SOCIETY OF ACTUARIES Financial Reporting Section

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Are YOU Ready? A PBA Implementation Guide

By Tim Cardinal and Steve Stockman

A principle-based approach for determining reserves is coming your way. The Valuation Manual VM-20 describes requirements for principle-based approach (PBA) reserves for life products but does not set forth resources, changes in processes and workflows needed by insurers to implement VM requirements. The Financial Reporting Section of the Society of Actuaries, joined by the Smaller Insurance Company Section, engaged Actuarial Compass, a consulting firm, to develop a PBA Implementation Guide for Life Products, based on the Valuation Manual passed by the NAIC in Dec. 2012.

The Guide offers companies/actuaries some "play-by-play" tactics for developing a "champion" implementation strategy for PBA. The Guide outlines a series of steps to translate VM-20 requirements and company business requirements into an implementation plan. The Guide contains templates and six Case Studies vetted through a series of interviews with a diverse group of 15 insurers that will help companies in forming a successful PBA strategy to help you get to the "end zone."

The Guide parallels travel guide books designed to help tourists plan a successful trip, such as to Paris or Rome. First you leaf through the travel guide, skimming sections based on your interests in historical sites, cultural and sporting events, restaurants, transportation and lodging. There are sample itineraries for one-, two- and three-day visits. Based on your initial scoping you make a list of potential things to see and to do. You then read more carefully and continue to re-read as your list narrows and final choices

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Embracing Change

By Bill Sayre

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In just a few weeks—as we approach Jan. 1, 2014—we will celebrate the New Year. Around the world, folks celebrate in different ways. In Japan, people enjoy Osechi Ryori, the traditional foods eaten on New Year's Day. For the Spanish, the custom is to eat 12 grapes over the course of the striking of the clock at midnight. Closer to home for me, people gather in Times Square of New York City and watch the lowering of a brightly colored, LED ball. At the SOA, we celebrated our New Year a few months back at the Annual Meeting, when our leadership transitioned. We also have our own traditions to celebrate this New Year, specifically in the Financial Reporting Section where we pass on an infrequently dry-cleaned, yet highly regarded, green jacket!

It is with the spirit of New Year's in mind that I write this column. First, we "ring out the old" (figuratively, not literally!). I have had the privilege of serving with Matt Clark, Dan Harris and Mark Yu for the last two years. The three of them have worked tirelessly on behalf of our section and we have benefited immensely! They will be tremendously missed but, knowing their commitment to our section, I am confident we will continue to profit from their contributions as Friends of the Council.

Matt has served as chair over the last year and we have come a long way under his leadership. We have undertaken key research initiatives in IASB/FASB Insurance Contracts Exposure Drafts, Volatility of Fair Value Accounting, Actuarial Modeling Controls, PBA Implementation and Setting Dynamic Policyholder Behavior, to name a few. At the same time, our section has completed or scheduled 11 webcasts and developed a multitude of sessions for the Life and Annuity Seminar, the Valuation Actuary Symposium and the Annual Meeting. We have moved forward in outreach to other sections and internationally. The purpose of the Financial Reporting Section is to encourage and facilitate the professional development of its members through activities such as meetings, seminars, research studies, and the generation and dissemination of literature in the field of life insurance company financial reporting. Matt has capably led us in fulfilling our mission.

We also "ring in the new." I am happy to welcome Mike McDonald, Michael Schmuker and David Weinsier as new members to the council. I am looking forward to working with them over the next year and am excited about the new ideas and energy they will bring to our section!

We have many initiatives we are considering as a section. I would like to focus on one—our research proposal to investigate rising interest rates. There has been a tremendous amount of discussion and concern about the currently low—and possibly sustained—low interest rate environment. However, we have not been as focused on the increasing risk of rising interest rates, especially if the change occurs rapidly. With the influx of money to stimulate the economy, the possibility for inflation is high. Once the economy gets moving, rising inflation could push financial governance to increase interest rates to combat it. This escalating interest risk could pose more of a financial threat to insurance companies than the sustained low interest rate environment.

I am eager to see the results of this new research as our team considers the potential circumstances for a rapid rise in interest rates and the implications to life insurance and annuity companies, including how the spike would impact current assets, investment strategy and policyholder behavior for major lines of insurance. This study will serve as a resource for companies to help them evaluate and enhance their current risk management strategies.

I look forward to serving you as chair in the upcoming year. Working with the council and all our committed Friends of the Council, I am optimistic that this New Year will be filled with promise. In conclusion, I hope all of you enjoy the upcoming holidays and wish you a Merry Christmas, a Happy Hanukkah and a very promising New Year! ■

JUST RELEASED—PAPER ON LIFE INSURANCE REGULATORY STRUCTURES AND STRATEGY: EUROPEAN UNION COMPARED WITH UNITED STATES

This paper discusses some of the global, wider financial services and insurance specific activities underway that are influencing solvency developments for life insurers and provides an overview of the differences in the current U.S. and E.U. regimes and the regulatory changes underway. The purpose of this paper is to provide a discussion of the emerging developments, the historical contexts or drivers of each and potential implications for insurers. The paper also identifies key valuation implications, the impact on pricing and product design and risk management implications. The paper can be found at: http://www.soa.org/files/research/projects/research-2013-life-ins-reg-structures.pdf. ■

are made along with priority must-do's and optional and contingency plans. The Implementation Guide can be used in a similar fashion.

A Road Map indicates a company's goals, starting points and ways to achieve the goals. PBA implementation is in essence performing a gap analysis and bridging the gaps. Determine where you are (current framework), where you want to be (future PBA framework) and why (requirements), what (initiatives), how and when to get there (Map). Sounds simple, yet could be overwhelming.

GUIDE OVERVIEW

In addition to the Case Studies, the Implementation Guide contains an Executive Overview, a Scoping Guide, and a Road Map Guide.

The Executive Overview links VM requirement implications with business requirements and company strategy and is intended for company management charged with implementation responsibilities and developing company PBA strategy. For each Case Study, a company profile outlines requirements and considerations for that company and a Road Map outlines the PBA initiatives the company will undertake. Project scale reflects the magnitude and complexity of the implementation and the case studies range from minimalist to enormous. Flow charts visually capture VM-20 requirements such as exclusion tests, deterministic and stochastic reserves and prescribed assumptions to aid users in forming a view of their future PBA framework.

The Scoping Guide outlines a precursory gap analysis including steps to identify business requirements and financial reporting requirements, to form a view of your future PBA framework and a template to evaluate the current framework versus PBA framework. The Road Map Guide steers users to ask more substantive questions, explore alternatives and evaluate and implement competencies, capabilities, activities and processes that could collectively be called practices. A VM requirement overview, implications and PBA implementation considerations are provided for categories organized as assumption setting, inputs, model platforms, outputs, technology and systems and actuarial organization. The Road Map Guide concludes with potential initiatives (i.e., action items) to implement PBA. The Guide also contains lessons shared by the participants and provides literature resources on numerous issues pertinent to a PBA framework.

EXECUTIVE GUIDANCE

Three frequently asked questions are,

1) "Where should we start?"

2) "What are others doing?" and

3) "What do we need to do and what don't we need to do?"

First, start by using the Guide to develop a plan and plan now. The benefits of doing so and the downsides of not doing so are numerous. Constructing your Road Map (plan) now does not necessarily mean the Map is frontloaded with large expenditures of time, effort and money. Numerous companies are concerned with having enough resources or the cost of procuring additional resources to implement and operate in a PBA paradigm. Spreading out the imple-

mentation work allows management more choices. Constructing a Map now permits some of the transition from the current framework to the future PBA framework to occur incrementally in manageable substeps and to be coordinated with other actuarial or company projects as a marginal increase in resources.

REQUIREMENTS, FACTORS AFFECTING SCOPE

The second and third frequently asked questions consider project scope and focus. Project magnitude and complexity are related to several dimensions including business strategy, products and features, business requirements (e.g., financial close schedule), staff size, management philosophy (conservative/aggressive), policy count, existing framework, recent and ongoing activities, organizational structure and asset/company size. Significant factors impacting project scope and which VM requirements are applicable will be product features and risk profiles. The Guide contains a Product Decision Tree and Potential Reserve Applicability table to assist with these determinations.

Perhaps the most significant factor affecting project scope is the degree to which statutory financial intelligence is incorporated into business decision making. The Guide makes a sharp distinction between the usage of the words information and intelligence. For example, the PBA financial statement reserve is information and the explanations of PBA earning variances are intelligence. The degree of resources invested in activities should reflect the degree to which they support business strategy and drive value creation. Information is costly, intelligence more so. The magnitude and complexity in implementing PBA reflects if, why and how decision makers accept, interpret and implement PBA intelligence.

PRACTICES FOLLOW REQUIREMENTS

The Guide explores practices in a PBA future framework in four areas:

> … is more always better and is most/all always best?

1. Capability: Can and How
2. Automation
3. Centralization
4. Robust versus Flexible

Key decisions throughout the implementation will reflect choices in these four interrelated areas critical to operating a PBA framework. Addressing gaps and deficiencies will be integral components of any Road Map. The considerations are to what extent, when and how a company should implement capabilities, full automation, a centralized input database, model or output database and fully or partially flexible and robust infrastructures. Two questions are, is more always better and is most/all always best? Our opinion is sometimes and no.

Practices should be aligned with company strategy. For example, five business-level strategies are cost leadership, differentiation, focused cost leadership, focused differentiation and integrated cost leadership/differentiation. Each strategy will have different requirements. The right capabilities, activities and processes including actuarial practices are not identical across all strategies. The competencies and leading practices to support a cost leadership and differentiation strategies have similarities but have important distinctions.

What you need to do will be significantly impacted by requirements. For example, the Guide explores whether it is critical to supplement company data with external sources in setting assumptions and margins. The Guide

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PBA will push … processes and frameworks to their limits. …

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provides a narrative and visual overview of VM-20 requirements. The adage, "measure twice, cut once," can be recast as, "form requirements twice, implement once."

ONE AND MANY

Many frameworks and processes exist to meet current requirements. PBA will push these processes and frameworks to their limits due to a significant increase in volume such as more scenarios, more sensitivities and more model runs to quantify assumptions and margins. A simple question to ask is, if your cash flow testing had to meet the same timeline as current statutory reporting and other demands such as governance, audits, accuracy, granularity and explanations to management, what would break? What if cash flow testing were run dozens of times? What would it take to make it work? The current framework may be sufficient if a process is run one time but insufficient in a PBA framework if the process will be run many times. Thus it is important to not only ask can it be done but how. The how can be measured in terms of cost and resources.

LEVERAGE EXISTING COMPETENCIES

A PBA framework is more than a model and spans processes, culture and business strategy. A company will want to leverage competencies from both financial reporting and cash flow testing functions. Each serves different needs and each has different strengths. Stochastic analysis, assumption setting and dynamic formulas, and non-premium/benefit cash flows including assets have historically been the domain of cash flow testing. However, cash flow testing may have been in non-production environments under moderate time constraints with pass/fail outcomes using models with approximate and conservative methods and assumptions. Financial Reporting exists in Sarbanes-Oxley or Model Audit Rule environments with standards and rigors of being precise, auditable, timely and insightful. Reporting receives the attention of management, auditors and analysts regarding earnings, explanations, planning, decision making and constant comparisons of forecasts to actual results. However, reporting may lack the infrastructure and capabilities required to gather experience data, set assumptions and model and explain stochastic results.

YOUR MOVE—PBA STRATEGY

Bridging gaps leverages internal core competencies. An internal-only view does not provide a complete perspective necessary to formulate a PBA strategy and decide your moves (i.e., construct your Road Map). Road Map choices regarding capabilities or when to sequence PBA implementation activities must also reflect anticipated competitor actions such as launching new products. How and when will you respond? Will you be a first mover? How will your distribution channel react? These are questions senior management should ponder today. Internal strategic discussions between management, marketing, operations and accounting are critical to formulate your PBA strategy. Besides product development another item to incorporate into your PBA strategy is the impact on capital and risk management strategies including actions by both direct writers and reinsurers.

MOVING TARGET

Another frequently asked question is, "why begin now—VM-20 will be changed and has numerous proposals under discussion such as aggregate versus individual margins." We remain steadfast in our advice—construct your Road Map now. Your business

requirements and PBA strategy should be high level and flexible to have much the same look now as in a few years. The conclusions, sequencing and details of the implementation activities may change considerably but your strategy on why and when to adopt, launch products, reflect PBA in business plans and incorporate VM-20 into managing the business will not. Your Road Map will be comprised of many foundational improvements to your current work activities that will have immediate benefits with or without VM-20. Other changes such as a delay in VM-20's effective date will stretch out your timeline of when you begin, work on and complete implementation activities, but your strategy should be able to adapt to changes in details.

ONE GUIDE, MULTIPLE PLANS

Will one shoe (Guide) fit all sizes? Wherever a company may be on the spectrum of today or tomorrow's demands, challenges, resources and capabilities there are common elements in implementing and operating a PBA framework. The scoping and road mapping exercises will be fairly similar across a broad range of companies. Potential considerations and questions to ask are similar, but which considerations are important or even applicable, and the answers to the questions will be unique. Thus, the frameworks, practices and maps will be unique as well.

Yes, one Guide fits all sizes, and yes, the Guide will lead companies down divergent paths. By rearranging templates, redefining categories, renaming labels, modifying considerations, reducing and adding detail, adjusting timelines, resources and sequencing, the tools and templates are transformed into something useful to the only company that matters—yours. And like if you were going to Paris or Rome, enjoy a successful trip. ■

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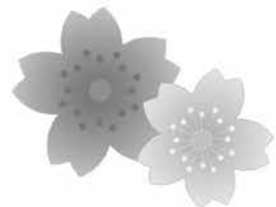

So Where Are We Now?

By Henry Siegel

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Combined, the Exposure Drafts (ED) from the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) amount to almost 800 pages. Comment letters on them may run to nearly as many pages. The biggest challenges to both boards will be sorting through the comments to identify common threads and positions that they want to adopt. For those who have not been following things closely, it will be an even bigger challenge.

In this article, therefore, I will attempt to summarize the comments I've heard in no more than three pages of text. I won't, obviously, deal with the details of every comment and there are minor issues I won't mention at all. For example, the definition of policyholder is wrong in both ED's, but it has very little actual effect on measurement (OK, I had to mention it, it drives me crazy that they can't get something so simple correct).

Below are the problems and some indication of the proposed solutions I've heard. If you want more, you'll need to read the comment letters on the IASB and FASB websites.

MEASUREMENT ISSUES

1) Non-life carriers

Non-life carriers don't want any change. If there have to be changes, they want them to be as simple as possible. Many, but not all, users and non-life actuaries agree with this. They don't think the current system is broken. They say they don't manage their business thinking about assets and liabilities together so discounting claim reserves doesn't match their business model.

There are exceptions, like reserves for disability claims, for instance. They discount those claims today and are willing to continue doing so. There is also a continuing dispute between the P&C and Health preparers over whether claim reserves should have a margin in them.

2) Discount rates

The major issue for life insurers is the appropriate discount rates to use. There are several aspects to this.

For preparers, assets and liabilities should respond consistently to changes in interest rates. This means that changes in liability discount rates should go up if market rates go up and down if they go down, and they need to do so consistently.

The boards' proposals, however, start with the premise that discounting of future cash flows to calculate liabilities should be based on the characteristics of the liability, not the assets supporting them. Therefore, asset and liability measurements don't necessarily move consistently. The top-down approach for determining discount rates attempts to remedy this, but is not entirely successful.

One cause of this problem is how to determine discount rates for durations where there are no matching assets. For instance, there are few corporate bonds with durations of longer than 20 years and almost none beyond 30. Yet long-term contracts have substantial cash flows of 30 year durations or longer. The proposal for determining those rates needs improvement.

A more technical problem applies to the top-down approach for shorter durations. The guidance requires a deduction from the market returns of actual investments held to compensate for expected and unexpected defaults. The guidance references making use of market information to determine those deductions. Unfortunately, this can result in liability discount rates remaining constant if bond yields move because of changes in market liquidity or short-term expected defaults. The best solution to this is to use long-term expected and unexpected default rates as the deductive item in calculating the top-down rates. It's not clear if the guidance allows this.

One solution to ameliorate this problem is the use of OCI to capture the effects of movements in interest rates. This works for simple, non-participating products but presents issues for par contracts.

One question is how to deal with changes to interest crediting rates. Both standards call for changing the discount rate for liabilities when crediting rates change but handle the changes differently.

The IASB appears to call for unlocking the liability discount rate to be equal to the current market rate, thereby

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eliminating OCI on interest sensitive cash flows. For contracts like Universal Life, it's arguable that all cash flows are interest sensitive to some extent since lapse rates are considered to be. This means there is no offset at all for these contracts and all the volatility falls to the bottom line.

FASB, on the other hand, only unlocks to the extent that the crediting rate changes. If you change your crediting rate by 50 basis points, the discount rate changes by 50 basis points. This produces a better match and less volatility in earnings and equity.

Because of these technical issues, many commentators are urging that OCI be made optional to avoid accounting mismatches.

Another solution to this problem in both EDs is the use of the mirroring concept. This was originally intended to be used for contracts such as variable annuities, unit-linked products and participating contracts with specifically assigned assets. Unfortunately, the concept fails again except for these very specific situations. For contracts like VUL, some VA's and other types of participating contracts where there may be both separate accounts and non-separate account cash flows, it's not clear how this concept works. Revisions to the guidance are needed.

On the other hand, there are also industry proposals to eliminate the mirroring concept and to just use a building blocks approach that matches the cash flows closely. The details of such a proposal are still being worked out as I write this and whether it will be a complete solution to this problem remains to be seen.

… many commentators are urging that OCI be made optional to avoid accounting mismatches.

3) Unlocking margins

Another measurement issue has to do with whether and when to unlock margins for changes in assumptions about future cash flows. The IASB allows for the contractual service margin (CSM) to be unlocked if assumptions about future cash flows change. Originally, this was meant to cover things like changes in mortality assumptions. Some readers, however, have interpreted the guidance to include changes due to current year experience. If there are more lapses than expected this year, the effect of that would get run through the CSM. The guidance needs to clarify the intent of the board.

On the other hand, the FASB decided to let those changes flow directly into earnings. This produces significant volatility in earnings whenever assumptions change. At the same time, FASB decided that when, as a result of an assumption change, a portfolio of contracts is determined to be in a loss position for its entire life, all remaining margin should be released. It's very likely, however, that the margin released will be greater than the effect of the assumption change in the current year, particularly if the current year change is the last in a series of changes. This could result in a company showing a profit in a year when the final unfavorable assumption change is made. FASB needs to rethink its position, particularly when combined with the problems it causes for presentation described below.

PRESENTATION ISSUES

Both EDs include proposals for presentation that try to make insurance revenue consistent with the revenue recognition standard for other types of contracts. There are two major adjustments needed from the traditional presentation of premium. First, deposit-like amounts (e.g., surrender values) need to be removed from the premium. Second, the remainder needs to be reallocated to make it consistent with the benefits and expenses provided. While some actuaries and users think this is a theoretically justified method, many others think it's not particularly useful. In the end, feedback from users

will determine whether this proposal will survive or the basis proposed in the IASB's original ED will hold. The original ED showed only margin release and differences between expected and actual experience on the face of the income statement.

A secondary issue for the presentation arises in the event of assumption changes. Because FASB requires the effect of assumption changes to flow directly to earnings, it's necessary in the future to adjust expected benefits or expenses to reflect those changes. This greatly complicates the calculation, particularly for long-term products that can expect to have a number of assumption changes over time.

TRANSITION ISSUES

Transition to the new standard will have a significant cost. Both EDs allow some simplified methods, but more flexibility is needed. Otherwise, companies may be required to hold a zero margin for some portfolios. This will result in losses for the lifetime of those portfolios since there will be no margins to cover overhead.

There are a number of possible safe harbor methods that could be considered. More work is needed on this.

There will be significant changes to the EDs before they become final standards. Several North American companies would prefer that FASB make no changes at all unless convergence is achieved with the IASB proposals. ■

Pay attention to developments – ***Insurance Accounting is too important to be left to the accountants.***

Systemically Important Financial Institutions (SIFI)—An Insurer's Perspective

By Steeve Jean, Zhuoyu Hu and Nelson Lum

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The financial crisis of 2008 is still fresh in the minds of those who work within the financial services sector. Many believe this financial crisis was brought about by three interrelated causes: 1) the rapid growth and collapse of the U.S. housing market, 2) the pervasive decline of mortgage underwriting standards, and 3) widespread mismanagement of financial risks related to mortgages and derivatives. While U.S. banking organizations were in the forefront, nonbank financial companies (NBFCs) were also impacted by the financial crisis. NBFCs are financial institutions that provide banking services, but do not hold a banking license. These institutions may engage in lending, insurance, investment banking, asset management and other related activities. During the crisis, NBFCs were not subject to the prudential regulation and supervision applied to banks to monitor and address systemic risks.

Emerging from this financial crisis, Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank or the Act). The Act created the Financial Stability Oversight Council (FSOC) to comprehensively monitor risks that affect the entire U.S. financial industry. The goals of Dodd-Frank are the following:

- To promote the stability of the U.S. economy by improving accountability and transparency in the financial system,
- To end "too big to fail,"
- To protect taxpayers by ending bailouts, and
- To protect consumers from abusive financial services practices.

The commonly held view is that the primary purpose of the Act is to manage systemic risk. Within this context, systemic risk is the potential for a sudden or unforeseen shock to cause considerable turmoil in financial markets. The ripple effects of such turmoil could spread into equity and bond markets and trickle down to affect household spending decisions.

SIFIs

Congress determined that any Bank Holding Company (BHC) with assets of $50 billion would be a Systemically Important Financial Institution (SIFI). For NBFCs, the FSOC provided interpretative guidance (called the Rule) in April 2012 as to the criteria by which an NBFC would be considered systemically important to U.S. financial stability. The FSOC follows a three-stage process to identify NBFCs which might pose a systemic financial risk.

Stage 1:

NBFCs must have $50 billion in total worldwide assets and meet at least one of the five thresholds shown in the table below.

Firms that do not meet the $50 billion base or any of these thresholds are not necessarily exempt. The Rule indicates that the FSOC may further assess the systemic risks of certain firms that do not currently disclose sufficient information to make the necessary determination.

Criteria	Thresholds
Gross notional credit default swaps outstanding for which the firm is the reference liability	$30 billion
Derivative liabilities	$3.5 billion
Total debt outstanding	$20 billion
Leverage ratio (total consolidated assets to total equity)	15:1
Short-term debt ratio (total outstanding debt with maturity less than 12 months to total consolidated assets)	10.0%

Stage 2:

Firms that meet the stated thresholds in Stage 1 automatically enter Stage 2. The FSOC will rely on public information and material available from the regulators to determine the firm's threat to financial stability. If there is insufficient information to make a determination, the firm will move to Stage 3. A large NBFC may not be moved to Stage 3 if the FSOC is satisfied that the firm does not currently pose a systemic risk. Presently, only firms moving to Stage 3 receive notification whereas the other non-notified firms remain in Stage 2.

Stage 3:

The FSOC will issue a Notice of Consideration to the NBFC, which will include a request for additional information. Once the FSOC has the appropriate information needed to make a designation, it will issue a Notice of Proposed Determination. If the FSOC determines that it will designate an NBFC as systemically important it will provide advance notice to the firm. If an NBFC has been deemed a SIFI, it has the right to bring action in U.S. federal court to rescind the determination.

THE IMPLICATIONS OF NBFC DESIGNATED AS SIFIs

In short, the NBFC and related subsidiaries will be subject to examination by the Federal Reserve Board (Fed), including enhanced regulatory reporting requirements to determine if the financial condition and its systems for risk monitoring can pose a threat to the financial stability of the United States. The burden will be greatest for the initial designees as the scope and clarity on the regulatory requirements are evolving. The enhanced standards for SIFIs include higher capital and liquidity requirements and additional oversight.

INSURERS AS NBFC SIFIs

Within Dodd-Frank, Title V establishes the Federal Insurance Office (FIO) within the Department of the Treasury and may signal that the federal government will play a larger regulatory role over insurance companies. The FIO has the authority to recommend that the FSOC designate an insurer and related subsidiaries as a potential risk to the financial system.

COMPREHENSIVE CAPITAL ANALYSIS AND REVIEW

Both bank and non-bank SIFIs could be subject to additional oversight by the Fed including the Comprehensive Capital Analysis and Review (CCAR) involving stress testing. SIFIs could be required to pass the Fed stress tests in order to implement their capital plans. Currently, the CCAR requirements have a banking focus (bank-centric) rather than an insurance focus (insurance-centric) which can pose significant challenges when applied to insurance companies.

CONSIDERATIONS FOR INSURANCE COMPANIES

The banking industry is already accustomed to providing submissions to the Fed, but for insurers this is a major endeavor. Some insurers have begun preparations to assess their own readiness and to build out capabilities for the potential CCAR-like submissions. Insurers should include the following areas for consideration in their preparation for a CCAR submission:

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- **Timing—**Typically the Fed's economic guidance is provided to SIFIs in mid-November with the annual CCAR submissions due in early January of the following year. Insurers would be subject to a tight timeline from receipt of the Fed's guidance—generation and compilation of results, management and board review, and submission to the Fed.

- **Assumptions and Scenarios—**The insurers will face challenges in translating the Fed's economic guidance to company, business unit, and product specific assumptions. Typically, the Fed will provide guidance on the movement of economic indices for each scenario and the SIFI would translate these in a manner appropriate for their business. Generally three to five scenarios would be tested concurrently. Three scenarios will be derived from detailed guidance and assumptions published by the Fed (base, adverse and severely adverse), while additional scenarios would be company specific (base and stress).

- **Data—**The CCAR submission requires the insurer to complete the required schedules on an annual basis in addition to the capital plan. Also, there could be less intensive quarterly and monthly submissions. The typical insurer may not be able to readily access all the information necessary to populate these schedules. The key priorities to capture the data requirements are:

  1. Understanding the Fed data definitions relative to the insurer's data definitions,
  2. Identifying the availability of the data necessary to populate the CCAR schedules, and
  3. Determining a method to efficiently access the necessary data.

- **Models—**Insurers use complex actuarial and financial models to assess risks and develop projections of earnings and capital. A major challenge for insurers is to incorporate scenario stress testing capabilities under multiple reserving bases to meet the CCAR reporting timelines. For the more complex insurance products, stochastic models may be needed and add additional complexities.

- **Documentation—**The CCAR submission process requires extensive documentation and should include the following:

  1. Internal Stress Testing Methodologies—The submission should include documentation that describes methodologies and assumptions for performing stress testing of the insurer portfolios, the model development process, and derivation of outcomes and validations procedures.
  2. Assumptions—The insurer should provide support for insurer specific assumptions, including known weaknesses in the development of the assumptions; the use of management judgment should be supported and in line with scenario conditions.
  3. Scenario Assumptions—The insurer should include appropriate documentation of their approach related to the company baseline and stress scenarios.

For insurance companies designated as SIFIs, the undertaking to prepare for a CCAR submission is a major endeavor.

A LOOK FORWARD

The financial crisis set in motion Dodd Frank and a path toward designating SIFIs for both bank and NBFCs. At the time of this writing, Prudential,[1] AIG[2] and MetLife[3] are at different stages of the SIFI designation. AIG and Prudential received the Notice of Proposed Determination. AIG selected not to appeal.

Prudential appealed, but the FSOC upheld its designation as a SIFI. Subsequently, Prudential announced they would not seek to rescind the designation and would focus on working with the FSOC to "develop regulatory standards that take into account the differences between insurance companies and banks."[4] MetLife has been moved to Stage 3. It is possible that other larger insurers will be designated in the future.

For insurance companies designated as SIFIs, the undertaking to prepare for a CCAR submission is a major endeavor. These designees could be subject to higher capital and liquidity requirements and additional oversight by the Fed. The requirements for the CCAR will likely evolve as the Fed adapts to the insurance framework; the possibility of changes in requirements is a source of uncertainty.

Currently the CCAR is perceived to have a bank-centric, rather than insurance-centric, focus. Insurance company risks derive from insurance product design, mortality/morbidity, accidents and natural disasters; these types of risks are not directly addressed in current CCAR stress tests. Most insurers may not currently be equipped to respond to the reporting timelines, data requirements, modeling needs, and documentation standards needed for submissions to the Fed. Insurance industry participants should look to educate the Fed on insurance related risks with the goal of helping to craft requirements with a more insurance–centric focus. This could help guide the Fed to develop CCAR submission requirements to yield a more relevant measure rather than a regulatory compliance exercise.

There is a view that the current regulatory capital framework should be used as a basis for assessing the insurance operations of a financial institution. One of the primary arguments is that the insurance industry has historically been successful in managing and containing insolvencies.

No matter what the final requirements are, this will likely be a game changer for companies designated as SIFIs. This could also have unintended consequences on insurance companies that are not likely to be designated. There might be an expectation that the CCAR scenario stress tests can be a valuable management tool for understanding the business's risk exposure to extreme events and that the tests provide a comprehensive view of risk. Upgrading a company's capabilities to handle the CCAR scenario stress tests would most likely lead to more reliable results, reporting efficiencies and better responsiveness of the management forecasting and reporting processes to current and future regulatory requirements. ■

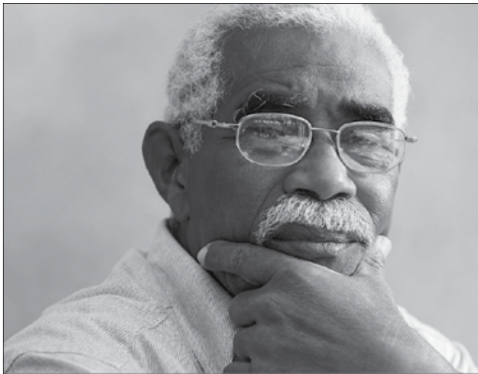
ENDNOTES

[1] *http://www.investor.prudential.com/phoenix.zhtml?c=129695&p=irol-newsArticle&ID=1856493&highlight*

[2] *http://phx.corporate-ir.net/phoenix.zhtml?c=76115&p=irol-newsArticle&ID=1826573&highlight=*

[3] *https://www.metlife.com/about/press-room/index.html?compID=104320*

[4] *http://news.prudential.com/article_display.cfm?article_id=6706*



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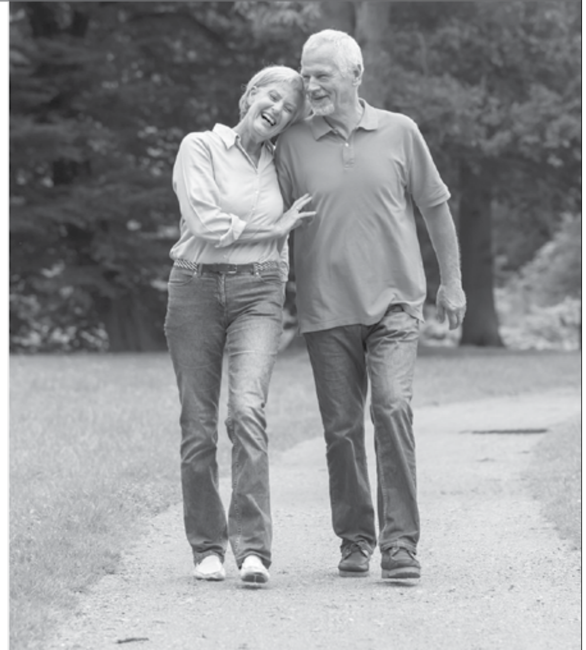

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What Happens in Indy …

By Nathan Worrell

Editor's note: The SOA asked young actuaries to provide feedback from the September Valuation Actuary Symposium in Indianapolis. Nathan Worrell kindly shared his views with us below. For more of Nathan's actuarial humor, take a look at his blog http://www.betweenthespreadsheets.blogspot.com/

This was my first symposium experience, so I had no idea what to expect. Would I be bored out of my mind? Would I be able to take something useful back to my job? What actually happens when you throw 800 actuaries in a hotel?

Reflecting on the experience, I realized that I learned a lot, made some great connections, and caught a good buzz (and that was before the reception!).

7:00 a.m. - Day 2

Off to a bright and early start. I came in too late for registration and events last night. I'm a little bummed I missed out on all the events that the consulting firms and software vendors were hosting. Right away, I can tell this will be a great conference. Reason? Freebies. I snagged a squishy Indy race car and SOA branded notepad. I'm a sucker for giveaways.

After getting my pastries, fresh fruit and coffee, I went to find a place to sit. To my amusement, almost every table had a lone actuary staring down at his breakfast, Smartphone, or newspaper. Occasionally there might be a pair of actuaries eating together and talking, but they were likely coworkers and already knew each other. I happen to be an extrovert, so I plopped down at the closest table and made my first new actuarial friend.

8:00 a.m. - Day 2 – Session 5: Asset Modeling Concepts

It's my first presentation. The room fills quickly, there's probably close to a hundred people here. Right on schedule, the presentation starts.

With each presentation, I find myself drawn to the subject matter, even if it is not directly applicable. Actuaries work on a lot of cool stuff.

I also have to confess that a good graph will get me just as excited as a free toy. There were some awesome 3D charts of asset payout structures under the New York 7 scenarios that I would love to hang in my cube.

I was pleasantly surprised that a third of the session had a Long Term Care (LTC) focus, which is one of my lines of business. It was great to hear some other ideas about how to approach the asset side of the business.

10:00 a.m. - Day 2 – Session 12: GAAP Hot Topics

Moving from session to session reminds me of high school or college. There isn't much time to linger after sessions are over, which is somewhat disappointing. If you're not first in line to talk with a presenter, you might not get a chance to meet them. Thankfully, we live in a world with LinkedIn and other tools to connect.

This session again features a three-speaker format. I'm a fan of this style. It breaks up the pace and tone.

The Hot Topics included: International accounting standards, low interest rates, and purchase GAAP accounting. Pretty scandalous stuff.

Sarcasm aside, the session really underscored the amount of judgment that actuaries are required to use every day. There is a lot of ambiguity in guidance, practice, and what's going to happen in the future. The session is the first part, and is a high level exposé on the issues. I'm intrigued to see how things play out in the follow-up workshop tomorrow.

I also have to say that during the session on PGAAP, a point of emphasis was what to do with a negative VOBA. While I took some notes, I also thought that if someone overheard actuaries talking about their VOBA's, they might think we were actually at a Sci-Fi conference of some sort.

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CONTINUED ON **PAGE 18**

11:45 a.m. - Day 2 – General Lunch

The lunch itself was typical mass produced cater fare: slightly seasoned chicken, on top of potatoes, with a side of veggies. The dessert was interesting though, as it was sprinkled with gold flakes.

The main speaker, James Surowiecki, author of *The Wisdom of Crowds*, did a fantastic job. His material was relevant and thought provoking. He told a few great stories, and instead of reiterating them, I'll just recommend that you check out his book or spend some time at a horse race track.

1:30 p.m. - Day2 – Session28: Current Topics in Mortality

Again, we enjoyed a full room and prompt start. Also, another focus on LTC, this time in the context of combination products. There was a lot of great food for thought in this presentation. The second presenter brought up the issue of post-level term and what to do with managing the jump/cliff.

After hearing the presenter discuss his method for modeling excess lapses, I have a strong urge to name my next dog Dukes MacDonald.

3:00 p.m. - Day2 – Session 40: Policyholder Behavior

Confession time. In addition to freebies and informative graphs, I also get jazzed when I have an opportunity to meet an actuarial author. So far in my actuarial journey, I've met Sam Broverman, Stuart Klugman, and Mary Hardy. This session added another to the list, Louis Lombardi. Louis Lombardi wrote *Valuation of Life Insurance Liabilities* and was a presenter of the Policyholder Behavior study.

I am really looking forward to the final report when the SOA publishes it. There will be interesting outcomes. Specifically, they gleaned insights outside of the insurance industry, including banks and a retailer.

A big takeaway for me was to try and view policyholders in the context of their life situations. Looking at things contextually has started to appear as a general theme of the sessions I've been to thusfar.

9:00 p.m. - Day 2

Back to the hotel room, feeling pretty tired and satisfied after a full day. The reception after my last session was nice. Decent appetizers, and free drinks (yay!). I also mingled with a few new people and ran into some blasts from the past. Then I went out with my coworkers to enjoy the beautiful night in downtown Indianapolis.

7:45 a.m. - Day 3 – Session 53: Gross Premium Valuations

Now, I get to be a presenter. I was recruited a few months ago by my boss to present on this topic. I jumped at the opportunity. I had spent the past couple years in Toastmasters and was eager to apply the concepts I learned in a professional setting.

The mood was set perfectly as our moderator flubbed my introduction. I made a reference to my blog *Between The Spreadsheets* in my bio, and he mistakenly called it

"Between the Sheets." It woke up the audience and ignited a round of laughter. I appreciated the levity because I wanted to inject humor in my presentation.

The presentation itself felt like a blur. I tried to be mindful of my speaking rate, my clarity, my humorous anecdotes, but I really got caught up in the moment. When I looked down, 25 minutes were gone, and my part of the session was over. I just hoped that I didn't speak too fast and that someone got something useful out of it.

9:45 a.m. - Day 3 – Session 57: GAAP Hot Topics Workshop

As much as I enjoyed the presentations, the workshop was a breath of fresh air. Here, moderators facilitated discussion between actuaries. The dialogue and interchange was really exciting and dynamic. As I had mentioned before there is a ton of judgment and ambiguity in our practice, and it can be really useful to look at a problem from several different angles.

There was a wide array of experience, company/product representation, and even geographic dispersion.

11:30 a.m. - Day 3 – Session 72: Avoiding Statistical Pitfalls

Let me start out by saying that I feel sorry for anyone who has the last slots at a conference. People are checked out mentally, and physically. Intellectual fatigue is setting in.

The presentation was unique in that it was a father/son duo. Additionally, it was an interactive session, in that I was able to participate via a polling device. The audience polling was a great technique to keep folks engaged.

1:00 p.m. - Day 3

It's over, at least for me. A few others are sticking around for a forum, but I'm done. The symposium quietly dissolves. No fanfare or grand farewell, just a smattering of actuaries catching cabs to the airport.

I've collected my materials, the business cards from the other actuaries I met, and depart for home. I am looking forward to getting back and sharing what I've learned.

I am also looking forward to the next symposium to see what other free handouts I can acquire, more dramatic ways to graph actuarial data, exciting topics I can learn new things about, and meeting other actuaries who get as excited about those things as I do. ■

PBA Corner

By Karen Rudolph

Karen Rudolph, FSA, MAAA, is a consulting actuary at Milliman Inc. She can be reached at Karen.rudolph@milliman.com. The author extends thanks to Charlie Linn, FSA, MAAA for his peer review of this article.

The views expressed in this article are those of the author and do not necessarily reflect the views of Milliman nor are they intended as methods of regulatory or tax compliance.

NET PREMIUM RESERVE FOR TERM INSURANCE

VM-20 Section 3 specifies the requirements for the "floor" reserve within the context of a principle-based valuation. Section 3.B.4 specifically defines this reserve for term insurance. These requirements include some familiar and some not-so-familiar concepts. I present a detailed walk-through of the net premium reserve (NPR) for a sample 20-year level premium term insurance policy with insurance coverage to age 95, followed by a discussion of how the NPR for an issue year cohort of policies may compare to current CRVM reserves as projected from the valuation date.

The single policy case study is a male preferred risk, issued at age 40. The guaranteed gross premium per unit for this case study, during the level premium period, is $1.66. Premiums following the 20-year level premium period increase significantly and follow an annually increasing premium schedule. There are no nonforfeiture values for this policy. The premise of the following paragraphs is that VM-20 is operative for this term policy and the policy is issued during 2013.

Step 1: Determine valuation assumptions

Assumptions of mortality, lapse and interest are specified in Section 3.C. For purposes of this demonstration I use the 2001 CSO ALB Male Nonsmoker Ultimate mortality rates. These rates are allowed, among other 2001 CSO table versions, as appropriate for use with NPR valuation. It should be noted that this policy could potentially be valued using a different table after issue. The guidance note in 3.C.1 suggests that should adoption of a new valuation mortality table occur, this new table would apply to previously valued policies. The note leaves the details of implementing mortality unlocking to be addressed by future Valuation Manual versions.

The valuation lapse rate schedule is provided by Section 3.C.3 and depends upon the length of the level premium period and the step up in rates following the level premium period. For the sample policy, the valuation lapse assumption is 6 percent during the initial level premium period; 80 percent shock lapse at the end of the level premium period and 10 percent thereafter. In this case, the step up in premiums following the level premium period exceeds 400 percent.

The valuation interest rate for this policy follows the familiar SVL formula, adjusted upward by 150 basis points, not to exceed 125 percent of the starting rate. For this demonstration, I assume a 2013 issue, which means the valuation interest rate would be limited to:

Table 1: Net Premium Reserve Assumptions

Assumption	Basis
Mortality	2001 CSO Male Nonsmoker ALB Ultimate
Lapse	6% during 20-year level premium period, with 80% shock lapse at end of level premium period; 10% thereafter.
Interest	4.5%
Benefit, Premium Timing	Semi-Continuous

VM-20 Reference: 3.C.

Table 2: Gross Premium and Adjusted Gross Premium, per unit of insurance

Policy Year	Gross Premium	Adjusted Gross Premium
1	$1.66	$0
2-5	$1.66	$1.494 (=90% X GP)
6-20	$1.66	$1.66
21+	Guar GP per unit	Guar GP per unit

VM-20 Reference: Adjusted Premiums defined in 3.B.4.b.

Min(0.035+0.015; 1.25*0.035) = 0.04375 or 0.045 after rounding to the nearest quarter of 1 percent.

Step 2: Calculate adjusted gross premiums

Rather than the actual guaranteed gross premium, it is a vector of adjusted gross premiums on which the valuation net premiums are based. For the sample policy, the adjusted gross premiums are specified as shown in Table 2. The adjustments made to the gross premium can be thought of as an expense allowance component.

Step 3a: Calculate valuation net premiums

Similar to current CRVM techniques, the valuation net premiums are expressed as a uniform percentage of the respective adjusted gross premiums. The uniform percentage is determined at issue and provides for the equivalence, at issue, of the present value of valuation net premiums and the present value of future benefits plus an amount equal to $2.50 per $1,000 of insurance for the first policy year only (also an expense allowance component). For the sake of brevity, Table 3a shows only the first 10 policy years' detail for the initial uniform percentage calculation.

The term "initial" uniform percentage is my own, and I use it since, for policies subject to the shock lapse assumption, VM-20 requires a limiting relationship between the present value of benefits (PVB) and present value of valuation net premiums (PVP) for periods following the shock lapse. In order to determine this ratio, an initial determination of the valuation net premiums is established. In this case, that initial determination is 148.5 percent of the adjusted gross premiums.

Step 3b: Revise valuation net premiums

Evaluating the [PVP/PVB] ratio for periods following the shock lapse (years 21 through maturity) produces a ratio in excess of the stipulated 135 percent. For the sample policy, this ratio is 427.3 percent. Were this ratio less than or equal to 135 percent, the valuation net premiums determined in Step 3a above would suffice.

Table 3a: Determining Initial Uniform Percentage

Policy Year	Adj GP	$PVAdjGP_t$	PVB_t	Expense Amount	Initial Uniform Percentage	Initial NP (1.485xAdj GP)
1	$0.00	20.191	27.480	$2.50	148.5%	$0.00
2	1.494	20.191	25.993			2.22
3	1.494	18.849	24.539			2.22
4	1.494	17.644	23.107			2.22
5	1.494	16.562	21.690			2.22
6	1.66	15.590	20.281			2.47
7	1.66	14.622	18.888			2.47
8	1.66	13.753	17.521			2.47
9	1.66	12.973	16.206			2.47
10	1.66	12.273	14.966			2.47

VM-20 Reference: Uniform Percentage defined in 3.B.4.a.

CONTINUED ON **PAGE 22**

Table 3b(i): Revising the Uniform Percentage to Comply with 3.B.4.a.

Policy Year	Adj GP	Initial NP (148.5%)	$PVP^{Initial}$	PVB	Renewal Period Ratio	Revised NP (46.9%x Adj GP)	$PVP^{Rev'd}$	Revised Renewal Period Ratio
21	$26.98	$40.07	11.952	2.797	427.3%	$12.66	3.775	135.0%
22	29.74	44.16				13.95		
23	32.92	48.89				15.44		
24	36.52	54.23				17.13		
25	40.52	60.17				19.01		
26	44.90	66.68				21.06		
27	49.64	73.72				23.29		
28	54.72	81.26				25.67		
29	60.24	89.46				28.26		
30	66.36	98.54				31.13		

VM-20 Reference: Uniform Percentage defined in 3.B.4.a.

In the sample policy, however, there must be two uniform percentages: one for the level premium period and one for the period following the shock lapse. Described below are steps used to derive the 'bifurcated' uniform percentages. Again, table data shown is truncated for the sake of brevity.

i. Uniformly reduce the valuation net premiums for periods following the level premium period such that PVP/PVB is 135 percent. Table 3b(i) shows periods beginning with policy year 21. The uniform percentage of adjusted gross premiums that satisfies the 135 percent limitation is 46.9 percent ((1.35/4.273)*1.485).

ii. Because the valuation net premiums for periods following the shock lapse were reduced, the valuation net premium for the initial level period must now be increased such that, for all years from issue, the PVP at issue is equivalent to the PVB plus $2.50 per $1,000 of insurance. Using the appropriate algebraic equivalencies, one can solve for the revised initial period valuation net premium.

Where: $A = (X \bullet L) + U$

A = present value of valuation net premiums policy years from issue where the net premium used is based on the initial uniform percent, as in Table 3a.

X = variable to solve

L = present value of valuation net premiums over the initial level premium period (years 1-20 in this example) where the net premium used is based on the initial uniform percent, as in Table 3a

U = present value of valuation net premiums over the period following the shock lapse and where the net premium used is based on the bifurcated uniform percent for that period, as in Table 3b(i).

For the sample policy, solving for X results in 1.453, which implies a revised uniform percent (the companion to the 46.9 percent above) of 215.8 percent (= 1.453*the original uniform percent in Step 3a or (1.453*148.5 percent)).

Step 4: Calculate terminal NPRs

As per Section 3.B.4, the NPR is simply the actuarial present value of future benefits less the actuarial present value of future valuation net premiums determined in the steps above. Table 4 lists the terminal NPR for the level premium period. Also presented is a representative CRVM reserve on the same valuation basis and assuming use of supportable X-factors to eliminate deficient premium reserves. The NPR method does not consider any premium deficiency characteristics of the policy since the deterministic reserve component is designed to cover this. Note that 2013 issues under the CRVM method use 3.5 percent valuation interest whereas VM-20 allows 4.5 percent. The CRVM method also does not allow lapse rates whereas VM-20 does.

Chart 4 on page 24 shows the pattern of the terminal NPR (blue), and the pattern of the current CRVM segmented terminal reserve (dashed).

Table 3b(ii): Revising the Uniform Percentage to Comply with 3.B.4.a.

Policy Year	Adj GP	$PVAdjGP_t$	PVB_t	Expense Amount	Revised Uniform Percentage	Revised NP
1	$0.00	20.191	27.480	$2.50	215.8%	$0.00
2	1.494	20.191	25.993			3.22
3	1.494	18.849	24.539			3.22
4	1.494	17.644	23.107			3.22
5	1.494	16.562	21.690			3.22
6	1.66	15.590	20.281			3.58
7	1.66	14.622	18.888			3.58
8	1.66	13.753	17.521			3.58
9	1.66	12.973	16.206			3.58
10	1.66	12.273	14.966			3.58

VM-20 Reference: Uniform Percentage defined in 3.B.4.a.

Chart 5 on page 24 shows a similar comparison, but for an issue year cohort where the valuation date is two years after issue. This model office represents a variety of issue dates within the issue year and Chart 5 includes consideration of the effect of the cash value floor for both methods. In this case, the policy nonforfeiture values are $0, so the cash value floor is equal to the remaining cost of insurance for the period, in this case, simply one-half of the valuation cost of insurance.

Step 5: Deterministic Exclusion Test

Complicating things a bit are the differences to the NPR calculation required by Section 6.B. of VM-20. In evaluating the block of policies under the Deterministic Exclusion Test, there are two modifications to the steps above:

1. In determining the valuation lapse rates, Section 6.B.5.b. requires lapses set to 0 percent for this contract since it is subject to the NPR of Section 3.A.1; and
2. Because the sample case is subjected to shock lapse rates, the comparison of guaranteed gross premiums to valuation net premiums is performed only during the initial premium period (first 20 years in this case).

The Deterministic Exclusion Test is intended to be performed over a group of policies considering periods from the valuation date forward. For demonstration, Table 5 on page 24 provides the comparison of the NPR valuation net premium calculated considering the two modifications for the Deterministic Exclusion Test

Table 4: Terminal Reserves

Policy Year	PVB_t	PVP_t	NPR (PVB_t - PVP_t)	$CRVM_t$
0	$27.48	$29.98	-2.50	0
1	28.94	33.38	-4.44	0
2	30.42	33.58	-3.16	2.13
3	31.91	33.81	-1.90	4.17
4	33.36	34.07	-0.70	6.11
5	34.76	34.36	0.39	7.90
6	36.07	34.30	1.77	9.52
7	37.30	34.24	3.06	10.98
8	38.46	34.18	4.28	12.30
9	39.61	34.12	5.49	13.52
10	40.68	34.06	6.62	14.59
11	41.61	34.00	7.61	15.44
12	42.31	33.94	8.37	16.01
13	42.69	33.89	8.80	16.22
14	42.63	33.85	8.79	15.98
15	41.98	33.82	8.16	15.15
16	40.57	33.81	6.76	13.65
17	38.30	33.82	4.47	11.41
18	35.08	33.86	1.22	8.44
19	30.80	33.92	-3.13	4.68
20	118.44	159.89	-41.45	0

CONTINUED ON PAGE 24

Chart 4

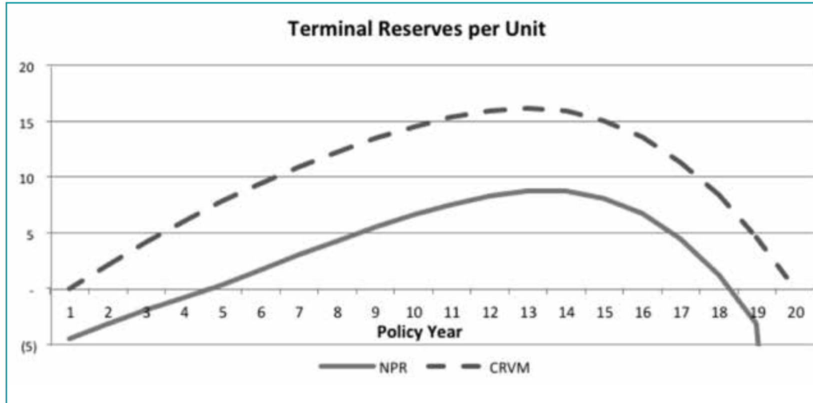

Chart 5

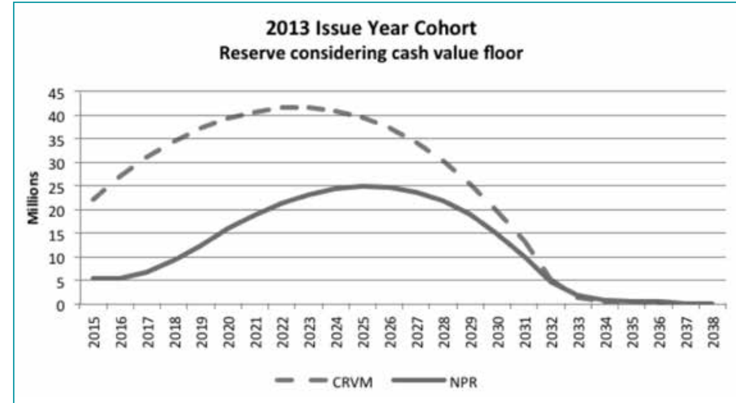

Table 5: Deterministic Exclusion Test

Policy Year	Guaranteed Gross Premium	Valuation Net Premium	
		Deterministic Exclusion Test	NPR determination
1	$1.66	$0.00	$0.00
2-5	1.66	3.61	3.22
6-20	1.66	4.01	3.58
At issue sum:	$33.20	$74.59	$66.58

to the guaranteed gross premiums for the sample policy. For this policy, and under the assumptions used, there is approximately a 12 percent increase in the valuation net premium per unit when deriving the net premium used for comparison to the guaranteed gross premiums under the Deterministic Exclusion Test. When summed from issue over the level premium period, the comparison amounts are: $33.20 of guaranteed gross premium and $74.59 of valuation net premium under the Deterministic Exclusion Test. However, in practice, the test is intended to be performed over a group of policies, so the actual test result depends on the comparison in aggregate. Should the group of policies fail, the Deterministic Reserve is a required component of the minimum reserve for the group.

OTHER CONSIDERATIONS

Although the NPRs and the Deterministic Exclusion Test can be performed today on currently issued policy groups, there are two considerations to keep in mind.

1. It is anticipated the 2014 Commissioners Standard Ordinary valuation mortality table will be required for use at about the same time as the Valuation Manual operative date, and
2. Valuation interest rates for use in calculating NPR may be different.

Even so, preliminary calculations can be performed as indicators of whether certain policy groups may pass or fail this exclusion test. ■

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SOCIETY OF ACTUARIES

Report on the International Actuarial Association: International Standards of Actuarial Practice and International Actuarial Notes

By Jim Milholland

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With the new accounting rules for insurance finally on the horizon, the Actuarial Standards Committee (ASC) of the International Actuarial Association (IAA) is in the initial stage of developing an International Standard of Actuarial Practice (ISAP) to provide guidance to actuaries that are involved in implementing the new accounting principles. "What's that?" you say. "International standards of practice! I didn't know there was such a thing. Do I have to comply?"

The real issue for most actuaries in the United States right now is not what the ISAP on insurance accounting will say. Given the timetable for adoption of the accounting rules, that can be addressed in due time. The more pressing questions are 1) what are ISAPs and 2) how do they affect members of the SOA?

ISAPs are model standards prepared by the IAA for member associations … to consider adopting.

WHAT ARE ISAPs?

The place to start is to say something about the IAA. It is an association of actuarial associations. The SOA is a member, as are the Casualty Actuarial Society, the Academy of Actuaries, the Canadian Institute of Actuaries, the Conference of Consulting actuaries, the American Society of Pension Professionals and Actuaries, and fifty-nine other actuarial associations from around the world. The governing body of the IAA is the Council, which comprises representatives from the member associations. The work of the IAA is done by the committees, which also have representatives from the member associations. The Council appoints the members of the ASC. There are eleven members of the ASC, two of whom are members of the SOA. In fact, one of these, Dave Pelletier, is the chair of the ASC. The other SOA member who is on the ASC is Godfrey Perrott.

ISAPs (International Standards of Actuarial Practice) are **model** standards prepared by the IAA for member associations and other actuarial standard setters to consider adopting (or endorsing). ISAPs have no authority by themselves unless an actuary asserts that his/her work complies with the ISAP.

The ASC drives the process for the development of ISAPs. The process is well defined and documented in *Due Process for International Standards of Actuarial Practice.*[1] The Executive Committee (EC), which carries out the work of the Council, fields ideas for standards and maintains a list of potential standards. Ideas can of course originate anywhere, but get to the EC through a member association or from an IAA committee. The EC decides if the idea should result in an ISAP or an International Actuarial Note (IAN). [More about IANs later.]

The usual practice of the ASC is to form a task force to develop an ISAP and to solicit assistance from committee members or others. The first formal step in developing an ISAP is writing the Statement of Intent (SOI). An SOI makes the case for a proposed ISAP, stating its purpose, intended scope, outlining the general content, and explaining why it is needed and how it will benefit the profession and the public. The ASC exposes a draft of the SOI for comments, then revises it and presents it for approval by the EC, which in turn submits it to the Council for ratification.

After the SOI is approved and ratified, the work on the ISAP begins in earnest. The task force drafts the proposed standard and works with the ASC to get a document worthy of exposure to the member associations. The ASC publishes the exposure draft and solicits comments from member associations and from other interested parties. The ASC then reviews the comment letters and modifies the draft standard as it sees fit. It summarizes the comments and reports to the member associations on how it reflected the comments in modifying the ISAP. It may contact member associations to sound out their reaction to how it responded to their comments. If changes in the draft standard are substantive, there may be a second exposure.

After satisfying itself that it has sufficiently reflected the views of the member associations in the draft standard, the ASC submits a final version to the EC. If the EC approves the proposed ISAP, it submits it to Council for adoption.

HOW DO ISAPs AFFECT MEMBERS OF THE SOA?

Once adopted, the ISAP is published by the IAA. In other words, it goes into effect. But what does that mean? Here it must be emphasized that ISAPs are model standards. The IAA operates under a guiding principle of subsidiarity. The essential concept of subsidiary is that the IAA is engaged in international activities that serve the interests of the profession and which would be inefficient for the member associations to do individually. In the context of standard setting, this means that the IAA does not impose standards on member associations, because each has a standard-setting process of its own. At the same time, the member associations have expressed a desire for some degree of convergence of standards among member associations. The model standards provide a benchmark for member associations as they move towards convergence. There are also associations, especially small ones, which benefit directly from the model standards. They can adopt a model standard as written, or modify it, and make it one of their own.

Actuaries then do not ordinarily practice explicitly in conformity with ISAPs. They practice in conformity with local standards, which may have been influenced by the IASPs. It is possible for an actuary to declare that his work is done in conformity with international standards, in which case he has obligated himself to follow the guidance in the ISAPs.

WHAT ARE IANs?

There are many topics for which it makes sense for the IAA to use its international scope to develop helpful guidance to actuaries. The IANs cover technical areas of actuarial practice and have proven to be useful to actuaries charged with implementing new practices, such as new accounting rules. They represent the thinking of a number of actuaries form around the world and hence offer a good resource for actuaries addressing technical topics for the first time. IANs are educational in nature. They are not authoritative and they do not mandate polices or practices. Actuaries should refer to them not because they are binding (they are not), but because they are useful.

THE SCORECARD

At the time of this paper, there is one ISAP in effect. ISAP 1 General Actuarial Practice was adopted in November 2012. This standard provides guidance to actuaries on topics that apply to almost every assignment, including accepting assignments, data quality,

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There will be a demand for international standards and the profession must be able to respond.

reliance on others, communication, and other general aspects of actuarial service.

ISAP 2, Financial Analysis of Social Security Plans is slated for adoption in October 2013. The SOI for proposed ISAP on IAS 19- Employee Benefits has been ratified. This standard is expected to be completed in 2015. The standard on IFRS 4 has an expected completion date of 2017.

Currently there are 12 IANs. Ten of them relate to accounting topics, namely, various aspects of IFRS 4. When the new accounting rules for insurance are adopted, that number is likely to double.

THE VALUE OF ISAPs

Few actuaries would question the value of actuarial standards. Nevertheless, they may want to understand why there are international standards. Aren't national standards sufficient?

The answer is twofold. The first relates to current circumstances. The desire for convergence of standards comes from the awareness of the member associations that the public expects and deserves a high degree of consistency among the various actuarial standard sets. There is also a desire of the member associations to help the smaller associations who need standards but do not have the resources to develop standards from the ground up.

The second relates to the future. It is my belief that multi-national insurers and sponsors of pension plans will eventually grow weary of dealing with multiple standards from their experts, regardless of convergence. There will be a demand for international standards and the profession must be able to respond. When the day comes, there will not be time enough to develop a process and a robust set of standards to meet the public expectation. The work of the IAA today lays the foundation for the future. ■

END NOTES

[1] http://www.actuaries.org/ABOUT/Documents/Due_process_EN.pdf

IAA Discount Rate Project Wrap-Up

By Frank Grossman

Central bankers are a fairly inscrutable lot. No wonder many actuaries have given up parsing every announcement of the Federal Reserve's Open Market Committee, instead trusting that, when the various quantitative easing programs come to an end, interest rates will inevitably rise. The abiding questions are, however, when will rates rise, and perhaps more importantly by how much?

What's a financial actuary to do with those idle moments no longer devoted to Fed watching? One could learn how to play the clarinet, or maybe watch the episodes of *The Wire* one more time. Yet I can't think of a better and more productive use of free time than delving into the recently published *Discount Rates in Financial Reporting: A Practical Guide.*

As described elsewhere in *The Financial Reporter* (viz. "IAA Discount Rate Project Update," number 86, September 2011), *A Practical Guide* is the final result of the International Actuarial Association's (IAA) three-year Discount Rate Project. This volume contrasts current approaches to setting discount rates across life, non-life and pension areas of practice, offering insights from the United States and elsewhere around the globe. Its primary audiences are financial reporting actuaries as well as actuarial students seeking a greater understanding of the topic.

In addition to an introductory section and a concluding section that summarizes recent developments, *A Practical Guide* addresses the following topics:

- Purpose and Objective When Discounting
- Risk-Free Rates
- Decomposition of Discount Rates
- Estimating Beyond the Term Period
- Replicating Portfolios
- Deflators
- Incorporation of Currency and Sovereign Risks
- Credit and Liquidity Risks
- Inflation
- Non-life Insurance Considerations
- Product Cash Flows Correlated to the Discount Rate Including Participating Business
- Stochastic Methods
- Treatment of Investment-Related Expenses
- Investment Assumptions
- Technical Reviews, Peer Reviews and Audits
- Communication and Presentation of Results, Assumptions and Methods

Nearly two-thirds of *A Practical Guide's* 320 pages are devoted to 13 in-depth case studies. Many references to relevant technical papers are also included.

Information about how to order your copy of *Discount Rates in Financial Reporting: A Practical Guide* may be found on the IAA's website *www.actuaries.org.* The price for a hard-bound copy, including access to a searchable soft-copy version, is C$150 for delivery to U.S. addresses. The soft-copy alone is available for C$75. In keeping with the IAA's educational mandate, university students with proper documentation may access the soft-copy for free.

Once again, the IAA extends its thanks to all members of the SOA Financial Reporting Section for their support of the Discount Rate Project and other actuarial education initiatives. ■

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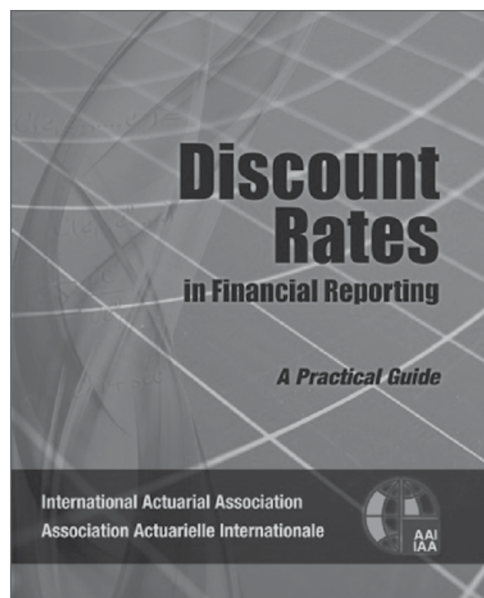

Information about how to order your copy of *Discount Rates in Financial Reporting: A Practical Guide* may be found on the IAA's website *www.actuaries.org.*

WHY FASB IS RIGHT AND IASB IS WRONG ABOUT RISK ADJUSTMENTS IN INSURANCE COMPANY ACCOUNTS

By Chris O'Brien

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While the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) have been working together on a new accounting standard for insurance contracts, the outcomes will not be identical. A major difference in the exposure drafts issued by the two standard setters in 2013 is that IASB includes a risk adjustment as part of the fulfilment value of liabilities, whereas the FASB does not.

This article looks at how the IASB's proposed definition of the risk adjustment might be calculated in practice. It concludes that any method is fraught with problems and it is unlikely that insurers could produce an answer that complies with the standard and helps investors understand their business.

Further, the article goes on to argue that while the principle of a risk adjustment is excellent from the perspective of aiming to provide relevant information, it raises issues of whether it can be calculated in a meaningful way and also whether it is consistent with other accounting standards. FASB appears to have the right answer: don't have a specific risk adjustment at all!

We start with the definition of the risk adjustment in the IASB exposure draft (ED) issued in July 2013 (paragraph B76):

"The risk adjustment measures the compensation that the entity would require to make the entity indifferent between:

(a) fulfilling an insurance contract liability that has a range of possible outcomes; and

(b) fulfilling a liability that will generate fixed cash flows with the same expected present value as the insurance contract."

If we are considering a stock insurer, we would expect it to be indifferent between two liabilities that had the same effect on shareholder value. This implies that the risk adjustment is the extent to which risk reduces the firm's shareholder value. More generally, to encompass mutuals, it is the effect of risk on a firm's objectives.

Now accounting standards are meant to help produce financial statements that are useful to investors and other stakeholders. So having a risk adjustment that provides information to investors about the impact of risk on shareholder value scores very highly and is, in principle, an excellent idea.

To help calculate it, it is useful to think what this risk adjustment means in practice. An insurer that is financially weak may be prepared to pay more to eliminate risk than would a strong insurer. This is because the weak insurer would gain more from greater certainty as it is more exposed (than a strong insurer) to financial distress if business results are adverse. This is similar to the finding in many research articles (Powell & Sommer, 2007) that, other things being equal, weakly capitalized insurers tend to reinsure more than do strong insurers. And an insurer that writes large amounts of new business may be prepared to pay more to eliminate risk because of concerns that if risks turn out badly, then reduced financial strength would mean lower new business profitability. Hence the risk adjustment may well be relatively high for an insurer that was financially weak and/or wrote large volumes of new business.

This is not surprising. The 2013 IASB ED says (paragraph B77(b)): "the risk adjustment also reflects... both favourable and unfavourable outcomes in a way that reflects the entity's degree of risk aversion." And weak insurers may have a high aversion to risk, leading to a high risk adjustment and high fulfilment value.

The IASB has examples in paragraph B82 about the risk adjustment being higher if, for example, there is a wide probability distribution of losses, but it does not appear to appreciate that whether an insurer is indifferent between risks also depends on the business context: large, strong firms will have a different aversion to risks compared to small or weaker firms.

The IASB doesn't plan to rule on exactly how insurers should calculate the risk adjustment as it believes the standard should stick to principles rather than place restrictions on practice. This also allows for the possi-

bility of some innovation as techniques develop. It did, however, set out three methods that could be used when it issued an earlier ED in 2010. It is useful to examine these and see if, in practice, an actuary could use them to produce an answer consistent with the risk adjustment as now defined.

The first of the three methods is the "confidence level method." Given the probability distribution of claims, some percentile is chosen so that the claims are X percent likely to be less than the liabilities reported in the accounts (i.e., using Value at Risk, VaR). The excess of this value over the expected value is the risk adjustment. There was no suggestion, though, as to how an insurer would choose what X would be.

While the probability distribution of losses is important, this needs to be complemented by an understanding of how risk affects the insurer's objectives in order to establish what the insurer would be willing to pay to eliminate the risk. That means understanding issues such as how risk affects taxes, expenses, financing costs, dealings with regulators, and the willingness of brokers to recommend insurers that have a high risk profile. These are difficult issues. The theory of how risk affects a firm's shareholder value through matters such as potential financial distress has been extensively discussed by several researchers. But the practice is more of a problem. While, in principle, the risk aversion of an insurer would depend on matters such as its financial strength, it is not easy to quantify this. Insurers usually concentrate on modeling their existing business, and on profits, solvency and embedded value. They may not do the more complex modeling of shareholder value, incorporating goodwill and the value of the put option to default. And building such a model isn't easy because the sensitivity of shareholder value to risk isn't well understood.

A second possible approach is to use tail value at risk (TVaR), where the TVaR is the average of the T% worst losses. TVaR is arguably better than VaR as it is a coherent risk measure, although this benefit comes at the cost of requiring more information about the probability distribution of losses. But how does an insurer choose T?

The problem is ... it is difficult for insurers to say how risk affects shareholder value.

Both VaR and TVaR were among the approaches to risk adjustments considered by the International Actuarial Association Risk Margin Working Group (RMWG, 2009). At that stage the IASB had not settled on the definition of risk adjustment, and the RMWG was therefore not tasked with working out how to apply in practice the risk adjustment that the IASB now proposes. However, it did comment that, if looking to use VaR or TVaR to determine the risk element of a transfer value of a liability, no theory or practice has been developed to decide what X or T should be used. Another acknowledged difficulty is that there is usually insufficient or no information on the effect of extreme events, although some judgment-based methods attempt to address this.

The third method mentioned by the IASB in the 2010 ED is the cost of capital approach. The IASB explained this by saying that an insurer could eliminate uncertainty in its liability, or at least produce a high degree of certainty, by holding more capital, but this has a cost. The risk adjustment would be calculated as the extra capital (C) multiplied by the annual cost of capital for the insurer (i), over the period of the liability. It will be appropriate to review the methodology because the new ED has a different definition of risk adjustment. In any event, though, C and i would reflect the insurer's own risks and financial position; for example, borrowing costs will be higher for financially weak firms. So, while Solvency II envisages a cost of capital with C as the regulatory capital requirement and i as a fixed rate for all insurers, defined variables are inappropriate for the risk adjustment in the IASB's ED. The IASB ED is meant to reflect each insurer's risk aversion and should not be based on regulatory capital formulae.

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The problem is that none of the three methods above gets a grip on the fundamental issue: that it is difficult for insurers to say how risk affects shareholder value.

One further method mentioned but not pursued by the RMWG (2009) was the utility estimation approach of Buchanan (1997). His idea was to adjust the liabilities to reflect the extent to which there is a dislike of risk. He focused on utility functions that reflect risk; knowing that utility functions differ between individuals, he considered a compromise utility function broadly reflecting the general users of accounts. However, he commented that in view of the lack of information about utility functions (i.e., the relationship been risk and individuals' utility), it was not an idea that could be implemented in practice.

The question that the IASB's ED raises is whether there is a sufficient understanding of the relationship been risk and firms' shareholder value to incorporate a risk adjustment. It is therefore worthwhile re-thinking whether the IASB'S proposal makes for a sound accounting standard.

As drafted, the ED looks inconsistent with other accounting standards. Although standards are designed with a view to producing financial statements that meet users' needs, they do not aim to result in the balance sheet showing shareholder value. Goodwill (at least if internally generated) is not normally included as an asset. So it seems odd that the risk adjustment reflects the effect of risk on, among other things, goodwill.

In its basis for conclusions, IASB recognises that there are objections to a risk adjustment, including the proposition that "no well-defined approach exists for developing risk adjustments that would meet the objective and provide consistency and comparability of results" (paragraph BCA94(a)).

A further argument is that even if measurement tools are developed, "it is not possible to perform direct back tests to assess retrospectively whether a particular risk adjustment was reasonable" (paragraph BCA94(c)).

These difficulties appear all the greater in the light of the global financial crisis 2007-09. There are examples of both banks and insurers (AIG is one; see Frankland et al, 2013) that quoted a VaR that was shown by subsequent events to be far below losses that actually occurred. Insurers in the European Union face having to calculate a 99.5% VaR as their capital requirement under Solvency II, sometimes thought of as needing an identification of a 1-in-200 year event. Yet one major insurer said, "Over the last century it could be argued that the [UK] economy … has suffered 6 one in two hundred year events" (Aviva, 2009). So, in addition to the difficulties in understanding the impact of risk on shareholder value, there are also problems in assessing the probability distribution of claims, at least in the tails.

The IASB supports the inclusion of a risk adjustment by arguing that an explicit risk adjustment will give greater insights and lead to a more appropriate profit recognition pattern. The trouble is that there won't be any insights or better profit recognition if there isn't a suitable way to calculate risk adjustments.

In conclusion, the IASB may have been ambitious in including a risk adjustment as it has done. The FASB has been pragmatic and realistic in proposing to go ahead without it. Actuaries working for insurers subject to IASB rules face a difficult challenge if the IASB proposal proceeds as planned. ■

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Financial Reporting Research Scorecard

By Sam Keller

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 10/1/2013):

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Project Name	Description	Targeted Completion	Status	Project Oversight Group (POG) Contact
Monograph on Risk Adjustment	A monograph addressing the application of risk and uncertainty in the measurement of insurance liabilities.	Q3 2014	The POG (Project Oversight Group) is reviewing an alternative project plan to accommodate delays encountered around the sourcing and vetting of research materials.	Mark Yu
Principle-Based Approaches Implementation Guide	This study will produce a resource for practitioners regarding practical implementation issues around PBA.	Q4 2013	The research team has begun drafting the report. A final draft is targeted for the end of September. A webcast based on results is scheduled for November 5.	Ronora Stryker
Setting Dynamic Policyholder Behavior	This is a survey of current practice of life insurers and annuity companies on setting dynamic policyholder behavior.	Q4 2013	An online survey was distributed to insurers. The research team is analyzing responses and anticipates project completion by end of year. A webcast based on results is scheduled for Dec. 19, 2013.	Katie McCarthy
Behavioral Economics Applications to Life and Health Insurance Policyholder and Annuitant Behavior	This is a call for papers to expand actuarial understanding of the theory of behavioral economics and its application to life and health insurance consumer behavior.	Currently ongoing	One paper has already been awarded prize money ($4K) and is out on the SOA website at: http://www.soa.org/Research/Research-Projects/Risk-Management/Behavioral-Simulations/. A second paper was recently received and is being evaluated.	Ronora Stryker
IFRS	Examines the impact to life insurance financial reporting of the upcoming IASB Exposure Drafts on accounting of insurance contract liabilities.	Q4 2013	The research team is working with the participating companies to model their product blocks under the proposed accounting requirements. Project completion is expected by the end of October.	Tom Herget

Recently published research of interest to Financial Reporting Section members:

Project Name	Link
Volatility of Fair Value Accounting	http://www.soa.org/Research/Research-Projects/Life-Insurance/research-how-fair-value.aspx
Actuarial Modeling Controls	http://www.soa.org/Research/Research-Projects/Life-Insurance/Actuarial-Modeling-Control.aspx
Monograph on Discount Rates	http://www.actuaries.org/index.cfm?lang=EN&DSP=PUBLICATIONS&ACT=DISCOUNT_RATES
Comparative Failure Experience in the Insurance and Banking Industries	http://www.soa.org/Research/Research-Projects/Life-Insurance/Actuarial-Modeling-Control.aspx

Research projects out for proposal: Please visit http://www.soa.org/Research/Research-Opps/Research-Opportunities.aspx at any time for a comprehensive list of SOA research opportunities.

Project Name	Proposal Due Date	Link
Illustrating Multiple Measurement Bases and their Application	11/1/2013	http://www.soa.org/Research/Research-Opps/Proposal-Request/Illustrating-Multiple-Measurement-Bases-and-their-Application.aspx

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

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