A STUDY OF CREDIT LIFE INSURANCE MORTALITY

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T HE National Association of Insurance Commissioners in 1962 established a Subcommittee To Study Mortality and Morbidity Experience under Credit Life and Credit Accident and Health Insurance. This subcommittee, with the aid of an Industry Advisory Committee, conducted a study designed to present a picture of the over-all financial operation of credit insurance and the variation among companies writing the coverage, and to determine the general level of credit insurance mortality and morbidity claim costs as well as the variations in these costs. The official report of this study was made to the NAIC in June 1964 and appears in its 1964 Proceedings; it covers all phases of the study to the extent that results were then available.

This paper, by the chairmen of the NAIC Subcommittee and of the Industry Advisory Committee, is intended to cover the technical considerations involved in the development of mortality costs produced in the study. The following general subjects are included:

I. Introduction
    A. Credit insurance—definition and background
    B. Credit insurance regulation
    C. Credit insurance experience studies
II. NAIC study, mortality
III. Results
IV. Observations
 V. Use of results
VI. Conclusions

I. INTRODUCTION

A. CREDIT INSURANCE—DEFINITION AND BACKGROUND

Credit insurance is that form of insurance under which the life or the health of the borrower of money or purchaser of goods or services is insured in connection with a specific loan or credit transaction. Both credit life and credit health insurance are generally available to creditors, who may be lending institutions, vendors providing services or selling goods on an installment basis or institutions which purchase consummated installment paper from dealers. Debtors in all of the classes of indebtedness, or only in certain of them, transacted by a creditor may be eligible for coverage. The insurance is generally provided in one of two ways: (1) it is

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automatically included as part of the credit transaction at no additional cost to the debtor or (2) it is optional on the part of the debtor and, if he elects to take it, he is required to pay a specific extra identifiable charge for the insurance, which is usually included in the credit transaction.

Credit life insurance is decreasing term insurance under which the benefit is generally related to the amount of outstanding indebtedness at the time of death. The benefit may be based on the scheduled amount of reducing indebtedness at death, or on the actual outstanding indebtedness at death including delinquent payments up to some stipulated maximum number. In some instances, level amount insurance is issued in connection with an installment credit transaction in the amount of the initial indebtedness; however, such level coverage was not included in the study since it is not recognized as credit insurance under the NAIC Model Bill for the Regulation of Credit Insurance.

Occasionally credit life insurance includes a total and permanent disability benefit, providing a single sum benefit in the event of such disability, based on the unpaid balance. Credit health insurance provides for payment of benefits to cover an insured debtor's installment payments falling due during total disability, generally with an elimination or waiting period, e.g., fourteen or thirty days.

Generally under credit insurance legislation, and in this study, the definition of credit insurance does not include insurance in connection with credit transactions of more than five years' duration.

Most credit insurance is provided through group insurance policies, although some is written on an individual policy basis. The two methods differ in form but not in substance. Under either, the insurance is provided for all or for certain classes of a creditor's debtors as a group, using mass marketing and underwriting techniques.

Because credit underwriting has some elements in common with insurance underwriting, the creditor performs a type of insurance underwriting function when making loans or granting credit. For example, a borrower who is actively at work may be considered both a good credit risk and a good insurance risk. Thus, the credit investigation can help screen out persons who might not be good insurance risks. However, there is the danger that the presence of insurance may be considered a substitute for the normal credit underwriting requirements.

In recent years growing sophistication on the part of debtors has led to some exploitation of credit insurance coverage through anti-selection. This has been reflected in an increase in the mortality or morbidity levels. To reduce this danger, some credit insurance policies now provide for underwriting safeguards in the form of gainful employment provisions or

evidence of insurability requirements. The objective of these safeguards is to avoid abuses of credit insurance without denying legitimate claims. However, these underwriting safeguards have been introduced only recently; the period covered by this study preceded their use to any appreciable extent.

Generally the creditor considers the insurance merely an adjunct to the credit operation so that it must be administered simply and not become an impediment to the loan or to the sale. For example, in the press of competition among lenders, or vendors, the creditor is reluctant to ask the borrower for precise age information since it generally is not necessary for credit underwriting. Furthermore, the current form of rate charts, which quickly show the finance charge, the insurance charge and the monthly payment for various amounts of original indebtedness, finance rates and durations, would be unduly complicated if age were a consideration in determining the insurance charge and such a complication probably would greatly curtail the sale of credit insurance.

<center>B. CREDIT INSURANCE REGULATION</center>

Because of the increased importance of credit insurance, and to avoid or check abuses of the coverage, the NAIC in 1957 adopted a Model Bill for the regulation of credit insurance. The bill was intended to serve as a standard for the guidance of insurers in the conduct of the business and for the guidance of insurance supervisory authorities in regulating credit insurance.

Probably the most important feature of credit insurance control is the limit placed on charges to the debtor. The Model Bill provides that the insurance charge made to the debtor by the creditor may not exceed the premium to be paid to the insurer as computed at the time the charge is determined. It also requires that there be a reasonable relationship between the benefits provided and the premium. To help define this reasonable relationship the NAIC adopted the so-called 50 per cent loss ratio principle, which provides that "a rate for credit life or credit accident and health [insurance] producing a loss ratio of under 50 per cent should be considered to be excessive." Of the nineteen states which currently set rate standards, sixteen specify the rates directly and three control rates indirectly by setting a specific loss ratio. Of the former, twelve also specify a loss ratio and two recognize in their standards the principle that the loss ratio should vary by the size of the case by allowing the highest premium rate level (and thus the lowest loss ratio) for the smallest size case and lower levels for the larger sizes of cases.

These provisions act as a control over the maximum premium charge

and thus over the maximum charge to the debtor. Unlike employee group life insurance, where premium rate regulation is used to assure adequate premiums, the aim of credit insurance regulation is to counteract the pressure toward higher premium rates, with their consequent advantage to the creditor-policyholder in the form of higher dividends and/or higher commission payments. This phenomenon in credit insurance is often referred to as "reverse competition." It was to a large extent for the protection of the debtor in his inferior status in the credit bargaining process that the Model Bill and related regulation arose.

C. CREDIT INSURANCE EXPERIENCE STUDIES

As a guide for regulation under legislation of this type, the collection of data and the study of credit insurance experience is necessary. Some states have statistical requirements in their regulations. However, there is no standard form for this collection. Also if data are limited to a single state, it generally fails to reveal important characteristics of the experience. Furthermore, opportunity or facilities to compile, study and analyze large volumes of data often are not available to the various individual states. In fact, few states have called for data. It was to fill these statistical needs that the NAIC Subcommittee was established and the current study undertaken.

A previous study had been conducted under NAIC sponsorship covering credit insurance experience of calendar years 1955 and 1956. The form of this earlier investigation was similar to the Credit Life and Accident and Health Insurance Exhibit now included as a supplement to the Annual Statement. Part A of the present study followed this form and covered the years 1960, 1961, and 1962. This type of study can be conducted each year by the use of Credit Exhibits obtainable from the year's Annual Statements.

Part B of the present study provided the means for the first time of examining, on an industry-wide basis, credit insurance experience in units smaller than total company experience. Thus, it was possible to examine variations in the levels of experience, by type of creditor for example, as well as to determine averages. The experience unit used in this part of the study was defined generally as all of the insurance on the debtors of a single creditor. The mortality results from Part B were included in the final report on the study to the NAIC; their analysis is the subject of this paper.

It was not possible to obtain similar results from the morbidity portion of Part B. It appears that a more refined study, based on more detailed data, is necessary. A call for data for such a study has been made, with final results not expected for two or three years. This study will attempt

to produce the basic elements of credit accident and health insurance claim costs (i.e., frequency and duration).

Data covering mortality by age had been requested. However, experience by age was available for only a limited portion of the business included in the study. Thus, it was not possible to present credit insurance experience by age nor to construct a credit insurance mortality table. Because of the limited interest in age information in connection with the credit transaction, it appears that credit insurance mortality experience, except for small, isolated portions of the business, can be presented only on an all-ages-combined basis.

A split of the experience by geographical area was not available; nor was it considered necessary. As in other industry mortality studies, national results were considered representative of any particular area. (Results by area presented in the 1955–56 study had been by location of the insurance company rather than of the experience, and thus of little significance.)

II. NAIC MORTALITY STUDY

Questionnaires were distributed through the insurance commissioners of their states to a total of 391 companies which write credit insurance. Of these, 289 companies returned the questionnaires. To avoid an undue burden on the smaller companies, submission of detailed data had been made optional for them. A total of 93 companies, with eligible exposure during 1962 of $22,039 million were included in the detailed mortality study. This represents 58 per cent of the 1962 credit life insurance in force in the United States as reported by the Institute of Life Insurance, a considerable portion compared to the 25 per cent of the total Ordinary life insurance in force in the United States entering the 1958 CSO table, or the 25 per cent of the total Group life in force entering the 1960 CSG table.

The following characteristics concerning each eligible experience unit covered for credit life insurance were collected.

1. Year of Experience—1961 or 1962
2. Policy Form—Group or Individual
3. Type of Creditor
    a) Non-Credit Union business
        i. Bank
        ii. Sales finance company
        iii. Dealer, retail vendor
        iv. Small loan company
        v. Production credit association, federal land bank
        vi. All other

  b) Credit Union business
4. Type of Indebtedness
    a) Non-Credit Union business
        i. Personal loans
        ii. Motor vehicle
        iii. Farm equipment
        iv. Appliances
        v. Mobile homes
        vi. Home modernization
        vii. Crop, seed, livestock
        viii. Education loan
        ix. Revolving credit
        x. Other, combination or not available
    b) Credit Union business
5. Premium Payment Method
    a) Single Premium Method—Under which the total premium for the full duration of indebtedness is immediately paid by the creditor to the insurance company.
    b) Outstanding Balance Method—Under which each month a premium payment is made by the policyholder which is the product of the amount of insured outstanding indebtedness on the premium due date and the monthly premium rate.
6. Insurance Option—*a*) coverage required with loan and automatically included in the credit transaction, or *b*) optional on the part of the borrower.
7. Type of Benefit
    a) Death Benefits only
    b) Death and lump-sum total and permanent disability benefits
8. Exposure, by amount. (Note that information by number of lives, or loans, was not available.)
9. Incurred Claims, by amount.

In addition to the over-all level of mortality, variation by any of the characteristics listed above was also examined.

III. RESULTS

Claim costs are expressed in this paper as annual rates per $1,000 of exposure (except for the brackets used in Table 6, as noted below). In the NAIC final report of this study, claim costs were expressed as cents per $100 of initial indebtedness repayable in 12 equal monthly installments, as is the general practice in credit insurance. The latter can be derived by multiplying the annual rate per $1,000 by .054166 . . . (the mean of the exposure for the year, in $1,000's, of $100 the first month, $91.67 the second month, etc., to $8.33 the last month). For example, the average mortality rate for non-Credit Union business, providing death bene-

fits only, shown as $5.65 in the tables, is equivalent to 30.6 cents per $100 for a twelve-month loan. The single claim costs per $100 repayable over other periods are often derived as multiples or fractions of the twelve-month cost, although this is not theoretically correct. (A more refined result is obtained by using the "sum of the digits" formula, commonly known as the "rule of 78." This recognizes that the outstanding balance under an n month loan is reduced, by $1/n$th of the original amount of indebtedness, at the *end* of each month. For example, the single claim cost equivalent to an annual mortality rate of $5.65 per $1,000 computed by this formula for an indebtedness repayable in twenty-four equal monthly installments is 58.9 cents per $100 initial amount, rather than twice the twelve-month cost of 30.6 cents.)

In the tables, the experience of units with death benefits only was kept separate from that of units which also provided a one-sum total and permanent disability benefit. The purpose of this separation was to observe any effect on mortality due to the presence of this disability benefit, which in some instances anticipates a death claim on a disabled life. Under some of the non-Credit Union units coded for both benefits, not all indebtedness had the disability coverage, e.g., a nation-wide case providing only death benefits in some states and death and disability benefits in other states. The total exposure on such a unit was included under "Death and Lump Sum Total and Permanent Disability Benefits." Thus, the disability claim costs are understated to an indeterminate extent. Such mixed-benefit units occurred under the Credit Union Experience to a negligible extent.

As seen in the tables for non-Credit Unions, the mortality of units with death and lump sum disability benefits was generally lower than that of those with death benefits only, but their disability claim costs more than offset this. For the Credit Union business, the mortality of units with death and lump sum disability benefits was slightly higher than that of units with death benefits only; in addition the disability benefit added to the total claim costs of the former.

Most states impose a limit on the maximum amount of group credit life insurance that may be provided on any one life, usually $5,000 or $10,000. However, some units were reported for the study with individual amounts far in excess of these. The business which allowed high amounts, mainly production credit associations, encompassed a very specialized type of credit operation, characterized by high age distributions and a high frequency of repeat credit on the same lives. To avoid the influence of unduly large individual claims, and for the sake of homogeneity, experience of units which allowed coverage in excess of $15,000 on any one life was re-

moved from the study. This business exhibited a very high mortality rate, about $8.30 per $1,000, on about $2 billion of exposure. This probably resulted from anti-selection and lack of underwriting safeguards as well as high average ages. Although this experience had little effect on the over-all results of the study, it probably would raise the average level of mortality for some companies writing significant amounts of this business.

The over-all level of Credit Union mortality was 25–30 per cent lower than that of non-Credit Unions. Because this was a significant difference, the experience of Credit Union business is shown separately throughout the tables. This more favorable mortality is probably the result of characteristics of Credit Union membership and their type of coverage, for example, actively-at-work membership, lower average ages, a closer creditor-debtor relationship and minimum anti-selection because coverage is usually automatic. (It is to be noted that the Credit Union business included only borrowers' loan coverage and not shareholders' deposit coverage.)

TABLE 1

EXPERIENCE BY YEAR

YEAR	BENEFITS PROVIDED UNDER UNIT					
	Death Benefits Only		Death and Lump-Sum Disability Benefits			
	Exposure (in $1,000's)	Claim Cost Mortality	Exposure (in $1,000's)	Claim Costs		
				Mortality	Disability	Total
Non-Credit Union Business						
1961..........	15,209,811	5.54	1,125,511	5.15	2.18	7.33
1962..........	16,392,548	5.76	1,379,400	5.34	1.50	6.84
Total.....	31,602,359	5.65	2,504,911	5.24	1.81	7.05
Credit Union Business Only						
1961..........	1,002,050	3.73	2,851,608	4.14	1.77	5.91
1962..........	635,730	3.80	3,630,940	4.01	1.81	5.82
Total.....	1,637,780	3.77	6,482,548	4.06	1.79	5.85

TABLE 2

EXPERIENCE BY TYPE OF CREDITOR

	Benefits Provided under Unit					
	Death Benefits Only		Death and Lump-Sum Disability Benefits			
	Exposure (in $1,000's)	Claim Cost Mortality	Exposure (in $1,000's)	Claim Costs		
				Mortality	Disability	Total
Non-Credit Union Business						
Bank................	10,603,859	5.56	466,789	5.89	.89	6.78
Sales finance company.	11,165,998	5.70	834,525	4.60	4.71	9.31
Dealer, retail vendor...	777,161	6.63	2,518	4.58	.44	5.02
Small loan company...	3,959,589	6.13	1,091,060	5.59	.02	5.61
Production credit association, federal land bank..............	311,790	6.02	37,771	5.89	*	5.89
All others...........	4,783,962	5.17	72,248	3.34	2.10	5.44
Total...........	31,602,359	5.65	2,504,911	5.24	1.81	7.05
Credit Union Business						
	1,637,780	3.77	6,482,548	4.06	1.79	5.85

* Claim costs less than $.005.

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TABLE 3

EXPERIENCE BY TYPE OF INDEBTEDNESS

	BENEFITS PROVIDED UNDER UNIT					
	Death Benefits Only		Death and Lump-Sum Disability Benefits			
	Exposure (in $1,000's)	Claim Cost Mortality	Exposure (in $1,000's)	Claim Costs		
				Mortality	Disability	Total
	Non-Credit Union Business					
Personal loans........	3,083,537	5.67	75,798	6.57	.11	6.68
Motor vehicle.........	8,105,342	5.76	827	2.12	1.09	3.21
Farm equipment......	507,239	5.87	69	*	*	*
Appliances...........	73,672	5.21	1,154	2.20	.18	2.38
Mobile homes.........	56,720	6.13	....	....	....	....
Home modernization...	307,521	5.58	1,075	1.85	*	1.85
Crop, seed, and livestock	169,860	6.48	244	13.33	*	13.33
Educational loan plans.	134,103	5.08	27,956	8.60	.09	8.69
Revolving credit, including bank line of credit.............	349,253	6.06	72,456	5.15	.04	5.19
Other, combination, or not available........	18,815,112	5.59	2,325,332	5.19	1.94	7.13
Total............	31,602,359	5.65	2,504,911	5.24	1.81	7.05
	Credit Union Business					
	1,637,780	3.77	6,482,548	4.06	1.79	5.85

* Claim costs less than $.005.

TABLE 4

EXPERIENCE BY INSURANCE OPTION, POLICY FORM, AND PREMIUM
PAYMENT METHOD—NON-CREDIT UNION BUSINESS

	BENEFITS PROVIDED UNDER UNIT			
	Death Benefits Only		Death and Lump-Sum Disability Benefits	
	Exposure (in $1,000's)	Claim Cost Mortality	Exposure (in $1,000's)	Claim Cost Mortality Only
	Coverage Included with Loan			
Group policies:				
Single premium................	948,235	5.58	811,347	4.60
Outstanding balance..........	5,924,239	5.30	138,259	4.50
Individual policies:				
Single premium................	11,099	4.63	....	......
Outstanding balance..........	....	......	....	......
Combination—group and individual:				
Single premium................	215	8.33	....	......
Outstanding balance..........	2,037	8.33	....	......
Total.....................	6,885,825	5.34	949,606	4.58
	Insurance Optional			
Group policies:				
Single premium................	12,913,374	5.83	1,225,587	5.70
Outstanding balance..........	7,852,153	5.59	126,859	5.35
Individual policies:				
Single premium................	2,348,938	5.89	65,924	5.78
Outstanding balance..........	8,627	4.95	....	......
Combination—group and individual:				
Single premium................	1,560,827	5.58	136,935	5.45
Outstanding balance..........	32,615	5.32	....	......
Total.....................	24,716,534	5.74	1,555,305	5.65
Grand total................	31,602,359	5.65	2,504,911	5.24

TABLE 5

EXPERIENCE BY DURATION SINCE ISSUE OF EXPERIENCE UNIT,
COMPLETED YEARS
(ONE-CREDITOR EXPERIENCE UNITS ONLY)

YEARS	BENEFITS PROVIDED UNDER UNIT					
	Death Benefits Only		Death and Lump-Sum Disability Benefits			
	Exposure (in $1,000's)	Claim Cost Mortality	Exposure (in $1,000's)	Claim Costs		
				Mortality	Disability	Total
Non-Credit Union Business						
Less than 1......	381,909	4.63	5,342	7.75	.06	7.81
1......	1,585,402	5.19	41,774	5.43	1.85	7.28
2......	2,716,720	5.41	39,385	5.48	1.96	7.44
3......	2,013,051	5.43	480,927	4.65	4.28	8.93
4......	1,354,932	5.46	349,435	4.58	4.95	9.53
5......	1,140,543	5.89	5,549	4.56	.46	5.02
More than 5......	16,730,989	5.58	1,420,358	5.58	.37	5.95
Total........	25,923,546	5.52	2,342,770	5.24	1.90	7.14
Credit Union Business Only						
Less than 1......	85,980	3.19	178,692	2.73	.50	3.23
1......	118,505	4.15	196,563	3.08	.81	3.89
2......	136,392	4.34	251,970	3.58	1.13	4.71
3......	92,059	3.34	278,684	3.23	.78	4.01
4......	113,350	3.84	263,746	3.56	1.16	4.72
5......	115,770	4.67	293,101	3.49	1.38	4.87
More than 5......	926,682	3.58	4,997,614	4.32	2.05	6.37
Total........	1,588,738	3.73	6,460,370	4.06	1.79	5.85

TABLE 6

Non-Credit Union Business
Experience by Level of Mortality (One-Creditor Experience Units Only)

Unit Mortality Level: Single Cost per $100 12-Month Loan	Benefits Provided under Unit							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢	3,275	494,655	*	85	10,067	*	.37	.37
1¢ but less than 5¢	607	416,430	.52	11	3,408	.57	1.46	2.03
5¢ but less than 10¢	560	393,206	1.44	12	4,188	1.50	1.81	3.31
10¢ but less than 15¢	651	850,466	2.27	13	51,400	2.23	3.51	5.74
15¢ but less than 20¢	756	2,073,380	3.19	15	21,120	3.30	1.79	5.09
20¢ but less than 25¢	763	2,338,035	4.23	16	385,531	4.47	5.02	9.49
25¢ but less than 30¢	814	5,702,331	5.04	19	1,322,454	5.08	1.62	6.70
30¢ but less than 35¢	739	9,283,368	5.85	9	401,552	6.17	.02	6.19
35¢ but less than 40¢	595	1,764,085	6.81	11	72,860	6.66	.06	6.72
40¢ but less than 45¢	472	839,141	7.77	15	36,767	7.70	3.84	11.54
45¢ but less than 50¢	385	558,307	8.70	7	6,942	8.79	.50	9.29
50¢ but less than 55¢	310	324,564	9.60	6	3,407	9.56	.09	9.65
55¢ but less than 60¢	227	254,194	10.65	5	8,397	10.63	.30	10.93
60¢ but less than 65¢	172	117,417	11.48	2	1,269	11.70	*	11.70
65¢ but less than 70¢	167	139,251	12.46	....				
70¢ but less than 75¢	122	78,725	13.33	3	2,088	13.61	*	13.61
75¢ but less than 80¢	89	37,002	14.22	2	6,644	14.33	.13	14.46
80¢ but less than 85¢	88	25,280	15.18	3	554	15.25	*	15.25
85¢ but less than 90¢	84	37,539	16.02	2	2,277	15.86	*	15.86
90¢ but less than 95¢	56	20,464	16.87	1	657	17.34	*	17.34
95¢ but less than $1.00	40	11,446	17.94	2	168	17.85	*	17.85
$1.00 and over	665	164,260	33.03	13	1,020	33.62	*	33.62
Total	11,637	25,923,546	5.52	252	2,342,770	5.24	1.90	7.14

* Claim costs less than $.005.

TABLE 6A

NON-CREDIT UNION BUSINESS
EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT
(ONE-CREDITOR EXPERIENCE UNITS ONLY)
Units Less than $250,000 of Exposure

	Benefits Provided under Unit							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢..................	2,839	185,428	*	79	4,653	*	.78	.78
1¢ but less than 5¢.........	276	36,561	.37	4	616	.42	.17	.59
5¢ but less than 10¢.........	205	26,654	1.37	6	745	1.37	*	1.37
10¢ but less than 15¢.........	195	25,902	2.33	2	329	2.60	*	2.60
15¢ but less than 20¢.........	170	23,773	3.25	5	821	3.47	1.27	4.74
20¢ but less than 25¢.........	159	20,521	4.14	5	804	4.06	*	4.06
25¢ but less than 30¢.........	151	19,526	5.10	2	301	4.91	*	4.91
30¢ but less than 35¢.........	131	18,920	5.94	4	321	5.82	*	5.82
35¢ but less than 40¢.........	121	15,875	6.98	2	189	6.68	*	6.68
40¢ but less than 45¢.........	112	16,506	7.83	2	365	7.75	*	7.75
45¢ but less than 50¢.........	106	13,698	8.77	1	92	8.92	*	8.92
50¢ but less than 55¢.........	92	13,172	9.66	1	126	9.53	*	9.53
55¢ but less than 60¢.........	74	10,792	10.62	....	....	....	....	....
60¢ but less than 65¢.........	66	8,614	11.56	....	....	....	....	....
65¢ but less than 70¢.........	69	8,947	12.46	....	....	....	....	....
70¢ but less than 75¢.........	60	7,034	13.40	1	12	13.16	*	13.16
75¢ but less than 80¢.........	43	5,808	14.33	1	109	14.07	*	14.07
80¢ but less than 85¢.........	55	6,024	15.19	2	90	15.01	*	15.01
85¢ but less than 90¢.........	44	5,247	16.04	....	....	....	....	....
90¢ but less than 95¢.........	34	4,298	17.04	....	....	....	....	....
95¢ but less than $1.00.......	26	2,926	18.04	2	168	17.85	*	17.85
$1.00 and over..............	530	45,612	38.49	13	1,020	33.62	*	33.62
Total...................	5,558	521,838	6.74	132	10,761	5.39	.44	5.83

* Claim costs less than $.005.

NON-CREDIT UNION BUSINESS
EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT
(ONE-CREDITOR EXPERIENCE UNITS ONLY)
Units $250,000 but Less than $1,000,000

	BENEFITS PROVIDED UNDER UNIT							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢	375	164,973	*	5	2,125	*	*	*
1¢ but less than 5¢	276	130,656	.42	7	2,792	.61	1.74	2.35
5¢ but less than 10¢	258	134,331	1.38	5	2,276	1.38	.41	1.79
10¢ but less than 15¢	285	152,846	2.29	6	3,916	2.23	9.06	11.29
15¢ but less than 20¢	296	170,525	3.23	4	1,755	3.05	*	3.05
20¢ but less than 25¢	281	154,174	4.15	4	2,210	4.02	.63	4.65
25¢ but less than 30¢	271	164,217	5.08	6	2,164	5.17	*	5.17
30¢ but less than 35¢	263	144,742	6.00					
35¢ but less than 40¢	231	125,301	6.89	4	2,244	7.02	1.92	8.94
40¢ but less than 45¢	198	103,360	7.83	8	4,191	7.88	1.59	9.47
45¢ but less than 50¢	152	83,779	8.71	3	1,633	8.77	1.98	10.75
50¢ but less than 55¢	148	81,314	9.69	5	3,281	9.56	.09	9.65
55¢ but less than 60¢	109	57,710	10.62	3	2,137	10.65	.31	10.96
60¢ but less than 65¢	76	38,278	11.54	1	265	11.65	*	11.65
65¢ but less than 70¢	73	37,251	12.39					
70¢ but less than 75¢	48	24,029	13.27	1	922	13.48	*	13.48
75¢ but less than 80¢	40	19,696	14.23					
80¢ but less than 85¢	28	12,258	15.16	1	464	15.29	*	15.29
85¢ but less than 90¢	37	18,614	16.02					
90¢ but less than 95¢	18	8,347	17.08	1	657	17.34	*	17.34
95¢ but less than $1.00	12	4,860	18.00					
$1.00 and over	114	48,324	32.09					
Total	3,589	1,879,585	5.89	64	33,032	5.76	1.75	7.51

* Claim costs less than $.005.

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TABLE 6C

NON-CREDIT UNION BUSINESS
EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT
(ONE-CREDITOR EXPERIENCE UNITS ONLY)
Units $1,000,000 but Less than $5,000,000

UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	Death Benefits Only			Death and Lump-Sum Disability Benefits				
						Claim Costs		
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Mortality	Disability	Total
Less than 1¢	54	94,011	*	1	3,289	*	*	*
1¢ but less than 5¢	46	89,861	.48					
5¢ but less than 10¢	92	183,230	1.42	1	1,167	1.79	5.69	7.48
10¢ but less than 15¢	146	289,935	2.31	2	5,896	2.42	.41	2.83
15¢ but less than 20¢	218	473,042	3.27	5	11,679	3.21	1.75	4.96
20¢ but less than 25¢	216	455,899	4.15	3	8,783	4.17	.13	4.30
25¢ but less than 30¢	247	564,554	5.08	2	5,232	5.19	*	5.19
30¢ but less than 35¢	242	532,312	6.02	1	4,024	6.09	*	6.09
35¢ but less than 40¢	179	395,347	6.90	2	4,672	6.61	*	6.61
40¢ but less than 45¢	132	294,852	7.83	3	6,604	7.85	.04	7.89
45¢ but less than 50¢	111	238,255	8.77	3	5,217	8.79	.06	8.85
50¢ but less than 55¢	62	106,139	9.60					
55¢ but less than 60¢	39	72,325	10.65	2	6,260	10.63	.30	10.93
60¢ but less than 65¢	29	54,639	11.54	1	1,004	11.72	*	11.72
65¢ but less than 70¢	20	35,031	12.46					
70¢ but less than 75¢	11	23,060	13.37	1	1,154	13.72	*	13.72
75¢ but less than 80¢	6	11,498	14.09					
80¢ but less than 85¢	5	6,998	15.23					
85¢ but less than 90¢	2	2,508	15.93	2	2,277	15.86	*	15.86
90¢ but less than 95¢	4	7,819	16.65					
95¢ but less than $1.00	2	3,660	17.80					
$1.00 and over	17	42,123	28.19					
Total	1,880	3,977,098	5.65	29	67,258	5.96	.50	6.46

* Claim costs less than $.005.

TABLE 6D

NON-CREDIT UNION BUSINESS
EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT
(ONE-CREDITOR EXPERIENCE UNITS ONLY)
Units $5,000,000 or More

UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	Death Benefits Only			Death and Lump-Sum Disability Benefits				
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢..................	7	50,243	*	....	....	....	....	....
1¢ but less than 5¢.........	9	159,352	.63	....	....	....	....	....
5¢ but less than 10¢.........	5	48,991	1.59	....	....	....	....	....
10¢ but less than 15¢.........	25	381,783	2.25	3	41,259	2.22	3.45	5.67
15¢ but less than 20¢.........	72	1,406,040	3.18	1	6,865	3.49	2.34	5.83
20¢ but less than 25¢.........	107	1,707,441	4.25	4	373,734	4.49	5.19	9.68
25¢ but less than 30¢.........	145	4,954,034	5.04	9	1,314,757	5.08	2.62	7.70
30¢ but less than 35¢.........	103	8,587,394	5.85	4	397,207	6.17	.02	6.19
35¢ but less than 40¢.........	64	1,227,562	6.79	3	65,755	6.65	*	6.65
40¢ but less than 45¢.........	30	424,423	7.75	2	25,607	7.62	5.24	12.86
45¢ but less than 50¢.........	16	222,575	8.62	....	....	....	....	....
50¢ but less than 55¢.........	8	123,939	9.54	....	....	....	....	....
55¢ but less than 60¢.........	5	113,367	10.69	....	....	....	....	....
60¢ but less than 65¢.........	1	15,886	11.26	....	....	....	....	....
65¢ but less than 70¢.........	5	58,022	12.52	....	....	....	....	....
70¢ but less than 75¢.........	3	24,602	13.31	....	....	....	....	....
75¢ but less than 80¢.........	....	....	....	1	6,535	14.33	.13	14.46
80¢ but less than 85¢.........	....	....	....	....	....	....	....	....
85¢ but less than 90¢.........	1	11,170	16.06	....	....	....	....	....
90¢ but less than 95¢.........	....	....	....	....	....	....	....	....
95¢ but less than $1.00.......	....	....	....	....	....	....	....	....
$1.00 and over...............	4	28,201	32.94	....	....	....	....	....
Total..................	610	19,545,025	5.43	27	2,231,719	5.21	1.96	7.17

* Claim costs less than $.005.

TABLE 6

CREDIT UNION BUSINESS ONLY
EXPERIENCE BY LEVEL OF MORTALITY
(ONE-CREDITOR EXPERIENCE UNITS ONLY)

UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	BENEFITS PROVIDED UNDER UNIT							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢...............	1,854	167,269	*	19,983	1,196,523	*	1.35	1.35
1¢ but less than 5¢.........	174	80,113	.46	1,181	472,834	.52	1.42	1.94
5¢ but less than 10¢........	245	168,414	1.35	1,398	592,256	1.40	1.62	3.02
10¢ but less than 15¢........	214	254,252	2.25	1,355	860,818	2.29	1.35	3.64
15¢ but less than 20¢........	201	264,227	3.29	1,189	735,350	3.23	1.83	5.06
20¢ but less than 25¢........	152	193,210	4.06	1,013	538,850	4.14	1.99	6.13
25¢ but less than 30¢........	151	167,830	5.19	872	505,944	5.06	2.33	7.39
30¢ but less than 35¢........	91	95,248	6.00	742	337,088	6.02	2.29	8.31
35¢ but less than 40¢........	99	67,357	6.81	644	254,130	6.89	1.96	8.85
40¢ but less than 45¢........	77	29,620	7.81	556	218,493	7.85	2.55	10.40
45¢ but less than 50¢........	62	31,057	8.82	451	172,339	8.73	3.08	11.81
50¢ but less than 55¢........	40	15,760	9.77	377	104,536	9.64	2.20	11.84
55¢ but less than 60¢........	32	10,434	10.50	312	69,097	10.56	2.71	13.27
60¢ but less than 65¢........	38	10,687	11.50	309	67,916	11.56	2.34	13.90
65¢ but less than 70¢........	31	4,267	12.39	280	51,185	12.41	1.75	14.16
70¢ but less than 75¢........	21	3,590	13.26	228	37,639	13.35	1.74	15.09
75¢ but less than 80¢........	14	3,287	14.18	213	33,182	14.31	1.90	16.21
80¢ but less than 85¢........	15	1,258	15.21	183	25,431	15.21	1.50	16.71
85¢ but less than 90¢........	18	1,509	16.06	182	27,216	16.17	3.69	19.86
90¢ but less than 95¢........	17	3,724	17.00	149	21,326	17.11	1.38	18.49
95¢ but less than $1.00.......	14	1,617	17.78	127	13,127	18.02	1.55	19.57
$1.00 and over..............	132	14,008	26.31	1,737	125,090	28.50	1.94	30.44
Total.................	3,692	1,588,738	3.73	33,481	6,460,370	4.06	1.79	5.85

* Claim costs less than $.005.

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CREDIT UNION BUSINESS ONLY
EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT
(ONE-CREDITOR EXPERIENCE UNITS ONLY)
Units Less than $250,000 of Exposure

	BENEFITS PROVIDED UNDER UNIT							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢..............	1,731	98,535	*	19,167	838,774	*	1.24	1.24
1¢ but less than 5¢........	72	10,071	.46	592	74,524	.52	1.18	1.70
5¢ but less than 10¢........	109	13,355	1.35	735	86,554	1.37	1.48	2.85
10¢ but less than 15¢........	86	11,435	2.25	711	80,027	2.29	1.59	3.88
15¢ but less than 20¢........	79	8,605	3.27	634	71,029	3.19	1.24	4.43
20¢ but less than 25¢........	60	7,356	4.17	542	53,920	4.15	1.68	5.83
25¢ but less than 30¢........	58	6,561	5.06	481	49,383	5.08	1.26	6.34
30¢ but less than 35¢........	44	4,040	5.93	446	44,527	6.00	1.18	7.18
35¢ but less than 40¢........	59	6,990	6.96	389	38,359	6.90	1.55	8.45
40¢ but less than 45¢........	42	4,115	7.79	349	34,914	7.83	1.72	9.55
45¢ but less than 50¢........	35	4,800	8.81	284	26,622	8.73	1.57	10.30
50¢ but less than 55¢........	29	2,847	9.66	267	24,195	9.67	3.23	12.90
55¢ but less than 60¢........	20	1,852	10.47	237	22,178	10.60	1.33	11.93
60¢ but less than 65¢........	30	2,991	11.52	231	18,526	11.54	1.72	13.26
65¢ but less than 70¢........	27	2,962	12.37	230	19,491	12.42	1.20	13.62
70¢ but less than 75¢........	19	2,065	13.40	180	16,131	13.38	1.05	14.43
75¢ but less than 80¢........	10	1,033	14.18	178	15,269	14.25	1.18	15.43
80¢ but less than 85¢........	15	1,258	15.21	155	12,808	15.23	1.22	16.45
85¢ but less than 90¢........	18	1,509	16.06	150	12,108	16.15	1.83	17.98
90¢ but less than 95¢........	12	809	16.91	126	10,621	17.10	1.88	18.98
95¢ but less than $1.00......	13	992	17.93	116	7,877	18.04	1.66	19.70
$1.00 and over..............	120	6,209	30.35	1,643	81,996	31.03	2.12	33.15
Total..................	2,688	200,390	3.54	27,843	1,639,833	4.08	1.38	5.46

* Claim costs less than $.005.

TABLE 6B

Credit Union Business Only
Experience by Level of Mortality and Size of Experience Unit
(One-Creditor Experience Units Only)
Units $250,000 but Less than $1,000,000

Unit Mortality Level: Single Cost per $100 12-Month Loan	Benefits Provided under Unit							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢.................	113	46,512	*	784	311,216	*	1.59	1.59
1¢ but less than 5¢.........	82	38,426	.46	503	241,958	.52	1.51	2.03
5¢ but less than 10¢.........	82	45,134	1.35	519	245,482	1.38	1.53	2.91
10¢ but less than 15¢.........	70	36,432	2.29	474	234,167	2.29	1.75	4.04
15¢ but less than 20¢.........	64	34,893	3.25	376	180,241	3.23	1.85	5.08
20¢ but less than 25¢.........	53	28,662	4.15	334	168,735	4.17	1.94	6.11
25¢ but less than 30¢.........	50	26,559	5.02	264	131,226	5.08	1.99	7.07
30¢ but less than 35¢.........	35	20,965	6.04	215	106,468	5.98	2.10	8.08
35¢ but less than 40¢.........	23	12,993	6.87	199	98,284	6.92	1.96	8.88
40¢ but less than 45¢.........	29	14,926	7.86	159	73,922	7.83	2.14	9.97
45¢ but less than 50¢.........	23	9,641	8.77	121	61,225	8.73	2.07	10.80
50¢ but less than 55¢.........	8	3,482	9.75	85	39,571	9.66	1.53	11.19
55¢ but less than 60¢.........	9	4,805	10.54	65	28,838	10.58	2.90	13.48
60¢ but less than 65¢.........	6	2,865	11.65	68	30,674	11.54	2.38	13.92
65¢ but less than 70¢.........	4	1,305	12.46	41	19,335	12.37	1.66	14.03
70¢ but less than 75¢.........	2	1,525	13.05	47	20,248	13.33	2.16	15.49
75¢ but less than 80¢.........	4	2,254	14.18	31	13,253	14.29	1.66	15.95
80¢ but less than 85¢.........	....	....	....	26	10,008	15.25	1.86	17.11
85¢ but less than 90¢.........	....	....	....	32	15,108	16.17	5.21	21.38
90¢ but less than 95¢.........	5	2,915	17.02	20	7,075	17.11	1.31	18.42
95¢ but less than $1.00.......	1	625	17.54	10	3,677	17.94	1.96	19.90
$1.00 and over...............	10	4,251	24.02	90	37,508	23.91	1.46	25.37
Total..................	673	339,170	3.80	4,463	2,078,219	4.14	1.81	5.95

* Claim costs less than $.005.

TABLE 6C

CREDIT UNION BUSINESS ONLY
EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT
(ONE-CREDITOR EXPERIENCE UNITS ONLY)
Units $1,000,000 but Less than $5,000,000

UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	Benefits Provided under Unit							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢	9	16,811	*	32	46,533	*	1.59	1.59
1¢ but less than 5¢	20	31,616	.48	84	143,283	.54	1.50	2.04
5¢ but less than 10¢	53	102,484	1.35	144	260,220	1.44	1.74	3.18
10¢ but less than 15¢	50	102,700	2.31	148	289,561	2.25	1.64	3.89
15¢ but less than 20¢	48	97,164	3.18	161	310,473	3.19	2.33	5.52
20¢ but less than 25¢	33	65,855	4.04	128	239,247	4.14	2.10	6.24
25¢ but less than 30¢	38	66,254	5.10	117	234,947	5.06	2.55	7.61
30¢ but less than 35¢	9	12,321	6.13	73	134,705	6.04	2.79	8.83
35¢ but less than 40¢	14	23,955	6.83	54	106,660	6.89	2.23	9.12
40¢ but less than 45¢	6	10,579	7.72	46	88,454	7.81	2.29	10.10
45¢ but less than 50¢	3	4,069	8.62	44	72,694	8.79	3.51	12.30
50¢ but less than 55¢	2	3,478	9.64	24	33,482	9.58	2.16	11.74
55¢ but less than 60¢	3	3,777	10.47	10	18,081	10.47	4.19	14.66
60¢ but less than 65¢	2	4,831	11.41	10	18,716	11.63	2.94	14.57
65¢ but less than 70¢	....	....	....	9	12,359	12.44	2.81	15.25
70¢ but less than 75¢	....	....	....	1	1,260	13.40	3.88	17.28
75¢ but less than 80¢	....	....	....	4	4,660	14.44	4.89	19.33
80¢ but less than 85¢	....	....	....	2	2,615	14.97	1.55	16.52
85¢ but less than 90¢	....	....	....	....	....	....	....	....
90¢ but less than 95¢	....	....	....	3	3,630	17.24	.02	17.26
95¢ but less than $1.00	....	....	....	1	1,573	17.96	*	17.96
$1.00 and over	2	3,548	21.97	4	5,586	22.52	2.27	24.79
Total	292	549,442	3.40	1,099	2,028,739	4.12	2.18	6.30

* Claim costs less than $.005.

TABLE 6D

CREDIT UNION BUSINESS ONLY

EXPERIENCE BY LEVEL OF MORTALITY AND SIZE OF EXPERIENCE UNIT

(ONE-CREDITOR EXPERIENCE UNITS ONLY)

Units $5,000,000 or More

UNIT MORTALITY LEVEL: SINGLE COST PER $100 12-MONTH LOAN	BENEFITS PROVIDED UNDER UNIT							
	Death Benefits Only			Death and Lump-Sum Disability Benefits				
	Number of Experience Units	Exposure (in $1,000's)	Claim Cost Mortality	Number of Experience Units	Exposure (in $1,000's)	Claim Costs		
						Mortality	Disability	Total
Less than 1¢..................	1	5,411	*	....	....	....	....	....
1¢ but less than 5¢.........	....	....	....	2	13,069	.76	.70	1.46
5¢ but less than 10¢........	1	7,441	1.33	....	....	....	....	....
10¢ but less than 15¢........	8	103,685	2.20	22	257,063	2.33	.55	2.88
15¢ but less than 20¢........	10	123,565	3.38	18	173,607	3.29	1.20	4.49
20¢ but less than 25¢........	6	91,337	4.04	9	76,948	4.06	1.98	6.04
25¢ but less than 30¢........	5	68,456	5.34	10	90,388	4.98	2.82	7.80
30¢ but less than 35¢........	3	57,922	5.96	8	51,388	6.00	2.29	8.29
35¢ but less than 40¢........	3	23,419	6.72	2	10,827	6.61	.74	7.35
40¢ but less than 45¢........				2	21,203	8.07	6.28	14.35
45¢ but less than 50¢........	1	12,547	8.94	2	11,798	8.51	9.23	17.74
50¢ but less than 55¢........	1	5,953	9.90	1	7,288	9.67	2.49	12.16
55¢ but less than 60¢........								
60¢ but less than 65¢........								
65¢ but less than 70¢........								
70¢ but less than 75¢........								
75¢ but less than 80¢........								
80¢ but less than 85¢........								
85¢ but less than 90¢........								
90¢ but less than 95¢........								
95¢ but less than $1.00......								
$1.00 and over..............								
Total..................	39	499,736	4.14	76	713,579	3.73	1.62	5.35

* Claim costs less than $.005.

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IV. OBSERVATIONS

Experience by Year—Table 1

The mortality level appeared not to differ greatly between 1961 and 1962. Any appearance of a trend in credit insurance mortality in this table is the net result of several conflicting influences inherent in credit insurance: a change in proportions of classes of indebtedness exhibiting higher or lower mortality, an increase in the average age of an experience unit consisting of a high proportion of classes of indebtedness which generally are renewed before or at maturity, and the growing awareness of debtors of the possibilities of selection against the insurance program. Because of the small difference the experience of the two years has been combined in the later tables.

Experience by Type of Creditor—Table 2

Generally there was no significant difference in the experience by type of creditor, except for the lower mortality level that appears in the Credit Union experience. To some extent this is due to the combinations of classes of indebtedness that are covered by many types of creditors. For example, banks may include personal loans, motor vehicle loans, home modernization, and educational loan plans, all of which might have different average levels of mortality. It appears that most types of creditors draw from the same borrowing public and thus can be expected to exhibit approximately the same levels of mortality.

Experience by Type of Indebtedness—Table 3

Results shown in this table failed to indicate any significantly different experience by type of indebtedness. Many of the types of indebtedness are a combination of different classes of mortality. For example, mobile home loans may include retired persons as well as active younger persons; generally educational loans cover parents of college students, but also may include the college students themselves. It is to be noted that much of the experience was included in the "Other, Combination or Not Available" category, thereby removing the hope of studying significant volumes of experience by type of indebtedness.

Experience by Plan Characteristics—Table 4 (Non–Credit Union Business only)

This table was designed to compare levels of mortality by insurance option, by policy form and by premium payment method, so that each characteristic could be studied independently of the others. Mortality under optional insurance appears somewhat higher than where coverage

was automatically included as part of the credit transaction, for each combination of policy form and premium payment method which had a significant volume of data and in total. This was expected because of the greater opportunity for selection inherent under optional insurance.

Based on the categories in this table where the volume is significant enough to compare group and individual policy experience, mortality under the two policy forms is nearly the same. This supports the proposition that credit insurance mortality is independent of the considerations on which the choice of policy form for a particular unit is based.

For each combination of insurance option and policy form, single premium business appears to show a higher mortality than outstanding balance business. However, this probably is the result of the method of compiling the data rather than a truly higher underlying mortality level. Exposures reported under single premium business generally are based on the scheduled reducing indebtedness, which ignores installments in default, whereas outstanding balance business includes the extra exposures on such defaults. On the other hand, the death benefit payable under either premium payment method normally includes installments in default up to some specified maximum number. For example, coverage of a loan with fifteen remaining scheduled monthly installments of $100 outstanding, plus one delinquent installment, would usually provide a death benefit of $1,600 under either outstanding balance or single premium method. However, the exposure for this loan would be reported as $1,500 for a single premium unit, but as $1,600 for an outstanding balance unit. For this reason mortality costs would appear to be higher for the single premium experience. However, the underlying mortality rates should be similar, since there is no inherent reason why the probability of death should differ by mode of premium payment. A recent sample of 924 credit life insurance claims we examined showed the following percentages with 1, 2, 3, 4, 5, or more monthly payments in default: 14.2, 3.7, 1.5, 1.2, and 1.9 per cent. This delinquency rate, and the corresponding understatement of exposures based on scheduled amounts, is consistent with the differences in results between single premium and outstanding balance business appearing in Table 4.

Credit Union experience is not included in Table 4, because practically all of the insurance was "Included with the loan," the policy form was "Group" and the premium payment method was "Outstanding Balance."

The instructions for the study had allowed each contributing company to define its experience units in such a way as to make a contribution to the study possible under the form of its available records. However, for

the following two tables, experience of units covering only single creditors is appropriate, thus these tables have been limited to this experience.

Experience by Duration—Table 5

This table shows results by duration since issue of insurance under the unit. There appears to be some increase in the level of mortality by duration.

Dispersion of Mortality Costs—Tables 6 and 6A–D

These tables show the dispersion of mortality of individual units around the average mortality level. Table 6 analyzes the experience of units of all sizes; Tables 6A–D show the same experience in broad categories of unit size. (The categories of unit mortality level by which the data are arranged have been put into exact 5-cent brackets of claim costs per $100, twelve-month loan.)

Apparently the mortality under the smaller units is at a level some-what higher than average. This might be the result of the greater oppor-tunity for selection on the part of the borrower, or less stringent under-writing on the part of the creditor. The creditor under the larger units has both the motive and the ability to protect his own experience by means of stricter administration of any underwriting requirements.

The greater dispersion of unit mortality costs among the smaller units is as expected from a statistical standpoint.

These tables can be of great value as a standard against which to test results of a specific unit whose underlying mortality rate might possibly be considered abnormal on the basis of its actual experience.

V. USE OF RESULTS

A. COMPANY EXPERIENCE

One of the objectives of the NAIC study was to determine levels of credit insurance mortality which might be used as standards against which to measure the experience of individual units, a company, or other definable class. Part A of the study, which covered total company experi-ence, was of the same form as the Credit Insurance Exhibit of the Annual Statement. Since this Exhibit is available annually, industry results can be produced from a summary of these Exhibits, and could then serve as a standard for measuring individual company results. An individual com-pany's over-all results can be examined by the use of its Exhibit. How-ever, questions arising from the use of this form of information would call for a closer examination of the company's business. For example, a company writing substantial volumes of credit union business, which

experiences significantly favorable levels of mortality, as noted previously, may show a low average mortality in its Credit Insurance Exhibit; this can be explained only after an examination of the composition of the company's business.

B. UNIT EXPERIENCE

1. One of the features of the regulations governing credit insurance of many states, whether or not these are based on Model Bill legislation and whether or not a 50 per cent loss ratio principle is involved, is a maximum level of premium rates for credit life insurance which is acceptable prima facie as reasonable without further examination of the actual experience of any unit to which it will be applied. In addition, such a regulation generally provides that a higher level of rates may be used for a particular unit if it can be justified by actual (or expected) experience of the unit, or of the class to which it belongs.

Part B of the study, which examined unit experience, can be used as a guidepost in determining the mortality level on which a prima facie rate may be based and in determining standards for allowing deviations above the prima facie rate.

2. In connection with the establishment of a prima facie rate under these regulations, and the definition of the business to which it is to apply, a set of rules for the establishment of higher level rates for units characterized by higher mortality is first necessary. The prima facie rate scale should then be based on the level of mortality among those units to which it will be applied. The units for which the rules will allow a higher rate level should be excluded from the experience on which the rate standard is to be based. Thus, the prima facie rate and the rules allowing deviations from it are not independent of each other.

While this interdependence of rate standards and deviation rules could be considered as a purely statistical proposition, certain practical considerations must be recognized in establishing rules for qualification of a unit for deviation. The following form of a set of rules is presented as an example of the principles involved:

a) For the unit being considered for deviation, the experience during a "critical experience period" of past actual experience is to be examined. The rules which have been tested below have defined the critical experience period in the form of an amount of exposure, but with a maximum number of past years experience. This maximum is set so as to insure that experience used for the examination will be recent enough to be a valid indication of future levels.

b) Experience for that portion of the critical experience period during which the unit was not in force is to be included at some arbitrary level

at or near normal. The critical period, when defined as a volume of expo-sure, requires several years of experience under the smaller units. This "missing year" provision will allow consideration for deviation, of such a smaller unit with poor experience, before it has attained the required critical period. However, the experience for the "missing years" is in-cluded at some level based on the average to avoid the undue influence of a short period of poor experience due to chance fluctuation under the unit.

c) A unit with mortality experience during the critical period (includ-ing the "missing years") which is higher than some specified critical level will qualify for a deviation above the promulgated prima facie rate. The critical mortality level should be set at a point such that only units with significantly poor experience will be granted a deviation. This provision is designed to reduce the number of applications for deviation and the number of examinations necessary on the part of the regulatory authorities.

d) Any set of rules should provide that for a unit to continue to qualify for deviation, its experience must be examined periodically. This feature of the rules, of course, does not enter the tests reported below.

These deviation rules were tested by the use of the reported experience under the units shown in Tables 6A through 6D for non-Credit Union business providing death benefits only, using each year's experience for each unit separately. When the critical period called for more than one year of experience, it was necessary, for this test, to use simulated experi-ence for the additional exposure. To do this, the unit's mortality over the required period (excluding any "missing years" during which it was not in force), was taken as a weighted average between its one year of reported actual mortality and the over-all average mortality of all units. The actual mortality was weighted by the square root of the fraction of the critical exposure represented by the one year of experience, and the over-all average by the complement of this weight. The square root was used to reflect the smaller dispersion that would be experienced by the unit over a period longer than one year.

In testing the rules, critical experience periods defined by four different volumes of exposure, two maximum periods, two "missing years" treat-ments, and three critical points are illustrated. For each combination of these, Table 7 shows the proportions, based on number of units and based on total exposure, of the total business in force which would qualify for deviation. In addition, the actual mortality rates of those units qualify-ing and of those units not qualifying for deviation are shown.

The deviation above the prima facie rate allowed each unit which

qualifies would be based on the unit's mortality over the critical period including provision for the "missing years." The prima facie rate, since it is applicable to those units not qualifying, should be based on their average actual mortality level; this of course is at a level below the average for the total business, as may be seen in Table 7.

It should be noted that this table shows the proportion of units in force qualifying for deviations, and not the annual rate of qualification. The annual rate will be at a level considerably lower than the proportions shown in the table. For example, under a rule where the table shows a

TABLE 7

Exposure:	$250,000		$1,000,000		$5,000,000		$10,000,000	
Maximum years:	3	10	3	10	3	10	3	10
	"Missing Years" at $3.69 per $1,000							
Critical point:								
$5.54 per $1,000:								
Per cent qualifying:								
Units..............	34.5%	33.9%	33.2%	29.6%	31.9%	20.4%	31.7%	17.4%
Exposure..........	52.7	52.6	52.4	52.2	51.5	49.6	51.2	47.6
Actual mortality rate:								
Units qualifying....	$ 6.97	$ 6.97	$ 6.97	$ 6.96	$ 6.98	$ 6.91	$ 6.98	$ 6.89
Units not qualifying.	3.89	3.89	3.91	3.93	3.96	4.14	3.98	4.27
$6.65 per $1,000:								
Per cent qualifying:								
Units..............	26.6%	25.8%	23.6%	19.2%	21.0%	10.3%	20.5%	8.1%
Exposure..........	14.1	14.1	13.5	13.3	11.5	9.9	10.4	7.8
Actual mortality rate:								
Units qualifying....	$ 9.90	$ 9.90	$10.00	$ 9.94	$10.41	$10.29	$10.72	$10.70
Units not qualifying.	4.80	4.80	4.82	4.84	4.88	4.99	4.91	5.08
$7.76 per $1,000:								
Per cent qualifying:								
Units..............	20.6%	19.8%	16.9%	12.6%	14.2%	5.6%	13.8%	4.5%
Exposure..........	8.3	8.3	7.5	7.3	5.6	4.4	4.8	3.1
Actual mortality rate:								
Units qualifying....	$11.83	$11.82	$12.10	$11.98	$13.24	$13.03	$13.96	$14.22
Units not qualifying.	4.95	4.95	4.98	5.01	5.06	5.17	5.09	5.23
	"Missing Years" at $5.54 per $1,000							
$5.54 per $1,000:								
Per cent qualifying:								
Units..............	35.5%	35.5%	35.5%	35.6%	35.6%	35.6%	35.6%	35.6%
Exposure..........	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7
Actual mortality rate:								
Units qualifying....	$ 6.97	$ 6.97	$ 6.97	$ 6.97	$ 6.97	$ 6.97	$ 6.97	$ 6.97
Units not qualifying.	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89
$6.65 per $1,000:								
Per cent qualifying:								
Units..............	27.2%	26.7%	25.0%	22.5%	22.8%	15.5%	22.4%	13.7%
Exposure..........	14.2	14.1	13.7	13.6	12.0	10.8	11.1	9.0
Actual mortality rate:								
Units qualifying....	$ 9.90	$ 9.90	$ 9.99	$ 9.99	$10.37	$10.46	$10.66	$10.94
Units not qualifying.	4.79	4.79	4.81	4.81	4.85	4.92	4.88	4.98
$7.76 per $1,000:								
Per cent qualifying:								
Units..............	21.1%	20.4%	17.9%	14.4%	15.3%	7.8%	15.0%	6.5%
Exposure..........	8.3	8.3	7.7	7.5	5.8	4.7	5.0	3.4
Actual mortality rate:								
Units qualifying....	$11.84	$11.83	$12.10	$12.06	$13.19	$13.30	$13.88	$14.57
Units not qualifying.	4.94	4.95	4.97	4.99	5.05	5.13	5.08	5.20

level of about 20 per cent of the in-force units qualified, this status would be maintained by qualifying only a fraction of such units each year.

Other forms of a deviation rule might have been used to accomplish the same purpose. The only requirement is that, in a practical way, the rule recognize a unit's significantly high mortality before granting a deviation.

The levels of critical exposure, maximum period, "missing years" treatment and critical point used in the rules that were tested were chosen somewhat arbitrarily. Others could have been used, but with similar results. The $5.54 mortality level corresponds to 30¢ per $100 twelve-month loan, approximately the average of the experience studied. Thus the critical points used for these tests, $5.54, $6.65, or $7.76 per $1,000, correspond to 100, 120, and 140 per cent of the over-all average mortality; and the "missing years" mortality, at $5.54 or $3.69 per $1,000, represent average or two-thirds of average.

Note that the mortality base for the prima facie rate is not independent of the deviation rule, as seen in the results in Table 7. For example, the test of the rule which used (1) a critical exposure of five million dollars, (2) a three-year maximum period, (3) mortality of $3.69 for the "missing years," and (4) a critical point of $5.54, showed that 32 per cent of the units in force would qualify for deviation; the prima facie rate must provide for a mortality level of $3.96 for those units to which it will apply, i.e., the 68 per cent of the units not qualifying for deviation. On the other hand, with a critical point of $6.65, the table shows that 21 per cent of the units would qualify; the prima facie rate under these circumstances must provide for the $4.88 level of mortality experienced by the other 79 per cent of the units.

VI. CONCLUSIONS

For the proper conduct of the business on the part of writers of credit insurance, and for the proper control of the business on the part of regulatory authorities, studies of credit insurance experience are necessary to provide standards on which to base rules or regulations, and to measure results.

As mentioned previously, the Credit Insurance Exhibit supplement to the Annual Statement is available to study an individual company's over-all experience or, in summary, for over-all industry studies. However, more specific instructions are necessary to ensure consistent completion of the Exhibit by reporting companies. For example, if the amounts of insurance reported in the Exhibit are to be used as a measure of exposure for the derivation for average company or industry mortality rates, they

should be based on actual amounts of insured outstanding indebtedness, and not on original amounts of loans as is done by some companies; the instructions should clarify this point. In addition, in order to make earned premiums available on a gross basis for the derivation of certain pertinent items (e.g., loss ratios), the Exhibit should specify this basis, or also provide for gross unearned premium reserves where net premium reserves may now be reported on an optional basis.

The variation in the regulations of those jurisdictions which have promulgated rate standards for credit life insurance serves as an example of the need for more information concerning the underlying mortality rates for this coverage. The fact that only sixteen jurisdictions have promulgated rates, and the considerable variation among these, although all presumably have similar bases and the same objectives, is further indication that no reliable basis has previously been available. However, with studies such as this, the need is being filled.

In order to provide more detailed information concerning credit insurance mortality and morbidity, periodic studies similar to Part B of the NAIC study should be conducted. Because of the technical nature of these studies, it is recommended that the Society of Actuaries consider this type of study as an addition to its current mortality and morbidity committee assignments.

The studies recommended above will provide meaningful results and it is hoped that state insurance departments interested in statistics would rely on these and not include burdensome statistical requirements in their regulations.

To the extent that this paper has provided valid and useful information concerning the background and results of this study, it has accomplished its purpose. However, if it serves to stimulate discussion of companies' credit insurance experience and practices, including for example their deviation rules, its value will be greatly enhanced. We invite such discussion.

DISCUSSION OF PRECEDING PAPER

HOWARD T. COHN:

A review of the NAIC mortality and morbidity study, together with the various discussions that were presented in connection with it, prompted us at Bankers National Life Insurance Company to analyze our own experience in reference to some of the significant factors developed by the study. This analysis developed some interesting results that would not be brought out by the NAIC study because of the basis on which the statistics were compiled.

1. *Experience by calendar year.*—Table 1 shows Bankers National's credit life insurance experience by calendar year from 1960 through 1964. We have experienced a significant increase in claim cost since 1961. It is

TABLE 1

EXPERIENCE BY CALENDAR YEAR

(Death Benefits Only)

Year	Exposure (in $1,000's)	Claim Cost Mortality
1960	185,096	6.34
1961	242,133	6.03
1962	290,606	6.39
1963	403,041	6.82
1964	507,159	6.92

interesting to speculate on the reasons for this experience in view of the general improvement in mortality during this same period. We believe that this trend indicates a growing sophistication on the part of the borrowing public. They are increasingly aware that substantial amounts of credit life insurance are available (*a*) with little or no underwriting, (*b*) free of contestable clauses, and (*c*) at modest premium rates independent of age.

Our experience is composed primarily of small loan business where statutory limitations provide for maximum amounts generally not in excess of $1,000. We suspect that, where other classes of loans involving coverage for higher amounts are involved, this type of adverse selection might become even more significant.

2. *Experience in Model Bill states versus non–Model Bill states.*—Table 2 shows the Bankers National Life experience in those states which have

adopted the NAIC Model Bill as opposed to those states which have not. The results are surprising to us in view of the fact that we write our business on virtually the same basis in all states. However, it does indicate that our experience in those states where the business is subject to Model Bill regulation is significantly higher than in the other states.

It is our judgment that the requirements in the NAIC Model Bill that the borrower be given a certificate depicting the benefits tend to publicize the availability of credit insurance as well as to alert otherwise unaware beneficiaries to the existence of coverage. We believe that credit life insurance receives less publicity in non–Model Bill states, where fewer certificates per borrower are being distributed. Publicizing the availability of this coverage will lead to adverse selection. As more states adopt the Model Bill, we can probably expect a continuing increase in mortality

TABLE 2

EXPERIENCE IN MODEL BILL VS. NON–MODEL BILL STATES
1960 THROUGH 1964

(Death Benefits Only)

	Exposure (in $1,000's)	Claim Cost Mortality
Model Bill states............	1,186,915	6.90
Other states................	441,120	5.80
Total....................	1,628,035	6.60

claim cost. The NAIC study contains claim experience secured from both Model Bill and non–Model Bill states, and, since the study may serve to assist actuaries and regulatory authorities in setting rate standards, it is important to emphasize that the inclusion of the lower claim factors generated in non–Model Bill states may cause regulatory authorities to adopt rates in Model Bill states that will ultimately prove inadequate.

3. *Effect of reserve basis on loss ratios for single premium business.*—In the authors' conclusions, they refer to the necessity of ascertaining the gross unearned premium reserve where net premium reserves may otherwise be reported in order properly to derive earned premiums for meaningful loss ratios. Table 3 shows the development of loss ratios on a single premium credit life policy written by Bankers National with the reserve calculated on two different bases. The first basis shows the reserves compiled by the gross unearned premium method, while the second basis shows the reserve computed on the basis of interest factors developed from the 1960 Commissioners Standard Group Mortality Table. It is

interesting to note that the effect of the reserve basis on the loss ratio developed in this manner is quite significant in the first policy year. The table indicates the necessity of determining the reserve basis before examining loss ratios.

The authors and their respective committees are to be congratulated for the valuable contribution that they have made in a field where there has been such a dearth of reliable statistics.

TABLE 3

Policy Year	Premium Paid	End of Period	Beginning of Period	Premium Earned	Claims Incurred	Loss Ratio
	A. Reserve Computed on Gross Unearned Premium Basis					
1........	280,860	151,485	....	129,375	47,751	36.9%
2........	249,236	155,612	151,485	245,109	131,881	53.8
3........	258,723	158,800	155,612	255,535	137,984	54.0
	B. Reserve Computed on Mortality and Interest Basis					
1........	280,860	82,256	....	198,604	47,751	24.0%
2........	249,236	84,497	82,256	246,995	131,881	53.4
3........	258,723	84,599	84,497	258,621	137,984	53.4

WILLIAM H. LEWIS:

I believe that Messrs. Gingery and Bittel are to be congratulated for their excellent paper on the subject of credit life insurance mortality. There is very little in the literature on the subject, and this paper contributes a great deal to actuarial literature on the nature of credit insurance.

I was particularly pleased with the recommendation that the Society of Actuaries consider the study of credit insurance mortality and morbidity as an addition to its current mortality and morbidity committee assignments.

I wish to take exception, however, to some of the conclusions arrived at in the paper. It is stated that the mortality level appeared not to differ greatly between 1961 and 1962. Actually, the claim cost mortality shown in Table 1 showed an increase of 4 per cent for 1962 over 1961. The paper states a number of reasons why this difference does not necessarily indicate a trend in credit insurance mortality. I suggest that it is not difficult to find explanations for anything we may want to believe,

but I do not believe that the possibility of a secular trend can be brushed aside so lightly. I believe that it is necessary to compile the experience of more than two years in order to establish the existence or nonexistence of a secular trend. Table 5 does appear to give some indication of the possibility of some such trend. Secular trend may in this case be defined as increasing antiselection.

Although I agree with the authors of the paper that there seems to be no inherent reason why the probability of death should differ by mode of premium payment, I cannot entirely agree with them in their explanations concerning the higher mortality shown by single premium business as compared with outstanding balance business. It is my understanding that some companies writing single premium business have failed to reduce their credit life insurance in-force file by cancellations as they occur. It is sometimes the practice to wait until the end of the calendar year, or until the normal expiry date, before such reduction is reflected in the in force. Likewise, deaths are often handled in a similar manner. The reasons for this practice are, of course, administrative simplicity and economy of operation, but such practices do result in an overstatement of exposure with a resultant understatement of mortality. Thus, while I do not dispute the authors' claims to methods of compiling the data which tend to overstate single premium mortality, I suggest that there are other methods which tend to understate.

As a final point, I suggest that, while the deviation rules proposed by the paper are excellent from a technical point of view, they would impose an administrative burden on insurance department personnel required to administer them because of their technical nature. I feel that a reasonable margin should be added to the average mortality in setting a prima facie rate to insure that already overburdened insurance department personnel will not be faced with a deluge of requests for rate deviations. The principle of adding margins has always been followed by the Society in establishing mortality tables for statutory purposes. A set of deviation rules should then be devised which is administratively feasible.

ROBERT A. MILLER III:

This paper by Messrs. Gingery and Bittel should be of considerable help to every company engaged in the credit life insurance business. The dispersion analysis set out in Tables 6A through 6D should be of particular interest. Besides providing information which should be useful in evaluating the experience of an individual group, the tables definitely confirm our impression that on non-credit union business the general

level of the mortality tends to improve with increasing size of the insured group.

We agree heartily with the authors' recommendation that the Society of Actuaries should consider this type of study as an addition to its current mortality and morbidity assignments. We should like very much to see a similar study on morbidity under credit health insurance policies. Because of the technical complexities of this form of insurance, we feel that it is most appropriate that such a study should be carried out under the auspices of the Society of Actuaries.

We feel, too, that the instructions for the credit insurance exhibit, which is prepared as a supplement to the annual statement, should be clarified so that all companies will report their exposures on actual amounts of insured outstanding indebtedness.

We hope that, as more complete mortality and morbidity data are made available through further similar studies in the area of credit insurance, state insurance departments will come to rely on these results rather than on separate statistical reports from insurance companies. We have found that the extreme variations in the kind and extent of information required by various states have imposed some rather serious burdens on our credit insurance operations.

Once again we should like to thank Mr. Gingery and Mr. Bittel for their excellent presentation of the results of the NAIC's credit life insurance mortality study.

WILLIAM K. NICOL:

Reference is made, in the paper under discussion, to the fact that it is based on a study reported to the NAIC in June, 1964. Those who are interested in this topic should refer to the 1965 Proceedings of the NAIC, which contain some critical analyses of the study submitted by other members of the NAIC Subcommittee to Study Mortality and Morbidity Experience under Credit Insurance.

In Section V of the paper entitled "Use of Results," there is a discussion of a method of determining a prima facie rate for credit insurance as well as a method for determining those units for which a rate deviation is warranted. In most states which promulgate a prima facie rate for credit life insurance, there has also been adopted the 50 per cent bench mark recommended by the NAIC at its December, 1959, meeting, and this 50 per cent bench mark must be taken into account both in the setting of prima facie rates and the determining of deviation standards in those states in which it has been adopted.

The NAIC Model Bill for regulation of credit insurance provides that any policy form shall be disapproved "if the benefits provided are not reasonable in relation to the premium charged." Premium rates producing loss ratios of under 50 per cent are to be considered excessive and, inferentially, policy forms which have premium rates producing a loss ratio of over 50 per cent should be entitled to consideration for deviation. The essential point here is that the 50 per cent bench mark applies to a policy form or to an individual experience unit and *not* to over-all company experience. In Section V, B, 2(c), the authors refer to a "critical mortality level" and state that "the critical mortality level should be set at such a point that only units with significantly poor experience will be granted a deviation." They use in Table 7 critical mortality levels of 100, 120, and 140 per cent of the over-all average mortality. For those states which use the 50 per cent bench-mark rule, it is inappropriate to set the critical mortality level at higher than 100 per cent of the over-all average mortality. Using a mortality rate for the "missing years" at $5.54 per thousand, and a critical point of $5.54 per thousand, more than 35 per cent of the experience units would qualify for deviation. I would submit that this is too high a level for practical administration by insurance departments and would invalidate the authors' approach in those states which have adopted the 50 per cent bench-mark criteria.

Furthermore, it is suggested that the prima facie rate should be based on the over-all mortality experience of the units not qualifying for deviation; in this case, a rate of $3.89 or a single premium per $100 twelve-month loan of 21 cents. If this approach were to be adopted, and if the 50 per cent bench mark were to be used to establish a prima facie gross rate of 42 cents, the loss ratios of those units in the nonqualifying category would range from 0 to over 70 per cent, and those units with a loss ratio in excess of 50 per cent should also be entitled to a deviation. It seems to me that the authors' whole approach to obtaining a prima facie rate is invalid in those states which use the 50 per cent bench mark.

I would submit that the only practical way to set a prima facie rate in those states is to determine from inspection of Table 6 for non-credit union business a premium rate which encompasses a sufficiently large proportion of the units reporting, as was suggested in the 1965 Proceedings of the NAIC as follows:

In order to develop standard or prima facie acceptable premium rates in accordance with the minimum 50% loss ratio requirement adopted by the NAIC for the administration of the "benefits" language set forth in the policy approval section of the Model Bill and thereby avoid the necessity for insurance departments to review a multitude of individual company policy form

filings, the average claim costs developed by the Study as set forth in Table B-9 would indicate the following:

Single Claim Cost per $100	Percentage of Experience Units Covered	Percentage of Experience Units Necessitating Deviation
.30¢	65%	35%
35	71	29
40	75	25
45	80	20
50	83	17

As indicated by the above figures, a prima facie acceptable rate of 90¢ per $100.00 would appear to be necessary in order to cover at least 80% of the cases and a prima facie rate of 80¢ per annum per $100.00 would be necessary to cover at least 75% of the cases and thus, depending on the staff and budget of a particular state insurance department, a prima facie rate based on a 50% loss ratio requirement could be promulgated in accordance with the above average claim costs developed under the Study.

(AUTHORS' REVIEW OF DISCUSSION)

STANLEY W. GINGERY AND W. HAROLD BITTEL:

We were pleased to see the support of our suggestion for a study of credit insurance experience by a Society committee, which was expressed both directly and in the form of questions concerning the coverage that such a study would help answer.

Mr. Cohn's four years of experience by calendar year help spotlight the question concerning the possible trend in mortality as an appropriate subject for any future study. For the purpose of revealing trends, a longer period of comparison, than 1961–62 in the present study or Mr. Cohn's 1960–64 period, would be necessary. For example, a comparison of the 1960–62 mortality rate for group credit insurance in Part A of the NAIC study with the corresponding figure for 1955–56 of the early NAIC study showed a 5 per cent increase in the five and one-half years between the two periods of experience. (Note that results for individual credit insurance were not available in the earlier study.)

The rapid increase in volume of Mr. Cohn's exposures, from $185,000 in 1960 to $507,000 in 1964, suggests that any increase in the mortality level of each new year's experience is possibly more the result of a change in composition of the exposure than necessarily a trend from year to year. The difference in experience in Model Bill and non–Model Bill

states presented by Mr. Cohn appears to show lower experience for the latter. This may be due to the fact that the Model Bill provides for full disclosure of coverage, which indicates the desirability of enacting the bill in all states.

It was not possible to obtain this split of the experience covered by the NAIC study, and it would probably not be feasible in any future studies. However, since this type of legislation and regulation is in effect in a majority of the states, and especially among the more populous ones, we doubt that non–Model Bill experience has had much effect on the over-all results.

With respect to Mr. Cohn's comments regarding the variation in method of computation of unearned premium reserves, this paper and study dealt only with pure mortality and morbidity costs, which were unaffected by such computation. Nevertheless, it was ascertained that this variation had no significant effect on the over-all results of the NAIC study dealing with premiums and related subjects.

Mr. Lewis' further explanation of differences between outstanding balance and single premium business also emphasizes the need for specific instructions in any collection of data, for the credit insurance exhibit or other purpose, to assure correct data. A study by the Society should be able to achieve this objective. We tried to confine our remarks on deviation rules to a determination of the level of mortality of portions of the experience which might be considered "standard" and "substandard," on which promulgated premium rates and deviations therefrom could be based. The individual company in setting its rates and state insurance departments in examining the level of filed rates must proceed from the claim rate levels to premium rates using a method of calculation which provides for expenses and margin, by means of the "50 per cent loss ratio principle" or otherwise.

Mr. Lewis suggests that a margin be added to the average mortality net claim cost to avoid numerous deviation requests to state insurance departments. He states that the principle of adding margins has always been followed by the Society in establishing mortality tables for statutory purposes. Such statutory tables are not used to derive gross premium rates directly, and it is reasonable to include margin in such tables for reserve valuation purposes. Loading the net claim cost before applying the 50 per cent loss ratio principle would result in doubling the margin included in the prima facie rate, thereby making it impossible to achieve a 50 per cent loss ratio even though no upward deviations were permitted. Note that to achieve an over-all 50 per cent loss ratio, downward deviations would have to equal the upward deviations if the prima facie rate is determined by doubling the average

net claim cost. Furthermore, downward deviations would have to exceed the magnitude of upward deviations if the prima facie rate were determined by doubling a loaded average claim cost. Therefore, it would appear that the administrative burden on insurance departments would be minimized by adopting a prima facie rate determined by doubling not more than the average net claim cost and granting upward deviations based on a reasonable set of deviation rules. Under this set-up, the over-all loss ratio would fall below 50 per cent and should leave more than ample room for any upward trend in mortality level that might appear in the future.

Mr. Miller's point is well taken that an industrywide, countrywide, study of experience would relieve state insurance departments of the task of collecting and analyzing experience separately and companies of contributing to many collections differing in minor details but with the same objective. The validity of the results could only benefit by such a uniform study. We strongly support this suggestion.

Mr. Nicol subscribes to the 50 per cent loss ratio principle as applied to policy forms or individual units. The latter is desirable in some situations because the individual risks insured are not uniform within policy form. However, this does not lead to the conclusion that, on the basis of an average mortality claim cost of 30 cents per $100 for a twelve-month loan, a 90 cents per $100 prima facie rate is called for. Such a prima facie rate would invalidate the 50 per cent loss ratio, as can be seen by extending Mr. Nicol's table by the addition of two columns—one showing the loss ratio of the "standard," i.e., nondeviated, cases for each suggested prima facie rate and one showing the loss ratio for all cases even before any deviation is granted (see accompanying tabulation).

SINGLE CLAIM COST PER $100	PRIMA FACIE RATE USING 50 PER CENT PRINCIPLE	LOSS RATIO BASED ON PRIMA FACIE RATE	
		Standard Cases	All Cases
30¢	60¢	35%	50%
35	70	37	43
40	80	33	37
45	90	30	33
50	100	28	30

In addition, we would like to point out that the unit of exposure in Tables 6A through 6D, on which the above was based, was one year of experience. For any but the largest cases a longer period would be re-

quired before any significance could be assigned to its own experience. The distribution of units less than $250 thousand, $250 thousand to $1 million, $1 million to $5 million, and over $5 million of exposure was 48, 31, 16, and 5 per cent, respectively. Considering the small numbers of lives covered by the units in the smaller of these size groups, most of the units included in these tables probably had less than a significant volume of experience in one year on which to determine deviation. (A corresponding distribution of volume under these cases was 2, 7, 15, and 76 per cent.)

Mr. Nicol's comments on our examples of the deviation rules do help to show the relation between a promulgated premium rate and rules for deviation from it. We must realize that there is not a unique choice of rate and rule. For example, one extreme might be a state whose promulgated rate based on the 50 per cent loss ratio principle and the $5.52 per $1,000 over-all average mortality level (which is equivalent to 29.9 cents per $100 twelve-months loan) would be set at 60 cents, with provision for no deviations regardless of individual unit experience. At almost the other extreme, deviations might be foreseen for all units with actual mortality, over a significant period, higher than 15 cents, for example; the promulgated rate in this instance would be set, by the 50 per cent loss ratio principle or otherwise, on the average mortality of the few remaining nondeviated units, which would be at a level well below 15 cents. In the first example, the underlying reasoning would be that there is no such thing as a substandard credit insurance unit; in the second, the reasoning would be that only a few units could be considered "standard" and that there are many substandard classes for which deviations would be necessary.

The particular example Mr. Nicol chose shows how a lenient rule, which allows many deviations, results in a low average mortality level among the nondeviated units to which the promulgated rate would apply and on whose mortality level it should be based. The resulting burdens on companies in applying for deviations and on state departments in examining these requests, are a practical consideration in setting the rate-rule combination. Thus, choosing another rate-rule combination from those included in the examples, one which would allow fewer deviations and would provide for a higher prima facie rate, would be more appropriate in actual practice.