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Letters

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degree, inflation also affects I, but, as experience has shown, the impact upon I is not nearly as direct as it is upon B and E. This is yet another reason why it is best to keep B and E segregated on one side of the equation. (B + E) should be considered as representing the actual cost of the *plan* (as affected by inflation as well as by the plan provisions), while C measures ultimately the actual pre-tax cost to the *employer*.

Not only is it impossible to state in advance the true cost of a pension plan; even after the plan has finally been wound up, the so-called true cost has to be modified by so many different factors—discount for interest, opportunity cost of money, etc.—that I do not believe it can ever be assigned a unique value.

Charles Barry H. Watson

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Sedentary Admiration

Sir:

As a slothful television watcher of the New York City Marathon, I was pleased to learn from the official demographics that 44* of our compatriots put on short pants and sneakers as live participants. Actuaries comprised one of the smaller identified groups, roughly matching Waiters (44), Filmmakers (43), and Bartenders (47), but easily outswarming Urban Planners (25), Politicians (18), and Security Guards (12).

The groupings are not mutually exclusive, though; perhaps some of our brethren were masquerading, e.g., as Unemployed (46) or Company Chairmen (182).

James B. Ross

*Same number as 1981 (John H. Cook, Jan. 1982 issue)—Ed.

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GERMA(I)N(E).

Sir:

Who is Hagel (Oct. issue, p. 1)? Is he any relation to Cant?

James B. Germain

Ed. Note: Our apologies to Georg Wilhelm Friedrich Hegel. We have goethe improve our proofreading.

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Osculation

Sir:

On the quality of an actuary's kiss, Warren A. Wild poses questions but doesn't provide the answers.

My wife and I are both FSA's, and thus are two of a small group of actuaries particularly well qualified to uphold the Society's motto on this matter. We do not support *Savvy's* dictum.

Peter W. Plumley

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BOOKS WANTED

The Society Library in Chicago seeks to acquire the following books:

Transactions of the International Congress:
- 16th (Brussels, 1960)
- 17th (London and Edinburgh, 1964)

ASTIN Bulletins

The Actuary's Handbook, Crocker, Sarason & Straight

Other books by Harry M. Sarason

If you are willing to part with any of these, please phone James L. Cowen, (312) 236-3833.

EMPLOYMENT INFORMATION SERVICE FOR STUDENTS

To actuarial students who have passed at least one examination, the Society will begin giving, upon request, employment information in the form of a list of potential employers, outlining standards for entry into their actuarial programs, application deadlines and salaries. This list will be arranged geographically, and revised annually.

Chief actuaries have been invited to send particulars for this list; actuarial club officers and others have been asked to help make its coverage complete. Any member who knows of employment opportunities not already submitted, please inform the Society office promptly. Deadline for 1983 list is *March 15th.*

Suzanne L. Hunziker

RUIN PROBABILITIES

Our Query for Actuaries last October—on the meaning and usefulness of calculated ruin probabilities of life insurance companies—sparked only two responses, one each from Canada and the U.S. Both we rate as much to the point; perhaps they will prompt observations from actuaries who have examined this momentous question.

Albert K. Christians said: To the man who has only a hammer, everything looks like a nail; the assiduous probabilist can calculate the probability of anything. Those who endorse promiscuous use of subjective probabilities will allow determination of a probability of even such statements as "The stock market will fall tomorrow."; "Shakespeare wrote *Hamlet.*"; "God exists."

But such probabilities are subjective, representing only relative degrees of belief, so their arithmetical values depend on the extent of the ignorance on which they are based. They cannot be estimated by the objective methods of classical statistics.

Probabilists will argue that the instances given above differ only in degree from the problem of determining the probability of an individual's death, for subjective considerations are involved in that case also. In that contention the probabilists are substantially correct, but I do not believe this justifies applying the calculus of probabilities whenever probabilities can be guessed at. Indeed, application of probability models to insurance arrangements has its justification, not in analysis of appropriateness of underlying theory, but because society, satisfied with the results, endorses their use.

We should be cautious about asking society to endorse the use of probability models in new areas where their results are uncertain, such as the case in point. Quoting probabilities to support a given method or rule for reserve determination may mislead. It would be hard to convey, along with such an estimate, a thorough understanding of all the underlying assumptions.

Determination of reserve requirements for insurance companies issuing equity guarantees isn't much different from determination of margin requirements for common stock investors. Regulators of securities markets operate at some distance from actuarial theory, but they

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Ruin Probabilities

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appear to perform reasonably without benefit of detailed probability models; they simply promulgate rules that appear to promote a desired result, i.e., orderly markets. Individuals and firms may base their own decisions on subjective probability estimates if they wish, but like action by government as a matter of public policy should be avoided if reasonable more direct methods of achieving the purpose are available.

James E. Jeffery expressed his views thus: It seems to me of little consequential difference to a life company whether it faces a stock market collapse or a catastrophic epidemic. In either case, acceptance of the risk of ruin is reasonable provided (1) prudent measures are taken to make the likelihood very small, (2) the risk takers are aware of the risk, and (3) they are reasonably compensated.

Although specific arrangements of maturity guarantees on equity products may be improper in terms of these tests, the making of such guarantees by life companies is not in itself improper.

Our thanks to these two contributors for their thought-provoking expressions.

E.J.M.

INDEXED-LINKED SECURITIES IN THE U.K.

by Alistair Neill

Should prices of index-linked securities move with interest rates, with common stock prices, a combination of these, or neither? Perhaps there will be a contra-movement compared with fixed interest securities; if interest rates come down, this will probably be at a time of lower inflation—the attractions of the index-link as an inflation hedge would then be reduced—and thus the price will fall.

For much of the time since my last report (May 1982 issue), the expectation of lower inflation seems to have been pulling the price down, i.e., increasing the yield. The 2½% yield which was mentioned increased to about 3%, and there had been relatively little change in the position despite a considerable fall in interest rates in the last few months to about the 10% level and a decline in our price index into single figures. But suddenly, last October, interest in the index-linked stocks revived; prices rose so that they yielded less than 2½%, where they have since hovered.

Why this quick change occurred isn't clear. It may be because government securities and common stock have both had significant increases, the index-linked securities being pulled along as an investors' afterthought; or perhaps investors don't believe that single-digit inflation will be with us for long, so let's buy the index-linked securities before everybody else does; or, it may be something else entirely. □

TAX SITUATIONS UNDER TEFRA

by James P. A. Knight

Passage of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) has further complicated the analysis of a life insurance company's tax situation. In conveying the conceptual impact of the tax law changes to company people already familiar with the principles of the 1959 Act, it is useful to develop a new classification system, based on the amount of Special Deductions allowed under Section 809(f) of the Tax Code.

For brevity, use the following notation:

T = Taxable Investment Income
G' = Gain From Operations Before Special Deductions
Q = Qualified Pension Plan Policyholder Dividends
P = Policyholder Dividends on Non-Qualified Plans
N = Non-Participating Contract Deductions
H = Group Life and A&H Deductions
$S = Q + P + N + H$ = Maximum Special Deductions
S^* = Allowable Special Deductions Under Section 809(f)
$G = G' - S^*$ = Taxable Gain From Operations
I = Taxable Income

First, note that the calculation of life company taxable income remains unchanged by TEFRA and can be written as:

$$I = \text{the smaller of } T \text{ or } G, \text{ plus } [\tfrac{1}{2}(G - T), \text{ if positive}]$$

However, TEFRA affects the calculation of both T and G. Because all companies are taxed in whole (if $G < T$), or in part (if $G > T$), on Gain From Operations, this note focuses on $G = G' - S^*$.

Before TEFRA, the effect of Section 809(f) was to set $G = T - \$250{,}000$ for many companies. This led directly to the classification system of identifying a company's tax position: a Phase I or Situation B tax was on $G = T - \$250{,}000$; a Phase II− or Situation A tax was on $G < T - \$250{,}000$; a Phase II+ or Situation D tax was on $G > T$.

Section 809(f) places a limit on certain Special Deductions (S) used to calculate the Gain From Operations (G). Shown below are pre-TEFRA and current formulations of the allowable Special Deductions (S^*) under Section 809(f).

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Death

Ruth Helen Peck, A.S.A. 1979

GOLDEN ANNIVERSARIES

Congratulations to 12 Fellows and 2 Associates who qualified for those categories in 1933:

Fellows

J. Finlay Allen	Leland J. Kalmbach
John C. Archibald	Harold R. Lawson
Lachlan Campbell	A. Earl Loadman
Thomas E. Gill	Leonard H. McVity
Russell O. Hooker	Frederick P. Sloat
James Hunter	Andrew C. Webster

Associates

Gerald M. Grassby   Leona Kuntz

The 1983 cohort of 50-year Fellows has proved itself a relatively hardy group, in that 63% of its 19 originals

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