



PolySystems, Inc.

HORIZONS

March 2010

Issue #57
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PolySystems, Inc.

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Managing C3 Phase III – A Case Study

—Timothy C. Cardinal, FSA, MAAA, MBA, Vice President

To date, numerous articles have covered the details of C3 Phase III in terms of various exposure drafts and associated terminology, calculations, and requirements. Others have made comparisons between the proposed and current capital levels in a simplified setting. This article will do neither. Instead, the following discussion will center around the implications for the Chief Actuary in communicating the impact of C3 Phase III to management, once it becomes effective.

The next stage after implementation will involve understanding the implications of C3 Phase III from a business sense and how it will impact management decisions. Almost immediately, this stage will evolve into a process of trying to find answers to critical business issues and implementing viable solutions. See Figure 1 for just a few questions management might ask.

Once actuaries have dealt with the mechanics, have wrestled with interpretations and have struggled with implementation issues (or perhaps even before all that occurs), management will want to anticipate what will happen to their capital and their business strategies. There will be a high priority to be prepared and to act in response to whatever the future brings. Management will entrust the challenging details to the actuaries. On the other hand, management will want answers, and they will want their questions answered not with details, but with a business view from 30,000 feet.

Besides providing you the tools you need for C3 Phase III, as a strategic partner, PolySystems can help you address your business issues as well. What follows (see Figure 2) is an Executive Summary case study. The analysis provided is a high level summary without going into the minutiae. The block of business analyzed is based on a real-life block of competitively designed UL policies with secondary guarantees to maturity. The assets were modified and the results scaled for illustration purposes and anonymity.

The client used UL Delphi for their SFAS 97 model which was seriatim. PolySystems made coding changes to modify the ULDelphi and Asset Delphi assumptions. Using a grid allowed seriatim granularity so accuracy was retained. PolySystems' software already supports all the detailed calculations required by C3 Phase III and our Cashflow File

Analyzer, utility functions, and reports support CTE analysis. Thus minimal time is required to modify your existing reporting production platform to support C3 Phase III implementation, meaning more time for sensitivity analysis, gaining insights, and answering questions.

The business issue is this. The new C3 Phase III capital requirement for all life insurance policies becomes effective 12/31/2010 and will apply to both in force and new business. (A proposed change may limit the scope to UL policies with secondary guarantees greater than five years.) Senior management is concerned about the potential magnitude of the increased required capital on the block of UL with secondary guarantees both at C3 Phase III adoption and in the future. Are there actions management can take to manage its required capital?

The case study illustrates one clients' efforts and demonstrates the potential for business

- Figure 1 -

Potential Questions for the Chief Actuary from Management

- How do the calculations work?
- How is the assumption setting and documentation different from what we do for GAAP or EV?
- Are our current systems, processes, models and experience studies capable?
- How can we implement C3P3 cost-effectively making informed decisions?
- How will it affect business close deadlines and will quality and controls suffer?
- What are our staffing and outsourcing needs during implementation and beyond?
- How do we do our business forecasts and support other strategic planning activities?
- What does it mean to my capital especially at a time when capital and liquidity are kings?
- How does it affect how we manage our present and future top and bottom lines and risk profile?
- How do we reflect C3P3 in our pricing and risk mitigation development cycles?

UPCOMING EVENTS

—Jackie Smith,
Actuarial Assistant

Introduction to Compiled User Formulas Webinar

March is a month of “madness” and another PolySystems webinar! In this webinar, learn about coding, compiling, and running user formulas.

Spaces are going fast, so visit www.PolySystems.com for more information and reserve your spot now!

VACARVM Seminar

You're invited to become a VACARVM Master.

We are hosting an information packed seminar on VACARVM in our Chicago Office on April 15 or April 20, following the SOA ERM Symposium.

If you'll already be in town, why not extend your stay and join us? For more information and to register, visit www.PolySystems.com.

ERM Symposium April 12–13; Chicago

Speaking of the ERM Symposium, we'll be there in the exhibition hall. Stop by and say hello.

It's Quiz Time!

Have you seen our latest ad on the back cover of *Contingencies*?

The winter Olympics may be over, but the momentum in short track speed skating is not.

Visit our website and take our short track speed skating quiz for your chance to win a Starbucks® gift card! 🇺🇸

- Figure 2 -

UL C3 Phase III Required Capital – Preliminary Report

To: CEO, CFO, CRO

From: Chief Actuary

Background

Our UL block can be divided into two sub-blocks. Block A consists of policies issued prior to 2003 with five year secondary guarantees and Block B is made up of policies issued in 2003 and later with guarantees to maturity. Up until now, all UL policies belonged to one asset segment. We recently formed a new asset sub-segment for Block B by taking a pro-rata share of the total UL segmented assets based on account values.

Findings

Block B has \$115 million in statutory reserves with \$100 million in account values. The current C3 required capital is \$0.6 million. The new C3 Phase III required capital is \$9.5 million. Maintaining our target 300% RBC ratio (which is well above the minimum required capital) will require \$26.7 million in additional capital.

The large impact on capital is due to the short duration of the UL asset segments. Block B has much longer liability durations than the pro rata assets chosen to back Block B. Also, a recent buildup of cash and short term bonds has shortened average asset durations relative to the liabilities.

On the in force block, management can control credited rates, investments and modify/enter into reinsurance or hedging arrangements. We found that changing the target spread is ineffective. Changing the target spread 50 bps reduces required capital by \$1.0 million. The efficacy of increasing spreads is limited since many of the “bad” scenarios occur in low interest rate environments where much of the block is at guaranteed credited interest rates. However, we found that re-assigning assets to the Block B sub-segment to more closely match the liability duration was completely effective. The new C3 Phase III required capital under this asset re-allocation would be \$0, thus freeing up \$1.8 million in capital (and maintaining a 300% RBC ratio). Statutory reserves are calculated according to current deterministic methodology and in this instance are greater than the C3 Phase III calculated capital requirements.

issues that might arise from the implementation of C3 Phase III. While the focus to date has been on the calculation issues, the above scenario highlights the actuary's role in the aftermath of the implementation of C3 Phase III.

Almost hidden in this case study is that considerable effort and infrastructure will be needed prior to being in a position to answer the questions that will inevitably be asked. And when answered, the solutions will need to be communicated in terms of top level business actions management can take.

The Next Step

Whether you have already started or are in the planning stages, we can provide solutions that

We did not consider product feature modifications. Modifications would, of necessity, consist of richer benefits and policyholder rights, thus compounding the problem. We did not explore reinsurance – mortality risk was not a driver in the large capital requirements.

Recommendations

We recommend creating asset sub-segments where warranted. Active asset management will be needed going forward. Mismatch risk is clearly a key driver. Further analysis will be needed to find the appropriate (best) balance between earnings and risk. C3 Phase III capital needs to be another factor to be considered when evaluating investment strategies and managing the trade-offs between cost of capital, yield, and credit and liquidity risks. C3 Phase III considerations will need to be incorporated into product design and underwriting.

The brevity of this report is not indicative of the work effort required to implement a basic C3 Phase III framework. Work included performing experience studies, setting assumptions and margins, vetting interpretations, and developing position papers. In addition, we evaluated alternative modeling decisions and determined model granularity, built new tools for analysis and controls, validated output, documented work processes and outcomes, and performed audits. Considerable time and effort will be needed to perform sensitivity analysis, to explore “what-if’s,” and to answer additional senior management questions. We have concerns regarding run-time and the impact on business close deadlines, business forecasts and strategic planning.

Method

Based on the 12/31/2009 inventory we worked with PolySystems to build a C3 Phase III model based on our reporting production environment. We streamlined setting the C3 Phase III assumptions by making simplistic adjustments to our GAAP best estimate assumptions. Assumptions do reflect our significant underwriting experience, whether guarantees are in-the-money, and the degree to which the guarantee is fully funded. Using the PolySystems software, we projected the required liability and asset cash flows over 1,000 scenarios and performed the requisite calculations.

are customized to work for you. PolySystems can help you with tasks such as: converting your *SFAS 97* model, education, experience studies, sensitivity analysis and what if's, modeling asset portfolios, and balancing your risk-reward criteria. PolySystems is also available to be your C3P3 sounding board or review your work.

We are in the process of establishing a C3 Phase III Resource Guide on our website. Check soon for its debut.

Contact Bob Keating at 312.332.5670 or via email at BKeating@PolySystems.com and we will assemble a C3 Phase III All-Star Team for you. 🇺🇸