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AN APPROACH TO GROUP LIFE CONVERSION RESERVES

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ABSTRACT

Recent statistics indicate that group life conversions produce severe antiselection in relation to ordinary policies issued standard. Under current valuation standards, substantial reserves may need to be held in anticipation of the adverse experience likely to result from these conversions. This paper illustrates one approach to the calculation of reserves on group life conversions and alerts the reader to its possible favorable income tax implications under current United States law. A specific example of the level of the reserves produced under that approach is given in the tables.

GENERAL CONSIDERATIONS

POLICIES converted from group contracts generally experience mortality well in excess of the 1958 CSO mortality rates, as is clearly shown in Table 2 of the 1959–67 Group Conversion Study (*TSA, 1969 Reports*, p. 156), which is reproduced here as Table 1. While the Standard Valuation Law requires that "[for] life insurance issued on the substandard basis and other special benefits, [the minimum standard for valuation shall be] such tables as may be approved by the Commissioner as being sufficient with relation to the benefits provided by such policies," there are no known universal tables generally approved for group conversions. An insurer would then normally be expected to use tables based upon its own experience, if such experience is significant. Otherwise, it should be considered reasonable to rely upon published conversion mortality experience, and this latter approach *may* present the benefit of a reserve "computed or estimated on the basis of recognized mortality . . . tables and assumed rates of interest" which would thus meet the requirements of section 801(b)(1)(A) of the United States Internal Revenue Code of 1954. The calculations which follow will be based upon the ratios of actual deaths to tabular 1958 CSO deaths in Table 2 of the 1959–67 Group Conversion Study. Since the ratios presented in that table are ungraduated and present a number of irregularities, all factors from the third

policy year on were graduated by a five-factor adjusted-average method, with slight adjustments for end values and a very few other values in order to ensure a smooth and declining progression in the ratios. Care was taken that no ratio be less than 100 per cent, to ensure compliance with reserve valuation laws. Table 2 shows the graduated ratios which resulted and which are used in the reserve calculations which follow.

TABLE 1

CRUDE SELECT MORTALITY RATIOS IN TEN-YEAR AGE GROUPS BASED ON AMOUNTS OF INSURANCE—FROM 1959–67 GROUP CONVERSION STUDY

Policy Year	Ratios of Actual Deaths to Tabular by 1958 CSO Table at Issue Ages					
	Under 25	25–34	35–44	45–54	55–64	65 and Over
1	686%	593%	479%	404%	386%	262%
2	447	575	349	280	247	163
3	415	400	322	288	220	144
4	187	339	291	270	189	129
5	305	308	298	229	189	129
6	312	243	260	205	170	126
7	161	297	258	175	157	123
8	196	269	238	200	156	111
9	157	187	209	174	144	135
10	191	233	194	162	130	112
11	154	222	187	159	133	120
12	202	205	160	155	138	118
13	153	151	155	140	123	107
14	152	141	160	138	108	110
15	143	130	132	134	111	100
16	117	128	152	118	105	104
17	137	116	122	111	97	109
18	85	120	113	112	102	81
19	137	118	117	105	87	91
20	104	107	113	106	87	80

TERMINAL RESERVES

Assuming that a reserve valuation by the Commissioners Reserve Valuation Method (CRVM) is most commonly desired, it becomes appropriate to consider the effect of expenses upon reserves. The CRVM acknowledges the existence of expenses, but in a very indirect way, by providing an excess expense allowance in the first policy year. This excess expense allowance is used in the computation of the renewal net premium, but it is thereafter of no consequence where a prospective reserve valuation is undertaken. While converting policyholders experience substandard mortality, they are given standard policies, with standard gross

premiums and values based upon the standard nonforfeiture factors. It seems logical to presume, then, that their policies would carry the standard renewal net premiums. Although a reserve for *future* conversions can make an allowance for the expense savings that may result from not paying commissions and from reduced issue costs, a reserve for past conversions should not normally (except for the first policy year on converted

TABLE 2

GRADUATED SELECT MORTALITY RATIOS IN TEN-YEAR AGE GROUPS BASED ON AMOUNTS OF INSURANCE—FROM 1959–67 GROUP CONVERSION STUDY

Policy Year	Ratios of Actual Deaths to Tabular by 1958 CSO Table at Issue Ages					
	Under 25	25–34	35–44	45–54	55–64	65 and Over
1	686%	593%	479%	404%	386%	262%
2	447	575	349	289	247	163
3	389	437	336	280	234	156
4	307	361	302	259	200	136
5	277	309	286	233	185	129
6	250	283	269	210	172	125
7	218	268	253	193	162	123
8	192	250	234	185	152	122
9	177	232	215	176	144	121
10	174	221	197	167	138	119
11	173	209	181	158	134	118
12	173	193	169	151	129	114
13	163	166	158	144	123	111
14	152	146	152	137	115	107
15	140	133	144	129	109	105
16	128	126	137	122	105	102
17	122	121	127	115	100	100
18	116	118	120	110	100	100
19	114	116	116	108	100	100
20	112	113	114	107	100	100

business with premium payments more frequent than annually) consider first-year expense savings, since, viewing reserves prospectively, these savings will not recur and have already passed into the insurer's general surplus (in a manner of speaking, since negative expenditures are not truly income). Since our valuation system is based generally upon annual "net" premiums and disregards expenses as a matter of policy (unless it is more conservative to take them into account in order not to jeopardize the soundness of the reserve and the solvency of the insurer, a situation of no concern here), it can be asserted that, prospectively, the terminal reserve on a converted policy is based strictly upon the mortality level

expected, the interest rate, and the standard renewal net premium. The terminal reserve on a whole life contract could thus be expressed as follows:

$$1{,}000A'_{[x]+t} - \beta_x \ddot{a}'_{[x]+t} ,$$

where primed symbols are based upon substandard or conversion mortality rates and β_x is the standard renewal valuation net premium.

TABLE 3

SUBSTANDARD EXTRA TERMINAL RESERVES PER $1,000 FOR SELECTED CENTRAL ISSUE AGES WHOLE LIFE PLAN VALUED ON 1958 CSO 3½ PER CENT CRVM BASIS AND ISSUED AS A GROUP CONVERSION

Policy Year	Issue Ages					
	20	30	40	50	60	70
1	$29.53	$50.05	$78.03	$117.10	$153.34	$124.56
2	24.46	42.04	72.33	107.21	134.42	105.43
3	20.17	36.46	66.27	96.56	115.15	86.73
4	17.15	32.16	60.73	86.27	100.44	76.15
5	14.55	28.71	55.10	77.08	87.03	68.02
6	12.34	25.58	49.47	69.05	74.85	61.10
7	10.61	22.51	43.85	61.82	63.51	54.39
8	9.29	19.59	38.46	54.53	53.28	47.26
9	8.19	16.82	33.43	47.39	43.93	39.53
10	7.08	14.01	28.83	40.52	35.06	31.77
11	5.92	11.22	24.67	34.04	26.19	23.14
12	4.70	8.61	20.80	27.79	17.79	15.86
13	3.61	6.63	17.27	21.89	10.45	9.46
14	2.68	5.17	13.77	16.47	5.32	5.12
15	1.94	4.05	10.52	11.88	2.02	1.57
16	1.41	3.10	7.53	8.11	0	0
17	0.97	2.27	5.18	5.38	0	0
18	0.63	1.48	3.29	3.43	0	0
19	0.31	0.70	1.63	1.71	0	0
20	0	0	0	0	0	0

Where substandard insurance is involved, it is rather traditional to hold a standard reserve and a substandard extra, as two separate figures. Hence the terminal substandard extra for group conversions could here be expressed as

$$1{,}000A'_{[x]+t} - \beta_x \ddot{a}'_{[x]+t} - (1{,}000A_{x+t} - \beta_x \ddot{a}_{x+t}) .$$

Table 3 shows some of the extra terminal reserves this formula produces for certain selected issue ages; the figures in the table are for a whole life

plan issued on the 1958 CSO table with $3\frac{1}{2}$ per cent interest. The renewal valuation net premium is the standard CRVM renewal net premium. Substandard values were computed on the basis of the percentages of the 1958 CSO mortality rates shown in Table 2. For durations beyond policy year 20, the effect of antiselection was assumed to have worn off to the point where it could be presumed that using 100 per cent of the 1958 CSO rates was safe. (Table 4 of the 1959–67 Group Conversion Study [*TSA*, *1969 Reports*, p. 159] shows an ultimate mortality ratio of 104 per cent overall. For all practical purposes, and considering the relatively small exposure base from which this ratio was derived, it was deemed proper to use 100 per cent.) Hence the table shows no substandard extra reserve factors for group conversions beyond policy year 20.

MEAN RESERVES

Reserves calculated at the end of a calendar year are traditionally mean reserves, that is, the arithmetic mean of the initial reserve and the terminal reserve for the policy year which straddles the calendar year end. However, when it comes to calculating the substandard extra mean reserve for group conversions, no annual substandard extra premium is payable. Hence the initial reserve for any one policy year is equal to the previous policy year's terminal reserve. Calculating the arithmetic mean of the substandard extra terminal reserves for group conversions presents no problem, except for the first policy year's reserve.

To obtain the first-year mean reserve, the method which appears to be the simplest is to calculate the first-year substandard extra initial reserve by the formula

$$1{,}000A'_{[x]} - \beta_x a'_{[x]} - \alpha_x ,$$

which will be seen to be equal to the first-year initial reserve on the entire policy minus the first-year initial reserve on the standard portion of it (α_x). The arithmetic mean between that initial reserve and the terminal reserve then can easily be calculated, producing the first-year mean reserve. Table 4 shows a scale of mean reserves for the substandard portion of group conversions corresponding to the terminal reserves given in Table 3.

CONCLUSION

The data now at hand from the 1959–67 Group Conversion Study make it possible to develop reserve factors which may prove more accurate than traditional and long unchallenged rule-of-thumb figures. The approach presented here appears reasonably simple as well as consistent with the methods followed under current valuation law. The factors

shown in the tables may be directly useful to those who reserve their new business on the 1958 CSO 3½ per cent CRVM basis and whose group conversions are mostly to the whole life plan; it may help others make an assessment of the level of the extra reserves needed, year by year, on

TABLE 4

SUBSTANDARD EXTRA MEAN RESERVES PER $1,000
FOR SELECTED CENTRAL ISSUE AGES
WHOLE LIFE PLAN VALUED ON 1958 CSO 3½ PER CENT CRVM BASIS
AND ISSUED AS A GROUP CONVERSION

Policy Year	Issue Ages					
	20	30	40	50	60	70
1	$33.93	$53.97	$82.54	$125.44	$173.03	$153.57
2	27.00	46.05	75.18	112.16	143.88	115.00
3	22.32	39.25	69.30	101.88	124.79	96.08
4	18.66	34.31	63.50	91.41	107.80	81.44
5	15.85	30.44	57.92	81.68	93.74	72.08
6	13.44	27.14	52.28	73.07	80.94	64.56
7	11.48	24.05	46.66	65.44	69.18	57.75
8	9.95	21.05	41.15	58.18	58.40	50.82
9	8.74	18.21	35.95	50.96	48.61	43.39
10	7.63	15.41	31.13	43.95	39.49	35.65
11	6.50	12.62	26.75	37.28	30.63	27.45
12	5.31	9.92	22.73	30.92	21.99	19.50
13	4.16	7.62	19.03	24.84	14.12	12.66
14	3.15	5.90	15.52	19.18	7.89	7.29
15	2.31	4.61	12.14	14.17	3.67	3.35
16	1.68	3.58	9.03	9.99	1.01	0.79
17	1.19	2.69	6.36	6.74	0	0
18	0.80	1.87	4.24	4.40	0	0
19	0.47	1.09	2.46	2.57	0	0
20	0.15	0.35	0.81	0.85	0	0

account of past group conversions. The presentation of this approach also may be of assistance to those who endeavor to have reserves which satisfy the statutory test for life insurance reserves under present United States federal income tax law.

DISCUSSION OF PRECEDING PAPER

JOHN M. BOERMEESTER:

Mr. Paquin is to be commended for calling attention to the need to establish mortality tables and derived data appropriate for the valuation of the excess mortality being experienced under group conversions. A source of data appropriate for valuation, he points out, is available in the series of intercompany studies published by the Society. There is no question that substantial excess mortality levels exist under these issues. Therefore, companies prudently should hold an appropriate extra reserve to recognize the fact that while companies will receive only standard premiums for these issues, they still must provide standard policy benefits, including standard dividends, to the substandard insured lives under conversion policies.

The primary question which one should ask in connection with establishing extra reserves is, "What are the proper assumptions which should be used to calculate extra reserves?" A related question of great practical importance is, "What should be the form and content of mortality tables which should be established for valuation purposes?"

Mr. Paquin's approach appears to be based on the principle that the extra reserve should be equal to the difference between (*a*) the total reserve requirement based on the actual substandard group conversion experience and (*b*) the valuation reserve requirement for a corresponding standard policy. The calculation of the reserves for each of these cases assumes the collection of a standard net valuation premium. This concept is expressed in Mr. Paquin's notation as follows:

$$\Delta V'_x = (A'_{[x]+t} - \beta_x \ddot{a}'_{[x]+t}) - (A_{x+t} - \beta_x \ddot{a}_{x+t}) \,. \qquad (1)$$

If the purpose of formula (1) above is to measure excess reserve requirements, I believe that the use in formula (1) of select functions *without* any specific mortality margins for group conversion and of ultimate functions *with* mortality margins for regular standard nonconversion business will lead to possible anomalies and serious questions of interpretation.

If I recall correctly, those who have designed the modern valuation tables for standard lives introduced margins for a class of fluctuations which did not contemplate extra mortality costs for group conversions. The application of Mr. Paquin's formula makes a deduction for the entire standard reserve which includes the margin designed to cover

normal mortality fluctuations for standard insurance. As a consequence, the formula will not produce any specific margins whatsoever for mortality fluctuations with respect to the conversion policy as a whole. However, some margin will exist to the extent of reversions of extra reserves held at time of withdrawal, since cash values on conversions are the same as those for standard policies. You will recall that cash values of standard policies generally are rather closely related to the reserves.

There are other approaches for establishing reserves for the excess mortality. I would offer for your consideration the concept that the extra reserve be so calculated as to reflect the difference between the actual mortality rates experienced on a group conversion plan and the corresponding actual select mortality rates experienced under a standard plan. Under this principle, the initial extra reserve may be expressed, without refinements, as follows:

$$\Delta V_x^c = \sum_{t=1}^{\infty} {}_tp_x^c[q_{[x]+t-1}^c - q_{[x]+t-1}]\ {}_t\overline{AR}_x v^t \qquad (2)$$

The superscript c refers to conversion policy functions; $q_{[x]+t}$ is the select mortality rate for a standard policy; ${}_t\overline{AR}_x$ represents the amount at risk; ${}_tp_x^c$ is the probability that the conversion policy will enter policy year t in accordance with a double decrement table for mortality and withdrawal. Withdrawal rates with respect to conversion policies have been the subject of intercompany studies conducted by the Society.

The concept represented by formula (2) is not new. For example, a report submitted on December 13, 1948, by the American Life Convention and the Life Insurance Association of America to the National Association of Insurance Commissioners presents a description of how the extra costs of group conversions may be evaluated by a similar formula. Refinements could be introduced to account for losses due to nonforfeiture options, distribution by sex, lapse rates for standard policies, and so on.

A number of years ago I prepared an experimental analysis according to the formula (2) concept, using some unpublished intercompany conversion data appropriate for age groups 65–69, 70–74, 75–79, and 80 and over. The whole life plan extra first-year reserves were approximately equal to those shown in Table 1 of this discussion. The values shown in columns 1 and 2, which also were computed at $3\frac{1}{2}$ per cent, reflect the use of the following assumptions with a number of modifications:

1. Standard mortality rates: the 1955–60 intercompany select and ultimate rates for males and females combined.
2. Group conversion select mortality and lapse rates: graduated values obtained from data assembled for the *1960 Reports*.

3. The amount at risk: the sum insured plus an unearned premium refund less cash value.

One should observe that the Table 4 values shown in column 3 below for the important issue ages above 40 are substantially lower than the values in column 2, while the values for the less important issue ages 40 and under are somewhat higher. The higher values for the young ages

TABLE 1

Issue Age	Experimental Values		Table 4 Values	Difference (1)—(3)
	All Durations (1)	First 20 Years (2)	(3)	(4)
20	$ 30.00	$ 26.00	$ 33.93	—$ 3.93
30	47.00	41.00	53.97	— 6.97
40	75.00	68.00	82.54	— 7.54
50	138.00	132.00	125.44	12.56
60	241.00	239.00	173.03	67.97
70	303.00	303.00	153.57	149.43

TABLE 2

Issue Age	Sum Insured	First-Year Extra Mean Reserve	
		Experimental Values	Table 4 Values
20	$ 20,000	$ 600	$ 679
30	100,000	4,700	5,397
40	280,000	21,000	23,111
50	350,000	48,300	43,904
60	180,000	43,380	31,145
70	70,000	21,210	10,750
Total	$1,000,000	$139,190	$114,986

arise in part, I believe, because the Table 4 basis does not use withdrawal rates (at duration 1 the withdrawal rates for young ages are three times those experienced at high ages). The differences shown in column 4 may be viewed as suspect for at least one reason: the experimental values were derived from the experience of a time period which was earlier than for the Table 4 values.

In order to give an idea of the magnitude of the amounts and differences involved, I have prepared an illustration (Table 2) with respect to a whole life plan for a model distribution of group conversion issues

by age. For this model the aggregate extra reserve requirement for the company values is about 21 per cent higher than that for the Table 4 values. While this difference is subject to some doubt, as I have mentioned before, the magnitude of the difference shown is not trivial. Smaller or larger differences would arise, of course, for different possible age distributions.

In conclusion, I would state that the problem of establishing valuation standards for group conversions is a very complex one involving an interplay of many variables. Possible solutions must be tested not only for theoretical soundness but also for practical application and statutory compliance in the real world. I would hope that this subject will be considered very carefully by those in the Society who are broadly versed in matters connected with valuation standards.

D. H. S. BATEMAN:

The purpose of the extra reserve for group life conversions is to set up a liability equal to the present value of the cost of the excess of mortality expected in the future under such policies over mortality expected under similar policies issued through normal underwriting procedures. Any practical method adopted for determining this reserve should also approximate this cost. The method used by my company is similar to that used by Mr. Levinson (*TSA*, XIV, 450) and is based on two select and ultimate mortality tables derived from our own mortality experience, one table representing recent experience for group life conversions and the other representing recent experience of standard business issued through normal underwriting. These tables, together with suitable lapse rates and a valuation interest rate, are used to determine our reserve for extra mortality on group life conversions. Mr. Paquin's novel method appears to represent a reasonable approximation. The overstatement caused by not using lapse rates tends to offset the understatement that arises from relating group life conversion mortality to the 1958 CSO Table rather than to a table with a level of mortality comparable to actual company experience under normally underwritten business. While certainly a reasonable approach, such an approximation may still have to pass the Internal Revenue Service test as to whether it is "estimated" (Internal Revenue Code, sec. 801[b][1][A]).

Mortality experienced on group life conversions can vary significantly by company, and for certain companies the 1959–67 experience may not be appropriate as the basis for this reserve. Any company, regardless of size, would want to make a judgment as to whether the 1959–67 study is an appropriate basis in the light of its own experience. Very large

companies do have the facilities for constructing tables based on their own experience. However, smaller companies do not have to rely solely upon published conversion mortality experience and have the alternative of making appropriate adjustments to published mortality to bring it into line with the general level of their own mortality experience.

Under the Internal Revenue Code life insurance reserves must be "computed or estimated on the basis of recognized mortality or morbidity tables." As Mr. Paquin infers, the fact that a mortality table for group life conversions has been published can serve to qualify it as being a "recognized table"; but in order to be recognized by the IRS as the basis of a life insurance reserve for a particular company, it must be representative of that company's experience. Furthermore, the adjustment of the mortality ratios in Table 2 of Mr. Paquin's paper to a minimum of 100 per cent might be an adverse factor in the IRS evaluation as to whether it represents a recognized table. On the other hand, state insurance department approval of the mortality basis used by a company for calculating this reserve can be just as effective in having the table recognized as is the fact of publication. In any event, from a tax qualification point of view it is almost essential that the mortality basis be expressed in terms of actual mortality rates rather than in terms of mortality ratios to some basic table.

It certainly seems desirable to publish in the *Transactions* the graduated mortality rates, for both select and ultimate durations, based on the 1959–67 group life conversion experience without any further adjustment. The actuary can then make any necessary adjustments to the published data to bring it into line with his company's experience.

(AUTHOR'S REVIEW OF DISCUSSION)

CLAUDE Y. PAQUIN:

Discussions can be quite helpful in bringing to an author's attention points he did not cover (assuming that the omission was not deliberate) or that need clarification. The discussions presented on this paper afford me an opportunity to elaborate on certain points and clarify other points.

A basic underlying principle of current statutory valuation laws concerning life insurance is that events which are within the control of policyholders, such as lapses, are not to be used to reduce liabilities. (A corollary of that principle is that events within the sole control of policyholders must be considered if they increase liabilities. For example, where the cash value exceeds the normal reserve factor, the Annual Statement blank used in the United States calls for an appropriate addi-

tion to the basic reserve.) It is in keeping with this basic principle that I refrained from using lapse rates. This refusal to use lapse rates may not accord with "generally accepted accounting principles," but it seems highly consistent with statutory insurance accounting practices.

Mr. Boermeester's discussion mentions the existence of an old formula to express the additional substandard reserve on past group life conversions, of the form

$$\sum_{t=1}^{\infty} v^t \; {}_tp_x^c(q_{[x]+t-1}^c - q_{x+t-1}) \; {}_tAR_x \, .$$

This formula should be handled with caution. The formula is valid if it can be made to pass the test of a Fackler accumulation, that is, if a normal connecting formula can be established between two successive terminal reserves, of the form

$$({}_tV_x + \beta_x + {}_t\Delta V_{[x]}^c)(1 + i) - q_{[x]+t}^c = (1 - q_{[x]+t}^c)({}_{t+1}V_x + {}_{t+1}\Delta V_{[x]}^c) \, .$$

This will occur if lapse rates are not considered, or are taken as zero, and if the amount at risk, ${}_tAR_x$, is of the form $(1 - {}_tV_x)$.

The connecting formula will then be

$$\begin{aligned}({}_tV_x + \beta_x + {}_t\Delta V_{[x]}^c)(1 + i) - q_{x+t} - (q_{[x]+t}^c - q_{x+t})(1 - {}_{t+1}V_x) \\ = (1 - q_{x+t}) \; {}_{t+1}V_x + (1 - q_{[x]+t}^c) \; {}_{t+1}\Delta V_{[x]}^c \, .\end{aligned}$$

This formula is equivalent to mine, which would read, more simply,

$$({}_tV_x + \beta_x + {}_t\Delta V_{[x]}')(1 + i) - q_{[x]+t}' = (1 - q_{[x]+t}')({}_{t+1}V_x + {}_{t+1}\Delta V_{[x]}')$$

If the insured under a group conversion is given a split personality—that is, he can lapse for purpose of the extra reserve but cannot do so with respect to the standard reserve—bizarre results will ensue and it will be a major challenge to explain by general reasoning how reserves can be accrued successively by the retrospective method.

Both discussants have questioned whether I used the "right" mortality for my calculations. In actuarial work, only theory can be demonstrably flawless. The remainder is a question of professional judgment, and on matters of judgment reasonable men can disagree. By and large, insurance commissioners will readily accept and approve the recommendation of a conscientious and reputable actuary who can support his recommendation with valid evidence. While it might be wise, from the point of view of state insurance laws, to add some appropriate margin to past experience mortality, this might turn out to be unwise if one looks at the requirements of federal income tax law. The thoughtful actuary will consider the problem from all angles.

One point perhaps should be clarified. Both the substandard and the standard mortality rates were related to the 1958 CSO Table because the latter, at least, is a "recognized mortality table." With publication of this paper, it is possible that Table 2 of the paper will also acquire sufficient recognition within the intendment of section 801(b)(1)(A) of the Internal Revenue Code of 1954, as amended. Even if the publication of Table 2, or of its parent table in *TSA*, *1969 Reports*, proves insufficient, the relationship of the substandard mortality to the 1958 CSO Table may save the day, one day. No guarantees can be made.

Mr. Bateman has expressed certain views concerning the tax implications of the valuation method presented in the paper which, while deserving of respect, are not supported by citation of authority. It is apparent that the 1958 CSO Table is not representative of any one company's experience, unless by chance; yet it is "recognized." One who reviews what case law and other authority there is in this area comes to the general impression that sound actuarial work, with sound data, will be appropriately rewarded, while sloppy work and figures pulled out of the air will produce the tax result they deserve.

I am grateful to Mr. Bateman for bringing Mr. Levinson's 1962 paper on the subject to my attention ("The Cost of Recent Additional Mortality under Group Conversions," *TSA*, XIV, 450). Much as I hate to admit it, Mr. Levinson wrote his paper one year before I began to receive the *Transactions* regularly, and I had not seen it before now. The younger members of the Society will no doubt find it interesting to read about the origin of the magic conversion charge of $65 per $1,000 prevalent in group life insurance.

A point which perhaps has not been emphasized strongly enough in my paper is that statutory reserves have, in my view, practically nothing to do with premiums. In his paper Mr. Levinson recommended treating excess mortality and expense savings separately. I would go further, and would recommend treating excess statutory reserves independently of anything else. Standard statutory reserves are insulated from lapses, expenses, commissions, dividends, so-called realistic mortality and interest, and other factors, and I conceive of the group life conversion reserves put into the Annual Statement as deserving of like aloofness. However, these reserves do deserve being "computed or estimated on the basis of recognized mortality tables and assumed rates of interest," because an actuary is expected to do his professional work properly and competently rather than to use the same figure everybody else is using, out of expediency.

An additional argument in favor of leaving lapse rates alone is that

there is no mention of a "recognized lapse table" in the United States federal income tax statute, and he who likes to play with fire may end by getting burned.

I am thankful to Messrs. Boermeester and Bateman for their interest in this subject and their discussions. The latter were thought-provoking and enlightening, and it is apparent that the last word has not yet been heard on this important topic.