2016 Actuarial Case Study

Presented by the UCLA Bruin Actuarial Society

And Some Real-Life Actuaries

Welcome and thank you for participating in the 2016 Actuarial Case Study Competition to be held on January 14th, 2016.

Your team's job is to provide cogent arguments through a thoughtful framework of analysis and present your information to a panel of "Decision Makers" to help inform on a course of action. When making your presentation, consider the following:

1. Who is your audience? What do they need to know?
2. What are effective ways to present your information and conclusions?
3. What is the appropriate layout and flow of your presentation?
4. What consensus can you build in persuading the audience of your conclusions?
5. What is the right answer, if there is one? There may not be just one right answer. Is the answer somewhere in the middle? Are there multiple conclusions that need to be considered?
6. What conclusions can you draw from you analysis and how do to you explain/interpret them to your audience?

Case Study

You are an Actuary at *The University of California Health Insurance Company ("UCHIC" or "UC" for short)*. Your company is domiciled in Westwood, California. *UC* is a large health insurance company providing health insurance to large group employers, i.e., employers with more than 50 employees.

Earlier in the year…

Starting in 2016, one aspect of the ACA legislation would be to expand the small group market and this would directly impact *UC*'s large group business line. In California, since 1992 with the passage of AB 1672, small groups were legally defined as employer groups with 2 to 50 employees. This portion of the ACA legislation would have created a standard definition on a federal level (and presumably on the state level) of a small group employer up to 100 employees. This would mean a portion of *UC*'s large group business would now become part of a small group exchange-rated pool.

UC had gone several years into the post-ACA legislative environment without having to alter its business strategy of serving the large group health insurance market, but the reality had been and you had suspected this, there had been realized downward pressure on profits implicitly imposed with the passage of the ACA legislation.

Senior Management had finally taken notice of this downward profit pressure on their large group portfolio and the pending legislation of the movement of large groups into the Small Business Health Options ("SHOP") Exchange. Leadership wanted to explore new small group opportunities and understand their viability and profitability.

In the summer of 2015, *UC* had decided on the following business decision. In order to get ahead of the legislative impact of moving a significant portion of *UC*'s large group business to the Small Business Health Options ("SHOP") Exchange, *UC* had decided to renew all the small-large groups that were impacted by this legislation in December of 2015 with an offer the group "could not refuse", thus keeping them as large groups for one more year before they would be required to move into the small group exchange. The hope was that this would give *UC* more time to review what was happening in the small group exchange and make a decision to if they wanted to enter the market or not.

Then, in October 2015, about half-way through the process of *UC* issuing renewals to these groups, the President signed the Protecting Affordable Coverage for Employees ("PACE") Act signaling that small group expansion would be put on hold. Since *UC* had already issued binding quotes to part of its small-large groups so they could renew in December of 2015, the company decided it would honor these quotes that groups "could not refuse". For the remainder of the groups that did not renew for December 2015, they would be processed as normal and renew in 2016 with all other large groups despite some modest complaints from the large group market about this offer that was "too good to refuse". Leadership did not think these complaints would lead to excess lapses of their small-large groups in 2016, but wanted to understand what would be the financial impact to the company if they did extend the offer that was "too good to refuse" to the remaining small-large groups for their renewals in 2016. At that time, things were hectic in your offer and you were too busy getting all the

rating factors setup for small group expansion, so you informed management that there would be a delay in getting an impact of extending the offer a group "could not refuse" until the end of October.

The day after the president signed the PACE Act in October, in a remarkable display of legislative speed and decisiveness, the State of California decided to forge ahead on its own for small group expansion. While not considered its best legislative work, the state did proceed triumphantly ahead and enact its own peculiar legislation. The bill stated that regardless of when the group renewed previously and if they have up to 100 employees, the group would be put into California's Small Business Health Options ("SHOP") Exchange effective January 2017. The legislation also stated, that, on a trial basis, insurers could begin moving small-large groups into the Small Business Health Options ("SHOP") Exchange effective January 2016, but the state could not require them to do so. Only in 2017, would this requirement be upheld.

Here you are today…

Given that a material portion of UC's business will eventually go into the Small Group Exchange, leadership thinks it is now the time to immediately evaluate its options of expanding into new business lines for 2016 and/or 2017 to gain some experience in this business line and other newly created ACA-based products.

The new business lines you have been specifically asked to consider are:

1. Small Group Insurance through the Small Business Health Options ("SHOP") Exchange
2. Individual Insurance through the Covered California Individual Market ("Covered CA") Exchange

UC has never before been involved in these two business lines and hence has no experience from which to base your pricing work. While you are an Actuary, you do stop short of doing miracles. You have hired *West Coast Limited Liability* ("*West Coast")* consulting to help give you some industry information to help you price the products and understand the dynamics of the new business lines. It just so happens that *West Coast* consulting is also the consultant for the State of California and has been providing assumptions for use rates, guidance on risk selection and premium development for the small group and individual insurance populations due to ACA expansion to help the state understand what will happen. You feel confident that the Actuarial assumptions *West Coast* has been using for the state's rate development will be consistent with the Actuarial assumptions you need to price these new business lines. After paying *West Coast* a fair market consulting fee, they have provided you with a series of tables (see the green tabs in the attached Excel file) to help develop the following:

1. Premium rate build-up for the small group market, adjusted by age and other factors that could be considered for members who are new to *UC*
2. Premium rate build-up for the individual insurance market, adjusted by age, pent-up demand and other factors that should be considered for members who are new to *UC*
3. The market pool of new members, distributed by age and product with *UC's* expected market share if priced at market rates

4. Lapse, Risk and Price/Member sensitivity Actuarial assumptions for adjustments different than market rates
5. Expected relative costs of a member when leaving one population going into another population (such as large group to small group)

The consultant has also advised you that the rates you set for the Small Group ("SHOP") and Individual ("Covered CA") Exchanges are the rates you have to charge everyone regardless if they are a new member to your company or a member that has transitioned from another business line. So while you can set rates by age, you are not allowed to charge different rates for different pools of members in the Small Group and Individual Exchanges depending on where they come from.

Your Actuarial instinct tells you that the risk profiles should carry over from the risk pool the member is coming from, i.e., the new members to *UC* will have one risk profile and the members who transition from UC's existing large group will have a different risk profile and that your combined experience will be your experience in the Exchange.

Internally, you have developed the following assumptions (see the orange tabs in the attached Excel file) to work with:

1. Table of excess capacity costs as *UC* is unable to scale quickly
2. Rating assumptions for *UC*'s large group block of business, including separate rating assumptions for the small-large groups with 51-100 employees
3. Demographic and cost information for the small-large groups separated out from UC's other large group business

UC's management wants to achieve the following 3 goals:

1. Bolstering their income statement with the desire of returning to 10% or greater profit per annum for shareholder distribution
2. Growing membership
3. Gaining experience in new markets

Basic Analysis

Your Actuarial analysis, at a minimum, should show the following:

1. Develop large group rating models and forecast rate increases, loss ratios and financial results for *UC*'s large group business considering the early renewals of *UC*'s small-large groups and then the remaining large groups that did not renew early
    a. Do not forget that you promised Leadership a financial review of extending the offer that groups "could not refuse" to all small-large group renewals in 2016

2. Develop small group rating models from the consultant's assumptions and then calculating loss ratios and financial results considering the existing *UC* groups that will become small groups and the new business *UC* can expect from entering the small group market
3. Develop individual rating models from the consultant's assumptions and then calculating loss ratios and financial results
4. For each of the new business lines, consider different membership assumptions based on the consultant's advice
5. Summarize the projected financial results from the time periods 2016 and 2017 and from each business line

Additional Considerations for Analysis

1. How can *UC* handle scaling and extra associated costs for expanding membership? Are there financial implications of growing too quickly?
2. How do turnover and lapse rates impact the financial results?
3. How does the relative risk pool of the remaining large group business impact the needed rate increase and financial results?

Presentation Considerations

At a minimum, the decision-makers want to know the following from your team:

1. What is the financial impact to the *UC's* bottom line? You will need to present a financial projection before and after the new business lines are added and interpret the results.
2. What is the impact of different membership projections to *UC's* total membership base? You will need to present each population separately for each approach taken by *UC*'s management.
3. Is there a way to maximize membership and financial performance? What are the trade-offs? Should there be a maximum number of new members *UC* is willing to enroll? 500,000? 1,000,000? 1,500,000? Is there too much membership growth that is possible?
4. Can *UC* be competitive in the new markets to make sufficient profit given how many and how much you project members to cost? What are the risks of having premiums that are not competitive with market premiums? What is the market dynamic of member movement between lines of business?
5. What are other considerations in expanding into these lines of business?
6. Are the assumptions being used reasonable and consistent with any other known sources?
7. What is your recommendation to the "Decision Makers" for an approach to take?

Prepare your presentation for the decision-makers to inform them on this opportunity.

Glossary of Terms and Definitions

PMPM – Per Member Per Month Costs. These are the costs for a member per month. To calculate PMPM costs – Total Costs / (Average Membership * 12)

Util per Year – Average number of times a member uses a certain service per year. For example, a use rate of 6.5 professional visits per year means a member visits the doctor, on average, 6.5 times per year.

Average Cost – Average cost per admission/visit/case/script. An average cost of $20,000 per admission means the average hospital admission costs $20,000 per admission.

Pent-Up Demand - When the demand for a service or product is unusually strong due to not having had that service previously.

Lapse Rates – The percent of a population that terminates or leaves a pool. For example, if the lapse rate is 35% per annum and you have 500,000 members at the beginning of the year, you would expect to have 500,000 * (0.65), or 325,000 members at the beginning of the next year or have 175,000 members lapse.

Price/Member Sensitivity – Since the member is paying the full cost of the insurance premium in the individual market, they are sensitive to what the price of the premium is relative to the market price. For each x% difference the price is relative to the market, a y% change in membership is to be expected.

Expected Cost Increase due to Risk Selection – As members leave a pool on their own accord, the ones who do leave are typically healthier, leaving the remaining overall pool, on average, more costly since you have fewer members to spread all the costs over.

Overhead – The costs for administering a health insurance plan. These are costs not directly to providing medical care, but are costs associated with the health insurer in paying claims, adjudicating claims, coordinating benefits and paying for such programs as disease management and care management.

Profit – The amount of financial gain from the difference of how much money was earned versus what was paid out for costs.

Loss Ratios – The ratio of medical expenses to premiums, usually represented as a percent. A loss ratio of less than 100% represents that premiums are sufficient to cover medical costs. A loss ratio greater than 100% represents premiums are not sufficient to cover medical costs. Loss ratios do not include the impact of insurer administrative costs.

Excess Capacity Constraints – *UC* is unable to scale quickly from a quick increase in membership and as a result, extra costs are incurred.