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Product Development and Pricing: Beginning to End

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This one-day seminar on product development and pricing was offered the day after the May 2013 Life & Annuity Symposium in Toronto. The seminar focused on issues related to pricing and developing various products including term, universal life with secondary guarantees, and indexed products. A general market overview was laid out by Rob Stone and Luc Farmer. General market trends, size and growth were discussed between US and Canadian products.

Term Insurance

Term insurance was covered by Luc Farmer and Donna Megregian. Luc discussed how term insurance in Canada works. The basic structure of term in Canada is different from the United States in that it has multiple level term periods rather than one level term period followed by an Annually Renewable Term (ART) scale. Canada has experienced a shift in business away from the 10-year plans and toward the 20-year plans. The 20-year term plans have been the primary focus of the U.S. market for many years now. A big similarity between the markets comes from the fact that generally, a re-price of the term product only changes the first level term period. As those initial rates have decreased without change in the second level set of rates, the increase in premium has become larger and the shock lapse on Canadian term policies has increased. This shock lapse is approaching the level of shock that the United States has shown to occur when the premiums increase over ten- fold from the initial level premium period. In the U.S. market, hot topics include simplified issue and capital solutions. Many companies that are able to price with a capital solution on term products find a competitive advantage when pricing their products. Throughout the product development process, a number of issues will come up that will require iteration before completion, so anticipation and getting parties involved early will help meet deadlines that often come crashing down upon people. The table to the right shows a general comparison of how term assumptions line up between Canada and the United States:

Topic	Canada	United States
Mortality assumption:	<ul style="list-style-type: none"> • Very sophisticated, varies by age, sex, amount of insurance, many preferred classes • Takes into account future mortality improvement 	<ul style="list-style-type: none"> • Very sophisticated, varies by age, sex, amount of insurance, many preferred classes • Takes into account future mortality improvement
Lapses:	<ul style="list-style-type: none"> • Base lapse (each year) <ul style="list-style-type: none"> - Less sensitive - Between 5% and 10% per year • Lapse at renewals <ul style="list-style-type: none"> - Very sensitive - As high as 80% - Often spread over two years - Very dependent on "slope" of premiums (level of premium at renewal versus the one at previous renewal) 	<ul style="list-style-type: none"> • Base lapse (each year) <ul style="list-style-type: none"> - Fairly Stable - Between 3% and 10% per year • Lapse at renewals <ul style="list-style-type: none"> - Very sensitive - As high as 90% - Often spread over two years - Very dependent on "jump" of premiums (level of premium at ART versus level term period)
Interest rates:	<ul style="list-style-type: none"> • Not very sensitive since under Canadian reserving method, the reserves are not as material as for permanent products 	<ul style="list-style-type: none"> • Capital requirements, reserve solutions and more retention of reserves (less coinsurance) makes this assumptions more sensitive in the United States
Expenses:	<ul style="list-style-type: none"> • Acquisition <ul style="list-style-type: none"> - Differs by issue age and volume - Should use full expenses - Many companies only use marginal expenses • Maintenance <ul style="list-style-type: none"> - Not sensitive 	<ul style="list-style-type: none"> • Acquisition <ul style="list-style-type: none"> - Differs by issue age and volume - Should use full expenses - Many companies only use marginal expenses • Maintenance <ul style="list-style-type: none"> - Sensitive, depending on size of policy & use in gross premium reserve

Universal Life Insurance

Josephine Marks and Paul Fedchak took participants into the world of universal life (UL), with Paul focusing on secondary guarantee universal life (ULSG). Josephine discussed the UL world in Canada, market size and types of products such as level COI ULs.

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Universal Life business in Canada experienced a fairly significant shift after the financial crisis of 2008 to 2010 and the resulting declines in long-term interest rates. The LCOI (Level Cost of Insurance) product suffered a decline in new business, with subsequent recovery to the \$ 400 million premium level whereas the YRT (yearly renewable term) product has still not recovered to its pre-crisis sales of \$ 250 million. LCOI has since been re-priced by many market participants, with rates rising 30-40%, while other companies have withdrawn from the market altogether.

Declining rates have however led to a widening in the spread between select/ultimate rates and risk-free rates for Government of Canada (GOC) bonds which is attributed to better margins for policyholders coupled with greater use of alternative investments. The asset mix for the top ten companies has evolved considerably with declines in fixed income assets offset by increased use of equity, real estate and other asset classes.

Asset Class	December 31, 2010	December 31, 2012
Fixed Income	81.6 %	74.3 %
Equity/Real Estate	17.2 %	21.6 %
Other	1.2 %	4.2 %

Some of the major trends and challenges facing UL in Canada are (i) threats to product sustainability with ten year GOC rates at historical lows, (ii) product design evolving from “fully guaranteed” to “guaranteed renewable,” (iii) anti-selection by customers and advisors, (iv) use of persistency bonuses, via increased credited rates or lower management fees, and (v) greater use of or interest in developing stochastic modeling for evaluation of rate guarantees.

Product features for the Canadian market include Critical Illness riders, inflation protection, and flexible investment options for side funds including managed accounts or specialty funds (including many mutual funds). Finally it was noted that changes to income tax rules have resulted in less room for tax-exempt growth in UL products.

Paul discussed key factors in ULSG pricing and product design. One key challenge is balancing simplicity desired for ease of modeling and administration with the versatility necessary to create a broad market appeal. Often companies commence pricing with a firm grasp of their competitive desires. ULSG raises the usual pricing challenge of meeting these competitive desires while attaining profitability targets. In addition, ULSG introduces the challenge of constructing underlying product mechanics, often unseen to the policyholder, from which such a variety of suitably competitive premiums emerge. A second key challenge discussed was understanding the impact of underlying secondary guarantee mechanics on Actuarial Guideline 38 (AG38 or AXXX) reserves.

Paul also walked through a case study of building a ULSG product and discussing sensitivities such as lower lapses and including reserve solutions. The case study represented one iteration of ULSG pricing. Following the case study, Paul discussed the questions a pricing actuary should look to address in the second pricing iteration. Paul’s session finished with brief discussion of the impact of ULSG design on GAAP SOP03-1 reserves, as well as product implementation challenges for the pricing team to keep in mind.

Product Design Process

The first panelist sessions included Jeremy Bill of Midland, Jeff Drake of One America, Jason Jump from Nationwide, and Pete Whipple from Ohio National. The panel discussed ways their companies handled pricing concerns related to speed to market, competitive analysis, experience studies, assumption setting, and policyholder behavior. One very important item in the process is getting the right people in line to facilitate decision making. Empower people to make reasonable decisions and provide a clear path so that changes and questions related to development are not held up by scheduling conflicts.

Indexed Universal Life and Annuities

Continuing the case study review for indexed products, Ricky Trachtman and Rob Stone discussed the nuances of index products. Indexed products are of great inter-

est in the market today due to higher illustrated rates and downside protection.

Ricky's presentation focused on Fixed Indexed Annuity (FIA) products while Rob's presentation focused on Indexed Universal Life (IUL). The FIA presentation started with a brief overview of the index market. It was demonstrated that even in the current interest rate environment the sales of index products have flourished, and that current economic factors have actually favor indexed products. Ricky moved on to state that the market has evolved and that there have been new entrants into the market. It was also mentioned that there has been plenty of product development activity for FIAs.

Next Ricky explained how FIAs are very much like fixed annuities but with a particular crediting strategy. He also walked through an example on how rate setting works for these products in contrast to other fixed annuities. A discussion of FIA's typical product features and pricing assumptions followed with an emphasis on how assumptions vary for FIA in contrast to other fixed annuities.

Modeling complexities for FIAs were discussed next. A brief discussion on option pricing models, the need to model assets to better assess interest rate risk and the use of solving algorithms to have a dynamic model rate setting within the FIA financial models, the existence of multiple crediting strategies and indices as well as the possibility of multiple buckets, were some of the modeling complexities discussed.

Ricky concluded his presentation with a focus on Guaranteed Lifetime Withdrawal Benefit (GLWB) riders on FIA. He mentioned that the GLWB rider has a very high election rate when available. As with the base FIA contract, some of the key features of this rider and a discussion on key pricing assumptions and modeling complexities followed. Within the GLWB rider presentation, the use of a holistic dynamic policyholder behavior model was discussed as well.

On the IUL side, Rob started with an overview of recent life insurance sales results. IUL has been a growing presence in the market (\$1.3 billion premium

in 2012 according to AnnuitySpecs Sales and Market report). According to Milliman UL/IUL surveys, however, IUL sales are not focused on long-term secondary guarantees as much as traditional fixed UL. This has been an underlying theme of IUL growth: as companies look for non-ULSG sales, IUL is frequently embraced as an alternative life insurance offering.

As a second part of the IUL presentation, Rob stepped through a pricing example where a traditional fixed UL product was changed to an indexed product. Through a statutory source of profits exhibit, changes in the profitability of the product were reviewed across several product changes. Finally, the indexed life pricing was switched to stochastic from deterministic, allowing for a brief discussion of the implications of stochastic pricing for indexed life products.

Modeling Techniques and Uses

The final panel discussion included topics related to asset and liability modeling techniques, stochastic analysis, policyowner behavior, product monitoring and inforce management. The panel included prior presenters Donna Megregian, Paul Fedchak, Ricky Trachtman and Rob Stone. The purpose of the panel was to address these topics in an informal format allowing audience participation, with each panelist addressing the topics as they relate to the products each panelist addressed earlier in the day.

Some key points regarding ULSG were raised during the panel discussion. Among these points was that ULSG pricing models are usually highly customized from company to company due to the complex nature of secondary guarantees. Assets are sometimes included in a ULSG pricing model, but only necessary if stochastic analysis is desired. Stochastic analysis is sometimes used on ULSG, but not as often as with indexed products. Additionally, premium funding and lapse rates are the primary policyholder behavior concerns for ULSG pricing, particularly when the secondary guarantee is in-the-money. Inforce management related to term products should consider the optionality that policyholders have related to conversion and potential uses of reserve financing to help with term pricing. ■



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