cumulative estimated impact the adoption would have on shareholders' equity. We found 13 of the 21 companies retrospectively adopting the standard disclosed the estimated reduction in shareholders' equity as of Jan. 1, 2012. [Note these 13 companies are not necessarily inclusive of the companies that disclosed the DAC reduction.] This metric also provides insight into the adoption's effect because the reduction in DAC asset impacts the financial statements with a corresponding decrease to equity. We observed a more narrow range of estimated equity reduction ranging from 1.8 percent to 17 percent, with the majority

of companies falling in the 2 percent to 8 percent reduction range. We have summarized the distribution of equity reduction in the histogram below.

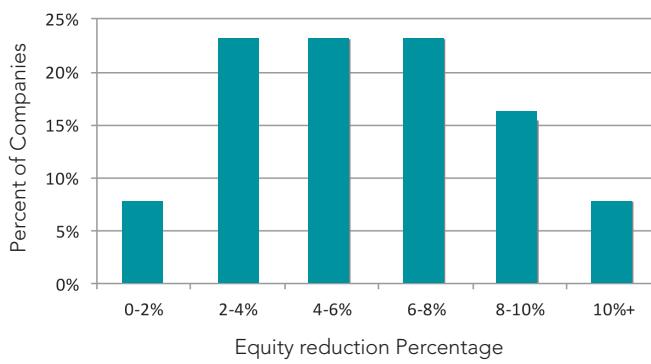
CONCLUSION

We view the actuarial implementation of ASU 2010-26 as a significant effort for most companies. While there may be facts and circumstances for certain product lines that lend themselves to expedited methods for retrospective implementation, such as those described herein, it would be prudent to carefully assess the proposed approaches for validity and potential oversights. ■

Retrospective Adoption Estimate of DAV Reduction as Disclosed in the 2011 Financial Statement, as of 1/1/2012



Retrospective Adoption Estimate of Equity Reduction as Disclosed in the 2011 Financial Statement, as of 1/1/2012



PBA Corner

By Karen Rudolph



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During months leading up to the Spring 2012 NAIC National meeting, regulators dealt with issues of material consequence relating to VM-20, the chapter of the Valuation Manual specifying valuation requirements for life insurance under a principle-based approach (PBA). With the meeting behind us, the direction of critical aspects of the Valuation Manual is becoming clearer. This article discusses these and other related issues with ties to principle-based valuation. As a result of the Life Actuarial Task Force's (LATF) work on VM-20, the entire Valuation Manual was exposed for comment at the conclusion of the NAIC Spring National meeting. It is LATF's objective to adopt the Valuation Manual during the June 2012 National Meeting.

ASSUMPTION MARGINS

Findings from the NAIC VM-20 Impact Study (Impact Study) were fairly clear in demonstrating that explicit margins applied to every material assumption has a compounding effect, resulting in modeled reserve components (deterministic and stochastic reserve amounts) with excessive conservatism. LATF discussed this outcome in the weeks leading up to the spring meeting. VM-20 Section 9.B.1 clearly states that the company must determine an explicit set of initial margins for each material assumption independently. Such initial margins may be reduced to reflect the fact that risk factors are not normally 100 percent correlated, providing the company demonstrates the method used to justify such a reduction is reasonable considering the scenarios contributing to the deterministic or stochastic reserve amount.

During the pre-meeting conference calls, an alternative approach to setting margins was proposed by an LATF member. The alternative approach focuses on developing the modeled reserve using anticipated experience (i.e., without margins) then adjusting the result by an amount representing an aggregate margin. One method of quantifying the aggregate margin may be to use the cost of capital method.¹ Other concepts floated during the regulatory discussion were that if this approach were pursued, then the anticipated experience (or best estimate) assumptions may need some degree of guard-

rail established to keep the company's assumption within the boundaries of an acceptable range.

In the end, and because this proposal was such a material change from the explicit individual margin concept, LATF chose to defer the issue and stay committed to the language of the margin requirements in the current exposure draft. The idea of the aggregate margin approach, if addressed, will likely be addressed after adoption of the Valuation Manual.

MORTALITY ASSUMPTION

Here too, findings from the Impact Study confirmed that modifications were necessary in the mortality requirements of VM-20. The finding at the heart of the proposed change to mortality assumption-setting comes from the mortality attribution analysis. The Impact Study revealed that the requirement for a company to credibility-blend its own experience with that of an industry table produced an overly conservative result, even before considering margins on the blended assumption. Changes to the mortality assumption requirements were proposed by the American Academy of Actuaries' Life Reserve Work Group (LRWG) and ultimately adopted by LATF. These requirements apply to the modeled components of VM-20; the deterministic and stochastic reserve amounts. Listed below are key elements of the revised requirement.

- The concept of a credibility segment is discarded; the concept of mortality segment is retained. The revisions define a mortality segment as a group of policies with different mortality experience than other segments (male vs. female; smoker vs. non-smoker; preferred vs. standard; etc.)
- The gatekeeper of 30 deaths for the simplified approach is also discarded. The revised requirements involve one process, whereby, if company mortality experience is not available or limited, the company can choose to use an applicable industry table in lieu of its own company experience.
- *Company Experience Mortality Rates Are...*



pany may use the underwriting criteria scoring procedure (USC) or another appropriate method. In the previous requirements, the USC was the only option.

- May be improved from the date of the industry basic table to the valuation date using published improvement factors.

- *Anticipated Experience Assumption*

- If the company chooses to use an industry table in lieu of its company experience mortality rates, as above, then the anticipated experience rates shall be equal to these industry table rates.
- Otherwise, the company will use its own company experience mortality rates for policy durations in which there exists sufficient company data. Previous requirements called for credibility blending at all policy durations.
- The sufficient data period is defined as the last duration at which sufficient company experience data exists. Sufficient experience data is defined as a minimum of [X] claims per year of exposure period. LATF is working on determining [X].
- Once the sufficient data period is known, the credibility of the data within that period is determined using common actuarial methods for credibility (i.e., limited fluctuation; Panjer). A single level of credibility is associated with the sufficient data period, rather than for durations within the period.
- Given the sufficient data period and the credibility of the data within the period, the company uses a table in VM-20 that prescribes the year to begin grading the company experience mortality rates to the applicable industry mortality rates. It also prescribes the year at which the grading must reach 100 percent of the industry rates. The higher the credibility of the data in the sufficient data period, the greater the number of durations of company experience can be recognized before beginning the grading process.
- Again, the new guardrail is restated such that the anticipated experience assumption may not

- *Applicable Industry Basic Tables*

- Continue to be based on the 2008 VBT including the primary, limited underwriting RR table forms. The company should select the rates within that table most appropriately reflecting the risk characteristics of the segment.
- In determining the applicable table, the com-

CONTINUED ON PAGE 30

be less than the experience mortality rates the company expects to emerge, with documentation provided in the actuarial report.

- *Mortality Margin*

The margin is expected to be specified as a percentage increase to the anticipated experience assumption mortality rates. The percentages may follow a select and ultimate schedule. LATF will need to develop these percentages in advance of adoption.

REINVESTMENT ASSUMPTION

The Impact Study was performed on two alternative reinvestment assumptions, and LATF ultimately adopted a modification of one of these two alternatives. The aspect of the VM-20 requirements that was modified was the maximum reinvestment yield cap. Whereas the spread on reinvestment yields had been set at a 50/50 blend of A and BBB quality fixed income assets, this criteria was modified to be a 50/50 blend of AA and A quality fixed income assets. This requirement comes into play in the VM-20 language in Section 7.E. that states that a company's minimum reserve cannot be less than that amount that would be obtained by substituting an alternative reinvestment strategy in which all fixed income reinvestment assets are public non-callable corporate bonds with gross asset spreads, asset default costs, and investment expenses by projection year that are consistent with a credit quality blend of 50 percent PBR credit rating 6 (A2/A) and 50 percent PBR credit rating 3 (Aa2/AA).

NET PREMIUM RESERVE METHODOLOGY

The Net Premium Reserve (NPR) methodology is one of three components used in determining the Principle-Based Reserve (PBR) for term policies and for univer-

sal life policies with secondary guarantees in excess of five years (ULSG). The PBR is the maximum of the deterministic, stochastic, and NPR reserves for these products. For term policies, the NPR was shown to be the prevailing component in the VM-20 process, demonstrated by Impact Study results. Conservative mortality assumptions from the credibility blending requirements of the VM-20 version used in the Impact Study was likely a material factor in this outcome, and was a compelling reason for the mortality assumption changes described above.

For ULSG, the problem was more complicated. While early duration NPR may have seemed reasonable, the projected pattern was not. The NPR amounts calculated by participating companies did not satisfy the objective of the NPR, which is to provide a result that follows the economics of the policy. LATF has turned to the American Council of Life Insurers (ACLI) for a revision to the NPR requirements for ULSG. The ACLI has enlisted member companies in determining a method that better reflects the flexibility and structure of the ULSG product type.

DETERMINISTIC EXCLUSION TEST

The Deterministic Exclusion Test (DET) may be performed for groups of policies that have been subjected to and passed the stochastic exclusion test.² The DET, if passed, allows the company to calculate only the net premium reserve for this group of policies. Recently the language in VM-20 was changed such that groups of policies meeting the definition for ULSG are deemed not to pass the DET, regardless of the outcome of the stochastic exclusion test.

OTHER DEVELOPMENTS RELATED TO PBA

Actuarial Guideline XXXVIII

The Joint Working Group of the Life Insurance and Annuities (A) Committee and Financial Condition (E) Committee, created to address Actuarial Guideline XXXVIII (AG 38) issues, continues its work. The group was formed for purposes of developing interim guidelines and tools for regulators to use in assessing the appropriateness of statutory reserves established for ULSG products, including term universal life products.

The margin is expected to be specified as a percentage increase to the anticipated experience assumption mortality rates.

The proposed guidelines and tools are referred to as the Draft Framework.³ The Draft Framework calls for closed blocks of in-force business to be evaluated by actuaries on a stand-alone basis using asset adequacy analyses incorporating moderately adverse scenarios. Prospective business issued after the specified date but prior to the effective date of VM-20 would be reserved using a formulaic approach consistent with LATF's interpretation of AG38. Policies issued on or after the effective date of VM-20 would be subject to VM-20.

The Draft Framework includes two appendices: Appendix I: Issues to be Addressed and Appendix II: Sequence of Key Decisions. The key decision points are titled Phase I, Phase II and Phase III decisions. The joint working group approved, with revisions, the Phase I decisions in February 2012, and this action was later adopted by the Financial Condition (E) Committee at the NAIC Spring Meeting.

Phase 1 decisions confirm an approach whereby in-force business is treated separately from prospective business. Phase 1 also allows for the NAIC to retain one or more independent, consulting actuaries to advise the Joint Working Group with respect to the issues in Appendix I of the Draft Framework. One of these issues is to identify the date defining in-force business from prospective business.

Phase II decisions include details of scope, implementation concepts, assumptions and methods.

Phase III decisions include state and legal issues that accompany making the Draft Framework operative for all states, assessing the in-force analysis and conclusions on in-force blocks and documentation require-

ments. Refer to the Draft Framework document for more details. This development relates to PBA because the Draft Framework is perceived to be an interim bridge between current statutory requirements and requirements of VM-20, once implemented.

Mortality Table Development

The Society of Actuaries and American Academy of Actuaries are working on developing several new valuation mortality tables. Each of these tables is underway and at different places on the continuum of data collection to completed table. It is expected that these tables will be available for use at about the same time that VM-20 requirements become operative. A single data call was used to collect company data for purposes of developing a simplified issue mortality table, a guaranteed issue mortality table and a pre-need mortality table. Analysis of each of these types is underway, with the first draft of these tables expected by late 2012.

A 2014 Commissioner's Standard Ordinary mortality table as well as the corresponding 2014 Valuation Basic Table are also in development. When complete, this collection of tables will include aggregate as well as preferred risk table structures. ■

END NOTES

¹ For detail on this method, refer to SOA Research Report "Analysis of Methods for Determining Margins for Uncertainty under a Principal-Based Framework for Life Insurance and Annuity Products," March 31, 2009. Larry Rubin, Nicholas Ranson, Xiaokai Shi.

² The stochastic exclusion test, if passed, means the company need not calculate the stochastic reserve for that group of policies.

³ Draft Framework, Jan. 13, 2012: http://www.naic.org/committees_jt_a_e_wg_draft_framework.pdf

Model Efficiency Study Results Report Now Posted

The report summarizes the findings of a stochastic modeling efficiency study.

View the report at [SOA.org, research, completed research projects, life insurance.](http://SOA.org/research)

Solvency II: A free lunch ... from the EU?

Solvency II offers a real incentive for diversifying risk, but is it quite the bonus it appears to be?

Paul Cook and Meera Rajoo investigate.

Meera Rajoo is senior actuarial analyst in Grant Thornton's financial services transactions and actuarial team.

This article first ran in the Jan./Feb. 2012 issue of *The Actuary UK*. It is reprinted here with permission.

RECEIVED WISDOM MUST CHANGE

As the deluge of figures that was QISS starts to subside, there is an opportunity to look beyond 2014 and search for signs of how our industry will operate once Solvency II is business as usual. There are fundamental pressures on our distribution models – the retail distribution review (RDR) and Foreign Account Tax Compliance Act (FATCA) to name but two. There is much to say on both of these but, for this article, we are focusing on what will drive the financial structures of our businesses.

The most crucial challenge is to identify the portfolio of risks that you would want to import to complement your own.

Working with our clients, the analysis has made it clear that the move away from composite offices will need to be reversed, or at least taken in a different direction, if the full benefits of risk diversification are to be realised. We are already seeing this as a driver of change.

Current regulations give little, if any, benefit for risk diversification, but Solvency II gives a real incentive to seek to maximise its effect. Taking a theoretical stance, Table 1 highlights that, in the simple situation where a monoline life or GI carrier takes on a different risk type, the capital required on a composite basis is markedly lower than for two stand-alone entities.

In practice, of course, the situation is more complex. The effect is diluted by the many different risk

types – market, credit and operational as well as insurance – that the stand-alone companies will bring to the combined entity. And the effect on the risk margin, not just on the solvency capital requirement (SCR), needs to be considered. A release in insurance risk capital of the order of 50% is not an unreasonable target.

In the strictest economic terms, the real worth of the exercise is not in the immediate capital release, welcome though that usually is, but in the difference between the face value and the discounted value of the capital release. And, of course, this is different between life and GI portfolios, because of the much greater mean term of the life policies. But even with this taken into account, there is no doubt that there is a strong theoretical case for creating further risk diversification.

That's fine in theory, but...

The difficulties start to arise when the practical constraints of trying to transfer real portfolios of risk between insurers are faced.

The most crucial challenge is to identify the portfolio of risks that you would want to import to complement your own. It is essential to avoid an unprofitable book because, while the benefits of capital efficiency are well worth having, they cannot outweigh a genuinely loss-making business.

This needs to be considered alongside the volatility of the claims coming from the newly acquired portfolio. A life company's shareholders do not expect to have to suddenly cover claims for a US windstorm. And the shareholders of a GI insurer will not be amused by the strengthening of longevity reserves.

In our experience, the real success factor is the quality of the long-term relationship between the original underwriter and the ultimate risk carrier. Linking with a high-quality underwriter that can be trusted is crucial.

Achieving this stable relationship can be facilitated by a properly structured transaction. It is also partly a matter of corporate chemistry. A surefire way to achieve this is by acquiring the underwriter. If you grab a man by his wallet, his heart will surely follow.

TABLE 1: Capital required for Composite or Stand-Alone Entities

Stand-alone risk	GI company	GI company + incremental GI risk	Stand-alone risk	Life company	Life company + incremental GI risk
Market	200	200	Market	800	800
Life	-	50	Life	50	50
GI	450	450	GI	-	50
BSCR	514	520	BSCR	807	815

But acquiring a company brings with it all sorts of risks – operational, reputational and strategic. You may acquire more risk than you are able to diversify away. Unless it is a strategic direction that you wanted to follow anyway, the acquisition can become the technical tail wagging the corporate dog.

Reinsurance is a much cleaner route, but there is the ever-present chance of picking up poor-quality business. One conversation in three between insurance folk usually contains an anecdote about the worst reinsurance treaty ever entered into. A quota share treaty is preferable, because both parties have much to gain from good experience. But, in practice, these treaties work best as long-term commitments on both sides – and such relationships take time to cultivate.

At the other end of the spectrum is buying one of the various forms of derivative risk vehicles. Longevity swaps, industry loss warranties and cat bonds all fall into this category. It may also be that tailor-made insurance risk packages can be manufactured. These will perhaps be the way forward in years to come – the range of risks and their transparency mean that they are useful adjuncts to a core risk diversification process, but they are not yet that core process.

An alternative approach, and one that has already been tried and tested, albeit in rather different circumstances, is the ‘sidecar’, perhaps more prosaically described as a reinsurance special purpose vehicle (SPV). Originally created to raise capital for insurers that had suffered considerable losses from Hurricane Katrina and other natural disasters of the time, a ‘sidecar’ is a listed and rated captive reinsurer into which the direct writer places its portfolio. Investors then buy shares in the ‘sidecar’. It is a short leap of the imagination to envisage a group of monoline insurers placing their business, or at least quota shares of their business, into a single reinsurance SPV and, in return, receiving shares in the performance of the entity as a whole.

The business transferred into the SPV would need only a small proportion of the risk capital that the monoline would need to provide on a stand-alone basis. The monoline insurer thus maintains its focus

on the risk that it knows best how to underwrite, yet gains the capital benefits of a pooled risk approach.

WHAT WILL THE REGULATORS THINK?

All this is predicated on being able to gain a suitable licence to write both life and GI risks. Those insurers that have retained their historical composite business licence have a genuine competitive advantage. An insurer with a significant level of risk diversification will be able to achieve higher margins or, more likely, offer lower premiums for the same margin than a monoline competitor. So how can the monoline respond?

The solution is not obvious, but there do appear to be useful reinsurance SPV structures that can allow monolines to achieve the price levels that their more fortunate composite competitors can take for granted. Carefully constructed, certain reinsurance SPVs can be licensed to receive both GI and life risks, even within the terms of the EU directive. But will the regulators be accommodating?

Of course, only the regulators themselves can answer this, and their response will quite properly vary from case to case. But insurance SPVs have been championed in the past by the FSA. And it would be surprising if the regulators allowed one section of the market to maintain a structural competitive advantage for purely historical reasons. So this may prove to be a route to a more level playing field.

WHERE DOES THAT LEAVE US?

The insurance industry of the future will be dominated by pooled risk vehicles, either within the fortunate composite licence holders or, conceivably, through specially created insurance or reinsurance SPVs. The winners will, as ever, be the firms that write profitable portfolios of policies, but there will be much more attention on risk portfolio engineering to ensure that those profits are not undermined by unnecessary risk capital costs? ■

Financial Reporting Research Scorecard

by Mark Alberts

Research is a primary mission of the Society of Actuaries Financial Reporting Section Council and is the largest use of section dues. The section spent \$141,000 in 2011 and anticipates spending \$80,000 in 2012 on research. This scorecard will keep section members informed about research projects sponsored or co-sponsored by the section.

Do you have an idea for a research project? Please send it to Mark Alberts at mark@albertsactuary.com.

Research initiatives in process:

PROJECT NAME	DESCRIPTION	TARGETED COMPLETION	STATUS	PROJECT OVERSIGHT GROUP CONTACT
Monograph on Rate Discounts	An IAA-sponsored monograph on the concepts and practical methods used in discounting for insurance company financial reporting.	TBD	In process	Frank Grossman
Monograph on Risk Adjustment	A monograph addressing the of risk and uncertainty in the measurement of insurance liabilities.	TBD	In process	Mark Yu
Comparative Failure Experience in the Insurance and Banking Industries	Identification of the factors that have been effective for the insurance and banking industries to reduce failure rates.	Q2 2012	Preliminary draft reviewed by Project Oversight Group (POG)	Larry Rubin
Premium Persistency Study of Flexible Premium Products	A survey of assumptions used by life insurers on their flexible premium products.	Q2 2012	POG is preparing feedback for final draft	Jeff Beckley
Credit Risk Modeling Techniques for Life Insurers	A survey of life insurers with respect to actuarial modeling of credit losses and an evaluation of current practice.	Q2 2012	Survey set to be finalized Q1	Mark Alberts
Actuarial Modeling Controls	A survey of control systems currently implemented for actuarial models in the United States and Canada.	Q3 2012	In process	Ronora Stryker
Volatility of Fair Value Accounting	Identification of methodologies currently in use by life insurers as well as potential new strategies to manage accounting volatility resulting from fair value accounting.	Q3 2012	In process	Katie McCarthy
Behavioral Economics Applications to Life and Health Insurance Policyholder and Annuitant Behavior	A call for papers to expand actuarial understanding of the theory of behavioral economics and its to insurance customer behavior.	TBD	Call for papers issued	Ronora Stryker
IFRS	Examines the impact to life insurance financial reporting of the upcoming IASB exposure draft on accounting of insurance contract liabilities.	TBD	In process	Tom Herget

Recently published research of interest to Financial Reporting Section members:

PROJECT NAME	LINK
Policyholder Behavior in the Tail Risk Management Section Working Group Variable Annuity Guaranteed Benefits 2011 Survey Results	http://www.soa.org/research/research-projects/risk-management/research-policy-behavior-tail-results.aspx
Model Efficiency Study Results	http://www.soa.org/research/research-projects/life-insurance/research-2011-11-model-eff.aspx
Financial Reporting for Insurance Contracts Under Possible Future International Accounting Standards—2011 Extension	http://www.soa.org/research/research-projects/life-insurance/research-fr-insurance-contracts-extension.aspx
Cost of Implementing a Principle-Based Framework for Determining Reserves and Capital Survey Results	http://www.soa.org/research/research-projects/life-insurance/research-cost-pba-survey.aspx

Mark Alberts, FSA, MAAA is president of Alberts Actuarial Consulting and chair of the Financial Reporting Section research team. He can be contacted at mark@albertsactuary.com.

Research projects out for proposal:

PROJECT NAME	PROPOSAL DUE DATE	LINK
All section research projects are currently past the proposal stage		

SOCIETY OF ACTUARIES

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