

The Financial Reporter

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PBA Corner

By Karen Rudolph

The fallout of the Dec. 2, 2012 Executive/Plenary adoption of the Valuation Manual (VM) has created a bit of speculation regarding the operative date for VM-20. Speculation is interesting, but rather than getting caught up in the absolute latest date on which one needs to be ready, let us review one of the tools available to us in preparing for this work. In this issue of PBA Corner, I introduce you to the American Academy of Actuaries' Economic Scenario Generator (ESG), how it is used, its input requirements, and its output files. Readers may already be familiar with the ESG if doing AG 43 or C3 Phase II analysis. For those new to the ESG, and those benefiting from a refresher, read on!

ESG: WHERE TO FIND IT

Appendix 1 of the VM directs you to the Society of Actuaries (SOA) website (soa.org) to find the ESG. Go to the home page, then *Research*, then *Software and Tools*, then *Economic Scenario Generators*, Related Links (right-hand side), click into *Interest Rate Generator Version 7.0.4*. This site is the official home of the most current ESG workbook tool. The user must agree to a disclaimer before downloading the file titled *AAA scenario generator version 7_0_4.xls*.

The American Academy of Actuaries (Academy) and the SOA have joined resources to manage the ESG that will be used in principle-based approaches. The SOA provides frontline support for the ESG. A joint SOA/Academy oversight group will oversee the generators and assist the SOA in providing technical support and direction for the current and future versions of the generators. Future versions of the ESG tool will include updated historical Treasury yield curve rates along with any other technical or user interface revisions deemed necessary. The version number of the ESG tool will advance with each new release.

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Green ... But No Envy

By Matthew Clark

As I indicated in the prior issue, the annual meeting was around the corner. That meeting is an important meeting for the Society of Actuaries (SOA), as well as each of the section councils. The key activities include the transition of leadership, a reflection on the past year, and a look at the year ahead.

TRANSITION OF LEADERSHIP

I took the opportunity to welcome the incoming and thank the outgoing members of the Financial Reporting Section Council in the last issue. I foreshadowed the passing of the green jacket. From the time I was honored with the opportunity to serve as the vice chair, I have dreaded the passing of the green jacket. Two fears were front and center: (1) just how dirty is this jacket and (2) will it fit?

It wasn't until Rob Frasca and I were at the podium that I realized that I had not tried on the jacket. What would I do if it didn't fit? Lucky for me it was just my size. This should relieve all of you considering a future as the chair of the section.

As for the cleanliness of the jacket, let's just say that my wife insisted that it go straight to the dry cleaner. Unfortunately, the jacket came back home with her. They could not assure the signatures would not be washed away. This is another tradition with the green jacket. The outgoing chair signs the inside of the jacket. The list of past chairs is humbling and impressive—several SOA presidents and many distinguished actuaries who continue to serve the profession. I could not risk the possibility of losing all of those signatures.

Finally, to call the jacket green is not doing it justice. I have not tested to see if it glows in the dark, but it is safe to say I don't have to worry about anyone else wearing the same jacket. While serving as your chair is an honor, nobody is envious of the jacket.

REFLECTION ON THE PAST YEAR

For those of you who could not make the annual meeting, I would like to share some of the accomplishments of the past year.

Below is a list of research projects that have been completed or are in process:

- Stochastic Modeling Efficiency
- Actuarial Modeling Controls
- Credit Risk Modeling Techniques for Life Insurers
- IAA Monograph on Discount Rates
- Premium Persistency of Flexible Premium Products
- Comparative Failure Experience in the Insurance and Banking Industry
- Volatility of Fair Value Accounting
- Actuarial Applications of Behavioral Economics
- IFRS 4
- IAA Monograph on Risk Adjustment
- PBA Practitioner's Guide (new)

Completed and planned webcasts include:

- Model Efficiency
- Considerations for Year-End (2011)
- IFRS & FASB Convergence
- Phase II of the VM-20 Study
- Low Interest Rate Environment—Stat Issues
- Premium Persistency of UL Research
- IFRS—first webcast focused on an Asian audience
- Low Interest Rate Environment—GAAP/PD Issues
- Volatility of Fair Value Accounting
- Considerations for Year-End (2012)

As you can see, the council has been busy. You can find this material on the SOA website.

LOOKING AHEAD

The council continues to identify opportunities to serve the membership. The research committee continues to invest in projects that will provide advancement opportunities for the actuarial profession and insurance industry.

A project that will take time, but is the most exciting for me, is the work on the replacement for the U.S. GAAP book. The new edition will focus on the evolving regulatory landscape. I have found the current book to be a great resource for me in my work, and I look forward to the new book being a natural complement. The authors have been arranged, and the production of the content will be underway.

A new form of communication to look forward to in 2013 is the introduction of podcasts. This is an endeavor started and still pursued by Rob Frasca. I am excited to leverage technology to distribute information. Look forward to communication from the SOA regarding the release of the podcasts and feel free to share your thoughts and ideas as this medium matures.

We are also spending time and effort to reach out to our membership outside of the United States. Specifically, time and resources are being spent to focus on our Canadian and Asian membership. It is important to keep the SOA and, more specifically, the section relevant for all of our members across the globe.

Finally, we are finding ways to leverage our efforts across section councils. The economic and industry challenges are areas of focus that are shared across the SOA sections. Identifying opportunities to leverage areas of common interest is exciting. I find that the expanded perspective brings an increase in the energy and collaboration, resulting in a better work product produced. ■



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For anyone new to the ESG, I recommend first reading through the Frequently Asked Questions (FAQ) dated April 2012. This document is accessed through the second link listed on the SOA Web page.

A complete set of release notes for Version 7 was created in December 2010. This document is accessed via the fifth link listed on the SOA Web page. The release notes provide technical information regarding improvements made in the scenario generation process as the ESG moved from version 7.0.3 to 7.0.4. The release notes also serve as an instruction guide for the user. These notes include the following information:

Attachment 1—Yield curve interpolation method: The stochastically generated interest rate process defines one-year and 20-year maturity rates. A Nelson-Siegel formula is used to derive the remaining points on the curve.

Attachment 2—The dynamic mean reversion point: Before officially approving the ESG, the Life Actuarial Task Force (LATF) of the National Association of Insurance Commissioners (NAIC) developed and adopted its own algorithm for determining the mean reversion parameter (MRP) used in the ESG. The 20-year Treasury bond rate tends toward this MRP. The algorithm uses historical rates as follows: $MRP = 0.20(A) + 0.30(B) + 0.50(C)$, rounded to the nearest 0.25%, where A is the median rate of the 20-year Treasury bond over the last 600 months, B is the average over the last 120 months, and C is the average over the last 36 months. The default setting of the ESG is to use the NAIC algorithm, where the (A), (B) and (C) values depend on the start date coded into the ESG. The default setting can be overridden by the user, but the resulting MRP would not comply with the NAIC's approved ESG process. While the algorithm for the MRP is dynamic, the MRP remains constant for future projected periods and across all scenarios generated once it is determined as of the start date. The release notes provide the exact source for finding the historical yield curve rates. The ESG file on the website is populated with historical monthly curves through Dec. 31, 2011 only. These historical rates capture the final daily

Treasury yield curve rates for each month. It is important to understand that the default MRP rate changes only once per calendar year, in January, for use during that calendar year.

Attachment 3—User Guide to the scenario generator workbook: This is a step-by-step listing of instructions for using the ESG. Attachment 3 is a critical read if you are new to the ESG. This guide walks the user through the input necessary to set up the generator, the format of the output files, and all the tabs found in the ESG workbook file. The reader should note that this guidance is largely focused on the interest rates generated by the ESG, rather than the equity returns.

ESG: BRIEF HISTORY

Looking back to 1999, pre-generated scenarios were posted on the Academy website for use in C3 Phase I calculations. In late 2008, the Academy released a version of the ESG tool called the C3 Phase I Enhanced Interest Rate Generator. These older tools and scenarios can still be found on the Academy website (not the SOA site). Throughout the evolution of the ESG, the Academy working group has used a stochastic lognormal volatility model. This choice drives the resulting parameters used by the stochastic process. These parameters are found on the "Parameters" tab of the ESG workbook. For example, the mean reversion point, τ_1 , and the mean reversion strength, β_1 , are parameter settings found there.

The design of the Academy's ESG is based largely on its intended use—to calculate statutory reserve and capital requirements for long-term liabilities. In 2005, equity scenario generation functionality was added. Over time, the user interface of the ESG has been improved, and the current version 7.0.4, together with the release notes and FAQ, provide a user-friendly ESG package.

ESG: APPLICATIONS

The April 2012 FAQ document provides an overview of applications that use interest rate and/or equity return scenarios and a discussion of whether the ESG would be approved for use in each.

APPLICATION	SCENARIO REQUIREMENTS
C3 Phase I	Until further action by the NAIC, C3 Phase I calculations require the use of scenarios generated by the "Enhanced C3 Phase 1 Interest Rate Generator" file, available at http://www.naic.org/committees_e_capad_lrbc_c3_market.htm . The file is titled <code>committees_e_capad_lrbc_c3_generator_06.xls</code> .
C3 Phase II	Both of these applications allow use of approved pre-packaged scenarios, scenarios generated by the ESG or any other scenario generator as long as the scenarios satisfy the approved calibration criteria.
And	
Actuarial Guideline 43	
C3 Phase III	Though no formal action has been taken on C3 Phase III, the proposed RBC C3 Requirements for Life Products include a recommendation to use either the ESG or proprietary generators as long as the scenarios used satisfy the required calibration criteria.
VM-20	VM-20 requires use of the Academy's economic scenario generator with certain prescribed parameters, rather than a specified set of scenarios or specified calibration criteria. When used by two different companies, the ESG will produce the same economic scenarios as long as the start date is the same, the parameters have been left at default settings, and the historical curve rates are identical. VM-20 does not allow for use of proprietary scenario generators. See VM-20 Section 7.G and Appendix 1 for more detail on VM-20 requirements.

The deterministic scenario required by VM-20's deterministic reserve calculation is actually found within the 16 stochastic exclusion test scenarios generated by the ESG. Scenario 12 of this set is the deterministic

Generating the scenario files is quite easy; however, there are a few input decisions to be made up front.

scenario. One improvement that could be made to the ESG would be to add functionality that would capture Scenario 12 independent of the others.

ESG: WHAT TO EXPECT

Most actuaries using the ESG will be focused on obtaining interest rate scenario files. It is helpful to know, however, that because several functionalities were coordinated into this one ESG file, the user will also be getting a set of equity scenario files with each run attempt, whether or not they want these. There will be more information on the equity files later. Generating the scenario files is quite easy; however, there are a few input decisions to be made up front. The first is the start date. This is the date the generator will use as the start date and to establish the averages used in calculating the MRP for each scenario generated. The push of a macro button obtains the appropriate rate from the historical rate data tab, assuming the tab has been appropriately populated with historical U.S. Treasury rates. Whether this is true is easy to check by looking in the Historical Curves tab of the workbook. The currently available ESG file is populated with appropriate month-end historical curve rates through December 2011.

The ESG provides the user with options for the number of years over which to project the rates. The ESG needs to know where the user wants the scenario files placed (a path name) and whether .csv files or .xml files are the preferred type.¹ A convenient feature is the ability to append the files with an optional suffix at the user's choice. This feature can be used to distinguish scenarios generated at different dates, for example. The ESG is capable of providing monthly, quarterly, semi-annual and annual time steps. Both bond equivalent and annual

CONTINUED ON PAGE 6

effective rates are supported. Once all the settings are complete, it takes approximately 10 minutes to generate the set of 10,000 scenarios.

While the ESG generates a set number of 10,000 scenarios, it also offers the use of a scenario picking tool to choose a stratified sample subset of 1,000, 500, 200 or 50 scenarios. The ESG will also generate the Stochastic Exclusion Test set of scenarios which is not considered a “subset” and has nothing to do with the scenario picking tool. The scenario picking tool is provided for convenience only and is not endorsed by the Academy. The method used to pick the scenario subsets from the larger set of 10,000 is the Significance Method and is briefly described in the FAQ document. It is the user’s responsibility to justify the number of scenarios used for any application as well as to comply with any calibration criteria requirements, as noted earlier. It is also important to understand that if the choice is made to run the 1,000 subset, for example, without first generating the full 10,000 scenarios, what the user gets is going to be driven by whatever scenario numbers were picked when the scenario picker was last run.

If the user chooses separate .csv files for each term to maturity, then each interest rate file is a matrix of rates, where the time step is across the columns, and the scenarios are listed one per row. One thousand scenarios means 1,000 rows of data, and 100 years of monthly time step means 1,200 columns of projected rates plus one column for the starting rate; in other words, a 1,000 x 1,201 grid of numbers. If the user chooses a single .csv file for the interest rate scenarios, then the resulting data is formatted by scenario and month in the rows, and by term to maturity in the columns.

Regarding the equity scenario files, the option for separate files or a single file does not apply; each file includes gross wealth ratios for a fund tied to specific asset classes. Within each of these equity files, the data begins with 1.00. Subsequent periods represent gross wealth ratios, indicative of the cumulative return for the indicated time period. The ESG will generate equity scenario files whether you need them or not. Each of the nine equity files represents an equity fund corresponding to an asset class. The file *Balanced.csv*, for example, represents returns of a diversified balanced allocation fund. The file names and fund types are listed in the table below. The equity return generator and the interest rate generator processes of the ESG are separate functionalities, having been incorporated into one workbook in 2005 for user convenience. The equity scenarios generated at any start date are not correlated with the starting Treasury curve. According to the FAQ document, however, returns for the fixed income equity funds are integrated with the generator for interest rate scenarios so that fund returns depend on the change in interest rates in the same scenario. The equity return files are formatted with time steps across the columns and scenarios down the rows. Background material on the equity generator and its output can be found at <http://www.actuary.org/content/c3-phase-ii-rbc-and-reserves-project>, under “Reports.”

The manner in which these interest rate and equity return data files are loaded into the user’s software system will vary by system. Some are designed to load the .csv files directly. The generated files carry the default names as shown in the table below.



Filename	Interest Rate	Filename	Equity Rate
UST_3m.csv	Three-month U.S. Treasury rate	AGGR.csv	Aggressive or specialized equity
UST_6m.csv	Six-month U.S. Treasury rate	BALANCED.csv	Diversified balanced allocation
UST_1yr.csv	One-year U.S. Treasury rate	FIXED.csv	Diversified fixed income
UST_2yr.csv	Two-year U.S. Treasury rate	INT.csv	Diversified international equity
UST_3yr.csv	Three-year U.S. Treasury rate	INTGOV.csv	U.S. intermediate-term government bonds
UST_5yr.csv	Five-year U.S. Treasury rate	LTCORP.csv	U.S. long-term corporate bonds
UST_7yr.csv	Seven-year U.S. Treasury rate	MONEY.csv	Money market/short-term equity
UST_10yr.csv	10-year U.S. Treasury rate	SMALL.csv	Intermediate risk equity
UST_20yr.csv	20-year U.S. Treasury rate	US.csv	Diversified large cap U.S. equity
UST_30yr.csv	30-year U.S. Treasury rate		



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This article was peer reviewed by Nancy Bennett, senior life fellow, American Academy of Actuaries, and Max Rudolph, principal, Rudolph Financial Consulting, LLC. Both have served as the chairperson of the Academy's Economic Scenario Work Group. ■

END NOTES

¹ The .xml format is EconSML, which stands for Economic Scenario Markup Language, a standard file format proposed by the Technology Section of the SOA for facilitating the sharing of such scenarios between different modeling systems.

Implementation Perspectives on Solvency II Internal Model Standards

By Fred Ngan



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INTRODUCTION

Under Solvency II, the alternative to the standard formula is the internal model—but that comes with a price. Companies can calculate their solvency capital requirement using either the more simplistic standard formula or their own internal model (or a partial internal model, which is a combination of the two), subject to supervisory approval. Regulators set a higher expectation and raise the bar for the use of internal models, in an effort to uphold the quality of the calculation of the solvency capital requirement. As a result, the tests and standards for internal model approval are extensive, leading to debates around how the guidance should be interpreted and implemented. Although much progress has been made, what lessons have we learned from an implementation perspective?

This article discusses some implementation considerations European insurers and their U.S. subsidiaries have encountered when applying the tests and standards for internal model approval. In particular, this article focuses on the use test, statistical quality and calibration, and model validation.

USE TEST

One controversial topic in regard to internal model approval is the use test. The spirit of the Solvency II Directive's Article 120 specifies that an internal model is widely used in and plays an important role in decision making. To comply with the use test, companies must provide evidence of acting on the decisions based on model outputs, meaning that senior management can no longer make significant risk and capital decisions without first looking to the model. Although the concept of the use test makes sense, it is often not easy to implement.

In general, companies need to be ready to provide rationale as to how and why the internal model fits the business model.

Models can improve business decisions, but the risk of misusing a model, or relying on an incorrect model, could lead to unanticipated results. It is important that senior management is fully aware of the key limitations and the expert judgment made within the model. Model governance and risk management are not new topics, but their importance becomes clearer when considering the consequences of relying on a model without appropriate scrutiny. Companies are likely to use a variety of accounting principles such as local statutory, IFRS, GAAP and Solvency II regulatory basis for the valuation of assets and liabilities. This is especially true for subsidiaries of a European parent that are subject to both local statutory and Solvency II regulatory standards. In this case, the market-consistent results are being factored into the thinking but not at the exclusion of all other metrics for financial reporting, pricing and capital. However, valuation on a market-consistent basis may not be favorable for particular lines of business due to the lack of recognition of credit spreads, such as spread-based business with long-term and unhedgeable guarantees that are actively sold in the United States. For instance, fixed annuity writers may question an internal model result due to the unfavorable capital requirement and profitability seen under the pillar 1 risk-neutral calculation. These subsidiaries might question whether the proposed framework is fully appropriate for the U.S. products, and may find it difficult to meet the use test requirement without altering their product and pricing strategies.

In general, companies need to be ready to provide rationale as to how and why the internal model fits the business model. However, it will likely be difficult to convince the regulators in the internal model application process if local management does not buy into the model.

STATISTICAL QUALITY AND CALIBRATION

Many insurance companies are frustrated with the extensiveness and complexity of the statistical quality and calibration requirements. As set out in Articles

121 and 122 of the Directive, these standards include risk coverage and ranking, data quality, probability distribution forecasts, mitigation techniques, future management actions, guarantees and options, aggregation and calibration of solvency capital requirement. There are several important considerations related to statistical quality and calibration.

The first is the modular approach, which is when the solvency capital requirement for each risk is calculated separately and then aggregated based on correlation matrices. Despite all the effort being put behind developing the internal model, it is noteworthy that companies tend to come up with a stress level (at least for some market risks) that is generally equal to the stress level under the standard formula. This is because justification may be required when the internal model stress levels deviate significantly from those calculated under the standard formula and/or other local solvency capital requirements such as Internal Capital Assessment (ICA). In this case, the standard stress becomes a common target for modelers. For instance, the four common types of equity risk model include stochastic process, times series model, fitted-distribution model and empirical distribution model. Despite the diversity in the choice of an equity risk model, the typical equity shocks in the industry are between 39 and 43 percent, which are close to the 1-in-200 standard shock of 39 percent (the base shock for equities listed in regulated markets in the countries that are members of EEA¹ or the OECD,² without any symmetric adjustment/equity dampener). Such consistency can be explained by behavioral bias, as well as the same underlying market data used for model calibration. It is crucial to confirm the calibration, but one may question the value of the additional modeling work.

When obtaining internal model regulatory approval, a sophisticated model is not always better, or safer, than a simpler one. Some companies have proposed a risk model that may have seemed too simple, but their sound and prudent selection of data and methodology allowed for it to meet all necessary requirements. In theory, the level

of detail should be proportionate to the nature, scale and complexity of the risks that the companies are exposed to.

Another common issue is the lack of justification in the use of actuarial judgment. Companies tend to focus on analyzing the data and calibrating the model, rather than understanding the risk profile and justifying the judgment and model limitations. Companies sometimes choose a probability distribution forecast without explaining why it is appropriate to their own risk profile, and what the underlying assumptions and limitations are. These qualitative aspects are vital, but can easily be overlooked.

MODEL VALIDATION

Model validation has been one of the key focuses of regulators. At least annually, companies should test the results and key assumptions of their internal model. Understanding some perspectives on model validation processes with respect to repeatability and auditability is important when using internal models. The commonly known three levels of defense are preparation of results, internal control systems and independent assurance. In practice, both risk owners and risk management functions often have a major responsibility in the model validation process. There are concerns over independence when the model owner also acts as a primary validator. Segregation of duties is of particular importance for proper model governance and model risk management. Moreover, the level of technical challenge and independence will be a key area of focus, despite the differences in regulatory landscapes among the European countries.

With respect to the technical aspects, model validation is not an easy task when there are dynamic decisions and linkages in the stochastic model. Many companies review the basic model projections and analytics (such as implied credited rate and lapse rate), but these alone are not always adequate. It is critical that companies truly understand the secondary impact and the implications of dynamic assumptions and sensitivities. For example, considering

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Currently, companies tend to summarize and validate the model results manually in a spreadsheet environment.

a fixed annuity product in an increasing interest rate environment, its profitability will depend on the interplay of many factors such as the crediting strategy, investment and disinvestment strategies, competitor actions and policyholder behavior. Companies should develop analytics specific to each business segment and environment, and provide commentary that truly explains the value, risk and capital drivers.

From a practical standpoint, companies should make an attempt to streamline the model validation process and use a variety of model validation techniques. Currently, companies tend to summarize and validate the model results manually in a spreadsheet environment. Although companies are generally not satisfied with their model output management, some have already automated this process by building a centralized output repository and using business intelligence tools to aggregate results and populate analytics at the desired level of granularity. Such improvement allows companies to save significant time and effort, and focus on understanding what the model results mean to the organization.

CONCLUSION

Again, the bar for the use of internal models under Solvency II is high. However, the continuous refinement of internal models has allowed companies to better understand their own risk profile, improve their risk management structure and risk culture, and potentially reduce their capital requirement. But **these commercial benefits cannot be fully realized unless companies embrace the use test in spirit and think beyond regulatory compliance.**

The views expressed herein are those of the individual authors and do not necessarily reflect the views of Ernst & Young LLP. ■

END NOTES

- ¹ EEA is the European Economic Area. It comprises the countries of the European Union (EU), plus Iceland, Liechtenstein and Norway.
- ² OECD is the Organisation for Economic Co-operation and Development. It has 34 country members, and its mission is to promote policies to improve economic and social well-being of people around the world.



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Practical Considerations to Implement and Productionalize VM-20

By Jason Kehrberg



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On Dec. 2, 2012, the National Association of Insurance Commissioners (NAIC) adopted the Valuation Manual (VM) that sets forth principle-based reserve (PBR) requirements for life insurance and annuities, passing the matter onto state legislatures. The only step that remains is for 42 jurisdictions that represent at least 75 percent of direct premiums to adopt the new Standard Valuation Law (SVL) and accompanying VM. Once that happens the new law will take effect on January 1 of the following one or two years, depending on whether the deciding vote happens in the first or second half of the year.

Section VM-20, “Requirements for Principle-Based Reserves for Life Products,” will likely be the most challenging section of the new manual for most insurers to implement. The goal of PBR is to better reflect risk and right-size reserves by replacing prescribed, one-size-fits-all, formulaic reserves with reserves based on company-specific experience, models and risk management practices. Although a “true” PBR may be relatively simple to define, VM-20 took years to develop and is quite complex. A formulaic reserve called the net premium reserve remains, and deterministic and stochastic modeled reserves have been added. There are many prescribed elements in all three reserves, as well as prescribed data and documentation requirements. VM-20 also creates new obligations for the company by relying more heavily on actuarial judgment and company data.

One thing is for certain when it comes to implementing and productionalizing VM-20 ... it is not going to be easy. This article focuses on some common challenges and practical considerations for companies that will have to implement and productionalize VM-20.

DEVELOPING EXPERTISE

Jan. 1, 2015 is the first possible effective date for VM-20, and there will be a three-year phase-in, perhaps longer for small companies with domestic state approval. It could also not happen at all. But the passage by the NAIC represents a significant milestone, and those companies taking a “wait and see” approach may now want to consider their next steps given the amount of work that could be involved in implementing VM-20. One of the first tasks is simply getting up to

speed on VM-20 and developing expertise by reading the document, available on the NAIC’s website, and staying on top of emerging practices and interpretations via industry websites and conferences and speaking with peers, vendors or consultants. With at least a basic understanding of VM-20, companies can then work to determine which of their products are in scope and which areas of the business will be affected.

EXCLUSION TESTS

VM-20 contains a deterministic reserve exclusion test and stochastic reserve exclusion test. Early on you should work to determine preliminary results to these exclusion tests since passing them can significantly reduce the amount of work required to implement VM-20. In order to conduct the exclusion tests, you will need anticipated experience assumptions, but not margins. You will also need gross and net premiums, and the capability to project assets and liabilities on 17 scenarios. For business that passes both tests, only the seriatim and formulaic net premium reserve need be calculated. For business that passes the stochastic but fails the deterministic reserve exclusion test, you will still not be required to calculate the stochastic reserve, potentially saving you hours of run time or from having to run on the grid, but you will have to develop margins for non-prescribed assumptions for calculating the deterministic reserve.

WHERE IN THE COMPANY SHOULD THE WORK BE DONE?

An important, early-on consideration when implementing VM-20 is the people, processes and systems that will be leveraged to do the work. In addition to being able to simply do the calculations and having access to the grid, there are other important factors to consider:

- Front-end data—VM-20 relies more heavily on company data than current formulaic reserves. Manual front-end data work may be acceptable for cash flow testing or preliminary VM-20 calculations, but ultimately the required data from administration and other systems needs to be as automated as possible. Although VM-20 only applies to life insurance policies, some riders will be in scope, complicating data requirements. Familiarity and proximity to the data will be a plus when modifying data extracts.



- Frequency of the calculation—Reserves are calculated at least quarterly. A fully automated production process is a must.
- Model point compression—The net premium reserve calculation is seriatim. Also, any excess over the net premium reserve must be allocated back to seriatim policies. Model point compression is currently allowed for the deterministic and stochastic reserves, but there are significant documentation and justification requirements. With the right setup, deterministic and stochastic reserves can be calculated using seriatim records, eliminating the need to document and justify model compression.
- Leverage grid hardware to meet the close schedule—Run time will almost certainly be an issue in a close process that is managed to the day or even hour.
- Relationship with IT—Productionalizing VM-20 will be easier if those involved have a good relationship with IT.
- Level of scrutiny by managers, auditors, regulators—Unlike cash flow testing, VM-20 numbers will flow through to financial statements. The level of scrutiny will be intense, and short-staffed regulatory departments may bring in consultants to conduct periodic reviews and ensure the mechanics are correct. The general level of system auditability will be key, as will a secure production environment with good controls, data management and documentation. In addition, the new SVL has certain governance requirements related to controls on PBR valuations.
- Documentation and reporting—Like other VM-20 work, an automated solution to documentation and

reporting within a secure production environment will make it much easier to satisfy auditors and stay on schedule.

- Level of prescription—The people, processes and systems involved with VM-20 will have to deal with a relatively high level of regulatory prescription, compared to cash flow testing for example. The following are examples of VM-20 items that include prescribed elements: liability assumptions and margins, exclusion tests, default rates, scenarios, starting asset levels, reinvestment spreads, certain cash flows to include/exclude in the calculation of reserves, and the entire net premium reserve calculation.
- Revisions—The new SVL references the VM, which can be amended as needed by the NAIC, without state legislative action as currently required. Revisions may occur frequently and quickly become effective.
- Outsourcing—Much of the solution and process can be outsourced. Weigh the pros and cons of a do-it-yourself approach vs. vendor solution.
- Costs—Budgets should include all implementation and ongoing maintenance costs, including additional staff, IT, vendor expenditures, etc.

EXPERIENCE STUDIES

VM-20 allows for company experience to be used in setting assumptions and margins for deterministic and stochastic reserve calculations. But those assumptions must be justified and documented by frequent and robust experience studies. Now is the time to evaluate the state of your experience studies and decide if improvements are necessary or worthwhile for VM-20. Are experience studies set up properly and done frequently enough? Do they have appropriate controls and enough documentation? Are you prepared to meet VM-50 and VM-51 requirements for reporting your experience data? In light of these questions, many companies will want to increase the frequency of experience studies or improve their thoroughness or controls. Manual, spreadsheet-based experience studies may be hard to support going forward. But before you can productionalize your experience studies you will have to get the data streams in order.

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ASSUMPTIONS AND MARGINS

VM-20 leaves much open to the interpretation of the actuary. Although common industry practices related to VM-20 are beginning to emerge, specific situations at your firm will sometimes require firm-specific interpretations of VM-20. Making such judgments can be difficult and may involve sensitivity testing and other techniques to determine the appropriate course of action. Your VM-20 mortality will depend on the mortality segments you define, the data you include, the specifics of the experience studies used, underwriting rules, and how you include data from your reinsurers.

Establishing assumption margins is another area where practice and results will differ depending on the data available and the sensitivity of results to the assumption in question. Given these differences, it is safe to say that more scrutiny will be placed on the development of actuarial assumptions and margins under VM-20.

DOCUMENTATION AND REPORTING

I mentioned above that documentation and reporting should occur, as much as possible, in an automated, production environment. But what documentation and reports should be produced? At a minimum you will

need to meet the requirements in VM-31, the section that deals with process documentation and results reporting requirements. You may be able to leverage existing process documentation to meet VM-20 requirements.

In addition to regulatory requirements, and just as important, results reporting includes the ability to produce what you need to get comfortable with the results. This would include the results of automatic checks and controls that happen throughout the process, baseline results, an analysis of change, summary reports for management, and audit reports. Given the increased volatility of principle-based reserves, much more time will need to be spent understanding results and quantifying and explaining changes to senior management.

CONCLUSION

VM-20 is a monumental change in the way reserves are calculated for life insurance products. It is a challenge all life companies must face. Implementation will be difficult, but by starting now, developing an overall roadmap, and then taking a piecemeal approach to the calculation, you can identify potential roadblocks in time and begin to allocate the necessary resources to address them and move on to product redesign. ■



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Sub-Atomic Accounting

By Henry Siegel

It looks like we're finally getting there. By the time you are reading this, all the hard decisions for the next round of Exposure Drafts (ED) should have been made. I know I've said that before but this time...

As far as I can tell, the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB), collectively referred to as "the boards," have both come up with theoretically defensible packages of decisions based on the same basic foundation. Once they have published, I don't expect a lot of comments saying that they have gotten the theory wrong, as there were last time around on Transition, for instance.

Instead, most of the comments will be along the lines of:

- a. You've been too prescriptive,
- b. We don't think we can do what you ask in a timely manner each quarter, or
- c. You've required technically correct calculations that don't generate benefits commensurate with their cost.

The problems in categories a) and b) can probably be solved fairly easily by simply granting more flexibility, such as they've already done by removing restrictions on how the risk margin can be calculated. The boards have already been assured that actuaries can do anything, so I don't think arguing complete impossibility will be viable.

The really hard questions are in category c). Let's look at two of the most serious problems that are likely to be cited.

For the decade plus that the IASB has been working on accounting for insurance contracts, it had never come to grips with the types of participating life insurance policies sold in the United States until this quarter. In the course of doing this, of course, they not only redefined what it means to be a participating contract (see the discussions in October and November below for more on this), but created a standard that should terrify every actuary who might have to implement it.

In the world of physics, it's accepted that as you look closer into the makeup of matter, there's a level below which things get so small that the particles you're dealing with no longer have the characteristics of the element. For instance, a single atom of gold has no color because it's smaller than the color's wavelength. Electrons by themselves are all the same; it's only when they are combined with other particles that they begin to differ from one another.

The accounting standard setters appear to not know this. They are trying to value an insurance contract liability. In doing so for participating contracts, they have decided to look at each of the cash flows in the contract separately. They then appear to have required that each cash flow be discounted individually using its own specific set of yield curves based on the extent to which that particular cash flow is dependent on investment returns. Leaving aside the question of how to decide which cash flows are or are not dependent on investment returns and how much so, you then have the disturbing situation that an individual contract can have more than one discount rate applied to it!

While this might sound OK theoretically, we need to remember that for income statement purposes you have a current rate (or rates) that you use for the balance sheet plus a locked-in rate used to separate interest rate movements into the Other Comprehensive Income (OCI). The end result is that you could end up with potentially four different discount rates for each contract. Even if you initially set discount rates for a year's worth of issues, it will get exceedingly complicated when you start adjusting the discount rates each quarter. And in the end, these are only estimates of the future anyway; does this additional complexity really aid in understanding how the company did this year?

Another place they've made things way more complicated than necessary is in presentation, most obviously on how to show premiums. In the original ED, the boards didn't propose to show premiums in the income statement at all. Instead, all they proposed to show was the release of margins and differences between actual and expected. Users objected to this, asking for premiums and claims, at least, to be shown.



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The boards then decided, however, not to just show something simple like incurred premium. Instead, they are proposing to adjust premiums twice. The first adjustment is to remove deposit components, the idea being something along the lines of what was previously done under FAS 97 but for all contracts, even those without explicit cost of insurance (COI) charges or expense loadings. Once this is done, the remaining premium is then adjusted again so that it is recognized in proportion to how coverage is provided.

This will not only require significant systems revisions to actually calculate these adjustments, but the end result will not be something that is immediately usable by analysts. Of course, these adjustments don't affect the bottom-line earnings so there will need to be an offsetting adjustment to the liabilities and/or claims as well to make everything work. How much more confused could this be?

I trust that when the boards have assembled all the comments from users and preparers, they will conclude that some of these theoretically correct decisions are not worth pursuing. They have done this on other standards, and I trust they will do it here as well.

The IASB and FASB met each month this quarter jointly and each had meetings without the other as well.

OCTOBER MEETING

IASB-FASB Joint Sessions

The IASB and FASB continued their joint discussions on the Insurance Contracts project where they discussed:

- The time value of money in the premium allocation approach;
- The presentation of changes in the liability for participating contracts; and
- How premiums and claims, non-claims fulfillment costs and acquisition costs should be presented in the statement of comprehensive income.

Time Value of Money in the Premium Allocation Approach

The boards tentatively decided unanimously that the discount rate at inception of the contract should be used

to measure the liability for remaining coverage, when it is accreted or discounted.

The boards discussed how the decision to present in OCI changes in the insurance liability arising from changes in discount rates would apply to the presentation of the liability for incurred claims for contracts to which the premium allocation approach is applied. The boards tentatively decided that when the liability for incurred claims is discounted, an insurer should use the rate at the inception of the contract to determine the amount of the claims and interest expense in profit or loss. That rate is subsequently locked in.

Originally, 11 IASB members preferred using the rate on the date the claim is incurred. However, 13 IASB members agreed to use the rate at the inception of the contract, for the sake of convergence with FASB.

This decision would seem to apply to claim reserves for all contracts, not just those using the premium allocation approach. The problem with this decision, however, is that for contracts like long term care, there is a potentially long distance between the issue date and the date of the claim, as long as 20 years or more. Discounting at a rate so distant doesn't seem to make much sense. It's possible the boards will reconsider this decision before final publication.

Participating Contracts

The boards considered previous tentative decisions that apply to contracts with participating features for which the mirroring approach would apply. (Note that in this discussion, the boards use participating contract only for those contracts where there is a contractual connection between the performance of the assets and the amounts paid to policyholders. U.S.-style participating contracts and universal life (UL) contracts would not qualify under this definition. They are handled separately in a November discussion.)

In particular, they noted that the mirroring decision would take precedence over the tentative decision that insurers should present in OCI changes in the insurance contract liability arising from the effect of changes in the discount rate. As a result, for contracts with partici-

pating features where the mirroring decision applies, insurers would present changes in the insurance contract liability in the statement of comprehensive income consistently with the presentation of changes in the directly linked underlying items.

The FASB tentatively decided that, for contracts to which the mirroring decisions do not apply and where the contractual obligation to the policyholder is directly linked to the fair value of the underlying items, changes in the insurance liability should be presented in profit or loss.

Presentation in the Statement of Comprehensive Income

- *Premiums and Claims*

The boards tentatively decided that premiums and claims presented in an insurer's statement of comprehensive income should be determined by applying an earned premium presentation, whereby premiums are allocated to periods in proportion to the value of coverage (and any other services) that the insurer has provided in the period, and that claims should be presented when incurred.

This decision also creates a nightmare to implement since for every policy you not only need to remove any deposit component but you need to reallocate the premium over the coverage period. How this will be useful to analysts is difficult to see.

- *Non-Claims Fulfillment Costs (e.g., Expenses)*

The boards tentatively decided that in an earned premium presentation:

- a. The portion of premium allocated to cover non-claims fulfillment costs should be equal to the originally expected non-claims fulfillment costs included in the measure of the building block liability.
- b. The premium allocated to cover non-claims fulfillment costs should be included in earned premium in the periods in which the costs are expected to be released from the liability for remaining coverage, i.e., when it is expected

that they will be either incurred or added to the liability for incurred claims.

- c. The amounts presented as expenses should be the actual costs incurred or be added to the liability for incurred claims in the period.

- *Acquisition Costs*

The IASB tentatively decided that the cash flows related to acquisition costs should be recognized in the statement of comprehensive income over the coverage period. (This decision is consistent with a decision previously made by the FASB.)

The FASB tentatively decided that an insurer should disaggregate in the statement of financial position the insurance contracts liability into the expected cash flows to fulfill the insurance obligation and the single margin. Acquisition costs should be reported as part of the single margin (i.e., the margin at issue includes the acquisition costs expected to be paid and is reduced when those acquisition costs are paid). The different approaches should not produce significantly different results.

The boards tentatively decided that acquisition costs should be recognized in the statement of comprehensive income in a way that is consistent with the proposed allocation of the residual/single margin. In other words:

- a. For the IASB, in a way that is consistent with the pattern of transfer of services provided under the contract.
- b. For the FASB, as the insurer satisfies its performance obligations to stand ready to compensate the policyholder if a specified uncertain future event adversely affects the policyholder, which is when the insurer is released from exposure to risk as evidenced by a reduction in the variability of cash outflows. Consequently, the single margin recognized should be grossed up for the amount of acquisition costs recognized.

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IASB-Only Meeting

The IASB met to discuss financial instruments with discretionary participation features, transition requirements, effective date, comparative information and early application.

Financial Instruments with Discretionary Participation Features

The IASB tentatively decided to adapt the contract boundary criteria and recognition criteria for a financial instrument with a discretionary participation feature as follows:

- a. The contract boundary for a financial instrument with a discretionary participation feature is the point at which the contract no longer confers substantive rights on the contract holder. A contract no longer confers substantive rights on the contract holder when:
 - i. The contract holder no longer has a contractual right to receive benefits arising from the discretionary participation feature in that contract; or
 - ii. The premiums charged confer upon the contract holder substantially the same benefits as those that are available, on the same terms, to those that are not yet contract holders.
- b. An entity shall recognize a financial instrument with a discretionary participation feature only when the entity becomes a party to the contractual provisions of the instrument, e.g., when the entity is contractually obliged to deliver cash (like for a claim or surrender).

Transition Requirements

The IASB made the following tentative decisions related to transition to the proposed new Insurance Contracts Standard:

- a. An insurer shall follow the reclassification guidance in IFRS 9 Financial Instruments except that an insurer should be:
 - i. Permitted to designate eligible financial assets under the fair value option where new accounting mismatches are created by the application of the proposed new Insurance Contracts Standard;
 - ii. Required to revoke previous designations under the fair value option where the accounting mismatch no longer exists because of the application of the proposed new Insurance Contracts Standard;
 - iii. Following earlier application of IFRS 9, permitted to newly elect to use OCI for the presentation of changes in the fair value of some or all equity instruments that are not held for trading, or revoke a previous election if applicable.
- b. An insurer shall determine the residual margin on transition, assuming that all changes in estimates of cash flows between initial recognition and the beginning of the earliest period presented were already known at initial recognition.

In addition, the IASB tentatively decided that:

- a. The proposed transition requirements for insurers that already apply IFRS should also apply to first-time adopters of IFRS; and
- b. It would not include explicit guidance on redesignation of property, plant and equipment and investment property on transition.

Effective Date, Comparative Financial Statements and Early Application

The IASB stated its intention to allow approximately three years between the date of publication of the final Insurance Contracts Standard and the mandatory effective date. In addition, the IASB tentatively decided:

- a. To permit entities to apply the final Insurance Contracts Standard before the mandatory effective date; and
- b. To require entities to restate comparative financial statements on first application of the final Insurance Contracts Standard.

Given the current timetable for the project, this would imply required implementation on Jan. 1, 2018 with comparables for 2016 and 2017.

NOVEMBER MEETING

IASB-FASB Joint Sessions

IASB and FASB met on Nov. 20, 2012 to continue their joint discussions of the proposed Insurance Contracts Standard.

Discount Rate for Cash Flows That Are Not Subject to Mirroring and That Are Affected by Asset Returns (e.g., UL and U.S.-Style Par Contracts)

The boards tentatively decided to clarify that, for cash flows in an insurance contract that are not subject to mirroring and that are affected by asset returns, the discount rates that reflect the characteristics of the cash flows shall reflect the extent to which the estimated cash flows are affected by the return from those assets. This would be the case regardless of whether:

1. The transfer of the expected returns of those assets are the result of the exercise of the insurer's discretion, or
2. The specified assets are not held by the insurer.

The boards also tentatively decided that when there is any change in expectations of cash flows used to measure the insurance contracts liability (i.e., any expected change in the crediting rate), an insurer should reset the locked-in discount rate that is used to present interest expense for those cash flows in the insurance contract that are not subject to mirroring and are affected by asset returns.

This would have the effect, it appears, of making OCI largely inapplicable for these contracts.

IASB-Only Meeting

Presentation Requirements

The IASB tentatively decided that:

- An entity should present all rights and obligations

for all insurance contracts on a net basis in the statement of financial position.

- An entity should be required to present separate line items for insurance contracts and reinsurance contracts in the statement of financial position.
- The general requirements of IAS 1 Presentation of Financial Statements are sufficient to specify the presentation requirements for the statement of comprehensive income for insurance contracts.

Disclosure Requirements

- Disclosure Requirements for Participating Contracts

The IASB tentatively decided that, for contracts with cash flows with a contractual link to underlying items (the only contracts for which the term participating is deemed applicable), an insurer should disclose:

- a. The carrying amounts of those insurance contracts; and
- b. If an insurer measures those contracts on a basis other than fair value, and discloses the fair value of those underlying items, the extent to which the difference between the fair value and the carrying value of the underlying assets would be passed to policyholders.

- Disclosure Requirements for the Presentation of Earned Premiums in the Statement of Comprehensive Income

The IASB tentatively decided that, for all insurance contracts, an insurer should disclose a reconciliation from the opening to the closing balance of the aggregate carrying amount of insurance contract liabilities and insurance contract assets, showing separately:

- a. The remaining balance of liabilities for remaining coverage but excluding any amounts that are attributable to losses on initial recognition (for the premium allocation

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- approach, this will be the unearned premium);
- b. Liabilities for remaining coverage that are attributable to:
 - i. Losses on initial recognition; and
 - ii. Subsequent changes in estimates that are immediately recognized in profit or loss (for the premium allocation approach, this will be the additional liabilities for onerous contracts); and
 - c. Liabilities for incurred claims.

The IASB tentatively decided that, for contracts that are accounted for using the building block approach, an insurer should disaggregate insurance contract revenue into the inputs that are used to determine the measure of the revenue in the period.

For example an insurer should disclose:

- a. The probability-weighted claims, benefits and expenses that are expected to be incurred in the period;
- b. An allocation of expected acquisition costs;
- c. The risk margin relating to that period's coverage; and
- d. The residual margin allocated to that period.

The IASB tentatively decided that, for contracts that are accounted for using the building block approach, an insurer should disclose the effect of insurance contracts written in the period on the insurance contract liability, showing separately the effect on:

- a. The expected present value of future cash outflows, showing separately the amount of acquisition costs;
- b. The expected present value of future cash inflows;
- c. The risk adjustment; and
- d. The residual margin.

The IASB tentatively decided that an insurer should disclose a reconciliation from premium receipts to revenue.

- Disclosure Requirements for Transition

The IASB tentatively decided that, in the period in which the new insurance contracts standard is initially applied, disclosure of the current period and prior period line item amounts that would have been reported in accordance with previous accounting policies in IFRS 4 Insurance Contracts should not be required.

Proposed Plan for Fieldwork

The IASB considered a proposed plan for a third round of fieldwork with preparers. In addition, the IASB considered a proposed plan for fieldwork with users of financial statements. Specifically, the IASB discussed the following objectives for fieldwork that is undertaken as part of the re-exposure of the Insurance Contracts proposals:

- a. To understand how the targeted proposals would be applied in practice;
- b. To evaluate the costs and benefits of the targeted proposals; and
- c. To assess how the proposed approach will help insurers to communicate with users of their financial statements.



The IASB staff reported that they intend to:

- a. Invite the participants from previous rounds of field tests to participate and in addition to invite new participants, particularly from regions not previously represented;
- b. Pursue collaboration with standard-setters and regional bodies in conducting fieldwork;
- c. Develop the fieldwork questionnaire and other materials as the forthcoming Re-exposure Draft is finalized so that entities can conduct the fieldwork during the comment letter period; and
- d. Present a preliminary analysis of the results at the same time as the comment letter analysis and the views received during the outreach activities. The results of the fieldwork, together with the views expressed in the comment letters, would then be taken into consideration when the IASB re-deliberates the proposals in the forthcoming Re-exposure Draft.

DECEMBER MEETINGS

The IASB met on Dec. 14, 2012 to continue its discussions of the proposed Insurance Contracts Standard.

The IASB discussed unlocking the residual margin, the residual margin for participating contracts, and impairment of reinsurance contracts. In addition, the IASB received an update on the FASB-only meetings held in November 2012.

Unlocking the Residual Margin

The IASB tentatively decided that the residual margin should be unlocked for differences between current and previous estimates of cash flows relating to future coverage or other future services. This means it's not unlocked if the estimate of claim reserves changes.

The Residual Margin for Participating Contracts

The IASB tentatively decided that the residual margin for participating contracts should not be adjusted for changes in the value of the underlying items as measured using IFRS.

The IASB tentatively decided that the constraint on recognizing revenue that is proposed in the Revenue Recognition project should not be applied to the allocation of the residual margin for insurance contracts, for both participating and non-participating contracts.

Impairment of Reinsurance Contracts

The IASB tentatively decided that a cedant should account for the risk of non-performance that is associated with changes in expected credit losses as follows:

- a. At inception of the contract, the cedant determines the residual margin by reflecting in the expected fulfillment cash flows all the expected effects of non-performance, including those associated with expected credit losses.
- b. After inception of the contract, the cedant shall recognize in profit or loss changes in cash flows that result from changes in expected credit losses.

Accordingly, a cedant would not apply the proposals of the Impairment Project that are being developed by the IASB to reinsurance contracts.

Some of the decisions made this quarter are critical for insurance companies that issue life insurance in the United States. In addition, the requirements for disclosure are becoming ever more detailed and while the boards recognize that they are being criticized for the amount of disclosures they are requiring in general, it looks like the disclosures for most insurance companies will be many pages long, over 100 for the larger companies.

It's we actuaries who will bear the brunt of preparing most of this information. As currently proposed, the entire income statement will be made up of actuarial numbers with not a single one directly from cash transactions. It therefore is more important all the time that we remember ...

Insurance accounting is too important to be left to the accountants! ■

Report on the IAA Meeting in Nassau, the Bahamas, Nov. 15–17, 2012

By Jim Milholland



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The prospect of an imminent exposure draft has caused energy to return to the International Actuarial Association (IAA) Committee on Accounting and the Subcommittee on Education and Practice (IAC). Both groups met during the IAA meetings in Nassau, the Bahamas. Discussions at the meetings were livelier than they have been recently. The accounting sessions weren't the only ones whose content interests financial reporting actuaries. The meetings of the Insurance Regulation Committee (IRC) addressed topics of interest as well. Tom Herget provided the information on the IRC.

INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

IASB-Related Activities

As this is being written, the International Accounting Standards Board (the board) has posted a timetable that calls for release of an exposure draft of the new insurance standard in the first half of 2013. This timing suggests that there may be a standard by early 2014, with reporting under the new standard as soon as 2017. Given the current pace of the board in its decision making, this timetable seems realistic, notwithstanding the history of delays in the insurance contracts portion of IFRS.

Because this exposure draft is the second one, the board will limit the number of areas on which it specifically requests feedback to avoid re-opening issues that have already been decided and sufficiently re-deliberated. In discussions at the meeting, it became apparent that some members of the IAC had discomfort with various aspects of the statement of comprehensive income presentation proposals and made differing conclusions about what was intended by the proposals for participating contracts.

The IAC is organizing to comment on the exposure draft, focusing on the limited number of topics for which the IASB is specifically requesting feedback. In addition, it plans to comment in advance of the exposure draft on the topics of particular urgency to actuaries and on which the IAA hopes to have some influence before the exposure draft is released.

When the new standard on insurance becomes effective, the existing International Actuarial Notes (IANs) on IFRS 4 will be largely outdated. The IAC is also planning to write no fewer than a dozen IANs on a fairly comprehensive set of topics related to the new standard. Some of these can be seen as revisions to existing IANs, but many will be completely new. The large set of IANs will likely be accompanied by a road map to the standard that directs the reader to the IAN that is applicable to a given topic or issue. The IAC is seeking help for the drafting.

MONOGRAPHS

The monographs on discounting and risk margins, which have been mentioned in past reports on the IAA, continue to make progress, with publication expected in 2013 and 2014, respectively. Aided by the substantive input from reviewers, the monographs promise to be quality documents that will be helpful to actuaries in practice.

The monograph on discounting is now over 350 pages. The length reflects the complexity of the subject and the willingness of the writers from Milliman to incorporate the improvements suggested by reviewers. Actuaries who find the length daunting will be comforted to know that a summary section is in the works.

The monograph on risk margins is being developed by a highly collaborative effort. The drafting team from Deloitte has proactively sought input from interested parties about current practices in quantifying risk and their possible applications to IFRS.

COOPERATION WITH THE PENSIONS COMMITTEE

In addition to co-developing the monograph on discounting, the IAC and the Pensions Committee are exploring how to meet the expectations of the IAA's Memorandum of Understanding with the IASB. There was no action taken in this regard.

The two groups are also comparing how the insurance standard and the pension standard address discounting and risk margins. As they currently stand, there are



differences, which raises the possibility that the IASB will eventually seek consistency of treatment or at least a rationalization of the differences. Discounting for insurance contracts is at the rate that reflects the characteristics of the contracts. This high-level, principled guidance leaves it to the insurer to determine the rate. For pension liabilities, by contrast, the rate is fairly well specified; it is a high-quality corporate bond yield. The approach to risk margins is even more distinct—insurance liabilities have one and pension liabilities do not.

INSURANCE REGULATION COMMITTEE

The “Purple Book”

Ten years ago the IAA created a series of white papers that were compiled into a “Blue Book” that provided input to supervisors about how to regulate insurers. This book will be updated and named the “Purple Book.” Topics nominated for inclusion are non-proportional reinsurance, intragroup reinsurance, diversification, concentration, time horizon, group versus solo entities, risk margins, procyclicality and sovereign risk.

Reliance on Rating Agencies

The G-20, through its Financial Stability Board, wants diminished reliance on the ratings produced by firms such as Moody’s, Standard & Poor’s and Fitch. The International Association of Insurance Supervisors (IAIS) believes that this is impractical and is trying to craft a report so stating. The IRC may provide assistance to the IAIS with this report.

Solvency II

The IRC received an update on Solvency II in Europe. This topic is of interest to North American insurers, as those with European ownership or European branches will be living with it. The combination of eurozone issues and low interest rates has delayed the implementation of Solvency II. According to one knowledgeable observer, Solvency II implementation would cause the insolvency of over 90 percent of the life companies in Germany. Should such a solvency system force a society to lose its market for long-term guarantees and security? One wonders if the issue is with the capital adequacy of insurers or with the solvency standard itself.

Reporting under Solvency II requires an opinion about actuarial items but does not require it to come from a qualified actuary. The regulations call for an “actuarial function” within each insurer to perform the valuations and prepare an opinion. This work must be performed by someone who is “fit and proper.” Actuarial organizations are usually not recognized by law in Europe; there is a concern over denying other qualified people participation in the valuation process.

Common Framework (ComFrame)

ComFrame development is entering its third year. This is an effort led by the IAIS to provide a common understanding of how insurers that operate in many countries should be regulated. At the moment it focuses on using scenario and stress testing to determine needed capital. The IAIS has agreed to field test the regulation before making it final. The IAIS will decide next year how to do the field test, and the field testing itself will be completed in 2014.

In the current draft version of ComFrame, there is a

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provision for a group-wide actuarial opinion. This opinion covers at least the following: a) the reliability and sufficiency of the liabilities; b) the adequacy of reinsurance credit in the reserves; and c) an analysis of the current and future financial condition of the group given recent experience. “Reliability” refers to the accuracy of nation-specific reserves.

NEXT MEETING

The IAA meets again in May 2013 in The Hague. By that time the board should have made all of its decisions, and the IAC will be able to begin serious work on a comment letter and on IANs. There will undoubtedly be progress on regulatory matters that will be of interest to financial reporting actuaries. ■



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Financial Reporting Research Scorecard

By Sam Keller

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Research is a primary mission of the Financial Reporting Section and is the largest use of section dues. This scorecard will keep section members informed about research projects sponsored or co-sponsored by the section.

Research initiatives in process (updated as of 12/19/2012):

Project Name	Description	Targeted Completion
Monograph on Discount Rates	An IAA-sponsored monograph on the concepts and practical methods used in discounting across actuarial practice areas.	Q2 2013
Monograph on Risk Adjustment	A monograph addressing the application of risk and uncertainty in the measurement of insurance liabilities.	Q3 2014
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.	Q1 2013
Principle-Based Approaches Implementation Guide	This study will produce a resource for practitioners regarding practical implementation issues around PBA.	2013
Setting Dynamic Policyholder Behavior	This is a survey of current practice of life insurers and annuity companies on setting dynamic policyholder behavior.	2013
IFRS	Examines the impact to life insurance financial reporting of the upcoming IASB Exposure Drafts on accounting of insurance contract liabilities.	TBD

Recently published research of interest to Financial Reporting Section members:

Project Name
Premium Persistency Study of Flexible Premium Products
Credit Risk Modeling Techniques for Life Insurers
Behavioral Simulations: Using agent-based modeling to understand policyholder behaviors
Volatility of Fair Value Accounting
A Survey of Actuarial Modeling Controls in the Context of a Model-Based Valuation Framework

Have an idea for a research project? Send it to Matt Clark (matthewclark@deloitte.com) or John Esch (john.esch@allianzlife.com). ■

Completion	Status	Project Oversight Group (POG) Contact
	Comments received during public exposure have been shared with the author team. The Ad hoc Project Oversight Group received the updated draft in January 2013.	Frank Grossman
	The POG is reviewing an alternative project plan to accommodate delays encountered around the sourcing and vetting of research materials.	Mark Yu
	The POG has completed its editing of the report and is working with the researcher to finalize for posting.	Larry Rubin
	Bids have been received and are being reviewed by the POG to select a researcher.	Ronora Stryker
	Bids have been received and are being reviewed by the POG to select a researcher.	Katie McCarthy
	Researchers are continuing to work with actuarial task forces to assemble financial statements under U.S. GAAP and IFRS bases.	Tom Herget

Link

<http://www.soa.org/Research/Research-Projects/Life-Insurance/research-premium-persist-assumptions.aspx>

<http://www.soa.org/Research/Research-Projects/Life-Insurance/research-credit-risk-mod.aspx>

<http://www.soa.org/Research/Research-Projects/Risk-Management/Behavioral-Simulations/>

Check the Completed Research Projects section of the SOA website for details

<http://www.soa.org/Research/Research-Projects/Life-Insurance/Actuarial-Modeling-Control.aspx>

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