The Actuarial Advantage at Ohio National

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Overview

Ohio National: Headquarters in Cincinnati, Ohio
Past & Present

- Founded 1909 as a stock company
- Converted to mutual in ‘59, then to mutual insurance holding company in ‘98
  - Increased hiring / infrastructure
    - Roughly 35 → 73 actuaries in ~6 yrs
  - Grow sales in most products; Increased focus on Retirement Plans/Disability Income
  - New products, international business
Facilities: Dining
Facilities: Recreation
Actuarial Departments at ONFS

- Product Development
  - Annuity
  - Life Insurance
  - DI (Disability Income)
  - International
- Corporate Actuarial
  - Financial Reporting
  - Special Projects
- Enterprise Risk Management
- Capital Management
- Actuarial Programming
With our products, policyholders pay premiums in exchange for promises.

These promises are typically fulfilled years (sometimes decades) after those premiums are collected.

What do we do with the premiums we’ve collected in the meantime?
Old “canned” immediate annuity valuation model from the 1980’s. Known issues, but limited transparency, no flexibility.

Transition to MG-ALFA software. How do we incorporate our data into ALFA?

Can we hook up ALFA output to downstream processing & control environment?
Some stocks pay a dividend, some whole life insurance does too.

Dividends allow policyholders to participate in the gains of the company they’ve invested in.

Higher rates are attractive to the investor, but can be costly to maintain.

Dividend rates can be changed periodically.
Since the financial crisis, interest rates have been historically low, but dividends have not entirely fallen with them. Why?

Actuarial executive asked ERM to measure the impact of different patterns of dividend cuts.

Using MG-ALFA modeling software, I tested a variety of cuts and provided results to senior management to support their decision.
Comparing/contrastng two ALFA model Formula DB’s
Went into the programs and found all the differences between the two models
- Could be small differences like spelling, or bigger ones like different formulas
Transferred this information into an excel document in order to sort through important and not-so-important aspects
Important to note the differences in equations because they will affect the projections that are run differently
Next project was to create automated/reformatted VA reports for different ALFA variables (VA features called riders).

Used VBA to pull a file, copy and paste itself, and then calculate different points of data.

Automated way to take output from ALFA and put it in a standardized and easily readable format.

Quicken the pace for ERM to analyze their runs and see if there are any outstanding errors or outliers in their data.

Created a uniform template to present results in a clear format:
- So that data can be easily updated from quarter to quarter.
Came into this internship not knowing much about what an actuary does daily or what the insurance industry was all about

One challenge I faced was using the different software related to each project

- Had never heard of ALFA before until I came into the internship, which was the software I would be working with for the entirety of the summer

When given the VBA project, I found that some of the topics I had learned in CSE and other computer classes were very helpful towards completing the project

Have a deeper understanding of the insurance field as a whole
ERM: Model Support

- Quarterly updates to **8 primary models** (vary by product) that need updated quarterly

  - "Quarterly" input includes: portfolio data (e.g. bonds, CM), policyholder data, scenario data, cashflows from structured products

- Maintain automatic **ETL operations**, manually process inputs, **design new solutions** (e.g. standard file formats to proprietary formats)

- **Tools**: SQL (W3Schools.com), Microsoft BI packages, SVN source control, C# .NET Framework, **batch scripting**

- **R & D** – **automation tools for models** (e.g. versioning, scripting model runs, moving scenario development from Excel to C#)
ERM: Model Support Examples
Capital Management: Projecting Required Capital

- Provide end of year “required” capital projections
- Fluctuations in future liabilities and assets imply calculating a “minimum” amount of capital
- “Capital charge”, or required amount broken down by risk categories: Asset, Insurance, Interest Rate, etc.

Different Capital Formulae:

- **NAIC RBC System**: Factor Based then apply covariance formula, TAC/Required
- **Rating Agency** Determined
- **Internal** Solvency Model

- Company Action, Regulator action, Rating
ONFS Actuarial Study Program

- Ohio National paid study time
  - 110-130 hours depending on length of exam
  - Study time for VEE’s and modules as well

- ONFS will cover study materials, registration fees for VEE’s, FAP Modules, and FSA Modules

- Exam fees 100% covered for 1st sitting
  - After 1st sitting fees will be reimbursed 100% upon passing

- Salary increases after passing of exams and assessments
Questions

Contact Information for Presenters
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Additional Resources
- http://www.beanactuary.org
- http://www.soa.org
- http://www.actuarialoutpost.com
- http://www.ohionational.com