

Credit Disability Study - An Update of the 1997 CCIA Study

The Credit Insurance Experience Committee of The Society of Actuaries July, 2005

In 1998, the Actuarial Committee of the Consumer Credit Insurance Association (CCIA) decided the industry needed a credit disability morbidity table, one that could be used for valuation and pricing.

The existing tables at the time were the NAIC's (National Association of Insurance Commissioners) 1968 and the 1974 credit disability tables. Both tables were created with all ages and both genders combined. A sub committee consisting of Robert Butler, chairman, Christopher Hause, Steve Ostlund and Craig Squier was formed to develop the new table.

The end result of the effort was a recommendation to the NAIC to adopt a modified and aggregated version the 1985 CIDA table as a valuation standard for single premium credit disability active life reserves. The NAIC adopted changes to SSAP 59, the Model A&H Valuation Regulation and Appendix A-010 to the Accounting Practices and Procedures Manual in order to implement the new standard.

The use of the modified 1985 CIDA table as a tool for pricing of basic, full benefit, and prima facie equivalency demonstrations of alternative disability benefits has taken hold on an ad hoc basis only.

Reasons for an Updated Study

Some states have existing specific laws and regulations pertaining to credit disability that generally require a gross unearned premium reserve. As states begin to adopt the new morbidity-based standard via law or regulation, concern has been expressed that the table remains adequate.

In addition, the enactment in 2001 of the Home Owner's Equity Protection Act (HOEPA) has curtailed the writing of single premium credit disability insurance on loans secured by real estate. While it is too early to determine the effect on claim costs, the Committee took advantage of the opportunity to examine the shift in the distribution of sales by term between contracts issued in 2000 and contracts issued in 2003.

How the Study was Carried Out

The basic approach to the study was the same as in the 1997 study. An actual-to-expected ratio was determined as follows.

The "actual" claim cost for each plan is derived by calculating a loss cost for each state based on the prima facie loss ratio, for each year 1997-2002 during the study period. The "expected" claim cost is based on the 1985 CIDA table, weighted by age and term for each plan. The age and term weightings came from the data submitted by the participating companies. We used the

company data from calendar year 2000, because this is the midpoint of the “actual” data collected.

The 1985 CIDA table is separated by gender, so a gender mix was sought. However, since the gender mix has been demonstrated to have limited affect on the A-to-E ratio, we used the gender mix from the 1998 study. Also, since the 1985 CIDA is separated by four occupation classes, as in the 1997 study, the proportions were determined using Department of Labor statistics.

Gathering the Plan/Age/Term Company Data

In 2004, the CCIA and the Credit Insurance Experience Committee (CIEC) asked companies to submit their new credit disability single premium business written in 2000 and 2003 gross of any refunds. The data was collected for each of the elimination periods, original term of coverage in months, age last birthday at issue (or date of birth and issue date) and, where available, gender.

Collected premiums and original amount of insurance (insured monthly indemnity times the number of months insured) were provided. Business that is summary processed was to be excluded. Copies of the survey form and instructions are provided in Appendix A.

Companies representing approximately one-half of the single premium credit disability market contributed their data. The names of companies contributing data is in Appendix B. Many companies have a practice to use a default age when the certificate is received without age. The data submitted for each company was reviewed by term, age and plan. Where the data was heaped at a particular age, the data was smoothed out by comparing to the exposure at surrounding ages. The data was then grouped by the original terms in months (6, 12, 18, 24, 30, 36, 48, 60, 72, 84, 96, 108, and 120). The resulting distribution of 2000 new business is given in Appendix C. A description of the process used to collect and compile data is contained in Appendix D.

The following chart shows the average weighted age and term by plan from the survey for issue year 2000.

Plan	Average Term in Months	Average Age
7-day retroactive	49.9	40.7
14-day retroactive	55.6	40.7
14-day elimination	54.3	41.1
30-day retroactive	68.7	42.3
30-day elimination	55.1	40.2
Unknown	43.6	36.5
Total	55.4	40.7

As in the 1997 study, there does not appear to be a significant difference in the age distribution by plan, so again, only the total age distribution was used throughout the study. There are significant differences in the distribution of original term in months by plan so each plan's unique distribution by term was used throughout the study.

Gathering the “Actual” Loss Costs from the Credit Insurance Experience Exhibit

Each year all companies writing credit insurance complete the Credit Insurance Experience Exhibit as part of their annual statement filing. This exhibit is prepared for each state's own experience. The data is provided for credit life, disability, unemployment and property. The experience is also separated between single premium and monthly business. The credit disability business experience is further split into six elimination periods; 7-day retroactive, 14-day retroactive, 14-day elimination, 30-day retroactive, 30-day elimination and all other. Earned premiums and incurred losses are reported. Actual earned premiums are reported as well as what the earned premiums for the state would be if all business were written at the state's prima facie rates in force at the end of the year. The data for all states is submitted on diskettes to the NAIC.

The single premium data for years 1997 through 2002 was selected for development of the actual loss costs. The primary purpose of the study is the validation of the use of the 1985 CIDA as a valuation table for single premium plans. So, the experience on monthly business was ignored. Prima facie rates in force at each year end by state, plan and for the original term of loans in months (6, 12, 18, 24, 30, 36, 48, 60, 72, 84, 96, 108, and 120) was gathered and recorded.

Most states' prima facie rates allow a company to exclude pre existing condition during the first 6 months of coverage if the condition resulted in treatment or medical advice during the 6 months prior to the effective date of coverage (6/6 pre existing condition exclusion). A few states also allow the coverage to be written at higher rates if there is no exclusion of pre-existing conditions. Where this alternative exists the rates for the 6/6 pre-existing exclusion coverage were selected. It is assumed that the rate differential for the two forms of pre-existing coverages is appropriate. The study therefore represents the net single premiums for credit disability insurance written with a 6/6 pre existing exclusion.

Weighted single premium rates per \$100 of initial insured indebtedness were determined for the USA and Puerto Rico combined for each of the 6 experience years in the study. This was done separately for each of the 5 elimination periods and 13 original terms in months. The total earned premium at prima facie rates for each plan by state was used for the weighting.

Concern has been expressed in the past that not all companies properly adjust their actual earned premium to what the earned premium would be if prima facie rates were charged. This has been seen on the credit life business where rate changes have been frequent in the past years. For credit disability the prima facie rates have been very stable as can be seen. This is not considered a significant source of error in this or the 1997 study. The following summarizes the experience for the 5 plans. Shown is the weighted prima facie rate for all terms combined and the implied weighted claim cost. The distribution of the companies' 2000 new business by term within plan was used to get the weighted single rate.

7-Day Retroactive

Year	Earned Premium @ Prima Facie	Incurred Claims	Loss Ratio	Per \$100 Of Initial Insured Indebtedness	
				Weighted Rate	Implied Claim Cost
1997	227,498,307	82,654,841	36.3%	4.94	1.80
1998	228,570,725	76,601,484	33.5%	4.97	1.67

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1999	224,042,915	83,832,427	37.4%	5.00	1.87
2000	214,676,751	89,554,097	41.7%	5.10	2.13
2001	217,067,384	89,524,952	41.2%	4.99	2.06
<u>2002</u>	<u>209,391,737</u>	<u>85,462,215</u>	<u>40.8%</u>	<u>4.98</u>	<u>2.03</u>
Total	1,321,247,819	507,630,016	38.4%	5.00	1.92

14-Day Retroactive

Year	Earned Premium @ Prima Facie	Incurred Claims	Loss Ratio	Per \$100 Of Initial Insured Indebtedness	
				Weighted Rate	Implied Claim Cost
1997	1,027,271,259	484,911,567	47.2%	4.28	2.02
1998	966,903,939	431,905,534	44.7%	4.29	1.91
1999	1,022,135,677	430,937,404	42.2%	4.20	1.77
2000	926,729,928	446,292,262	48.2%	4.09	1.97
2001	959,883,311	488,886,415	50.9%	4.03	2.05
<u>2002</u>	<u>888,390,006</u>	<u>442,033,128</u>	<u>49.8%</u>	<u>3.95</u>	<u>1.97</u>
Total	5,791,314,120	2,724,966,310	47.1%	4.14	1.95

14-Day Elimination

Year	Earned Premium @ Prima Facie	Incurred Claims	Loss Ratio	Per \$100 Of Initial Insured Indebtedness	
				Weighted Rate	Implied Claim Cost
1997	31,769,900	18,157,468	57.2%	4.05	2.32
1998	29,338,368	19,392,187	66.1%	4.07	2.69
1999	34,143,810	20,359,441	59.6%	4.15	2.48
2000	30,044,469	20,794,537	69.2%	4.07	2.81
2001	35,596,605	23,936,754	67.2%	4.13	2.78
<u>2002</u>	<u>33,702,892</u>	<u>25,268,364</u>	<u>75.0%</u>	<u>3.57</u>	<u>2.67</u>
Total	194,596,044	127,908,751	65.7%	4.01	2.63

30-Day Retroactive

Year	Earned Premium @ Prima Facie	Incurred Claims	Loss Ratio	Per \$100 Of Initial Insured Indebtedness	
				Weighted Rate	Implied Claim Cost
1997	93,585,628	56,535,999	60.4%	4.20	2.54
1998	97,109,932	52,380,827	53.9%	4.27	2.30
1999	95,360,950	52,275,264	54.8%	4.20	2.30
2000	88,202,009	52,832,123	59.9%	4.16	2.49
2001	81,855,294	53,418,457	65.3%	4.11	2.68
<u>2002</u>	<u>69,308,986</u>	<u>43,254,939</u>	<u>62.4%</u>	<u>4.05</u>	<u>2.53</u>
Total	525,422,799	310,697,609	59.1%	4.17	2.47

30-Day Elimination

Year	Earned Premium @ Prima Facie	Incurred Claims	Loss Ratio	<u>Per \$100 Of Initial Insured Indebtedness</u>	
				Weighted Rate	Implied Claim Cost
1997	56,313,190	46,465,023	82.5%	2.86	2.36
1998	61,000,655	42,855,661	70.3%	2.80	1.97
1999	59,291,607	36,996,844	62.4%	2.75	1.71
2000	57,438,026	35,930,267	62.6%	2.74	1.72
2001	56,305,672	40,123,532	71.3%	2.72	1.94
2002	50,862,876	32,340,249	63.6%	2.68	1.71
Total	341,212,026	234,711,576	68.8%	2.76	1.90

As in the 1997 study, there were anomalies in the actual experience. It was decided in the previous study not to pursue analyzing these anomalies since this is the nature of the business. For additional information on the explanation for these anomalies, refer to the write up for that study. However, the fact that the 30-day plans exhibit a higher than expected claim level prompted the NAIC to adopt the use of the 14-day table for use in valuing 30-day plans. While some of this is due to the higher average term (see the table above), it cannot be entirely explained by term alone.

Derivation of the “Expected” Claim Costs

The 1985 CIDA has separate tables (incidence and termination rates) for males and females and four occupation groups. There are separate tables for 7-day elimination, 14-day elimination, 30-day elimination and 90+ elimination (plus 0 day accident). Three disability tables were constructed for the 7-day elimination, 14-day elimination and 30-day elimination periods. The published data was used to create these tables. Disabled lives by claim duration were computed for ages 22, 27, 32, 37, 42, 47, 52, 57, 62 and 67. The 5-point LaGrange formula that was recommended in the 1985 Transactions of the Society of Actuaries was used to compute the disabled lives for these ages. The 7-day elimination table was used to compute rates for both 7-day elimination and 7-day retroactive period plans. Likewise the 14-day elimination table was used for 14-day elimination and 14-day retroactive period plans and likewise for the 30-day elimination table.

For each table there are 8 sub tables; one each for the 4 occupation classes and 2 genders. A few of the companies captured gender in their databases. Most companies did not. For those that reported gender in 1997, 65% of their new business was males by count and 69% were males by exposure. Many of those that do not capture gender in their databases did run samplings of their new business by name to determine gender. The results of these samplings were very similar to the other data. It was decided in building the aggregate 1985 table to assume the in force credit disability business is 70% male.

No company recorded occupation in the data provided. This data is not routinely kept by the credit insurance industry. The distribution of the USA work force by occupation was determined from the July 1998 Bureau of Labor Statistics published by the U.S. Department of Labor. The distribution is as follows:

Occupation	Male	Female
Class 1	26.8%	30.7%
Class 2	19.5%	40.8%
Class 3	29.1%	19.6%
Class 4	24.7%	8.8%

The data has been updated to 2002. That table appears below.

Occupation	Male	Female
Class 1	32.4%	37.1%
Class 2	17.6%	35.5%
Class 3	22.5%	24.3%
Class 4	27.6%	3.1%

It is expected that the credit insurance distribution by occupation mirrors the work force. It has been argued that the lower occupation risks are more likely to purchase credit insurance. It can also be argued that the better occupation risks take out larger loans and that when they do purchase credit insurance the larger loan offsets this bias.

For each elimination period there are 8 tables containing number of disabled lives by age at disablement and duration of claim through 20 years. Using each distribution by occupation above and assuming 70% male a composite table was produced. From this composite table net single premiums were computed for each of the 5 elimination period plans of insurance. Net single premiums were computed for each age at disablement. Under this calculation the resulting net single premiums assume the insured remains the same age throughout the period of coverage. From these net single premiums, a second set of net single premiums was created where the insured ages throughout the period of coverage. The cost for each yearly advance in age was linearly interpolated between the central ages in each 5 year age bracket.

Comparison to the Blended 1985 CIDA

Using the net single premiums computed above, a net single premium was determined by weighting all ages and all terms using the distribution from the survey. We then compared this to the weighted claim cost of the industry experience for the calendar years 1997 through 2002 combined.

Comparison Based on 2002 Occupation Class Distribution

Plan	Prima Facie Premium Distribution	1985 CIDA Net Single Premiums Assuming		1997 - 2002 Experience Claim Cost	Actual to Expected w/Aging
		No Aging	Aging		
7-day retroactive	16.2%	2.83	2.95	1.92	65.1%
14-day retroactive	70.9%	2.57	2.73	1.95	71.4%
14-day elimination	2.4%	2.25	2.38	2.63	110.7%
30-day retroactive	6.4%	1.99	2.19	2.47	112.7%
30-day elimination	4.2%	1.47	1.58	1.90	120.3%
Total	100.0%	2.52	2.67	1.99	74.5%

Comparison Based on 1998 Occupation Class Distribution

Plan	Prima Facie Premium Distribution	1985 CIDA Net Single Premiums Assuming		1997 - 2002 Experience Claim Cost	Actual to Expected w/Aging
		No Aging	Aging		
7-day retroactive	16.2%	2.89	3.02	1.92	63.6%
14-day retroactive	70.9%	2.64	2.80	1.95	69.6%
14-day elimination	2.4%	2.31	2.45	2.63	107.5%
30-day retroactive	6.4%	2.06	2.27	2.47	108.7%
30-day elimination	4.2%	1.52	1.63	1.90	116.6%
Total	100.0%	2.59	2.74	1.99	74.0%

Adequacy of the Valuation Table

In order to confirm the appropriateness of the use of the 1985 CIDA Table as modified "Valuation Table" (112% of incidence rates and using the 14-day table for 30-day elimination and retroactive plans), we compare the table with aging to this new valuation basis.

Comparison Based on 2002 Occupation Class Distribution

Plan	Prima Facie Premium Distribution	Val. Table Net Single Premiums Assuming		1997 - 2002 Experience Claim Cost	Actual to Expected w/Aging
		No Aging	Aging		
7-day retroactive	16.2%	3.17	3.30	1.92	58.1%
14-day retroactive	70.9%	2.88	3.06	1.95	63.7%
14-day elimination	2.4%	2.52	2.67	2.63	98.8%
30-day retroactive	6.4%	3.02	3.29	2.47	74.9%
30-day elimination	4.2%	2.18	2.33	1.90	81.6%
Total	100.0%	2.90	3.07	1.99	64.8%

Comparison Based on 1998 Occupation Class Distribution

Plan	Prima Facie Premium Distribution	Val. Table Net Single Premiums Assuming		1997 - 2002 Experience Claim Cost	Actual to Expected w/Aging
		No Aging	Aging		
7-day retroactive	16.2%	3.24	3.38	1.92	56.8%
14-day retroactive	70.9%	2.96	3.14	1.95	62.2%
14-day elimination	2.4%	2.59	2.74	2.63	96.0%
30-day retroactive	6.4%	3.11	3.38	2.47	73.0%
30-day elimination	4.2%	2.24	2.39	1.90	79.6%
Total	100.0%	2.97	3.15	1.99	63.2%

The overall Actual to Expected ratios of 64.8% and 63.2% confirm the adequacy in aggregate of the current table, based on either occupation class distribution. The fact that each individual plan A/E ratio is less than 100% reinforces the adequacy by plan as well. The Committee recognizes that these A/E ratios suggest that the valuation standard, while generally generating reserves less than unearned premiums, still contains a significant amount of redundancy. This will be monitored in future studies.

Comparison of term distribution – 1997 to 2000 to 2003

<u>Term in Months</u>	<u>1997 Distribution</u>	<u>2000 Distribution</u>	<u>2003 Distribution</u>
6	0.3	0.2	0.3
12	1.9	1.2	1.5
18	2.4	1.3	1.6
24	8.3	4.4	4.9
30	3.3	1.7	2.0
36	23.5	16.8	15.0
48	19.2	17.8	16.9
60	31.9	42.2	44.5
72	3.3	5.0	10.5
84	1.7	3.5	1.1
96	0.2	0.4	0.2
108	0.1	0.1	0.1
120	3.8	5.4	1.3
Total	100.0	100.0	100.0
Average	49.23	55.40	52.83

From the table above, two things are noteworthy. First, the 72-month term is showing steady increases in the percentage of Initial Insured Indebtedness, at the apparent expense of the 36-month term. This is suggested by the lengthening term of automobile loans. Secondly, the 120-month percentage increased from 1997 to 2000, and decreased sharply with the 2003 data, presumably as a result of HOEPA and industry reaction to this and other restrictions on the sale of single premium credit disability on Home Equity secured loans.

Average Age – 1997 to 2000 to 2003

The overall average age continues to increase. In 1997, the average age was 39.14. For the 2000 data the average grew to 40.73, and for the 2003 data the average was 41.48.

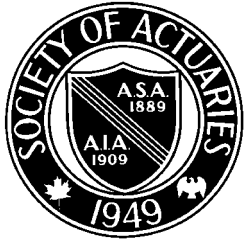
The Committee would like to thank the contributing companies, the Society of Actuaries and the CCIA for their data and support.

Credit Insurance Experience Committee, 2004

Christopher H. Hause, *Chairperson*

Jeanne Meeker Daharsh
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Appendix A

SOCIETY OF ACTUARIES

475 N. MARTINGALE RD., SUITE 800, SCHAUMBURG, IL 60173-2226

847/706-3500

Date: August 11, 2004

To: All Insurers Issuing Single Premium Credit Disability Insurance

From: Christopher H. Hause, Chair
Credit Insurance Experience Committee

CC: John A. Luff
Experience Studies Actuary, SoA

RE: Credit Disability Study

In 1997, the Consumer Credit Insurance Association initiated a credit disability study. The eventual result of that study was NAIC adoption of a valuation standard for credit disability based on the 1985 CIDA table. The CIEC is conducting an update to the 1997 study to evaluate trends and continued adequacy of the 1997 recommendation. I am asking for your participation by submitting information on Single Premium Credit Disability Insurance issued during 2000 and 2003. I have attached the specifications for the data call. Please note that we need an extract from your certificate file for every certificate that was issued to be effective in 2000 and 2003. Contracts issued but subsequently cancelled are to be included.

Hause Actuarial Solutions has contracted to perform the data collection and can be contacted if you have any questions. They have agreed that this data will only be used for the purpose of this study, and that the identity of the company will not be associated with its experience after it has been collected, preserving confidentiality. If the agreement between Hause Actuarial Solutions and the Society of Actuaries does not meet your needs, you may either send your experience to John Luff at the Society of Actuaries, Bill Burfeind at CCIA or create a direct confidentiality agreement with Hause Actuarial Solutions.

In order to be included in the study the data must be received by October 31, 2004. If you are unable to meet the October 31 deadline, I ask that you consider developing the necessary programs to participate next year. If it is more convenient to provide the data in a different format, please feel free to submit it in your format, and we will convert it. The fields that are absolutely required in order for the data to be used are indicated with an asterisk.

If you are not the appropriate person to receive this data call, please forward it to the responsible party. I strongly encourage that you participate in this study to facilitate wide-spread adoption of a valuation standard that truly represents all companies in the Credit Insurance Industry. On behalf of the Credit Insurance Experience Committee, I thank you in advance for your participation.

Appendix A

Form B

Record Layout of Disk File (ASCII) Containing Input Data

<u>Description</u>	<u>Field Position</u>	<u>Comments</u>
Company Name or ID (if confidential)*	1 to 20	
Age Last Birthday Low*	21 to 23	
Age Last Birthday High	24 to 26	Can be same as low
Original Term in Months*	27 to 29	Insert 000's if not available
Elimination Period:*	30	
1 = 7 retro		
2 = 14 retro		
3 = 14 elim		
4 = 30 retro		
5 = 30 elim		
6 = other		
0 = not available		
Sex:	31	
1 = male		
2 = female		
0 = not available		
Original Single Premium	32 to 43	dollars and cents
Original Amount of Insurance Issued (Note: this equals monthly indemnity times term in months)	44 to 50	dollars only
Monthly Indemnity*	51 to 57	dollars and cents
Source of Business	58	
1 = Auto		
2 = Financial Institution		
3 = Finance Company		
4 = Other		
0 = Not Available		
Underwritten	59	
1 = yes		
2 = no		
0 = Not available		
Joint/Single	60	
1 = Single		
2 = Joint		
0 = Not Available		
Pre-ex Indicator	61	
1 = Pre-ex applies		
2 = No Pre-ex		
0 = Not available		
Critical Period Indicator	62	
1 = Full Benefit		
2 = Critical Period		
0 = Not Available		
Real Estate Backed Loan	63	
1 = Yes		
2 = No		

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0 = Not Available

Year of Issue*

00=2000, 03=2003

64 to 65

Appendix B

Contributing Companies

American Modern Life Insurance Company
CUNA Mutual Insurance Society
Madison National Life Insurance Company
Minnesota Life Insurance Company
Plateau Insurance Company
Resource Life Insurance Company
Universal Underwriters Life Insurance Company
Old United Life Insurance Company
American National Insurance Company
Central States Health & Life Company of Omaha
American General Assurance Company
Union Security Life Insurance Company
Caribbean American Life Assurance Company
First Fortis Life Insurance Company
American Bankers Life Assurance Company
First Central National Life Insurance Company
Household Life Insurance Company
American Health and Life Insurance Company

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

I. 7 Day Retroactive Elimination Period

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	843	707	637	700	601	475	359	203	99	15	4,639	0.1%
12	8,436	7,781	8,057	8,373	7,569	6,073	4,705	2,722	1,449	424	55,589	1.4%
18	9,980	10,314	10,745	11,417	10,163	8,595	5,985	3,468	1,514	218	72,399	1.9%
24	28,217	29,087	30,605	32,968	31,384	26,134	19,946	11,498	5,780	812	216,431	5.6%
30	11,200	11,224	13,000	13,343	12,624	10,100	7,387	4,595	2,184	203	85,860	2.2%
36	67,809	79,517	96,162	110,466	113,916	99,165	81,433	50,740	24,970	3,157	727,335	19.0%
48	61,287	85,645	108,345	130,303	137,136	125,969	104,208	64,048	31,504	3,742	852,187	22.2%
60	109,550	145,507	186,141	236,253	256,431	240,221	202,082	127,981	57,981	8,344	1,570,491	41.0%
72	11,591	12,646	15,180	18,827	21,291	19,527	16,955	12,678	4,463	717	133,875	3.5%
84	2,958	7,759	12,564	16,560	15,849	15,186	9,700	4,525	1,422	156	86,679	2.3%
96	133	209	395	459	667	620	637	608	211	28	3,967	0.1%
108	48	36	62	50	32	0	206	188	36	0	658	0.0%
120	447	1,289	1,778	2,477	3,510	5,657	5,160	3,717	836	55	24,926	0.6%
Total	312,499	391,721	483,671	582,196	611,173	557,722	458,763	286,971	132,449	17,871	3,835,036	100.0%
Distribution	8.1%	10.2%	12.6%	15.2%	15.9%	14.5%	12.0%	7.5%	3.5%	0.5%	100.0%	

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

II. 14 Day Retroactive Elimination Period

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	8,583	4,582	4,479	7,243	4,485	7,993	2,966	2,011	1,103	487	43,932	0.2%
12	37,534	29,447	27,079	30,379	34,751	24,469	19,738	12,258	7,678	1,762	225,095	1.1%
18	49,739	31,303	29,222	32,643	29,776	26,012	18,864	11,852	7,014	1,348	237,773	1.2%
24	139,226	117,535	117,877	127,719	123,779	103,824	81,273	52,567	29,209	4,209	897,218	4.4%
30	50,183	48,033	47,803	50,698	50,450	41,240	31,820	19,701	12,011	1,607	353,546	1.7%
36	412,697	422,409	458,072	500,307	517,031	453,428	369,479	238,071	122,161	15,918	3,509,573	17.3%
48	375,020	402,270	457,350	518,079	544,038	475,577	395,322	249,623	123,878	13,852	3,555,009	17.5%
60	683,338	799,713	995,980	1,210,042	1,353,530	1,269,768	1,086,369	724,922	325,698	37,872	8,487,232	41.9%
72	86,769	100,282	117,314	144,824	159,414	147,952	128,215	91,923	37,187	5,476	1,019,356	5.0%
84	16,001	43,856	72,146	93,403	113,784	99,978	82,958	55,008	19,969	1,971	599,074	3.0%
96	1,905	4,915	12,495	19,383	15,862	14,444	13,434	21,059	6,577	1,036	111,110	0.5%
108	201	1,333	1,680	1,936	3,018	3,409	2,714	14,972	3,723	854	33,840	0.2%
120	19,447	53,556	103,230	161,940	221,624	236,589	211,520	138,231	47,661	4,285	1,198,083	5.9%
Total	1,880,643	2,059,234	2,444,727	2,898,596	3,171,542	2,904,683	2,444,672	1,632,198	743,869	90,677	20,270,841	100.0%
Distribution	9.3%	10.2%	12.1%	14.3%	15.6%	14.3%	12.1%	8.1%	3.7%	0.4%	100.0%	

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

III. 14 Day Elimination Period

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	88	99	134	195	240	218	211	147	50	0	1,382	0.1%
12	774	878	1,182	1,578	1,914	1,806	1,400	891	424	26	10,873	1.0%
18	646	663	1,032	1,111	1,189	1,350	1,010	658	276	1	7,936	0.8%
24	3,314	4,026	4,427	5,137	5,297	4,459	3,498	2,426	901	14	33,499	3.2%
30	593	805	1,154	1,287	1,399	1,487	1,196	853	279	19	9,072	0.9%
36	13,771	16,653	20,804	21,381	21,375	19,783	15,521	8,779	3,951	132	142,150	13.6%
48	15,110	19,296	21,858	24,824	25,493	23,180	18,324	11,578	4,510	128	164,301	15.8%
60	33,361	52,386	77,553	98,222	101,493	97,892	82,900	52,056	22,650	380	618,893	59.4%
72	2,184	1,828	2,309	2,388	3,550	3,794	3,301	1,973	751	0	22,078	2.1%
84	222	195	287	910	1,014	1,509	1,006	687	100	0	5,930	0.6%
96	21	20	21	97	26	171	218	278	83	0	935	0.1%
108	8	34	0	35	77	179	228	96	0	0	657	0.1%
120	169	856	1,823	3,542	4,043	5,335	5,095	2,205	720	0	23,788	2.3%
Total	70,261	97,739	132,584	160,707	167,110	161,163	133,908	82,627	34,695	700	1,041,494	100.0%
Distribution	6.7%	9.4%	12.7%	15.4%	16.0%	15.5%	12.9%	7.9%	3.3%	0.1%	100.0%	

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

IV. 30 Day Retroactive Elimination Period

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	225	179	241	331	332	319	262	166	53	9	2,117	0.1%
12	1,219	1,243	1,656	1,958	2,169	2,110	1,801	1,058	561	46	13,821	0.9%
18	1,517	1,132	1,141	1,455	1,617	1,369	1,164	673	464	21	10,553	0.7%
24	5,192	4,437	5,376	6,689	7,123	6,808	5,318	3,484	1,567	173	46,167	3.1%
30	2,001	1,438	1,552	1,620	2,047	1,833	1,366	960	857	79	13,753	0.9%
36	16,339	14,612	18,436	22,706	24,271	24,094	18,222	12,759	5,392	555	157,386	10.7%
48	21,380	21,339	21,049	26,340	28,183	24,816	19,885	13,225	7,766	812	184,795	12.6%
60	29,463	37,187	51,145	65,686	74,464	72,828	62,401	41,028	17,076	1,684	452,962	30.8%
72	4,942	5,168	7,634	9,402	11,504	10,215	8,568	8,192	2,549	326	68,500	4.7%
84	4,089	15,969	27,418	38,093	48,185	53,741	47,329	28,780	7,566	1,233	272,403	18.5%
96	258	470	714	694	1,334	894	1,622	1,131	288	0	7,405	0.5%
108	21	47	226	239	270	52	425	270	223	0	1,773	0.1%
120	4,959	13,815	22,743	32,377	39,833	41,918	39,404	27,996	13,080	2,400	238,525	16.2%
Total	91,605	117,036	159,331	207,590	241,332	240,997	207,767	139,722	57,442	7,338	1,470,160	100.0%
Distribution	6.2%	8.0%	10.8%	14.1%	16.4%	16.4%	14.1%	9.5%	3.9%	0.5%	100.0%	

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

V. 30 Day Elimination Period

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	249	377	436	549	717	606	619	369	184	41	4,147	0.2%
12	1,675	1,951	2,761	3,614	4,239	4,383	3,771	2,446	1,184	79	26,103	1.5%
18	1,294	1,512	2,052	2,316	2,926	2,897	2,640	1,448	895	19	17,999	1.0%
24	6,445	6,376	7,272	9,379	10,161	9,728	8,109	5,556	2,889	103	66,018	3.8%
30	1,940	2,019	2,183	2,739	3,177	3,284	2,962	2,085	1,157	8	21,554	1.2%
36	23,597	23,994	25,962	29,321	33,727	33,208	28,515	18,076	8,453	200	225,053	12.9%
48	32,497	33,743	36,961	40,854	43,362	40,320	33,354	22,625	9,703	584	294,003	16.9%
60	85,933	96,084	107,268	116,528	124,150	113,731	96,996	63,743	22,083	1,505	828,021	47.6%
72	14,317	18,399	23,550	24,966	27,990	22,995	19,728	11,318	3,350	278	166,891	9.6%
84	2,204	3,957	5,500	6,319	7,368	6,699	5,815	4,169	1,311	0	43,342	2.5%
96	130	341	414	402	550	706	629	694	159	0	4,025	0.2%
108	0	53	12	146	186	127	130	231	43	0	928	0.1%
120	642	1,872	2,780	5,122	8,710	8,163	10,146	3,900	1,108	0	42,443	2.4%
Total	170,923	190,678	217,151	242,255	267,263	246,847	213,414	136,660	52,519	2,817	1,740,527	100.0%
Distribution	9.8%	11.0%	12.5%	13.9%	15.4%	14.2%	12.3%	7.9%	3.0%	0.2%	100.0%	

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

VI. Plan Is Unknown

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	932	76	61	29	20	35	26	14	12	2	1,207	1.0%
12	3,886	947	411	279	216	156	117	94	57	4	6,167	5.4%
18	17,506	3,812	1,332	637	348	243	183	117	70	8	24,256	21.1%
24	626	638	766	806	701	695	559	352	182	16	5,341	4.6%
30	117	186	189	306	293	299	245	173	109	6	1,923	1.7%
36	714	1,058	1,212	1,381	1,357	1,388	1,203	910	487	66	9,776	8.5%
48	646	821	860	1,324	1,593	1,760	1,484	811	505	41	9,845	8.6%
60	5,839	5,108	5,309	7,139	7,755	6,722	5,252	4,091	2,270	250	49,735	43.2%
72	519	487	682	748	996	1,006	613	419	145	82	5,697	5.0%
84	35	75	107	69	95	101	149	203	0	27	861	0.7%
96	0	0	24	0	67	0	47	0	0	31	169	0.1%
108	0	0	0	31	0	0	0	6	43	0	80	0.1%
120	0	0	0	0	0	0	0	0	0	0	0	0.0%
Total	30,820	13,208	10,953	12,749	13,441	12,405	9,878	7,190	3,880	533	115,057	100.0%
Distribution	26.8%	11.5%	9.5%	11.1%	11.7%	10.8%	8.6%	6.2%	3.4%	0.5%	100.0%	

Appendix C

Distribution Of Credit Disability Exposure By Issue Age, Term in Months and Plan Exposure Is Gross Insured Indebtedness Issued In 2000 (in '000)

VII. Grand Total Of All Plans Combined

<u>Term</u>	<u>Age 22</u>	<u>Age 27</u>	<u>Age 32</u>	<u>Age 37</u>	<u>Age 42</u>	<u>Age 47</u>	<u>Age 52</u>	<u>Age 57</u>	<u>Age 62</u>	<u>Age 67</u>	<u>Total</u>	<u>Distribution</u>
6	10,920	6,020	5,988	9,047	6,395	9,646	4,443	2,910	1,501	554	57,424	0.2%
12	53,524	42,247	41,146	46,181	50,858	38,997	31,532	19,469	11,353	2,341	337,648	1.2%
18	80,682	48,736	45,524	49,579	46,019	40,466	29,846	18,216	10,233	1,615	370,916	1.3%
24	183,020	162,099	166,323	182,698	178,445	151,648	118,703	75,883	40,528	5,327	1,264,674	4.4%
30	66,034	63,705	65,881	69,993	69,990	58,243	44,976	28,367	16,597	1,922	485,708	1.7%
36	534,927	558,243	620,648	685,562	711,677	631,066	514,373	329,335	165,414	20,028	4,771,273	16.8%
48	505,940	563,114	646,423	741,724	779,805	691,622	572,577	361,910	177,866	19,159	5,060,140	17.8%
60	947,484	1,135,985	1,423,396	1,733,870	1,917,823	1,801,162	1,536,000	1,013,821	447,758	50,035	12,007,334	42.2%
72	120,322	138,810	166,669	201,155	224,745	205,489	177,380	126,503	48,445	6,879	1,416,397	5.0%
84	25,509	71,811	118,022	155,354	186,295	177,214	146,957	93,372	30,368	3,387	1,008,289	3.5%
96	2,447	5,955	14,063	21,035	18,506	16,835	16,587	23,770	7,318	1,095	127,611	0.4%
108	278	1,503	1,980	2,437	3,583	3,767	3,703	15,763	4,068	854	37,936	0.1%
120	25,664	71,388	132,354	205,458	277,720	297,662	271,325	176,049	63,405	6,740	1,527,765	5.4%
Total	2,556,751	2,869,616	3,448,417	4,104,093	4,471,861	4,123,817	3,468,402	2,285,368	1,024,854	119,936	28,473,115	100.0%
Distribution	9.0%	10.1%	12.1%	14.4%	15.7%	14.5%	12.2%	8.0%	3.6%	0.4%	100.0%	

Appendix D

Credit Morbidity Data Collection and Manipulation Documentation

- I) Gather data from companies and import into an Access Database Table
- II) Table Structure/Field Names as follows:
 - a. CompanyName
 - b. AgeLastBirthday_Low – Use this age for data manipulation
 - c. AgeLastBirthday_High
 - d. OriginalTerm_InMonths
 - e. EliminationPeriod (This translates to the benefit type as follows)
 - i. 1 = 7 Retro
 - ii. 2 = 14 Retro
 - iii. 3 = 14 Elim
 - iv. 4 = 30 Retro
 - v. 5 = 30 Elim
 - vi. 6 = Other
 - vii. 0 = Not Available
 - f. Sex
 - i. 1 = Male
 - ii. 2 = Female
 - iii. 0 = Not Available
 - g. OriginalSinglePremium
 - h. OriginalAmountOfInsuranceIssued (This is the field used for calculations)
 - i. MonthlyIndemnity
 - j. SourceOfBusiness
 - i. 1 = Auto
 - ii. 2 = Financial Institution
 - iii. 3 = Finance Company
 - iv. 4 = Other
 - v. 0 = Not Available
 - k. Underwritten
 - i. 1 = Yes
 - ii. 2 = No
 - iii. 0 = Not Available
 - l. Joint_Or_Single
 - i. 1 = Single
 - ii. 2 = Joint
 - iii. 0 = Not Available
 - m. PreExIndicator
 - i. 1 = Pre-Existing applies
 - ii. 2 = No Pre-Existing
 - iii. 0 = Not Available
 - n. CriticalPeriodIndicator
 - i. 1 = Full Benefit
 - ii. 2 = Critical Period
 - iii. 0 = Not Available
- III) Use VB utility to graph detail by Benefit to visually identify age bumps by Benefit
 - a. Line Graph is utilized to graphically identify spikes.
 - b. Each line on graph indicates an Elimination Period (7R, 14R, etc.)
 - c. Total line sums all Elimination Periods
 - d. Age Bumps are defined as default ages. Unusual spikes indicate the use of a default age.
- IV) Smooth Bumps
 - a. For all Identified Bumps (example ages 34 and 45)
 - For Each Benefit Type (14R, 7R, 30R, 14E, etc.)
 - For Each Term (DB Field OriginalTermInMonths)
 - Find terms on either side of bump. In this example ages 33 and 35, and ages 44 and 46

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Average amounts from age 33 and 35 and assign to age 34. Average amounts from age 44 and 46 and assign to age 45)

Next

Next

Next

- b. NOTE - If either side of age to be “smoothed” is zero, no smoothing occurs.
- V) After data has been smoothed. Create separate tables for each Elimination Period
- VI) Compress Months Data into following categories
 - a. This is done by company, and by Elimination Period
 - b. DB Field -- Original Term In Months
 - i. 6 Month = Months 1 – 9
 - ii. 12 Months = Months 10 – 15
 - iii. 18 Months = Months 16 – 21
 - iv. 24 Months = Months 22 – 27
 - v. 30 Months = Months 28 – 33
 - vi. 36 Months = Months 34 – 42
 - vii. 48 Months = Months 43 – 54
 - viii. 60 Months = Months 55 – 66
 - ix. 72 Months = Months 67 – 78
 - x. 84 Months = Months 79 – 90
 - xi. 96 Months = Months 91 – 102
 - xii. 108 Months = Months 103 – 114
 - xiii. 120 Months = Months >= 115 – 126
 - xiv. Eliminate (or ignore) all terms >=127 Months
- VII) Compress Age Data into following categories
 - a. This is done by company, and by Elimination Period
 - b. DB Field -- AgeLastBirthday_Low
 - i. Eliminate (or ignore) all ages <=14
 - ii. Age 22 = Ages 15 – 24
 - iii. Age 27 = Ages 25 – 29
 - iv. Age 32 = Ages 30 – 34
 - v. Age 37 = Ages 35 – 39
 - vi. Age 42 = Ages 40 – 44
 - vii. Age 47 = Ages 45 – 49
 - viii. Age 52 = Ages 50 – 54
 - ix. Age 57 = Ages 55 – 59
 - x. Age 62 = Ages 60 – 64
 - xi. Age 67 = Ages 65 – 69
 - xii. Eliminate (or ignore) all ages >=70
- VIII) Combine totals of all the Companies data into a separate database containing totals tables for each elimination period. This combination process uses the “smooth” data, before age and benefit month data is compressed at the single company level.
 - a. 7 Day Retro Totals Table
 - b. 14 Day Retro Totals Table
 - c. 14 Day Elim Totals Table
 - d. 30 Day Retro Totals Table
 - e. 30 Day Elim Totals Table
 - f. Other Totals Table
 - g. Not Available Totals Table.
- IX) Compress Totals for all companies Months Data into following categories. This combination process uses the “smooth” data, before age and benefit month data is compressed at the single company level.
 - a. DB Field -- Original Term In Months
 - i. 6 Month = Months 1 – 9
 - ii. 12 Months = Months 10 – 15
 - iii. 18 Months = Months 16 – 21
 - iv. 24 Months = Months 22 – 27
 - v. 30 Months = Months 28 – 33
 - vi. 36 Months = Months 34 – 42
 - vii. 48 Months = Months 43 – 54

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- viii. 60 Months = Months 55 – 66
 - ix. 72 Months = Months 67 – 78
 - x. 84 Months = Months 79 – 90
 - xi. 96 Months = Months 91 – 102
 - xii. 108 Months = Months 103 – 114
 - xiii. 120 Months = Months \geq 115 – 126
 - xiv. Eliminate (or ignore) all terms \geq 127 Months
- X) Compress Totals for all companies Age Data into following categories
- a. DB Field -- AgeLastBirthday_Low
 - i. Eliminate (or ignore) all ages \leq 14
 - ii. Age 22 = Ages 15 – 24
 - iii. Age 27 = Ages 25 – 29
 - iv. Age 32 = Ages 30 – 34
 - v. Age 37 = Ages 35 – 39
 - vi. Age 42 = Ages 40 – 44
 - vii. Age 47 = Ages 45 – 49
 - viii. Age 52 = Ages 50 – 54
 - ix. Age 57 = Ages 55 – 59
 - x. Age 62 = Ages 60 – 64
 - xi. Age 67 = Ages 65 – 69
 - xii. Eliminate (or ignore) all ages \geq 70
- XI) Copy grid from cross tab query created in Access into Excel for utilization in the final study documents.