Credit Life Mortality and Minimum Valuation Standard
Credit Insurance Experience Committee of the Society of Actuaries
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I. Introduction

In May of 2001 the Credit Disability Insurance Experience Committee's area of interest was expanded to include credit life insurance. The Committee was re-named the Credit Insurance Experience Committee. The first charge of this expanded Committee is to study credit life mortality and to answer the National Association of Insurance Commissioner's request to the Society of Actuaries to develop a recommendation for a uniform national valuation standard for credit life insurance policy reserves.

A review of the 50 states' and District of Columbia's laws and regulations found that only 14 states had specific policy reserve valuation requirements for credit life insurance. Inquiries were then made to the other State Departments of Insurance to determine the reserve standard they required. Appendix 1 provides what the Committee believes is the standard by state. There are situations where one company was approved to use a different standard than another company. Where this occurred or where there is some question about the requirement we left the reserve basis blank. The Committee found that the most common valuation standards cited were: 1958 CSO, 130% 1958 CSO (or its near equivalent 1958 CET), 1980 CSO and the 1980 CET.

The Committee agreed to study the actual credit life mortality for a two year period, calendar years 1998 and 1999. Death claims incurred during this two year period and paid by the data collection date were to be included. The data collection date was the summer of 2001 which would allow a minimum of 18 months following date of death for a claim to be paid. The few death claims that may remain unpaid by the summer of 2001 were considered immaterial. The Committee agreed to limit the study to single premium credit life insurance. This was considered appropriate because it is the single premium business where mortality based policy reserves are held. Further, many companies do not maintain in their system exposure data on their monthly outstanding credit life business.

II. Description of the Data

On July 12, 2001 a request was mailed out to credit insurers from Steven L. Ostlund, Chair of the Credit Insurance Experience Committee to contribute to a credit life mortality study. All member companies of the Consumer Credit Insurance Association (CCIA) were urged to contribute. A special effort was made to encourage any company with $1,000,000 or more of 1999 credit life single premium, whether a member of the CCIA or not, to join in the study. Appendix 2 is a copy of the request, the data requirements and the collection and processing methods used for the study.

Some companies process segments of their single premium business in summary. This is generally done for policyholders that have very small credit transactions where the cost to process certificate detail is prohibitive. The companies were asked to report data for their single premium business only where detail certificate or policy exposure information is available.

Twenty nine companies contributed data to the study. The Committee ended up using the data from twenty seven of the companies. The list of the twenty nine contributors is shown in Appendix 3.

Credit life insurance is generally written with limited underwriting (a few general health questions) or no underwriting using the states' prima facie rates. Prima facie rates in each of the states are the same by gender and issue age. We requested companies report their data by gender, by underwritten versus not underwritten and by type of lender, if available. We found many companies did not record this information in their system since it is not required for determining the credit life premium. The Committee therefore chose not to study differences in mortality by gender, underwriting status or type of lender.

Many companies assign a default age when applications are submitted without an age or date of birth rather than reject the application. The companies will select and assign a default age that on average will result in a reserve value that will match the average reserve value for their business. This age typically is 3 to 5 years higher than the arithmetic age. Most companies do not store an indicator in their in force file when an average age is assigned. For those companies that used a default age there was a noticeable spike in the exposure at the default age. Some companies will vary the default age for the different markets it writes in such as auto dealer, bank, credit union, retail, finance company, etc and as a result there were two or more noticeable spikes in their exposure.

Different techniques were tried to eliminate the spikes in exposure. One method was to compare the spike in exposure by company to the surrounding ages and spread the apparent excess to all ages based on their weighted exposure. In the end the Committee chose to smooth out the exposure data by company using the Karup King formula. The sum of the smoothed exposures was set equal to the sum of the raw data exposures and any underage or excess was spread by the weighted smoothed exposures. An example of the process used to smooth the exposure is shown in Appendix 4.

III. Results

Mortality rates were computed by both amount and number. The results are shown in the two tables below by five year age brackets for all companies combined. Also shown are the expected mortality rates using 100% of the new 200X Commissioner's Standard Ordinary Table male ultimate mortality rates.

Table 1 by Amount

By Amount				Expected	Expected	Actual to
Age	Grouped Exposures	Grouped Claims	Mortality Rate	Mortality Rate	Claims	Expected
22	9,298,325,546	8,679,622	0.933	0.98	9,075,267	95.64%
27	12,140,464,609	8,590,969	0.708	1.14	13,869,316	61.94%
32	13,698,973,550	11,993,194	0.875	1.15	15,788,126	75.96%
37	16,863,356,112	18,735,445	1.111	1.40	23,689,304	79.09%
42	19,912,780,285	35,453,989	1.780	2.09	41,575,038	85.28%
47	20,244,601,986	51,416,668	2.540	3.22	65,310,940	78.73%
52	18,230,572,297	72,361,215	3.969	4.78	87,351,612	82.84%
57	14,771,537,170	91,693,109	6.207	7.96	117,887,105	77.78%
62	10,456,908,824	104,136,763	9.959	13.10	137,625,565	75.67%
67	3,820,622,692	51,536,277	13.489	21.06	81,012,684	63.62%
72	319,939,790	4,662,188	14.572	33.17	10,691,014	43.61%
Total	139,758,082,861	459,259,438	3.286	4.321	603,875,972	76.05%

Table 2 by Number

By Number				Expected	Expected	Actual to
Age	Grouped Exposures	Grouped Claims	Mortality Rate	Mortality Rate	Claims	Expected
22	1,653,980	1,649	0.997	0.976	1,614	102.13%
27	2,021,469	1,557	0.770	1.142	2,309	67.41%
32	2,115,176	2,043	0.966	1.152	2,438	83.80%
37	2,411,558	2,953	1.225	1.404	3,388	87.18%
42	2,631,072	4,670	1.775	2.086	5,493	85.01%
47	2,511,983	6,836	2.722	3.222	8,105	84.35%
52	2,117,072	8,930	4.218	4.782	10,145	88.02%
57	1,660,903	11,334	6.824	7.956	13,259	85.48%
62	1,245,886	13,563	10.886	13.096	16,405	82.68%
67	560,708	7,389	13.178	21.062	11,887	62.16%
72	56,965	704	12.365	33.170	1,901	37.05%
Total	18,986,773	61,629	3.246	4.053	76,945	80.09%

The overall actual to expected mortality ratio based on number is higher than the mortality ratio based on amount. One might expect anti selection by size which is not apparent in the above tables. Only in three of the age groups is the ratio higher by amount, ages 40 to 44, 65 to 69 and 70 - 74. Two possible explanations for this might be;

1. The average size of insurance in force is $7,453. This is not large enough to be a target for anti selection. Many states cap the amount of insurance that can be written as credit life insurance thus eliminating or diminishing anti selection by size.
2. Much of the business is underwritten using short form applications with limited health questions. Some of the business is guaranteed issue. Generally an insurance company will allow guarantee issue only for clients that make small size loans. e. g. Tennessee's statute does not allow underwriting if the amount is less than $25,000. The level of underwriting employed by the credit insurance industry seems to eliminate the anti selection by size.

IV. Reasonableness Test

A test of reasonableness was run. All companies writing credit insurance are required to report their experience by state on the Credit Insurance Experience Exhibit (CIEE) that is a supplement to the annual statement. In 1999 there were 217 companies that reported their single premium credit life data and of these 157 companies were actively writing new single premium business. The credit life experience is split between single premium business and monthly outstanding balance business. The actual earned premium is reported on the CIEE and what the earned premium would be if all business were written in each state at that state's prima facie rates then in force. By knowing the states' prima facie rates in force in 1998 and in 1999, the Committee was able to compute the credit life single premium insurance exposure by amount for each year separately during the two year period. This was done for all companies writing credit life business in the USA, whether the company was a contributor or not. The result is:

Grouped Exposure	Grouped Claims	Mortality Rate
360,063,308,108	1,095,119,700	3.041

Comparing this to the table 1 data above shows the study covered 39% of the single premium business in force in 1998 and 1999. Also, the mortality rate from the study is consistent with the industry's earned premium / incurred loss experience for the same period.