SOCIETY OF ACTUARIES

Article from:

The Actuary

June 1988 – Volume 22, No. 6

Grading Process cont'd.

a number of manual checks are also performed. Five additional working days are required to complete the processing of all the multiple-choice examinations.

Thus, the total elapsed time from date of the examination to release of the results for an all multiple-choice examination is scheduled for 40 working days. Wherever possible, we attempt to speed up the process, but never at the expense of quality control.

Essay Papers

For examinations that include both multiple-choice and essay questions, we follow the same steps as above except for determining the pass mark. Instead, the multiple-choice scores are combined with the essay scores before the pass mark steps are followed.

Once the essay papers are sorted in the Society office, they are mailed to members of the Examination Committee for grading. Each question is graded using a grading outline (with points allocated) previously accepted by all graders assigned to that question. After enough time has been allowed for all graders to finish their grading assignments at home, a central grading session is held.

[Canadian essay papers are first forwarded to a Canadian address to sort out French papers which are then translated into English by a special committee. Although papers close to the pass mark will be read by a bilingual actuary before final grading, many of the early readings have to be performed by actuaries who may not be fluent in French. A separate, parallel schedule is established to handle these additional procedures and insure that these answer sheets are available for the central grading session.]

At central grading, approximately 40% of the papers around the pass mark are assigned to other members of the grading team and are independently graded. If the results are the same, that result is used. If the scores are quite close, either the original score is retained or an average of the two scores is used. Whenever there are larger discrepancies, both graders must get together and reconcile their scores.

These central grading sessions last for two to three days, depending upon the size of the candidate population. Five to six days are allowed for both conducting the central grading session and combining the scores with the multiple-choice scores.

Thus, in general, we would expect the results of an examination that included essay scores to take an extra week to 10 days to be released.

Finally, holidays must also be considered in establishing a schedule. A number of holidays follow the November examinations, and our planning schedule must account for them. The May examinations are followed by national holidays in both Canada and the U.S.

While time consuming, the processing of our papers is relatively much quicker than that of other insurance industry examinations. In addition, since the Society relies to a very great extent on a volunteer structure to maintain its examination system, some allowances have also been made for that in setting the schedule. Finally, quality controls take time, but the importance of the examination results makes them necessary.

While students are patiently (or impatiently) waiting for the results of their May examinations, it is hoped that this explanation will at least help them to understand why it is "taking so much time."

Curtis E. Huntington is Corporate Actuary with New England Mutual Life Insurance Company. A past General Chairperson of the E&E Committee, he is now a member of the Education Policy Committee, the Research Policy Committee and the Board of Governors.

Academic Actuary Sought

An academic actuary is sought to fill a faculty position (rank open) in Actuarial Science beginning August 22. The position requires a commitment to excellence in teaching and research, as well as ability and willingness to participate in insurance industry activities. The candidate must have a Doctorate or be within one year of completion of a Doctorate for a tenure leading appointment. Membership in the Casualty Actuarial Society, Society of Actuaries or Canadian Institute of Actuaries is required.

Submit letter of application, vita and three letters of reference by July 1 to: Dr. Samuel H. Cox, Jr., University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0307 (402-472-2698).

Research Projects Under Review

by Irwin T. Vanderhoof

The following research projects from various sources have been submitted to the Research Policy Committee. The Committee has referred them to various bodies within the actuarial community and requested that feasibility studies be made. Review of these studies began in mid-May and action to launch high-priority projects will shortly follow.

If other projects you believe are important are not on the list, please submit them to Director of Research Mark G. Doherty at the Society office. Such proposals should include your best effort at estimating costs as well as describing benefits. Ideas on how the work should be done and by whom are also important. If you are working on one of these projects or know of someone who would be qualified, let Mark know.

If you or your company would be interested in funding one of these projects, our door is always open — call Mark quickly. An offer of funding is almost a guarantee that appropriate projects will be carried out under the auspices of the Society research program. Offers for co-funding with the Society also will get our attention. However, there are too many worthwhile projects on the following list to assure you that any particular project will be carried out without such offers of funding assistance.

Following is the list of potential research projects:

- Better early warning system to detect potential insolvency of insurance companies.
- Applications of cash flow analysis for reserving and determination of solvency made easier to use.
- Survey of actual practices of actuaries as they correspond to standards being written.
- Preparation of an Investment Track for Fellowship.
- Integration of theory of finance and investments with the traditional actuarial activities.
- Development of management/business issues to raise the consciousness of actuaries.

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Research Projects cont'd.

- Build health care data base for use by actuaries.
- Calculation of sufficient policy reserves for individual health insurance policies which are subject to deteriorating claim experience or cumulative antiselection.
- What is industry experience with regard to product cash flows and how do they correlate with level of interest rates?
- To what extent are the flexible premium and coverage features of universal life being used?
- What is the impact of non-pension guaranteed issue and simplified underwriting on expected claims, especially for single premium life versus external replacements?
- What would be some reasonable assumptions about future mortality improvement?
- Profession is in need of a new comprehensive stochastic life insurance pricing methodology.
- Current regulation of nonforfeiture values, cost/rate disclosures and policy illustrations is inappropriate for today's flexible investment oriented products and does not meet the needs of consumers.
- Prudent funding levels — what margins should be implicitly or explicitly used in actuarial valuations? What are the bounds of prudence? To what extent should funding levels be influenced by investment policy?
- Real rates of return — what relationship exists between inflation rates and rates of return on real or financial assets? To what extent can the actuary rely on these?
- Study forces that impact individual health insurance products: aging of policyholders, inflation, expensive enhancements in medical care, limitations of initial underwriting in the future and antiselection by persistency versus lapsing policyholders as premiums increase.
- Financing and controlling cost of health care.
- Nature and incidence of individual catastrophic health care costs.
- Financing of CCRSs.
- Effect of quality on default experience of debt securities.
- Measurement of quality and default experience of mortgage loans and real estate.
- Development of econometric or actuarial models of health care costs; current measures of health care costs and utilization appropriate for use by health actuaries.
- Development or refinements in the financial measurement of solvency and solidity of insurance companies.
- Development of models for costing retiree benefits, liabilities and funding.
- Impact of wellness and cost-containment programs on the cost of health insurance.
- Development of adverse selection models.
- Financial impact and solvency of insurance guaranty funds.
- Continued work on the financial cost of AIDS and other diseases, such as Alzheimer's, and related medical developments.
- Cost of covering various uninsured portions of the population.
- Long-term cost of the agency system and the impact of changes in the financial services industry upon these costs.
- Impact of demographic trends on financial security systems.
- Asset returns and potential fluctuations.
- Implications of FASB and OBRA on pension plans.
- Long-term care proper funding and analysis of experience with mind toward future changes in demographics and development of data on cost of LTC coverage.
- Matching assets and liabilities in retirement plan funding.

U.S. economic statistics for pension actuaries.

- Minimum surplus an insurer should retain for the risks it has assumed.
- How should statements of actuarial opinion and supporting documentation be reviewed and validated by regulatory authorities?
- What other methods of validating reserves and surplus are available on a practical basis in addition to the deterministic cash flow scenario basis and the present value basis?

Support for Valuation Actuary and C-1 risks.

Collection and analysis of joint life data.

- Quantifying the C-3 risk — diffusion process for interest rates. Should result in practical methodology.
- Models for stop-loss claims under group health insurance.
- Expert systems (artificial intelligence).
- Reserves for adjustable premium policies, convertible and renewable term insurance.
- Inclusion of investment risks in pension plan valuation.
- Use of operations research techniques in establishing pension investment policies and in doing graduation under specific constraints.
- Asset models, particularly for rates of return, and their relationship to insurer solvency and the stability of pension plan contribution rates.
- Using new financial instruments to reduce insurance risks.
- Actuarial aspects of long-term care — premiums, reserves, demographic projections.
- Premium margins for catastrophes.
- Use of public data bases to work on LTC pricing and reserving problems.
- Development of new valuation morbidity table for riders attached to life insurance policies.
- Derive more comprehensive age and sex specific health care data for improved projections of costs.
- Impact of increasing own-occ beyond two years on long-term disability products.
- Costs and data on partial disability.
- Cost implications of full or partial CPI indexing on investment postures and variability of cost impacts.
- Long-term cost implications of Social Security programs.
- How do interest rates and investment returns vary with inflation?
- Do income needs of pensioners decline as they grow older?
- Do increases in Social Security benefits reduce personal and corporate savings?
- The extent of pension plan coverage and adequacy.

Irwin T. Vanderhoof is President of Irwin T. Vanderhoof Actuarial Investment Consulting Inc. He is SOA Vice President overseeing Research and Studies, the Chairperson of the Research Policy Committee and an Associate Editor of *The Actuary*.