SOCIETY OF ACTUARIES

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The Actuary in Fiction

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No sooner had this image of an actuary fixed itself in my mind, than I happened to make a grand tour through Ford Madox Ford's tetralogy: "A Man Could Stand Up," "Some Do Not," "No More Parades," and "Last Post." The key figure in these novels is Christopher Tietjens, "the last English Tory," whose actuarial efforts in a government statistical department are brought to an untimely end by a vengeful wife and the intrigues and folly let loose by the First World War. In this corrupt post-war period, Christopher Tietjens chooses to live by an outmoded code of honor, takes a mistress, and gives up his actuarial career.

John Blackbridge

The more remarkable capabilities of American actuaries emerge in a short story by Somerset Maugham entitled, "The Portrait of a Gentleman." As Mr. Maugham tells it, he visualized this late nineteenth century diamond of an actuary from an imaginative reading of his treatise on poker. Mr. Maugham describes John Blackbridge, actuary and attorney at law, as follows:

> "I see him very distinctly as a man of middle age, in a black frock-coat and a chimney-pot hat, wearing a black satin stock; he is clean-shaven and his jaw is square; his lips are thin and his eyes wary; his face is sallow and somewhat wrinkled. It is a countenance not without severity, but when he tells a story or makes one of his dry jokes his eyes light up and his smile is winning.
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> "He enjoyed his bottle of burgundy, but I cannot believe that he ever drank enough to confuse his excellent faculties. He was just rather than merciful at the card table and he was prepared to punish presumption with rigour. He had few illusions, for here are some of the things that life had taught him: men hate those whom they have injured; men love those whom they have benefited; men naturally avoid their benefactors; men are universally actuated by self-interest; gratitude is a lively sense of expected benefits; promises are never forgotten by those to whom they are made, usually by those who make them.
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> "It may be presumed that he was a Southerner, for while speaking of Jack Pots, which he describes as a frivolous attempt to make the game more interesting, he remarks that they are not popular in the South. This last fact, he says, contains much promise, because the South is the conservative portion of the country, and may be relied on as the last resort of good sense in social matters."

Inquiry at the Congressional Library discloses that there had been a real John Blackbridge, actuary and counsellor at law, and that he had in 1879 put together "The Complete Poker Player" as a "practical guide to the American national game: containing mathematical and experimental analyses of the probabilities of draw poker."

Milton Northey Haskins

A more recent work of fiction, "Slightly Perfect," by George Malcolm-Smith, hints that the failure of nerve which has overtaken some portions of the Western World may have spread to Hartford. In this story, Milton Northey Haskins, a promising young Associate with the Nutmeg of Hartford, commits the grave error — without the aid of a computer — of misplacing a decimal point in the cash value on a 20-payment life policy at age 32. Confronted with this blasphemy, he renounces the insurance world to join a circus.

This flight from supremely rational behaviour — of which the actuary appears to be a symbol — to the carefree, buoyant, and irrational life of a circus has, of course, a profound emotional appeal for many. It is not surprising, therefore, that Malcolm Smith's book was later adapted into a musical and enjoyed a fairly long run on Broadway.

On the whole, modern literature — and this includes at least one detective story — has been kind to actuaries, preenting them as somewhat dull and prosaic but highly estimable. Regrettably, a notable fragment of the classics pronounces a contrary judgment. In Plato's "Apology," Socrates defends himself from the charge that he has led a life likely to bring him to an untimely end by declaring: "A man who is good for anything ought not to calculate the chances of living or dying." □

SURPLUS SURPLUS — COMPUTERS TO THE RESCUE?

by Irving Rosenthal

The Report of the Special Committee on Insurance Holding Companies recently published by the New York Insurance Department, wrestles manfully (in Appendix One of the Report) with the problem of preventing holding companies from siphoning off excessive amounts of surplus from the operating insurance companies they control.

The report maintains, correctly we think, that insurance regulation must assure more than "solvency" for the operating insurance companies; it must, in addition, assure "solidity." Solidity is achieved when solvency is assured for a long enough period into the future "for any dangerous development to be detected and the surplus drain resulting from it stopped." Solidity, we may say, is present solvency plus enough surplus for financial shock absorption to assure future solvency.

Surplus Surplus

The amount of the necessary financial shock absorber is designated as "required surplus." Any additional surplus is designated by the catch phrase "surplus surplus." This last, in the Report's view, may properly be employed or invested by holding company managements as they see fit without imposition of any limit derived from insurance considerations alone. Other limits related to broad public policy objectives may properly be imposed, e.g., prevention of undue concentration of economic power.

The practical problem of determining "required surplus" must now be confronted. The Report points out that the problem has already been faced to some extent in the regulation of non-life insurers (the main sphere of application) both here and abroad. Various rules-of-thumb have evolved for making the

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Surplus Surplus

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necessary determinations. However, these crude rules are regarded by the Report as lacking scientific validity and the failure to do better is attributed to nothing more serious than "technical difficulty."

The Report goes on to assert that "while the necessary calculations are very difficult, the mathematical techniques for doing the job scientifically are now rapidly developing as a consequence of the increased use of computers." A further reference to the Finnish "equalization reserve" makes it clear that the Report has in mind computer programs for applying the Scandinavian or European mathematical risk theory.

Differs with Report

It is at this point that we must part company with the authors of the Report. They seem to us to have succumbed to the widespread delusion that it is a guarantee of scientific validity if a decision-making process can be forced into a mathematical formulation—particularly if the latter is complex enough to require computer programs to produce numerical results.

The mathematical theory of risk is complicated enough to impress anybody and the employment of computers to make it produce numbers gives it added glamour. But for all the complexity and glamour, the validity of the final numbers depends upon the appropriateness of the theory. The question is whether this theory adequately expresses the nature of the contingent forces which may attack the solvency of insurance organizations.

The forces which threaten solvency are legion; they are varied and extremely complex. To mention only a few —there is unfavorable political change, e.g., war; unfavorable economic change, e.g., collapse of financial markets; unfavorable social change, e.g., decline in public morals and business ethics.

Threats to solvency may also arise from natural or industrial catastrophes and, above all, from the catastrophe of bad management of the insurance operation itself. The kind of unfavorable claim fluctuation which we can think of as a pure chance deviation from a norm is probably the least important of all the potential menaces to solvency.

Contingent Events

All the forces just referred to are unpredictable and therefore contingent. But, for the most part, they are not the kind of contingent forces which lend themselves to treatment by the methods of mathematical probability which the use of mathematical theory of risk exemplifies.

The kind of contingent events to which the methods of mathematical probability apply are those which arise in a stable framework defined by parameters representing basic probabilities which are validated by adequate statistical experience. Even such a relatively simple form of contingency as the fluctuation of insurance claims derives in good part from the operation of contingent forces which fail to meet the criteria stated. The mathematically unmanageable forces must be allowed for in some way or other in the parameter set-up of the mathematical risk theory formulae. The parameter set-up will, accordingly, be heavily infected with the influence of armchair estimates and crystal ball visions.

It is because of the insecurity of the parameter assumptions and the recognition that there are more things in heaven and earth than are dreamt of in the mathematical theory of risk, that quoted gross premiums for stop-loss insurance are usually three or four times as high as the theoretical net premiums on which they are based.

It seems to this writer that it would be well to continue to rely for practical estimates of "required surplus" on plain common sense and the crude rules-of-thumb suggested by experienced insurance men. No good can come from a pretentious pseudo-scientific approach which inappropriately applies elaborate mathematical techniques for the purpose of spawning computer outputs of dubious validity. □

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