

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1995-96 REPORTS**

**REPORT OF THE ANNUITY EXPERIENCE COMMITTEE
GROUP ANNUITY MORTALITY**

ABSTRACT

This report presents the 1991 and 1992 calendar-year experience of retired individuals in the United States, who are covered under group pension contracts issued in the United States and Canada. Data for calendar-years 1987 through 1990 are also included to provide a comparison with 1991 and 1992 experience and to provide information on mortality trends over time.

A partial list of previous Society of Actuaries reports on group annuity mortality is shown below.

1981-82 calendar years: *TSA 1983 Reports*

1983-84 calendar years: *TSA 1984 Reports*

1985-86 calendar years: *TSA 1985-86-87 Reports*

1987-88 calendar years: *TSA 1988-89-90 Reports*

1989-90 calendar years: *TSA 1993-94 Reports*

The report includes the annuity experience under contracts providing insurance company guaranteed annuity benefits to ongoing pension plans and the experience of contracts covering closed groups of lives for which purchases are made by a single payment at issue (single premium closeout business). It also includes contracts that do not contain insurance company guarantees of future payments (e.g., certain types of immediate participation guarantee contracts, direct disbursed benefit payment arrangements).

The total data reported in this study include all annuities in payment status or, in some cases, past normal retirement date but not currently receiving payments, that are to continue for the future lifetime of the annuitant. With respect to joint and survivor annuities, only the primary annuitant is counted in the exposure and death statistics.

1. CAVEATS

The data are not homogeneous by experience year. Of the 13 contributors listed at the end of this report, six submitted data (about 63% of the total data) for all years in the 1987-92 period. Furthermore, the aggregate study data include data that some companies submitted in a new format beginning in 1989.

Data collection is generally performed during the last six months in the year following the experience year. It is anticipated that some deaths will be reported subsequent to the gathering of data. If an insurance carrier submits data earlier in the collection period, that carrier will be expected to have a relatively higher level of late reported deaths, and vice-versa. This

study covering 1991 and 1992 calendar-year experience includes all data for these years submitted by the contributing companies through the end of calendar year 1995, including any late reported deaths. Due to the extended collections period, no adjustment has been made to the study results to reflect any further lag in late reported deaths.

Results in this report for years prior to 1991 have since been updated to reflect additional submissions of late reported deaths since the prior report. Future reports issued by the committee will incorporate any deaths reported for calendar years 1991 and 1992 subsequent to this report.

The data submitted were in sufficient detail to allow the committee to break the total experience into subsets based on a single parameter or a combination of parameters. The committee believes that the tables in this report produce data cells generally large enough to be credible (at least 50 deaths, for example), and in a format that facilitates data analysis. However, data at very low and very high attained ages may be too small to be credible.

2. FORMAT OF STUDY

The format is essentially the same as that of the Group Annuity Mortality Report of 1989 and 1990 calendar-year experience. The following index describes the tables and charts.

Table	Description
1-2	Summary of Exposures and Actual Deaths, by Lives and Annual Income, by Attained Age Group, for Males and Females, in Calendar Years (1) 1991 and (2) 1992.
3-8	Experience by Retirement Class: Prior to Normal Retirement Data (NRD), on or after NRD, No Stated NRD, and Past NRD with No Payment, by Lives and Annual Income, by Attained Age Group, in Calendar Years 1991 for (3) Males and (4) Females; 1992 for (5) Males and (6) Females; and 1991-92 for (7) Males and (8) Females.
9-10	Experience by Benefit Class: Life Annuity, Life Annuity with Period Certain, and Modified Cash Refund Annuity, by Lives and Annual Income, by Attained Age Group, in Calendar Years 1991-92 for (9) Males and (10) Females.
11-12	Experience by Survivor Status: Single Life and Joint Life Annuity, by Lives and Annual Income, by Attained Age Group, in Calendar Years 1991-92 for (11) Males and (12) Females.
13-14	Experience by Years Since Retirement: 0-1, 2-5, 6-10, and 11 or More Years, by Lives and Annual Income, by Attained Age Group, in Calendar Years 1991-92 for (13) Males and (14) Females.
15	Comparison of Experience for Males and Females, by Lives and Annual Income, by Attained Age Group, in Calendar Years 1991-92.

- 16–21 Experience by Guaranteed versus Nonguaranteed Status, by Lives and Annual Income, by Attained Age Group, in Calendar Years 1991 for (16) Males and (17) Females; 1992 for (18) Males and (19) Females; and 1991–92 for (20) Males and (21) Females.
- 22–25 Summary of Experience by Classification Group, in Calendar Years 1991 and 1992 for Males, by (22) Lives and (23) Annual Income; and for Females, by (24) Lives and (25) Annual Income.
- 26–29 Comparison of Experience by Classification Group, for 1991–92 Versus 1989–90 for Males, by (26) Lives and (27) Annual Income; and for Females, by (28) Lives and (29) Annual Income.
- 30–33 Summary of Mortality Improvement in Calendar Years 1987 to 1992, by Attained Age Group, for Males, by (30) Lives and (31) Annual Income; and for Females, by (32) Lives and (33) Annual Income.

Chart

- I–IV Histograms of A/E ratios from 1987 to 1992.

The mortality table used for expected deaths is the 1983 Group Annuity Mortality (GAM) Table without projection. Expected deaths for females are based on the female mortality tables (as opposed to the male mortality table with the standard six-year setback), except for Table 15, which is based on male mortality with no age setback. Attained age is defined as age nearest birthday as of January 1 of the calendar year of exposure.

Each of the tables displays exposure and/or an actual to expected (A/E) ratio. The amount of exposure provides a key to the credibility of the data in each classification age cell and for the classification group in total. Caution is advised in drawing any conclusions for experience at the very low or very high ages, because exposures are rather limited.

3. PRINCIPAL OBSERVATIONS

1991–92 Experience

Overall, A/E ratios for males are seen to be lower based on income rather than on number of lives (1.00 versus 1.08, respectively). This is true for nearly all five-year age groups. There is no significant difference in the corresponding female A/E ratios based on income and number of lives (1.15 versus 1.16, respectively). As concluded in the prior 1989–90 report, the results for males support the notion that higher-income individuals exhibit lower mortality (Tables 26–29).

A/E ratios for individuals who retire prior to NRD are generally higher than those who retire on or after NRD. This is true overall for males and

females, based on lives and income. This may reflect the tendency of unhealthy individuals to elect early retirement (Tables 3-8).

There are higher A/E ratios for males who elect life annuity or life annuity with period certain versus modified cash refund annuities. This was also true in the 1989-90 study, although (based on lives) the relative positions of life annuity and life annuity with period certain have reversed (Tables 9-10).

As in the 1989-90 study, single life annuity A/E ratios are higher than those for joint life annuities in almost all age groupings (Table 11-12).

It is difficult to reach any specific conclusions about mortality experience based on number of years since retirement. A/E ratios for all ages combined generally seem to show a decreasing pattern with increasing duration since retirement. Possible explanations may be the presence of disabled lives in the data at the younger ages and early durations, and the fact that some contributors may have coded the year of retirement to be the year of purchase for single premium closeout business, thus causing an understatement in the years since retirement (Tables 13-14).

As prior studies have indicated, females are living longer than males. The ratio of female to male mortality averages 0.62, based on lives, 0.64, based on income. The ratio of female to male mortality tends to increase as age increases (Table 15).

A/E ratios for males for contracts where future benefit payments are guaranteed by an insurer, which constitutes the majority of the study data, are lower than non-insurer-guaranteed contracts. The former includes single premium closeout business, which is usually nonparticipating, whereas the latter includes contracts with immediate participation guarantee feature (Tables 16-21).

A/E ratios decrease for increasing attained age groups for both males and females, except for very high attained age groups where exposures are limited. The A/E ratios by male income for attained age groups 70-74 through 85-89 are generally below 1.00 (Tables 22-25).

Comparison with 1989-90 Experience

For males and females, the number of lives exposed, as well as income exposed, were relatively stable from 1990 through 1992. As was reported in the 1989-90 report, there was a sharp increase in both the number of lives and income exposed from 1989 to 1990, for both males and females, due to the increased number of insurers submitting data.

As expected, the 1991-92 calendar-year data display overall mortality improvement over the 1989-90 calendar-year data for both males and females by lives and income. The following table summarizes the total results:

	1989-90 A/E Ratio	1991-92 A/E Ratio
Male Lives	1.11	1.08
Male Income	1.02	1.00
Female Lives	1.18	1.16
Female Income	1.17	1.15

Tables 26–29 provide further details of this comparison. Although most categories of retirement class, benefit class, survivor class, years since retirement and attained age do exhibit similar mortality improvement from the 1989–90 study to the 1991–92 study, you should note that this is not consistently true in all comparisons. For example, for male lives with No Stated NRD (34% of exposure) and female lives retiring on/after NRD (26% of exposure), the A/E ratios increased from 1.05 (1989–90) to 1.14 (1991–92).

1987–92 Experience Trends

Tables 30–33 contain summaries of the A/E ratios and annual mortality improvement factors for years 1987 through 1992.

For males, the average annual rate of improvement over this six-year period was 2.3%, as measured on a lives basis, and 2.1% as measured on an income basis.

For females, the average annual rate of improvement over this six-year period was 2.0%, as measured on a lives basis, and 2.4% as measured on an income basis.

Overall, both male and female mortality improved in almost every calendar year from 1987 through 1992, with minor exceptions under female lives for year 1988 and 1991 (Table 32) and a much larger mortality increase (higher A/E ratio) for female income from 1990 to 1991 (Table 33). All other comparisons followed the consistent trend of decreasing A/E ratios from 1987 through 1992.

4. CONTRIBUTING COMPANIES

The following thirteen companies have contributed experience for one or more years during the six-year period 1987 through 1992 inclusive.

- Aetna Life Insurance Company
- Canada Life
- Equitable Life Assurance Society
- John Hancock Mutual Life Insurance Company
- Lincoln National Life Insurance Company
- Metropolitan Life Insurance Company

Nationwide Life Insurance Company
Pacific Mutual Life Insurance Company
Penn Mutual Life Insurance Company
Principal Financial Group
Prudential Insurance Company of America
Sun Life Assurance Company of Canada
Travelers Insurance Company

5. ACKNOWLEDGMENTS

The Group Annuity Experience Committee recognizes and appreciates the significant time and effort expended by each of the contributing companies to collect, compile, and validate data submitted for publication in this report. In addition, we wish to express our thanks to John Avery, Keith Hoffman, and William McDonald at the Center of Medico - Actuarial Statistics for the tabulation, refinement, and production of the data for the group annuity tables and charts.

TABLE 1
SUMMARY OF EXPOSURES AND ACTUAL DEATHS FOR CALENDAR-YEAR 1991

Attained Age	Males		Females		Total	
	Exposure	Deaths	Exposure	Deaths	Exposure	Deaths
Lives						
Under 55	7,188.44	105.00	6,453.18	32.00	13,641.62	137.00
55-59	50,731.54	661.00	22,245.01	158.00	72,976.55	819.00
60-64	137,582.08	2,383.00	60,722.23	543.00	198,304.31	2,926.00
65-69	240,820.91	5,774.00	114,994.74	1,557.00	355,815.65	7,331.00
70-74	230,909.08	8,685.00	115,825.34	2,433.00	346,734.42	11,118.00
75-79	188,317.23	10,961.00	96,727.27	3,360.00	285,044.50	14,321.00
80-84	112,587.59	10,048.00	66,245.62	3,791.00	178,833.21	13,839.00
85-89	48,883.89	6,713.00	33,022.70	2,996.00	81,906.59	9,709.00
90-94	15,033.98	2,901.00	10,909.55	1,624.00	25,943.53	4,525.00
95 and over	3,152.39	864.00	2,582.36	549.00	5,734.75	1,413.00
Total	1,035,207.13	49,095.00	529,728.00	17,043.00	1,564,935.13	66,138.00
Income						
Under 55	\$ 50,627,925	\$ 333,602	\$ 16,217,832	\$ 88,605	\$ 66,845,757	\$ 422,207
55-59	258,966,966	3,159,294	59,149,078	362,153	318,116,044	3,521,447
60-64	815,191,082	10,814,864	170,276,740	1,390,456	985,467,822	12,205,320
65-69	1,175,305,181	23,653,938	283,398,595	3,560,256	1,458,703,776	27,214,194
70-74	894,579,563	29,192,993	229,815,480	4,564,349	1,124,395,043	33,757,342
75-79	556,074,164	30,242,620	150,660,662	5,114,238	706,734,826	35,356,858
80-84	276,102,342	23,156,129	88,246,324	5,175,510	364,348,666	28,331,639
85-89	102,324,575	13,140,389	38,798,143	3,543,340	141,122,718	16,683,729
90-94	29,192,951	5,592,803	11,670,671	1,640,670	40,863,622	7,233,473
95 and over	4,759,253	1,253,108	2,449,143	515,975	7,208,396	1,769,083
Total	\$4,163,124,002	\$140,539,740	\$1,050,682,668	\$25,955,552	\$5,213,806,670	\$166,495,292

TABLE 2
SUMMARY OF EXPOSURES AND ACTUAL DEATHS FOR CALENDAR-YEAR 1992

Attained Age	Males		Females		Total	
	Exposure	Deaths	Exposure	Deaths	Exposure	Deaths
Lives						
Under 55	8,910.54	160.00	6,245.18	34.00	15,155.72	194.00
55-59	47,790.52	689.00	20,925.44	156.00	68,715.96	845.00
60-64	122,033.83	2,143.00	55,616.52	466.00	177,650.35	2,609.00
65-69	216,153.60	5,124.00	107,068.38	1,429.00	323,221.98	6,553.00
70-74	212,415.17	7,526.00	111,099.67	2,260.00	323,514.84	9,786.00
75-79	173,061.53	9,440.00	91,863.84	3,044.00	264,925.37	12,484.00
80-84	106,152.91	9,177.00	63,719.81	3,349.00	169,872.72	12,526.00
85-89	47,214.93	6,190.00	33,278.32	2,984.00	80,493.25	9,174.00
90-94	15,059.41	2,859.00	11,268.86	1,634.00	26,328.27	4,493.00
95 and over	3,219.90	879.00	2,727.56	632.00	5,947.46	1,511.00
Total	952,012.34	44,187.00	503,813.58	15,988.00	1,455,825.92	60,175.00
Income						
Under 55	\$ 57,245,348	\$ 536,784	\$ 16,565,253	\$ 61,843	\$ 73,810,601	\$ 598,626
55-59	250,473,684	2,808,361	57,558,486	376,207	308,032,171	3,184,568
60-64	747,800,410	10,657,864	159,222,264	1,243,856	907,022,674	11,901,721
65-69	1,120,420,343	22,399,498	281,116,651	3,648,687	1,401,536,994	26,048,184
70-74	902,387,576	28,036,783	241,973,707	4,350,614	1,144,361,283	32,387,398
75-79	546,704,396	26,814,244	153,786,996	4,690,100	700,491,392	31,504,344
80-84	267,578,332	21,926,745	89,108,258	4,637,299	356,686,589	26,564,044
85-89	102,174,693	12,684,768	41,327,539	3,550,717	143,502,232	16,235,485
90-94	29,378,100	5,523,901	12,700,152	1,724,175	42,078,252	7,248,077
95 and over	5,196,543	1,705,914	2,726,895	612,557	7,923,438	2,318,471
Total	\$4,029,359,424	\$133,094,862	\$1,056,086,201	\$24,896,055	\$5,085,445,625	\$157,990,917

TABLE 3

EXPERIENCE BY RETIREMENT CLASS FOR CALENDAR-YEAR 1991
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Prior to NRD		On/After NRD		No Stated NRD		Past NRD with No Payment		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives										
Under 55	4,778.59	2.37	724.32	1.88	1,673.20	7.03	12.33	0.00	7,188.44	3.33
55-59	30,613.25	1.55	1,530.42	1.69	18,574.87	2.12	13.00	0.00	50,731.54	1.76
60-64	82,173.11	1.40	8,519.32	1.43	46,789.85	1.62	99.80	1.61	137,582.08	1.47
65-69	109,339.37	1.17	56,049.24	1.16	73,193.08	1.27	2,239.22	1.08	240,820.91	1.19
70-74	85,469.46	1.11	68,725.65	1.09	66,966.50	1.17	9,747.47	1.12	230,909.08	1.12
75-79	58,232.83	1.10	64,616.92	1.00	56,457.43	1.12	9,010.05	1.05	188,317.23	1.07
80-84	24,943.67	1.05	44,435.97	0.98	37,711.96	1.05	5,495.99	1.03	112,587.59	1.02
85-89	8,068.35	1.04	21,238.31	1.05	16,763.90	1.07	2,813.33	0.98	48,883.89	1.05
90-94	1,847.97	0.97	7,177.44	1.10	4,854.50	1.01	1,154.07	1.02	15,033.98	1.05
95 and over	284.49	1.03	1,525.90	1.14	1,038.00	0.93	304.00	0.79	3,152.39	1.03
Total	405,751.09	1.13	274,543.49	1.04	324,023.29	1.14	30,889.26	1.03	1,035,207.13	1.10
Male Income										
Under 55	\$ 33,035,391	1.25	\$ 7,905,925	0.26	\$ 9,514,857	3.30	\$ 171,752	0.00	\$ 50,627,925	1.48
55-59	162,754,754	1.75	11,759,740	1.21	84,349,032	1.50	103,440	0.00	258,966,966	1.64
60-64	458,370,428	1.12	52,649,208	0.81	303,733,915	1.21	437,531	1.12	815,191,082	1.13
65-69	483,785,928	1.02	256,619,766	0.99	421,781,713	1.03	13,117,774	0.74	1,175,305,181	1.01
70-74	269,557,652	0.97	265,735,032	0.93	315,204,000	1.06	44,082,879	0.88	894,579,563	0.99
75-79	140,475,924	1.03	184,520,823	0.95	200,102,744	1.05	30,974,673	0.99	556,074,164	1.01
80-84	48,961,513	1.04	107,403,285	0.91	105,607,751	0.99	14,129,793	0.90	276,102,342	0.96
85-89	13,577,963	0.92	43,691,980	1.00	38,462,508	1.02	6,592,124	0.85	102,324,575	0.99
90-94	2,554,379	0.82	14,009,442	1.11	9,843,960	1.06	2,785,170	0.89	29,192,951	1.05
95 and over	398,683	0.64	2,217,660	1.22	1,546,619	0.81	596,291	0.72	4,759,253	0.96
Total	\$1,613,472,615	1.04	\$946,512,861	0.96	\$1,490,147,099	1.05	\$112,991,427	0.90	\$4,163,124,002	1.01

TABLE 4
EXPERIENCE BY RETIREMENT CLASS FOR CALENDAR-YEAR 1991
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Prior to NRD		On/After NRD		No Stated NRD		Past NRD/No Payment		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives										
Under 55	4,735.51	2.87	385.20	0.00	1,289.13	3.79	43.34	17.34	6,453.18	2.97
55-59	15,987.57	2.06	811.02	2.21	5,384.18	2.55	62.24	0.00	22,245.01	2.18
60-64	38,636.11	1.51	5,636.68	2.45	16,225.07	1.63	224.37	3.19	60,722.23	1.64
65-69	48,124.70	1.45	30,771.90	1.45	32,911.66	1.73	3,186.48	1.21	114,994.74	1.52
70-74	35,995.18	1.32	35,129.40	1.32	35,290.70	1.27	9,410.06	1.11	115,825.34	1.29
75-79	24,850.97	1.22	33,393.10	1.06	30,563.15	1.17	7,920.05	1.04	96,727.27	1.14
80-84	13,904.13	1.12	24,449.39	1.09	22,389.01	1.10	5,503.09	1.11	66,245.62	1.10
85-89	6,194.16	1.22	12,206.68	1.08	11,484.76	1.07	3,137.10	1.07	33,022.70	1.10
90-94	1,919.95	1.22	4,224.08	1.13	3,524.62	1.16	1,240.90	1.05	10,909.55	1.14
95 and over	356.08	0.74	1,018.55	1.02	838.74	0.89	368.99	1.03	2,582.36	0.94
Total	190,704.36	1.26	148,026.00	1.14	159,901.02	1.18	31,096.62	1.08	529,728.00	1.18
Female Income										
Under 55	\$ 11,336,470	3.88	\$ 1,515,304	0.00	\$ 3,244,778	2.05	\$ 121,280	3.32	\$ 16,217,832	3.20
55-59	43,496,004	1.62	2,416,116	1.83	13,019,378	2.72	217,580	0.00	59,149,078	1.87
60-64	109,452,434	1.47	14,418,124	1.49	45,741,369	1.57	664,813	1.55	170,276,740	1.50
65-69	115,738,156	1.32	70,058,328	1.29	88,351,119	1.70	9,250,992	1.15	283,398,595	1.42
70-74	60,866,699	1.12	68,683,885	1.35	78,585,009	1.27	21,679,887	1.08	229,815,480	1.24
75-79	31,721,133	1.20	48,864,178	1.05	55,659,897	1.13	14,415,454	1.15	150,660,662	1.12
80-84	14,393,049	1.18	30,953,124	1.05	34,542,158	1.24	8,357,993	0.94	88,246,324	1.14
85-89	6,004,187	1.15	13,065,423	1.06	15,556,228	1.13	4,172,305	1.20	38,798,143	1.12
90-94	1,619,148	1.23	4,268,313	1.07	4,182,438	1.11	1,600,772	0.91	11,670,671	1.09
95 and over	369,849	0.53	794,667	1.06	876,247	0.96	408,380	0.95	2,449,143	0.92
Total	\$394,997,129	1.24	\$255,037,462	1.13	\$339,758,621	1.25	\$60,889,456	1.06	\$1,050,682,668	1.20

TABLE 5
EXPERIENCE BY RETIREMENT CLASS FOR CALENDAR-YEAR 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Prior to NRD		On/After NRD		No Stated NRD		Past NRD/No Payment		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives										
Under 55	4,246.78	1.85	568.10	0.39	4,081.99	7.63	13.67	0.00	8,910.54	4.19
55-59	25,885.45	1.58	1,238.32	1.22	20,649.84	2.45	16.91	0.00	47,790.52	1.95
60-64	63,664.59	1.38	5,725.39	1.52	52,542.42	1.64	101.43	0.00	122,033.83	1.49
65-69	90,698.10	1.12	39,665.38	1.17	83,791.03	1.25	1,999.09	0.88	216,153.60	1.18
70-74	74,661.97	1.04	50,293.16	1.01	79,158.76	1.11	8,301.28	1.03	212,415.17	1.06
75-79	52,850.11	0.94	49,766.84	0.97	61,286.32	1.06	9,158.26	1.04	173,061.53	1.00
80-84	28,040.46	0.95	36,985.30	0.98	35,375.57	1.03	5,751.58	0.93	106,152.91	0.99
85-89	9,757.37	0.96	20,540.30	0.99	13,920.51	1.06	2,996.75	1.01	47,214.93	1.00
90-94	2,421.08	1.00	7,296.56	1.03	4,156.85	1.07	1,184.92	0.97	15,059.41	1.03
95 and over	331.41	0.97	1,610.75	1.14	957.74	0.85	320.00	0.83	3,219.90	1.00
Total	352,557.32	1.03	213,690.10	1.01	355,921.03	1.13	29,843.89	0.99	952,012.34	1.06
Male Income										
Under 55	\$ 29,161,256	1.05	\$ 8,518,405	0.02	\$ 19,367,060	4.80	\$ 198,626	0.00	\$ 57,245,348	2.12
55-59	143,612,619	1.23	11,196,345	0.52	95,552,149	2.02	112,571	0.00	250,473,684	1.50
60-64	362,717,122	1.21	41,690,875	1.56	342,842,584	1.18	549,829	0.00	747,800,410	1.22
65-69	411,072,607	0.99	192,421,054	0.89	505,328,657	1.06	11,598,026	0.68	1,120,420,343	1.00
70-74	243,088,609	1.01	211,049,905	0.87	410,650,716	0.93	37,598,345	0.99	902,387,576	0.94
75-79	126,450,175	0.85	146,636,865	0.89	240,439,920	0.93	33,177,435	1.05	546,704,396	0.91
80-84	52,159,271	0.94	88,669,922	0.92	111,736,697	0.96	15,012,442	0.97	267,578,332	0.94
85-89	15,813,594	1.00	42,712,743	0.96	36,073,614	0.94	7,574,743	0.93	102,174,693	0.96
90-94	3,187,689	1.20	14,016,988	1.05	9,659,001	0.92	2,514,422	1.07	29,378,100	1.02
95 and over	341,825	1.21	2,445,935	1.22	1,477,534	0.88	931,249	1.81	5,196,543	1.22
Total	\$1,387,604,767	1.00	\$759,359,037	0.93	\$1,773,127,932	0.99	\$109,267,688	1.02	\$4,029,359,424	0.98

TABLE 6
EXPERIENCE BY RETIREMENT CLASS FOR CALENDAR-YEAR 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Prior to NRD		On/After NRD		No Stated NRD		Past NRD/No Payment		Total	
	Exposure	Δ/E Ratio	Exposure	Δ/E Ratio	Exposure	Δ/E Ratio	Exposure	Δ/E Ratio	Exposure	Δ/E Ratio
Female Lives										
Under 55	4,326.70	3.05	332.12	1.95	1,527.26	4.43	59.10	0.00	6,245.18	3.30
55-59	14,510.42	2.14	524.33	2.92	5,828.03	2.61	62.66	0.00	20,925.44	2.28
60-64	33,828.58	1.46	3,969.48	1.48	17,506.33	1.72	312.13	0.56	55,616.52	1.54
65-69	43,835.25	1.46	22,454.69	1.46	37,017.39	1.60	3,761.05	1.16	107,068.38	1.50
70-74	34,560.75	1.30	25,968.91	1.34	40,341.04	1.21	10,228.97	0.98	111,099.67	1.25
75-79	23,917.36	1.17	25,842.80	1.10	32,656.90	1.05	9,446.78	0.91	91,863.84	1.08
80-84	15,413.24	1.06	20,520.75	0.98	21,414.18	1.05	6,371.64	0.86	63,719.81	1.01
85-89	7,285.91	1.06	12,045.50	1.16	10,260.76	1.07	3,686.15	0.97	33,278.32	1.09
90-94	2,317.49	1.13	4,372.02	1.17	3,155.77	1.14	1,423.58	0.88	11,268.86	1.12
95 and over	478.00	0.99	1,098.49	1.07	793.15	1.00	357.92	0.97	2,727.56	1.02
Total	180,473.70	1.20	117,129.09	1.13	170,500.81	1.14	35,709.98	0.92	503,813.58	1.13
Female Income										
Under 55	\$ 10,531,990	2.39	\$ 1,386,290	0.53	\$ 4,469,601	2.34	\$ 177,372	0.00	\$ 16,565,253	2.22
55-59	41,176,659	1.90	1,871,606	1.10	14,290,004	2.39	220,217	0.00	57,558,486	1.99
60-64	97,118,964	1.41	11,341,683	0.97	49,787,306	1.61	974,310	0.26	159,222,264	1.43
65-69	109,001,016	1.48	55,040,745	1.31	105,885,278	1.57	11,189,613	1.01	281,116,651	1.46
70-74	61,169,733	1.11	54,356,684	1.21	101,811,814	1.08	24,635,476	1.08	241,973,707	1.12
75-79	29,778,966	1.09	39,900,010	1.02	66,216,370	1.01	17,891,651	0.79	153,786,996	1.01
80-84	15,118,526	1.11	26,389,489	1.03	37,228,423	1.00	10,371,819	0.80	89,108,258	1.01
85-89	6,734,203	1.04	13,271,770	1.06	16,178,104	1.08	5,143,462	0.92	41,327,539	1.05
90-94	1,869,694	1.19	4,400,592	1.14	4,688,699	1.00	1,741,167	0.79	12,700,152	1.05
95 and over	477,541	1.16	878,709	0.92	968,431	0.93	402,214	0.98	2,726,895	0.98
Total	\$372,977,291	1.23	\$208,837,579	1.09	\$401,524,030	1.12	\$72,747,301	0.88	\$1,056,086,201	1.11

TABLE 7

EXPERIENCE BY RETIREMENT CLASS FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Prior to NRD		On/After NRD		No Stated NRD		Past NRD/No Payment		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives										
Under 55	9,025.37	2.12	1,292.42	1.22	5,755.19	7.45	26.00	0.00	16,098.98	3.80
55-59	56,498.70	1.56	2,768.74	1.48	39,224.71	2.29	29.91	0.00	98,522.06	1.85
60-64	145,837.70	1.39	14,244.71	1.46	99,332.27	1.63	201.23	0.80	259,615.91	1.48
65-69	200,037.47	1.15	95,714.62	1.16	156,984.11	1.26	4,238.31	0.98	456,974.51	1.19
70-74	160,131.43	1.08	119,018.81	1.06	146,125.26	1.14	18,048.75	1.08	443,324.25	1.09
75-79	111,082.94	1.02	114,383.76	0.99	117,743.75	1.09	18,168.31	1.05	361,378.76	1.03
80-84	52,984.13	1.00	81,421.27	0.98	73,087.53	1.04	11,247.57	0.98	218,740.50	1.00
85-89	17,825.72	0.99	41,778.61	1.02	30,684.41	1.07	5,810.08	1.00	96,098.82	1.03
90-94	4,269.05	0.98	14,474.00	1.07	9,011.35	1.03	2,338.99	0.99	30,093.39	1.04
95 and over	615.90	1.00	3,136.65	1.14	1,995.74	0.89	624.00	0.81	6,372.29	1.01
Total	758,308.41	1.08	488,233.59	1.03	679,944.32	1.14	60,733.15	1.01	1,987,219.47	1.08
Male Income										
Under 55	\$ 62,196,647	1.16	\$ 16,424,330	0.13	\$ 28,881,917	4.30	\$ 370,378	0.00	\$ 107,873,273	1.82
55-59	306,367,373	1.50	22,956,085	0.87	179,901,181	1.78	216,011	0.00	509,440,650	1.57
60-64	821,087,550	1.16	94,340,083	1.13	646,576,499	1.20	987,360	0.49	1,562,991,492	1.17
65-69	894,858,535	1.00	449,040,820	0.94	927,110,370	1.05	24,715,800	0.71	2,295,725,524	1.01
70-74	512,646,261	0.99	476,784,937	0.90	725,854,716	0.99	81,681,224	0.94	1,796,967,139	0.96
75-79	266,926,099	0.95	331,157,688	0.92	440,542,664	0.98	64,152,108	1.02	1,102,778,560	0.96
80-84	101,120,784	0.99	196,073,207	0.91	217,344,448	0.97	29,142,235	0.93	543,680,674	0.95
85-89	29,391,557	0.96	86,404,723	0.98	74,536,122	0.98	14,166,867	0.89	204,499,268	0.97
90-94	5,742,068	1.03	28,026,430	1.08	19,502,961	0.99	5,299,592	0.97	58,571,051	1.03
95 and over	740,508	0.89	4,663,595	1.22	3,024,153	0.84	1,527,540	1.37	9,955,796	1.10
Total	\$3,001,077,382	1.02	\$1,705,871,898	0.94	\$3,263,275,031	1.02	\$222,259,115	0.96	\$8,192,483,426	1.00

TABLE 8
EXPERIENCE BY RETIREMENT CLASS FOR CALENDAR-YEARS 1991 AND 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Prior to NRD		On/After NRD		No Stated NRD		Past NRD/No Payment		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives										
Under 55	9,062.21	2.95	717.32	0.89	2,816.39	4.14	102.44	6.92	12,698.36	3.13
55-59	30,497.99	2.10	1,335.35	2.49	11,212.21	2.58	124.90	0.00	43,170.45	2.23
60-64	72,464.69	1.48	9,606.16	2.05	33,731.40	1.68	536.50	1.64	116,338.75	1.59
65-69	91,959.95	1.46	53,226.59	1.45	69,929.05	1.66	6,947.53	1.18	222,063.12	1.51
70-74	70,555.93	1.31	61,098.31	1.33	75,631.74	1.24	19,639.03	1.04	226,925.01	1.27
75-79	48,768.33	1.20	59,235.90	1.08	63,220.05	1.11	17,366.83	0.97	188,591.11	1.11
80-84	29,317.37	1.08	44,970.14	1.04	43,803.19	1.08	11,874.73	0.97	129,965.43	1.06
85-89	13,480.07	1.13	24,252.18	1.12	21,745.52	1.07	6,823.25	1.02	66,301.02	1.10
90-94	4,237.44	1.17	8,596.10	1.15	6,680.39	1.15	2,664.48	0.96	22,178.41	1.13
95 and over	834.08	0.88	2,117.04	1.04	1,631.89	0.94	726.91	1.00	5,309.92	0.98
Total	371,178.06	1.23	265,155.09	1.14	330,401.83	1.16	66,806.60	1.00	1,033,541.58	1.16
Female Income										
Under 55	\$ 21,868,460	3.17	\$ 2,901,594	0.25	\$ 7,714,379	2.22	\$ 298,652	1.20	\$ 32,783,085	2.71
55-59	84,672,663	1.76	4,287,722	1.51	27,309,382	2.55	437,797	0.00	116,707,564	1.93
60-64	206,571,398	1.44	23,759,807	1.26	95,528,675	1.59	1,639,123	0.77	329,499,004	1.47
65-69	224,739,172	1.39	125,099,073	1.30	194,236,397	1.63	20,440,605	1.07	564,515,246	1.44
70-74	122,036,432	1.12	123,040,569	1.29	180,396,823	1.16	46,315,363	1.08	471,789,187	1.17
75-79	61,500,099	1.15	88,764,188	1.04	121,876,267	1.07	32,307,105	0.95	304,447,658	1.06
80-84	29,511,575	1.14	57,342,613	1.04	71,770,581	1.12	18,729,812	0.86	177,354,582	1.07
85-89	12,738,390	1.09	26,337,193	1.06	31,734,332	1.10	9,315,767	1.04	80,125,682	1.08
90-94	3,488,842	1.21	8,668,905	1.11	8,871,137	1.06	3,341,939	0.85	24,370,823	1.07
95 and over	847,390	0.88	1,673,376	0.99	1,844,678	0.95	810,594	0.97	5,176,038	0.95
Total	\$767,974,420	1.23	\$463,875,041	1.11	\$741,282,651	1.18	\$133,636,757	0.96	\$2,106,768,869	1.15

TABLE 9
EXPERIENCE BY BENEFIT CLASS FOR CALENDAR-YEARS 1991 AND 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Life		Life and Certain		Modified Cash Refund		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives								
Under 55	12,250.62	4.10	1,945.80	3.39	1,902.56	2.27	16,098.98	3.80
55-59	82,374.99	1.86	8,132.31	2.20	8,014.76	1.45	98,522.06	1.85
60-64	207,337.86	1.49	24,987.16	1.65	27,290.89	1.26	259,615.91	1.48
65-69	353,970.29	1.19	50,008.54	1.23	52,995.68	1.12	456,974.51	1.19
70-74	339,191.18	1.10	52,065.48	1.16	52,067.59	0.97	443,324.25	1.09
75-79	276,732.38	1.03	43,011.38	1.09	41,635.00	0.98	361,378.76	1.03
80-84	167,257.99	1.01	25,761.02	1.03	25,721.49	0.95	218,740.50	1.00
85-89	77,677.06	1.02	9,114.91	1.06	9,306.85	1.03	96,098.82	1.03
90-94	25,304.01	1.04	2,013.89	1.02	2,775.49	1.01	30,093.39	1.04
95 and over	5,493.92	1.01	267.31	1.18	611.06	0.98	6,372.29	1.01
Total	1,547,590.30	1.08	217,307.80	1.12	222,321.37	1.01	1,987,219.47	1.08
Male Income								
Under 55	\$ 67,883,463	2.22	\$ 18,405,735	1.14	\$ 21,584,075	0.98	\$ 107,873,273	1.82
55-59	415,355,587	1.57	36,698,411	2.08	57,386,652	1.26	509,440,650	1.57
60-64	1,275,559,063	1.18	113,516,426	1.47	173,916,003	0.95	1,562,991,492	1.17
65-69	1,844,648,017	1.00	206,118,620	1.16	244,958,888	0.92	2,295,725,524	1.01
70-74	1,415,732,698	0.97	195,595,563	1.01	185,638,878	0.84	1,796,967,139	0.96
75-79	859,309,142	0.96	137,942,692	0.95	105,526,726	0.94	1,102,778,560	0.96
80-84	419,131,898	0.96	70,486,478	0.91	54,062,298	0.92	543,680,674	0.95
85-89	167,621,249	0.96	20,283,410	1.04	16,594,609	0.98	204,499,268	0.97
90-94	50,064,852	1.02	4,135,997	1.19	4,370,201	1.08	58,571,051	1.03
95 and over	8,898,617	1.13	376,275	1.05	680,904	0.74	9,955,796	1.10
Total	\$6,524,204,586	1.00	\$803,559,607	1.03	\$864,719,233	0.92	\$8,192,483,426	1.00

TABLE 10
 EXPERIENCE BY BENEFIT CLASS FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS- 1983 GROUP ANNUITY MORTALITY

Attained Age	Life		Life and Certain		Modified Cash Refund		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives								
Under 55	10,166.77	3.23	1,447.49	3.01	1,084.10	2.34	12,698.36	3.13
55-59	34,384.14	2.09	4,550.95	3.42	4,235.36	2.03	43,170.45	2.23
60-64	90,602.98	1.58	12,569.43	1.64	13,166.34	1.61	116,338.75	1.59
65-69	168,232.53	1.48	25,016.81	1.77	28,813.78	1.47	222,063.12	1.51
70-74	171,395.18	1.28	26,668.58	1.29	28,861.25	1.20	226,925.01	1.27
75-79	143,185.28	1.11	22,321.57	1.05	23,084.26	1.16	188,591.11	1.11
80-84	101,958.64	1.06	13,826.69	1.07	14,180.10	1.02	129,965.43	1.06
85-89	54,915.76	1.11	5,309.07	1.03	6,076.19	1.08	66,301.02	1.10
90-94	19,251.75	1.12	1,257.81	1.14	1,668.85	1.18	22,178.41	1.13
95 and over	4,646.56	1.00	226.03	0.88	437.33	0.87	5,309.92	0.98
Total	798,739.59	1.16	113,194.43	1.18	121,607.56	1.15	1,033,541.58	1.16
Female Income								
Under 55	\$ 25,302,351	3.10	\$ 5,103,785	1.91	\$ 2,376,950	0.30	\$ 32,783,085	2.71
55-59	94,196,953	1.75	11,534,921	3.16	10,975,690	2.14	116,707,564	1.93
60-64	261,400,134	1.45	32,333,779	1.54	35,765,090	1.54	329,499,004	1.47
65-69	429,055,918	1.39	63,449,217	1.79	72,010,111	1.41	564,515,246	1.44
70-74	354,325,276	1.19	58,572,628	1.17	58,891,284	1.11	471,789,187	1.17
75-79	232,514,521	1.08	37,252,819	1.00	34,680,318	1.03	304,447,658	1.06
80-84	141,461,483	1.08	18,383,793	1.07	17,509,306	1.03	177,354,582	1.07
85-89	67,818,645	1.10	6,074,653	1.07	6,232,384	0.93	80,125,682	1.08
90-94	21,769,111	1.07	1,303,716	0.97	1,297,996	1.18	24,370,823	1.07
95 and over	4,737,263	0.96	192,245	0.77	246,530	0.97	5,176,038	0.95
Total	\$1,632,581,654	1.15	\$234,201,556	1.20	\$239,985,659	1.13	\$2,106,768,869	1.15

TABLE 11

EXPERIENCE BY SURVIVOR STATUS FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Single Life		Joint Life		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives						
Under 55	10,700.98	4.09	5,398.00	3.26	16,098.98	3.80
55-59	61,186.29	1.90	37,335.77	1.77	98,522.06	1.85
60-64	161,427.78	1.51	98,188.13	1.44	259,615.91	1.48
65-69	298,033.87	1.23	158,940.64	1.12	456,974.51	1.19
70-74	317,373.91	1.11	125,950.34	1.06	443,324.25	1.09
75-79	282,268.91	1.04	79,109.85	1.01	361,378.76	1.03
80-84	185,719.75	1.01	33,020.75	0.99	218,740.50	1.00
85-89	83,265.47	1.04	12,833.35	0.98	96,098.82	1.03
90-94	26,055.58	1.05	4,037.81	1.01	30,093.39	1.04
95 and over	5,695.47	1.01	676.82	1.04	6,372.29	1.01
Total	1,431,728.01	1.08	555,491.46	1.07	1,987,219.47	1.08
Male Income						
Under 55	\$ 65,145,452	1.93	\$ 42,727,821	1.66	\$ 107,873,273	1.82
55-59	272,931,571	1.67	236,509,079	1.47	509,440,650	1.57
60-64	795,762,552	1.18	767,228,941	1.17	1,562,991,492	1.17
65-69	1,227,566,568	1.07	1,068,158,956	0.93	2,295,725,524	1.01
70-74	1,093,109,240	0.98	703,857,899	0.94	1,796,967,139	0.96
75-79	761,822,138	0.98	340,956,421	0.92	1,102,778,560	0.96
80-84	413,967,339	0.96	129,713,335	0.94	543,680,674	0.95
85-89	159,813,261	0.99	44,686,007	0.91	204,499,268	0.97
90-94	45,458,687	1.06	13,112,364	0.95	58,571,051	1.03
95 and over	7,885,528	0.96	2,070,268	1.67	9,955,796	1.10
Total	\$4,843,462,335	1.01	\$3,349,021,091	0.97	\$8,192,483,426	1.00

TABLE 12
 EXPERIENCE BY SURVIVOR STATUS FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Single Life		Joint Life		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives						
Under 55	9,734.97	3.49	2,963.39	1.98	12,698.36	3.13
55-59	34,306.39	2.27	8,864.06	2.05	43,170.45	2.23
60-64	97,454.32	1.68	18,884.43	1.12	116,338.75	1.59
65-69	195,797.60	1.55	26,265.52	1.21	222,063.12	1.51
70-74	207,751.54	1.30	19,173.47	0.96	226,925.01	1.27
75-79	178,030.10	1.11	10,561.01	1.09	188,591.11	1.11
80-84	125,584.79	1.05	4,380.64	1.10	129,965.43	1.06
85-89	64,122.44	1.10	2,178.58	1.02	66,301.02	1.10
90-94	21,492.07	1.13	686.34	1.19	22,178.41	1.13
95 and over	5,146.75	0.98	163.17	1.03	5,309.92	0.98
Total	939,420.97	1.16	94,120.61	1.10	1,033,541.58	1.16
Female Income						
Under 55	\$ 24,676,722	2.55	\$ 8,106,363	3.18	\$ 32,783,085	2.71
55-59	90,725,479	1.87	25,982,085	2.12	116,707,564	1.93
60-64	265,241,150	1.54	64,257,853	1.15	329,499,004	1.47
65-69	478,316,740	1.49	86,198,506	1.19	564,515,246	1.44
70-74	418,746,798	1.21	53,042,389	0.86	471,789,187	1.17
75-79	279,544,659	1.06	24,902,999	1.05	304,447,658	1.06
80-84	167,550,882	1.07	9,803,700	1.14	177,354,582	1.07
85-89	75,656,576	1.09	4,469,106	0.98	80,125,682	1.08
90-94	23,147,163	1.07	1,223,660	1.06	24,370,823	1.07
95 and over	4,888,164	0.95	287,874	1.00	5,176,038	0.95
Total	\$1,828,494,334	1.16	\$278,274,535	1.08	\$2,106,768,869	1.15

TABLE 13

EXPERIENCE BY YEARS SINCE RETIREMENT FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Years Since Retirement									
	0-1		2-5		6-10		11 and Over		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives										
Under 55	5,731.74	3.56	7,430.87	3.53	2,303.77	4.79	632.60	6.02	16,098.98	3.80
55-59	37,094.45	2.09	53,725.21	1.70	6,341.94	1.79	1,360.46	2.38	98,522.06	1.85
60-64	64,247.29	1.38	123,191.97	1.44	67,226.31	1.59	4,950.34	2.44	259,615.91	1.48
65-69	48,909.55	1.10	207,412.24	1.14	155,733.79	1.21	44,918.93	1.41	456,974.51	1.19
70-74	13,284.91	0.94	79,459.69	1.02	223,566.58	1.08	126,013.07	1.17	443,324.25	1.09
75-79	6,891.73	1.02	37,814.56	1.01	73,213.31	1.07	243,459.16	1.03	361,378.76	1.03
80-84	3,580.35	0.85	18,730.93	1.03	26,429.23	1.04	169,999.99	1.00	218,740.50	1.00
85-89	1,543.33	1.05	7,476.69	1.09	9,839.60	1.06	77,239.20	1.02	96,098.82	1.03
90-94	577.00	0.72	2,534.51	1.10	2,550.83	1.04	24,431.05	1.04	30,093.39	1.04
95 and over	121.97	0.95	454.50	0.98	539.00	0.95	5,256.82	1.02	6,372.29	1.01
Total	181,982.32	1.19	538,231.17	1.13	567,744.36	1.12	699,261.62	1.04	1,987,219.47	1.08
Male Income										
Under 55	\$ 45,158,747	1.25	\$ 46,151,283	2.09	\$ 14,238,921	2.76	\$ 2,324,323	2.37	\$ 107,873,273	1.82
55-59	211,694,461	1.85	250,598,106	1.36	40,992,516	1.51	6,155,567	1.52	509,440,650	1.57
60-64	458,125,152	1.12	811,406,583	1.13	275,266,089	1.36	18,193,669	1.62	1,562,991,492	1.17
65-69	244,728,369	0.88	1,121,584,450	0.95	818,952,927	1.05	110,459,778	1.41	2,295,725,524	1.01
70-74	70,162,900	0.70	408,927,454	0.86	914,613,800	0.98	403,262,984	1.06	1,796,967,139	0.96
75-79	27,162,570	0.93	153,313,984	0.86	275,256,191	1.02	647,045,814	0.96	1,102,778,560	0.96
80-84	13,511,622	0.74	63,408,822	0.91	82,417,507	1.06	384,342,723	0.94	543,680,674	0.95
85-89	5,236,565	1.01	20,872,573	0.90	26,303,247	0.96	152,086,884	0.98	204,499,268	0.97
90-94	1,710,240	0.88	7,428,252	0.93	5,822,624	1.01	43,609,935	1.06	58,571,051	1.03
95 and over	322,248	1.22	1,125,070	0.62	1,459,644	1.42	7,048,834	1.11	9,955,796	1.10
Total	\$1,077,812,874	1.02	\$2,884,816,575	0.96	\$2,455,323,466	1.03	\$1,774,530,511	0.99	\$8,192,483,426	1.00

TABLE 14
 EXPERIENCE BY YEARS SINCE RETIREMENT FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Years Since Retirement									
	0-1		2-5		6-10		11 and Over		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives										
Under 55	4,216.53	3.25	5,788.59	2.93	2,092.84	3.42	600.40	3.18	12,698.36	3.13
55-59	15,570.05	2.51	22,316.00	1.85	4,389.74	3.10	894.66	3.05	43,170.45	2.23
60-64	29,518.29	1.55	54,011.42	1.58	29,208.55	1.55	3,600.49	2.31	116,338.75	1.59
65-69	30,671.24	1.41	97,332.51	1.43	70,813.01	1.60	23,246.36	1.67	222,063.12	1.51
70-74	13,038.15	1.10	46,277.84	1.20	105,518.81	1.29	62,090.21	1.31	226,925.01	1.27
75-79	7,005.56	1.02	22,350.13	1.12	44,095.82	1.06	115,139.60	1.13	188,591.11	1.11
80-84	3,940.19	1.01	12,071.89	1.07	18,164.86	1.08	95,788.49	1.05	129,965.43	1.06
85-89	1,854.97	0.91	5,222.44	1.15	7,626.69	1.06	51,596.92	1.10	66,301.02	1.10
90-94	612.19	0.93	1,605.94	1.20	2,456.00	1.11	17,504.28	1.13	22,178.41	1.13
95 and over	154.24	0.86	417.75	1.00	633.00	0.78	4,104.93	1.02	5,309.92	0.98
Total	106,581.41	1.21	267,394.51	1.25	284,999.32	1.21	374,566.34	1.11	1,033,541.58	1.16
Female Income										
Under 55	\$ 12,478,660	2.60	\$ 13,450,780	3.36	\$ 5,601,148	1.62	\$ 1,252,497	1.45	\$ 32,783,085	2.71
55-59	47,523,821	1.85	56,072,766	1.90	11,617,999	1.96	1,492,977	4.93	116,707,564	1.93
60-64	95,672,047	1.43	161,193,606	1.40	66,310,297	1.65	6,323,054	1.71	329,499,004	1.47
65-69	85,462,158	1.35	275,157,005	1.35	170,862,678	1.59	33,033,405	1.61	564,515,246	1.44
70-74	35,304,641	1.01	122,221,366	1.08	223,931,409	1.25	90,331,772	1.18	471,789,187	1.17
75-79	16,358,648	1.02	49,205,662	1.03	81,397,893	1.04	157,485,454	1.09	304,447,658	1.06
80-84	9,566,017	1.05	24,001,746	1.09	28,745,047	1.14	115,041,772	1.05	177,354,582	1.07
85-89	4,280,967	0.99	9,744,646	1.18	11,475,285	1.12	54,624,784	1.06	80,125,682	1.08
90-94	1,314,685	1.13	3,168,669	0.97	3,606,198	1.00	16,281,271	1.10	24,370,823	1.07
95 and over	311,606	0.99	687,001	0.78	779,354	0.77	3,398,077	1.03	5,176,038	0.95
Total	\$308,273,250	1.19	\$714,903,247	1.19	\$604,327,309	1.22	\$479,265,064	1.09	\$2,106,768,869	1.15

TABLE 15
 COMPARISON OF MALE AND FEMALE MORTALITY EXPERIENCE
 FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Exposure		A/E Ratio		Ratio of Female to Male Mortality
	Male	Female	Male*	Female	
Lives					
Under 55	16,098.98	12,698.36	3.80	1.32	0.35
55-59	98,522.06	43,170.45	1.85	0.98	0.53
60-64	259,615.91	116,338.75	1.48	0.74	0.50
65-69	456,974.51	222,063.12	1.19	0.67	0.56
70-74	443,324.25	226,925.01	1.09	0.62	0.57
75-79	361,378.76	188,591.11	1.03	0.62	0.60
80-84	218,740.50	129,965.43	1.00	0.62	0.62
85-89	96,098.82	66,301.02	1.03	0.69	0.67
90-94	30,093.39	22,178.41	1.04	0.80	0.77
95 and over	6,372.29	5,309.92	1.01	0.83	0.82
Total	1,987,219.47	1,033,541.58	1.08	0.66	0.62
Income					
Under 55	\$ 107,873,273	\$ 32,783,085	1.82	1.14	0.63
55-59	509,440,650	116,707,564	1.57	0.85	0.54
60-64	1,562,991,492	329,499,004	1.17	0.68	0.58
65-69	2,295,725,524	564,515,246	1.01	0.64	0.63
70-74	1,796,967,139	471,789,187	0.96	0.57	0.59
75-79	1,102,778,560	304,447,658	0.96	0.59	0.62
80-84	543,680,674	177,354,582	0.95	0.63	0.66
85-89	204,499,268	80,125,682	0.97	0.68	0.70
90-94	58,571,051	24,370,823	1.03	0.75	0.73
95 and over	9,955,796	5,176,038	1.10	0.81	0.74
Total	\$8,192,483,426	\$2,106,768,869	1.00	0.63	0.64

*Expected deaths for both males and females using male mortality.

TABLE 16
 EXPERIENCE BY GUARANTEED STATUS FOR CALENDAR-YEAR 1991
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Guaranteed		Nonguaranteed		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives						
Under 55	4,567.97	2.81	2,620.47	4.25	7,188.44	3.33
55-59	29,236.13	1.65	21,495.41	1.92	50,731.54	1.76
60-64	85,842.71	1.45	51,739.37	1.50	137,582.08	1.47
65-69	170,658.91	1.18	70,162.00	1.24	240,820.91	1.19
70-74	184,094.80	1.12	46,814.28	1.14	230,909.08	1.12
75-79	156,751.61	1.07	31,565.62	1.07	188,317.23	1.07
80-84	96,643.60	1.02	15,943.99	1.02	112,587.59	1.02
85-89	43,177.57	1.06	5,706.32	1.03	48,883.89	1.05
90-94	13,170.72	1.06	1,863.26	0.97	15,033.98	1.05
95 and over	2,828.73	1.04	323.66	0.92	3,152.39	1.03
Total	786,972.75	1.09	248,234.38	1.15	1,035,207.13	1.10
Male Income						
Under 55	\$ 28,294,945	1.63	\$ 22,332,980	1.27	\$ 50,627,925	1.48
55-59	150,177,605	1.86	108,789,361	1.34	258,966,966	1.64
60-64	460,735,358	1.12	354,455,724	1.15	815,191,082	1.13
65-69	759,666,937	0.99	415,638,244	1.05	1,175,305,181	1.01
70-74	677,152,174	0.98	217,427,389	1.01	894,579,563	0.99
75-79	440,804,232	1.01	115,269,932	1.00	556,074,164	1.01
80-84	228,277,982	0.96	47,824,360	0.98	276,102,342	0.96
85-89	88,290,235	0.98	14,034,340	1.06	102,324,575	0.99
90-94	24,742,621	1.06	4,450,330	0.97	29,192,951	1.05
95 and over	4,127,160	0.99	632,093	0.79	4,759,253	0.96
Total	\$2,862,269,249	1.01	\$1,300,854,753	1.04	\$4,163,124,002	1.01

TABLE 17
 EXPERIENCE BY GUARANTEED STATUS FOR CALENDAR-YEAR 1991
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Guaranteed		Nonguaranteed		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives						
Under 55	4,242.65	2.29	2,210.53	4.19	6,453.18	2.97
55-59	14,561.90	1.70	7,683.11	3.08	22,245.01	2.18
60-64	43,273.14	1.62	17,449.09	1.68	60,722.23	1.64
65-69	89,424.16	1.52	25,570.58	1.53	114,994.74	1.52
70-74	97,008.89	1.30	18,816.45	1.23	115,825.34	1.29
75-79	83,802.88	1.14	12,924.39	1.12	96,727.27	1.14
80-84	58,243.04	1.12	8,002.58	0.99	66,245.62	1.10
85-89	29,413.86	1.12	3,608.84	0.95	33,022.70	1.10
90-94	9,746.06	1.16	1,163.49	1.01	10,909.55	1.14
95 and over	2,318.65	0.96	263.71	0.77	2,582.36	0.94
Total	432,035.23	1.18	97,692.77	1.17	529,728.00	1.18
Female Income						
Under 55	\$ 10,728,209	2.69	\$ 5,489,623	4.16	\$ 16,217,832	3.20
55-59	37,093,157	1.44	22,055,921	2.59	59,149,078	1.87
60-64	113,514,883	1.57	56,761,857	1.37	170,276,740	1.50
65-69	208,672,873	1.46	74,725,722	1.31	283,398,595	1.42
70-74	186,457,945	1.23	43,357,535	1.26	229,815,480	1.24
75-79	127,987,662	1.11	22,673,000	1.20	150,660,662	1.12
80-84	76,277,068	1.16	11,969,256	0.97	88,246,324	1.14
85-89	34,314,348	1.14	4,483,795	0.92	38,798,143	1.12
90-94	10,306,764	1.09	1,363,907	1.06	11,670,671	1.09
95 and over	2,135,584	0.98	313,559	0.60	2,449,143	0.92
Total	\$807,488,493	1.20	\$243,194,175	1.19	\$1,050,682,668	1.20

TABLE 18
 EXPERIENCE BY GUARANTEED STATUS FOR CALENDAR-YEAR 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Guaranteed		Nonguaranteed		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives						
Under 55	4,294.51	2.27	4,616.03	6.16	8,910.54	4.19
55-59	26,155.61	1.56	21,634.91	2.41	47,790.52	1.95
60-64	75,116.84	1.36	46,916.99	1.72	122,033.83	1.49
65-69	152,059.15	1.13	64,094.45	1.30	216,153.60	1.18
70-74	164,799.22	1.04	47,615.95	1.12	212,415.17	1.06
75-79	140,156.30	0.98	32,905.23	1.07	173,061.53	1.00
80-84	88,774.49	0.98	17,378.42	1.05	106,152.91	0.99
85-89	40,818.05	0.99	6,396.88	1.08	47,214.93	1.00
90-94	13,011.58	1.03	2,047.83	1.05	15,059.41	1.03
95 and over	2,881.23	1.00	338.67	1.03	3,219.90	1.00
Total	708,066.98	1.02	243,945.36	1.19	952,012.34	1.06
Male Income						
Under 55	\$ 27,174,280	1.21	\$ 30,071,068	3.02	\$ 57,245,348	2.12
55-59	130,776,105	1.24	119,697,580	1.80	250,473,684	1.50
60-64	410,443,366	1.19	337,357,045	1.25	747,800,410	1.22
65-69	716,597,309	0.94	403,823,034	1.11	1,120,420,343	1.00
70-74	671,041,784	0.93	231,345,792	0.97	902,387,576	0.94
75-79	422,602,059	0.89	124,102,337	0.98	546,704,396	0.91
80-84	214,282,070	0.93	53,296,262	0.97	267,578,332	0.94
85-89	85,872,595	0.94	16,302,098	1.03	102,174,693	0.96
90-94	24,422,849	1.04	4,955,250	0.94	29,378,100	1.02
95 and over	4,612,480	1.23	584,063	1.12	5,196,543	1.22
Total	\$2,707,824,896	0.95	\$1,321,534,528	1.07	\$4,029,359,424	0.98

TABLE 19
EXPERIENCE BY GUARANTEED STATUS FOR CALENDAR-YEAR 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Guaranteed		Nonguaranteed		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives						
Under 55	4,128.90	2.80	2,116.28	4.26	6,245.18	3.30
55-59	14,129.81	2.25	6,795.63	2.35	20,925.44	2.28
60-64	40,321.31	1.52	15,295.21	1.58	55,616.52	1.54
65-69	82,849.40	1.48	24,218.98	1.55	107,068.38	1.50
70-74	91,475.57	1.23	19,624.10	1.33	111,099.67	1.25
75-79	77,931.84	1.07	13,932.00	1.12	91,863.84	1.08
80-84	54,975.89	1.02	8,743.92	0.96	63,719.81	1.01
85-89	29,071.95	1.09	4,206.37	1.09	33,278.32	1.09
90-94	9,905.80	1.12	1,363.06	1.08	11,268.86	1.12
95 and over	2,426.69	1.04	300.87	0.89	2,727.56	1.02
Total	407,217.16	1.12	96,596.42	1.18	503,813.58	1.13
Female Income						
Under 55	\$ 10,935,047	1.60	\$ 5,630,206	3.43	\$ 16,565,253	2.22
55-59	35,656,864	1.93	21,901,622	2.09	57,558,486	1.99
60-64	105,528,713	1.51	53,693,551	1.27	159,222,264	1.43
65-69	204,205,557	1.43	76,911,094	1.56	281,116,651	1.46
70-74	192,143,112	1.10	49,830,595	1.18	241,973,707	1.12
75-79	128,714,514	1.01	25,072,482	1.00	153,786,996	1.01
80-84	75,473,487	1.01	13,634,771	1.01	89,108,258	1.01
85-89	35,672,533	1.05	5,655,006	1.01	41,327,539	1.05
90-94	11,048,735	1.06	1,651,418	0.95	12,700,152	1.05
95 and over	2,389,172	1.03	337,723	0.68	2,726,895	0.98
Total	\$801,767,733	1.10	\$254,318,468	1.17	\$1,056,086,201	1.11

TABLE 20
 EXPERIENCE BY GUARANTEED STATUS FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Guaranteed		Nonguaranteed		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Male Lives						
Under 55	8,862.48	2.55	7,236.50	5.45	16,098.98	3.80
55-59	55,391.74	1.61	43,130.32	2.17	98,522.06	1.85
60-64	160,959.55	1.41	98,656.36	1.61	259,615.91	1.48
65-69	322,718.06	1.15	134,256.45	1.27	456,974.51	1.19
70-74	348,894.02	1.08	94,430.23	1.13	443,324.25	1.09
75-79	296,907.91	1.03	64,470.85	1.07	361,378.76	1.03
80-84	185,418.09	1.00	33,322.41	1.03	218,740.50	1.00
85-89	83,995.62	1.02	12,103.20	1.06	96,098.82	1.03
90-94	26,182.30	1.04	3,911.09	1.01	30,093.39	1.04
95 and over	5,709.96	1.02	662.33	0.97	6,372.29	1.01
Total	1,495,039.73	1.06	492,179.74	1.17	1,987,219.47	1.08
Male Income						
Under 55	\$ 55,469,225	1.42	\$ 52,404,048	2.27	\$ 107,873,273	1.82
55-59	280,953,710	1.57	228,486,941	1.58	509,440,650	1.57
60-64	871,178,724	1.15	691,812,769	1.20	1,562,991,492	1.17
65-69	1,476,264,246	0.97	819,461,278	1.08	2,295,725,524	1.01
70-74	1,348,193,958	0.95	448,773,181	0.99	1,796,967,139	0.96
75-79	863,406,291	0.95	239,372,269	0.99	1,102,778,560	0.96
80-84	442,560,052	0.95	101,120,622	0.98	543,680,674	0.95
85-89	174,162,830	0.96	30,336,438	1.05	204,499,268	0.97
90-94	49,165,470	1.05	9,405,580	0.95	58,571,051	1.03
95 and over	8,739,640	1.12	1,216,156	0.95	9,955,796	1.10
Total	\$5,570,094,145	0.98	\$2,622,389,281	1.05	\$8,192,483,426	1.00

TABLE 21

EXPERIENCE BY GUARANTEED STATUS FOR CALENDAR-YEARS 1991 AND 1992
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	Guaranteed		Nonguaranteed		Total	
	Exposure	A/E Ratio	Exposure	A/E Ratio	Exposure	A/E Ratio
Female Lives						
Under 55	8,371.55	2.54	4,326.81	4.23	12,698.36	3.13
55-59	28,691.71	1.97	14,478.74	2.74	43,170.45	2.23
60-64	83,594.45	1.57	32,744.30	1.63	116,338.75	1.59
65-69	172,273.56	1.50	49,789.56	1.54	222,063.12	1.51
70-74	188,484.46	1.26	38,440.55	1.28	226,925.01	1.27
75-79	161,734.72	1.11	26,856.39	1.12	188,591.11	1.11
80-84	113,218.93	1.07	16,746.50	0.98	129,965.43	1.06
85-89	58,485.81	1.11	7,815.21	1.03	66,301.02	1.10
90-94	19,651.86	1.14	2,526.55	1.05	22,178.41	1.13
95 and over	4,745.34	1.00	564.58	0.83	5,309.92	0.98
Total	839,252.39	1.15	194,289.19	1.18	1,033,541.58	1.16
Female Income						
Under 55	\$ 21,663,256	2.14	\$ 11,119,829	3.79	\$ 32,783,085	2.71
55-59	72,750,021	1.68	43,957,543	2.34	116,707,564	1.93
60-64	219,043,596	1.54	110,455,408	1.32	329,499,004	1.47
65-69	412,878,430	1.44	151,636,816	1.43	564,515,246	1.44
70-74	378,601,057	1.17	93,188,130	1.21	471,789,187	1.17
75-79	256,702,176	1.06	47,745,482	1.10	304,447,658	1.06
80-84	151,750,555	1.08	25,604,027	0.99	177,354,582	1.07
85-89	69,986,881	1.10	10,138,801	0.97	80,125,682	1.08
90-94	21,355,499	1.08	3,015,325	1.00	24,370,823	1.07
95 and over	4,524,756	1.01	651,282	0.64	5,176,038	0.95
Total	\$1,609,256,226	1.15	\$497,512,643	1.18	\$2,106,768,869	1.15

TABLE 22
 SUMMARY OF GROUP ANNUITY MORTALITY EXPERIENCE BY MALE LIVES
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1991		1992		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	1,035,207	1.10	952,012	1.06	-0.04
By Retirement Class					
Prior to NRD	405,751	1.13	352,557	1.03	-0.10
On/After NRD	274,543	1.04	213,690	1.01	-0.03
No Stated NRD	324,023	1.14	355,921	1.13	-0.01
Past NRD/No Payment	30,889	1.03	29,844	0.99	-0.04
By Benefit Class					
Life	781,114	1.11	766,476	1.05	-0.06
Life and Certain	120,644	1.15	96,664	1.09	-0.06
Modified Cash Refund	133,449	0.99	88,873	1.03	0.04
By Survivor Class					
Single Life	744,112	1.09	687,616	1.06	-0.03
Joint Life	291,095	1.11	264,396	1.04	-0.07
By Years Since Retirement					
0-1	105,422	1.13	76,560	1.30	0.17
2-5	286,910	1.15	251,321	1.11	-0.04
6-10	286,413	1.14	281,331	1.09	-0.05
11+	356,462	1.07	342,799	1.01	-0.06
By Attained Age					
Under 55	7,188	3.33	8,911	4.19	0.86
55-59	50,732	1.76	47,791	1.95	0.19
60-64	137,582	1.47	122,034	1.49	0.02
65-69	240,821	1.19	216,154	1.18	-0.01
70-74	230,909	1.12	212,415	1.06	-0.06
75-79	188,317	1.07	173,062	1.00	-0.07
80-84	112,588	1.02	106,153	0.99	-0.03
85-89	48,884	1.05	47,215	1.00	-0.05
90-94	15,034	1.05	15,059	1.03	-0.02
95 and over	3,152	1.03	3,220	1.00	-0.03
Comparison of Female/ Male		0.61		0.62	0.01

TABLE 23

SUMMARY OF GROUP ANNUITY MORTALITY EXPERIENCE BY MALE INCOME
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1991		1992		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	\$4,163,124,002	1.01	\$4,029,359,424	0.98	-0.03
By Retirement Class					
Prior to NRD	\$1,613,472,615	1.04	\$1,387,604,767	1.00	-0.04
On/After NRD	946,512,861	0.96	759,359,037	0.93	-0.03
No Stated NRD	1,490,147,099	1.05	1,773,127,932	0.99	-0.06
Past NRD/No Payment	112,991,427	0.90	109,267,688	1.02	0.12
By Benefit Class					
Life	\$3,231,672,703	1.02	\$3,292,531,883	0.98	-0.04
Life and Certain	440,744,196	1.04	362,815,411	1.03	-0.01
Modified Cash Refund	490,707,103	0.94	374,012,130	0.90	-0.04
By Survivor Class					
Single Life	\$2,443,162,693	1.03	\$2,400,299,642	1.00	-0.03
Joint Life	1,719,961,309	0.99	1,629,059,782	0.94	-0.05
By Years Since Retirement					
0-1	\$ 598,839,287	1.02	\$ 478,973,587	1.01	-0.01
2-5	1,504,743,246	0.98	1,380,073,329	0.93	-0.05
6-10	1,171,046,614	1.05	1,284,276,852	1.01	-0.04
11+	888,494,855	1.01	886,035,656	0.97	-0.04
By Attained Age					
Under 55	\$ 50,627,925	1.48	\$ 57,245,348	2.12	0.64
55-59	258,966,966	1.64	250,473,684	1.50	-0.14
60-64	815,191,082	1.13	747,800,410	1.22	0.09
65-69	1,175,305,181	1.01	1,120,420,343	1.00	-0.01
70-74	894,579,563	0.99	902,387,576	0.94	-0.05
75-79	556,074,164	1.01	546,704,396	0.91	-0.10
80-84	276,102,342	0.96	267,578,332	0.94	-0.02
85-89	102,324,575	0.99	102,174,693	0.96	-0.03
90-94	29,192,951	1.05	29,378,100	1.02	-0.03
95 and over	4,759,253	0.96	5,196,543	1.22	0.26
Comparison of Female/ Male		0.65		0.63	-0.02

TABLE 24
 SUMMARY OF GROUP ANNUITY MORTALITY EXPERIENCE BY FEMALE LIVES
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1991		1992		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	529,728	1.18	503,814	1.13	-0.05
By Retirement Class					
Prior to NRD	190,704	1.26	180,474	1.20	-0.06
On/After NRD	148,026	1.14	117,129	1.13	-0.01
No Stated NRD	159,901	1.18	170,501	1.14	-0.04
Past NRD/No Payment	31,097	1.08	35,710	0.92	-0.16
By Benefit Class					
Life	401,659	1.19	397,081	1.12	-0.07
Life and Certain	58,716	1.14	54,478	1.22	0.08
Modified Cash Refund	69,353	1.16	52,254	1.14	-0.02
By Survivor Class					
Single Life	482,355	1.18	457,066	1.14	-0.04
Joint Life	47,373	1.15	46,747	1.06	-0.09
By Years Since Retirement					
0-1	65,246	1.19	41,335	1.24	0.05
2-5	137,108	1.25	130,287	1.25	0.00
6-10	140,437	1.24	144,562	1.17	-0.07
11+	186,936	1.14	187,630	1.09	-0.05
By Attained Age					
Under 55	6,453	2.97	6,245	3.30	0.33
55-59	22,245	2.18	20,925	2.28	0.10
60-64	60,722	1.64	55,617	1.54	-0.10
65-69	114,995	1.52	107,068	1.50	-0.02
70-74	115,825	1.29	111,100	1.25	-0.04
75-79	96,727	1.14	91,864	1.08	-0.06
80-84	66,246	1.10	63,720	1.01	-0.09
85-89	33,023	1.10	33,278	1.09	-0.01
90-94	10,910	1.14	11,269	1.12	-0.02
95 and over	2,582	0.94	2,728	1.02	0.08

TABLE 25

SUMMARY OF GROUP ANNUITY MORTALITY EXPERIENCE BY FEMALE INCOME
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1991		1992		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	\$1,050,682,668	1.20	\$1,056,086,201	1.11	-0.09
By Retirement Class					
Prior to NRD	\$ 394,997,129	1.24	\$ 372,977,291	1.23	-0.01
On/After NRD	255,037,462	1.13	208,837,579	1.09	-0.04
No Stated NRD	339,758,621	1.25	401,524,030	1.12	-0.13
Past NRD/No Payment	60,889,456	1.06	72,747,301	0.88	-0.18
By Benefit Class					
Life	\$ 796,654,957	1.21	\$ 835,926,697	1.10	-0.11
Life and Certain	119,131,856	1.12	115,069,700	1.27	0.15
Modified Cash Refund	134,895,855	1.19	105,089,804	1.04	-0.15
By Survivor Class					
Single Life	\$ 911,795,187	1.21	\$ 916,699,147	1.11	-0.10
Joint Life	138,887,481	1.07	139,387,054	1.10	0.03
By Years Since Retirement					
0-1	\$ 184,874,691	1.21	\$ 123,398,559	1.16	-0.05
2-5	353,714,127	1.24	361,189,120	1.15	-0.09
6-10	273,361,100	1.32	330,966,209	1.14	-0.18
11+	238,732,750	1.11	240,532,314	1.07	-0.04
By Attained Age					
Under 55	\$ 16,217,832	3.20	\$ 16,565,253	2.22	-0.98
55-59	59,149,078	1.87	57,558,486	1.99	0.12
60-64	170,276,740	1.50	159,222,264	1.43	-0.07
65-69	283,398,595	1.42	281,116,651	1.46	0.04
70-74	229,815,480	1.24	241,973,707	1.12	-0.12
75-79	150,660,662	1.12	153,786,996	1.01	-0.11
80-84	88,246,324	1.14	89,108,258	1.01	-0.13
85-89	38,798,143	1.12	41,327,539	1.05	-0.07
90-94	11,670,671	1.09	12,700,152	1.05	-0.04
95 and over	2,449,143	0.92	2,726,895	0.98	0.06

TABLE 26
 COMPARISON OF 1991-92 WITH 1989-90 GROUP ANNUITY MORTALITY EXPERIENCE
 BY MALE LIVES
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1989-90		1991-92		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	1,836,227	1.11	1,987,219	1.08	-0.03
By Retirement Class					
Prior to NRD	671,993	1.36	758,308	1.08	-0.28
On/After NRD	523,348	0.98	488,234	1.03	0.05
No Stated NRD	595,266	1.05	679,944	1.14	0.09
Past NRD/No Payment	45,620	1.08	60,733	1.01	-0.07
By Benefit Class					
Life	1,332,196	1.15	1,547,590	1.08	-0.07
Life and Certain	238,290	1.04	217,308	1.12	0.08
Modified Cash Refund	265,741	0.98	222,321	1.01	0.03
By Survivor Class					
Single Life	1,354,605	1.13	1,431,728	1.08	-0.05
Joint Life	481,622	1.02	555,491	1.07	0.05
By Years Since Retirement					
0-1	222,425	1.23	181,982	1.19	-0.04
2-5	564,090	1.13	538,231	1.13	0.00
6-10	448,194	1.12	567,744	1.12	0.00
11--	601,519	1.09	699,262	1.04	-0.05
By Attained Age					
Under 55	12,816	3.15	16,099	3.80	0.65
55-59	97,464	1.73	98,522	1.85	0.12
60-64	262,955	1.40	259,616	1.48	0.08
65-69	452,376	1.18	456,975	1.19	0.01
70-74	411,984	1.12	443,324	1.09	-0.03
75-79	317,671	1.09	361,379	1.03	-0.06
80-84	178,365	1.05	218,740	1.00	-0.05
85-89	75,872	1.05	96,099	1.03	-0.02
90-94	22,303	1.08	30,093	1.04	-0.04
95 and over	4,421	1.00	6,372	1.01	0.01
Comparison of Female/ Male		0.60		0.62	0.02

TABLE 27
 COMPARISON OF 1991-92 WITH 1989-90 GROUP ANNUITY MORTALITY EXPERIENCE
 BY MALE INCOME
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1989-90		1991-92		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	\$7,119,125,005	1.02	\$8,192,483,426	1.00	-0.02
By Retirement Class					
Prior to NRD	\$2,482,615,091	1.23	\$3,001,077,382	1.02	-0.21
On/After NRD	1,727,974,280	0.92	1,705,871,898	0.94	0.02
No Stated NRD	2,736,438,140	0.98	3,263,275,031	1.02	0.04
Past NRD/No Payment	172,097,495	0.97	222,259,115	0.96	-0.01
By Benefit Class					
Life	\$5,398,805,418	1.04	\$6,524,204,586	1.00	-0.04
Life and Certain	821,195,727	1.02	803,559,607	1.03	0.01
Modified Cash Refund	899,123,861	0.93	864,719,233	0.92	-0.01
By Survivor Class					
Single Life	\$4,462,871,410	1.06	\$4,843,462,335	1.01	-0.05
Joint Life	2,656,253,595	0.94	3,349,021,091	0.97	0.03
By Years Since Retirement					
0-1	\$1,168,181,897	1.06	\$1,077,812,874	1.02	-0.04
2-5	2,873,911,488	1.01	2,884,816,575	0.96	-0.05
6-10	1,638,017,119	1.03	2,455,323,466	1.03	0.00
11+	1,439,014,501	1.02	1,774,530,511	0.99	-0.03
By Attained Age					
Under 55	\$ 90,164,477	2.24	\$ 107,873,273	1.82	-0.42
55-59	490,013,130	1.34	509,440,650	1.57	0.23
60-64	1,469,428,350	1.17	1,562,991,492	1.17	0.00
65-69	2,084,042,377	1.03	2,295,725,524	1.01	-0.02
70-74	1,482,781,604	0.99	1,796,967,139	0.96	-0.03
75-79	887,476,739	0.98	1,102,778,560	0.96	-0.02
80-84	418,104,096	1.00	543,680,674	0.95	-0.05
85-89	151,097,751	1.03	204,499,268	0.97	-0.06
90-94	39,411,410	1.06	58,571,051	1.03	-0.03
95 and over	6,605,071	0.90	9,955,796	1.10	0.20
Comparison of Female/ Male		0.62		0.64	0.02

TABLE 28
 COMPARISON OF 1991-92 WITH 1989-90 GROUP ANNUITY MORTALITY EXPERIENCE
 BY FEMALE LIVES
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1989-90		1991-92		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	919,707	1.18	1,033,542	1.16	-0.02
By Retirement Class					
Prior to NRD	307,418	1.50	371,178	1.23	-0.27
On/After NRD	290,816	1.05	265,155	1.14	0.09
No Stated NRD	282,044	1.13	330,402	1.16	0.03
Past NRD/No Payment	39,429	1.14	66,807	1.00	-0.14
By Benefit Class					
Life	678,785	1.19	798,740	1.16	-0.03
Life and Certain	196,976	1.20	113,194	1.18	-0.02
Modified Cash Refund	133,946	1.10	121,608	1.15	0.05
By Survivor Class					
Single Life	838,745	1.19	939,421	1.16	-0.03
Joint Life	80,962	1.04	94,121	1.10	0.06
By Years Since Retirement					
0-1	118,675	1.25	106,581	1.21	-0.04
2-5	284,209	1.28	267,395	1.25	-0.03
6-10	209,944	1.26	284,999	1.21	-0.05
11+	306,879	1.12	374,566	1.11	-0.01
By Attained Age					
Under 55	13,089	2.68	12,698	3.13	0.45
55-59	44,007	2.17	43,170	2.23	0.06
60-64	118,463	1.69	116,339	1.59	-0.10
65-69	213,322	1.46	222,063	1.51	0.05
70-74	200,442	1.25	226,925	1.27	0.02
75-79	162,266	1.11	188,591	1.11	0.00
80-84	102,661	1.09	129,965	1.06	-0.03
85-89	47,456	1.11	66,301	1.10	-0.01
90-94	14,724	1.17	22,178	1.13	-0.04
95 and over	3,277	0.99	5,310	0.98	-0.01

TABLE 29
 COMPARISON OF 1991-92 WITH 1989-90 GROUP ANNUITY MORTALITY EXPERIENCE
 BY FEMALE INCOME
 EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

	1989-90		1991-92		Change in A/E Ratios
	Exposure	A/E Ratio	Exposure	A/E Ratio	
Total	\$1,830,733,051	1.17	\$2,106,768,869	1.15	-0.02
By Retirement Class					
Prior to NRD	\$ 624,735,512	1.45	\$ 767,974,420	1.23	-0.22
On/After NRD	491,108,775	1.03	463,875,041	1.11	0.08
No Stated NRD	634,660,386	1.15	741,282,651	1.18	0.03
Past NRD/No Payment	80,228,378	1.14	133,636,757	0.96	-0.18
By Benefit Class					
Life	\$1,384,675,177	1.18	\$1,632,581,654	1.15	-0.03
Life and Certain	206,245,375	1.18	234,201,556	1.20	0.02
Modified Cash Refund	239,812,499	1.12	239,985,659	1.13	0.01
By Survivor Class					
Single Life	\$1,578,690,959	1.19	\$1,828,494,334	1.16	-0.03
Joint Life	252,042,092	1.02	278,274,535	1.08	0.06
By Years Since Retirement					
0-1	\$ 325,097,799	1.25	\$ 308,273,250	1.19	-0.06
2-5	735,977,116	1.22	714,903,247	1.19	-0.03
6-10	390,285,767	1.23	604,327,309	1.22	-0.01
11+	379,372,368	1.10	479,265,064	1.09	-0.01
By Attained Age					
Under 55	\$ 38,403,435	4.19	\$ 32,783,085	2.71	-1.48
55-59	123,861,796	1.97	116,707,564	1.93	-0.04
60-64	330,455,390	1.47	329,499,004	1.47	0.00
65-69	515,100,803	1.36	564,515,246	1.44	0.08
70-74	380,520,198	1.18	471,789,187	1.17	-0.01
75-79	243,224,020	1.06	304,447,658	1.06	0.00
80-84	128,945,712	1.08	177,354,582	1.07	-0.01
85-89	52,356,011	1.09	80,125,682	1.08	-0.01
90-94	14,695,639	1.21	24,370,823	1.07	-0.14
95 and over	3,170,045	0.88	5,176,038	0.95	0.07

TABLE 30
SUMMARY OF MORTALITY IMPROVEMENT FOR MALE LIVES
FOR CALENDAR-YEARS 1987 TO 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	A/E Ratio						Annual Improvement Factors					Arithmetic Average
	1992	1991	1990	1989	1988	1987	1992 to 1991	1991 to 1990	1990 to 1989	1989 to 1988	1988 to 1987	
Under 55.....	4.19	3.33	3.33	2.91	3.76	2.97	-0.259	0.002	-0.144	0.226	-0.269	-0.089
55-59.....	1.95	1.76	1.74	1.73	1.97	1.80	-0.105	-0.015	-0.003	0.121	-0.096	-0.019
60-64.....	1.49	1.47	1.38	1.43	1.47	1.47	-0.015	-0.067	0.037	0.028	-0.001	-0.004
65-69.....	1.18	1.19	1.16	1.20	1.24	1.28	0.012	-0.032	0.038	-0.032	0.028	0.016
70-74.....	1.06	1.12	1.12	1.12	1.20	1.23	0.058	-0.005	0.003	0.069	0.018	0.029
75-79.....	1.00	1.07	1.09	1.08	1.15	1.16	0.065	0.017	-0.002	0.057	0.008	0.029
80-84.....	0.99	1.02	1.04	1.05	1.10	1.10	0.032	0.022	0.008	0.045	0.003	0.022
85-89.....	1.00	1.05	1.05	1.04	1.07	1.09	0.046	-0.000	-0.011	0.027	0.016	0.016
90-94.....	1.03	1.05	1.05	1.13	1.11	1.15	0.018	0.004	0.068	-0.019	0.035	0.021
95 and over.....	1.00	1.03	0.97	1.05	1.18	1.09	0.027	-0.056	0.077	0.109	-0.084	0.015
Total.....	1.06	1.10	1.10	1.12	1.18	1.19	0.039	0.002	0.018	0.046	0.012	0.023

TABLE 31

SUMMARY OF MORTALITY IMPROVEMENT FOR MALE INCOME
FOR CALENDAR-YEARS 1987 TO 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	A/E Ratio						Annual Improvement Factors					Arithmetic Average
	1992	1991	1990	1989	1988	1987	1992 to 1991	1991 to 1990	1990 to 1989	1989 to 1988	1988 to 1987	
Under 55.....	2.12	1.48	1.98	2.55	1.84	2.06	-0.438	0.256	0.221	-0.388	0.108	-0.048
55-59.....	1.50	1.64	1.32	1.35	1.63	1.40	0.083	-0.239	0.021	0.170	-0.166	-0.026
60-64.....	1.22	1.13	1.15	1.20	1.22	1.23	-0.074	0.017	0.038	0.018	0.009	0.001
65-69.....	1.00	1.01	1.03	1.03	1.08	1.07	0.010	0.019	-0.001	0.045	-0.005	0.014
70-74.....	0.94	0.99	1.00	0.98	1.06	1.10	0.049	0.014	-0.019	0.076	0.031	0.030
75-79.....	0.91	1.01	0.98	0.97	1.05	1.09	0.099	-0.024	-0.011	0.075	0.038	0.035
80-84.....	0.94	0.96	1.00	1.00	1.02	1.04	0.023	0.036	0.001	0.017	0.022	0.020
85-89.....	0.96	0.99	1.01	1.06	1.00	0.97	0.033	0.024	0.045	-0.061	-0.034	0.002
90-94.....	1.02	1.05	0.99	1.19	1.04	1.12	0.021	-0.058	0.170	-0.143	0.067	0.011
95 and over.....	1.22	0.96	0.88	0.92	1.14	1.09	-0.266	-0.094	0.039	0.193	-0.042	-0.034
Total.....	0.98	1.01	1.02	1.03	1.07	1.09	0.035	0.006	0.011	0.040	0.015	0.021

TABLE 32

SUMMARY OF MORTALITY IMPROVEMENT FOR FEMALE LIVES
FOR CALENDAR-YEARS 1987 TO 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	A/E Ratio						Annual Improvement Factors					Arithmetic Average
	1992	1991	1990	1989	1988	1987	1992 to 1991	1991 to 1990	1990 to 1989	1989 to 1988	1988 to 1987	
Under 55	3.30	2.97	2.94	2.34	2.95	4.32	-0.113	-0.009	-0.253	0.205	0.318	0.029
55-59	2.28	2.18	2.20	2.13	2.40	2.16	-0.049	0.011	-0.034	0.114	-0.114	-0.014
60-64	1.54	1.64	1.68	1.69	1.75	1.81	0.063	0.023	0.009	0.034	0.033	0.032
65-69	1.50	1.52	1.45	1.48	1.47	1.56	0.017	-0.054	0.026	-0.012	0.057	0.007
70-74	1.25	1.29	1.24	1.28	1.37	1.29	0.034	-0.041	0.030	0.071	-0.061	0.007
75-79	1.08	1.14	1.11	1.11	1.16	1.15	0.048	-0.021	-0.002	0.043	-0.006	0.012
80-84	1.01	1.10	1.08	1.09	1.15	1.13	-0.015	0.010	0.044	-0.011	0.022	0.082
85-89	1.09	1.10	1.11	1.12	1.23	1.22	0.013	0.006	0.005	0.091	-0.006	0.022
90-94	1.12	1.14	1.12	1.25	1.21	1.27	0.025	-0.018	0.099	-0.034	0.050	0.024
95 and over	1.02	0.94	0.99	0.99	1.10	1.00	-0.085	0.054	-0.001	0.100	-0.099	-0.006
Total	1.13	1.18	1.17	1.20	1.26	1.25	0.039	-0.010	0.026	0.046	-0.002	0.020

TABLE 33

SUMMARY OF MORTALITY IMPROVEMENT FOR FEMALE INCOME
FOR CALENDAR-YEARS 1987 TO 1992
EXPECTED MORTALITY BASIS—1983 GROUP ANNUITY MORTALITY

Attained Age	A/E Ratio						Annual Improvement Factors					Arithmetic Average
	1992	1991	1990	1989	1988	1987	1992 to 1991	1991 to 1990	1990 to 1989	1989 to 1988	1988 to 1987	
Under 55	2.22	3.20	5.71	2.52	3.16	3.21	0.305	0.439	-1.265	0.202	0.016	-0.061
55-59	1.99	1.87	1.82	2.14	2.41	1.47	-0.065	-0.026	0.149	0.112	-0.643	-0.095
60-64	1.43	1.50	1.44	1.51	1.45	2.08	0.044	-0.042	0.046	-0.040	0.302	0.062
65-69	1.46	1.42	1.37	1.35	1.32	1.49	-0.027	-0.041	-0.016	-0.018	0.112	0.002
70-74	1.12	1.24	1.17	1.19	1.33	1.26	0.099	-0.060	0.023	0.099	-0.051	0.022
75-79	1.01	1.12	1.06	1.07	1.12	1.14	0.102	-0.059	0.011	0.041	0.024	0.024
80-84	1.01	1.14	1.06	1.11	1.11	1.02	0.113	-0.073	0.044	0.001	-0.083	0.000
85-89	1.05	1.12	1.08	1.10	1.20	1.16	0.061	-0.032	0.015	0.086	-0.037	0.019
90-94	1.05	1.09	1.15	1.30	1.12	1.25	0.035	0.058	0.114	-0.166	0.103	0.029
95 and over	0.98	0.92	0.98	0.73	0.76	0.91	-0.063	0.058	-0.349	0.047	0.162	-0.029
Total	1.11	1.20	1.16	1.19	1.23	1.26	0.071	-0.032	0.025	0.030	0.025	0.024

CHART I

SUMMARY OF ACTUAL/EXPECTED RATIOS FOR MALE LIVES FOR CALENDAR-YEARS 1987 TO 1992
 EXPECTED MORTALITY BASIS-1983 GROUP ANNUITY MORTALITY TABLE

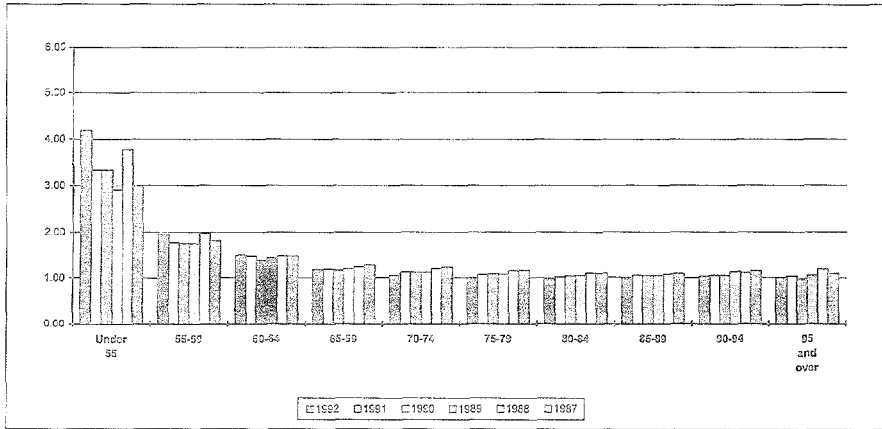


CHART II

SUMMARY OF ACTUAL/EXPECTED RATIOS FOR MALE INCOME FOR CALENDAR-YEARS 1987 TO 1992
 EXPECTED MORTALITY BASIS-1983 GROUP ANNUITY MORTALITY TABLE

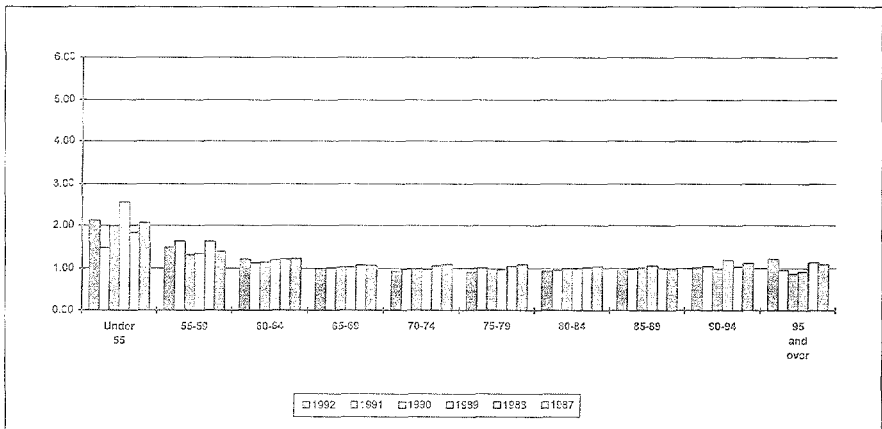


CHART III

SUMMARY OF ACTUAL/EXPECTED RATIOS FOR FEMALE LIVES FOR CALENDAR-YEARS 1987 TO 1992
 EXPECTED MORTALITY BASIS-1983 GROUP ANNUITY MORTALITY TABLE

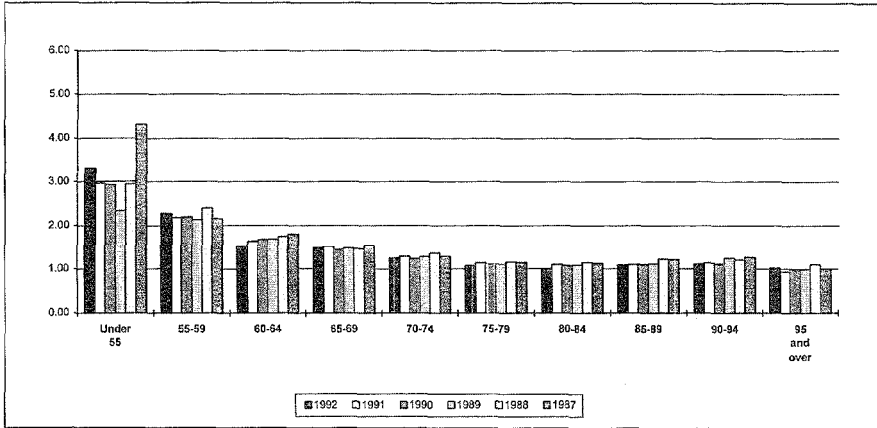


CHART IV

SUMMARY OF ACTUAL/EXPECTED RATIOS FOR FEMALE INCOME FOR CALENDAR-YEARS 1987 TO 1992
 EXPECTED MORTALITY BASIS-1983 GROUP ANNUITY MORTALITY TABLE

