2015 Preneed Mortality Study Report

Joint Academy of Actuaries' Life Experience Committee and Society of Actuaries' Preferred Mortality Oversight Group's Guaranteed Issue/Simplified Issue/Preneed Working Group

November 2016

The American Academy of Actuaries is an 18,500+ member professional association whose mission is to serve the public and the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

The Society of Actuaries (SOA) is an educational, research and professional organization dedicated to serving the public, its members and its candidates. The SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal problems. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

2015 Preneed Mortality Study Report

TABLE OF CONTENTS

Members of the Guaranteed Issue/Simplified/Preneed Working Group 3

I. Data Selection 4

1.1 Description of Preneed Product and Underwriting 4
1.2 Background 4
1.3 Analysis of Data, including Limitations 5
1.4 Data Included in the Study 6

II. Basic Mortality Table 7

2.1 Extent of Credible Data 7
2.2 Select Period and Other Dimensions 7
2.3 Graduation Choices Made 7
2.3.1 Graduation Methodology 7
2.3.2 Use of 90% Confidence Intervals to Guide Graduation 8
2.3.3 Adjustment of Graduated Mortality Rates 8
2.3.4 Production of Mortality Tables 9
2.3.5 Slope Checking 9
2.4 Mortality Improvement 9
2.5 Basic Mortality Tables 10

III. Valuation Mortality Table 11

3.1 Scatter Diagram 11
3.2 Coverage for Various Loadings 12
3.3 Model Office Reserves and Graphs 12
3.4 Valuation and Nonforfeiture Recommendations 13
3.5 Other Valuation Sections 13

Appendix A. 2015 Preneed Male Basic Select and Ultimate, Composite Mortality Table, ALB 14

Appendix B. 2015 Preneed Female Basic Select and Ultimate, Composite Mortality Table, ALB 16

Appendix C. 2015 Preneed Unisex Basic Select and Ultimate, Composite Mortality Table, ALB 18

Members of the Guaranteed Issue/Simplified/Preneed Working Group

Mary J. Bahna-Nolan, FSA, MAAA, CERA, Chair

Jeffrey E. Johnson, ASA, MAAA, Preneed Sub-group Chair*

Mark William Birdsall, FSA, FCA, MAAA*
Jennifer L Brady, FSA, MAAA
William M. Brummond, FSA, MAAA
Donna R. Claire, FSA, CERA, MAAA
Keith A. Dall, FSA, MAAA
Andy Ferris, FSA, FCA, MAAA
Jean-Marc Fix, FSA, MAAA*
Monique N. Hacker, FSA, MAAA
Catherine Ho, ASA, MAAA
Joseph J. Hogan, FSA, MAAA
Leslie M. Jones, ASA, MAAA*
Tony Randall Litterer, FSA, MAAA
Gregory Lee Mitchell, FSA, MAAA*
David Moran, FSA, MAAA
Edward James Mullen, FSA, MAAA
Kyle John Nodurft, FSA, MAAA*
W. Michael Reese, ASA, MAAA
Tomasz Serbinowski, FSA, MAAA
Lloyd M. Spencer Jr., FSA, CERA, MAAA
Michael J. Villa, ASA, MAAA*
D. Joeff Williams, FSA, MAAA*
Josh Windsor, FSA, FIA, MAAA*

Consultants:

David B. Atkinson, FSA

SOA Staff :

John A. Luff, FSA, FCIA, MAAA

Cynthia S. MacDonald, FSA, CFA, MAAA

Korrel Rosenberg

*members of the Preneed sub-group

I. Data Selection

1.1 Description of Preneed Product and Underwriting

A pre-need insurance policy is any life insurance policy or certificate that is issued in combination with, in support of, with an assignment to, or as a guarantee for a prearrangement agreement for goods and services to be provided at the time and immediately following the death of the insured. Any policy that met this definition was classified as pre-need even if the underwriting otherwise was either guaranteed issue or simplified issue.

The Preneed insurance industry sells life insurance and annuity products to fund pre-arranged funerals. A definition of "preneed insurance" offered in NAIC Model regulation #817 is "a life insurance policy, annuity contract, or other insurance contract issued by an insurance company which, whether by assignment or otherwise, has for a purpose, the funding of a preneed funeral contract or an insurance-funded funeral or burial agreement, the insured or annuitant being the person for whose services the funds were paid." Most of these products have increasing death benefits designed to keep pace with the rising cost of funerals. Most policies are sold as single premium whole life; the next most common plan is whole life with ten years of premium payments.

Underwriting is typically performed by agents using a very simplified approach that requires applicants to answer a handful of broad health questions. These questions are used to classify insureds into two or three risk categories, one of which is usually considered "guaranteed issue." Some insurers allow applicants to skip these health questions, causing the applicants to automatically fall into the guaranteed issue class. As a result, a majority of preneed business is issued on a "guaranteed issue" or "standard" basis, having a graded death benefit and/or increased premium cost. Where insurers use three risk classes, the guaranteed issue "imminent death" applicants are sometimes issued a deferred annuity product. The remaining insureds are classified as "simplified issue."

Mortality in the year following issue is very high and then drops significantly in the second year. Almost all Preneed business is sold on a unisex and composite (i.e., unismoke) basis.

1.2 Background

The Society of Actuaries (SOA) performed its first Preneed mortality study and published a Preneed mortality table in 2008, based on data for the years 2000 to 2004. The table had a 5-year select period for issue ages ranging from 0 to 99, with separate rates for males and females. Starting around issue age 50, the "select" period became an "anti-select" period, with mortality decreasing by duration over the first five years.

A data call was issued on March 11, 2011 for guaranteed issue, simplified issue and preneed mortality data for observation years 2005 to 2009. The data call is described in detail in the four documents that make up the Appendix.

The SOA hired MIB to compile the data collected for the Preneed study. MIB performed numerous syntax and validation checks and worked with SOA staff to ensure that company confidentiality was protected in the production of any data views that were provided to the Joint American Academy of Actuaries Life Experience Committee and Society of Actuaries Preferred Mortality Oversight Group (POG) for the development of the mortality tables.

The SOA's confidentiality guidelines state that any data released for analysis should not have any one company dominating the experience data. To meet this guideline, several companies' data submissions had to be scaled down. The guidelines also state that any potential subset or extract of the data should

contain multiple companies' experience in order to prevent the identification of any one company's experience. These guidelines were adhered to by having the analysis performed by an independent consultant to the SOA, David Atkinson. Only aggregated, summary data was released to the POG.

1.3 Analysis of Data, including Limitations

The study included data from 11 companies, representing roughly half of the Preneed insurance industry by number of companies and 75% by volume of business.

Mortality was found to vary significantly by the following parameters, in addition to the usual variations by gender, issue age and duration for select mortality and by gender and attained age for ultimate mortality:

- Guaranteed Issue (GI) vs. Simplified Issue (SI)
- Single Pay vs. Multi Pay, such as 10-pay whole life
- Level vs. Increasing vs. Modified Death Benefits (typically return of premium in first 2 years)
- Size of policy
- Company

When mortality ratios were analyzed by GI vs. SI, Single Pay vs. Multi Pay and Level/Increasing vs. Modified Death Benefits, mortality levels for each combination fell into one of the following two groupings:

1. GI Single Pay business and all business with Modified death benefits
2. All other business (SI or Multi Pay business, excluding business with Modified death benefits)

The first group was labeled "High Anti-Selection Risks" and the second group was labeled "Low Anti-Selection Risks." Mortality tables were constructed for each group as well as for all risks combined. When mortality ratios to these new tables were calculated by contributing company, the results were surprising:

- The separate tables for high and low anti-selection risks produced mortality ratios by company that were wildly inconsistent.
- The table for all risks combined produced mortality ratios by company that were surprisingly consistent.

Knowing that the overall pool of risks written by each company was quite similar, the second result made sense. Knowing that some companies interpreted SI and GI differently when coding their data, it was understandable that company results for SI or GI would be inconsistent. Therefore, the decision was made to move forward with one mortality table for all Preneed risks.

1.4 Data Included in the Study

A small amount of Preneed data was not coded as either GI or SI. This data was excluded from the study.

The following table shows totals for data collected, data excluded and data included in the study:

	Preneed Data Included in Study				Average Mortality Rate	
	Death Count	Death Units	Exposure Count	Exposure Units	By Count	By Amount
Data Collected	639,084	2,992,148	7,976,643	35,096,568	0.08012	0.08525
Data Excluded	4,499	11,299	123,476	329,583	0.03643	0.03428
Data Included	634,585	2,980,849	7,853,166	34,766,985	0.08081	0.08574
Ratio of Included to Collected	99.3%	99.6%	98.5%	99.1%	100.9%	100.6%

II. Basic Mortality Table

2.1 Extent of Credible Data

The study included over 630,000 deaths. Results were highly credible, with more than 1,000 deaths in each cell, for quinquennial issue age groups from 45 to 94 and durations 1 to 10 and for quinquennial attained age groups from 45 to 99.

2.2 Select Period and Other Dimensions

First year mortality showed substantial anti-selection at all ages. Second year mortality showed significant anti-selection, though much less than in year one. Anti-select mortality rates graded into ultimate mortality rates over about 5 years for issue ages under 60 and over about 10 years for issue ages over 60. Therefore, a select period of 10 years was chosen.

The vast majority of Preneed business, 96%, was written on a unisex basis. The other 4% of the business was written in states that required sex-distinct rates. Male, Female and Unisex Preneed tables were constructed.

2.3 Graduation Choices Made

2.3.1 Graduation Methodology

Whitaker-Henderson graduation was performed using graduation functions obtained from Bob Howard's WHGradSample.xls workbook, available on-line. Exposure was used as the weights for the graduation, thereby ensuring that the graduated rates would reproduce total units of death benefits.

Different orders of polynomials were tested. The 4^{th} order polynomials provided the best combination of fit and smoothness in every case. Relatively small values of "h," the smoothing parameter, were achieved, due to the large number of deaths that produced consistent patterns of mortality.

Mortality rates for duration 1 were extremely high, averaging more than three times the duration 2 rate for issue ages under 60 and more than two times the duration 2 rate for issue ages 60 to 70. Issue age 0 mortality rates were also very high, averaging more than double the mortality rates for issue ages 1-4.

Because of mortality rate discontinuities for policy year 1 and also for issue age 0, select mortality was graduated in three segments:

1. A one-dimensional graduation for Issue Age 0,
2. A one-dimensional graduation for Policy Year 1 and
3. A two-dimensional graduation for Issue Age Groups > 0 and Policy Years 2-10.

A single one-dimensional graduation was used for Attained Age Groups. Ultimate mortality was based on durations 11-20 only. Durations 21+ were excluded because they were from an era with significant differences from today's Preneed market, data were scant and raw mortality rates for duration 21+ were generally lower than for durations 11-20. Ultimate mortality rates were graduated for attained age groups 10-17 and 18-24 and for quinquennial attained age groups from 25-99 to 95-99.

Ninety-percent confidence intervals were calculated for all raw (input) mortality rates, calculated as deaths in units divided by exposure in units. The primary graduation parameter, "h," was then varied to produce a reasonable balance between smoothness and fit, such that 85% to 95% of the graduated rates

typically fell within the 90% confidence intervals. If 100% of the graduated rates fell within the 90% confidence intervals, it was assumed that the fit was excessive so smoothness was increased. If less than about 80% of the graduated rates fell within the 90% confidence intervals, it was assumed that the smoothness was excessive so fit was increased.

A majority of the cells with graduated rates outside of the 90% confidence intervals were for the lowest and highest issue ages where the number of deaths was relatively small.

2.3.2 Use of 90% Confidence Intervals to Guide Graduation

Ninety-percent confidence intervals were calculated for each raw (input) mortality rate. The primary graduation parameter, "h", was varied with a target of smoothing mortality rates such that 90% of graduated mortality rates remained within their 90% confidence intervals. Cells for the lowest and highest ages, with too few deaths to be credible, were excluded from the confidence interval target. The 90% goal was readily achieved.

The variance of incurred death benefits for each policy was calculated as follows:

> Variance = q * (1 – q) * Amount^2, where q = mortality rate and Amount = death benefit in force, in units.

Ideally, this variance would have been calculated as the mortality study data was being assembled, but it requires the raw mortality rate, which cannot be calculated until after mortality study data has been compiled. The pivot table summarizes multiple policies into cells, thereby losing the ability to calculate variance at the policy level. Variance was estimated at a summary level by pre-calculating a variance adjustment, "VarAdj," as follows:

1. Develop a distribution of business by size of policy for the study as a whole or for subgroups where average size does not vary significantly.

2. Calculate the square root of the sum of Amount^2 for each subgroup and divide the result by the average size for the subgroup. Based on limited testing, this factor can range between 1.05 and 7.00. For Preneed business, with its high concentration of small size policies, experimentation indicated a more narrow range of 1.10 to 1.25; a slightly conservative value of 1.20 was selected for VarAdj.

For Preneed business, confidence intervals for a mortality rate cell were calculated as follows:

1. AvgSize = Units Exposed / Count Exposed
2. NumPol = Number of policies = Count Exposed
3. VarAdj = 1.20
4. Variance = VarAdj * NumPol * q * (1 – q) * $(\text{AvgSize})^2$, where q is the cell's raw mortality rate based on units, not count.
5. StdDev = Standard Deviation as a fraction of actual deaths = SQRT(Variance) / UnitsActDth
6. The 90% confidence interval assumes a normal distribution, using plus or minus 1.645 standard deviations:
    a. q90CI_low = low end of 90% confidence interval = q * (1 – 1.645 * StdDev)
    b. q90CI_high = high end of 90% confidence interval = q * (1 + 1.645 * StdDev)

2.3.3 Adjustment of Graduated Mortality Rates

Select data was marginal for issue ages under 40, and insufficient when split between male and female. The unisex table was therefore created first. For issue ages 0-39 combined, ratios of male and female mortality to unisex mortality were calculated. These ratios were applied to unisex rates to generate mortality rates for ages 0-39 for males and females.

Select rates for issue age 92 were set equal to ultimate rates beginning at duration 8. Select rates for issue age 96 were set equal to ultimate rates beginning at duration 6, with the duration 5 rate then calculated as the average of durations 4 and 6. Select rates for issue age 100 were set equal to ultimate rates beginning at duration 3; select rates for durations 1 and 2 were extrapolated from issue ages 92 and 96.

Adjusted deaths were calculated to reflect the effect of all adjustments to mortality rates. For each of the three mortality tables, adjusted deaths equaled or slightly exceeded actual deaths.

2.3.4 Production of Mortality Tables

Preneed mortality tables were produced using the following process, separately for unisex, females and males:

1. Adjusted mortality rates were linearly interpolated to obtain final select mortality rates for issue ages 0 to 100 and durations 1 to 10 and to obtain ultimate mortality rates for attained ages 10 to 96. The linear interpolation made use of weighted average ages for each age group, to better reproduce mortality within each age group.
2. Ultimate mortality rates for attained ages 97 to 120 were calculated using the following Old Age Mortality Rate methodology, separately for unisex, females and males:
    a. Annual percentages increases for 2015 VBT mortality rates were calculated for ages 97 through 120.
    b. The Preneed interpolated mortality rate for attained age 96 was used as the starting point.
    c. Rates for ages 120 to 97 were calculated based on the 2015 VBT annual percentage increases minus X%, but no less zero, where X% was solved for to reproduce the age 96 unismoker rate.

2.3.5 Slope Checking

Three kinds of slope checks were made, with ultimate rates treated as policy year 11. Slopes were checked:

1) Between rates for adjacent issue ages for the same policy year:
    - Rates monotonically decreased to a minimum between issue ages 21 and 28 and then monotonically increased thereafter.
2) Between rates for adjacent durations for the same issue age:
    - Other than some exceptions at young ages, rates monotonically decreased to a policy year that varied by issue age (policy year 5 for issue ages 29 through 62, a later policy year for younger ages and an earlier policy year for older ages) and then monotonically increased to policy year 11 (ultimate).
3) Between rates for the same attained age but with issue age and policy year differing by 1 and -1 or -1 and 1:
    - Issue ages 31 and up had a single minimum, mostly between policy years 7 and 9. Most issue ages below 31 had both a minimum and a maximum when looking at constant attained ages. While not ideal, no adjustments were made because so little business was issued at these ages.

2.4 Mortality Improvement

Overall Preneed mortality was studied by observation year. Based on percentages of the 2015 Preneed Unisex table, there were two years of modest mortality improvement followed by two years of modest mortality deterioration. Overall, there was a compound average mortality deterioration of 0.4% per year

with a standard deviation of 0.8%. The data was inconclusive: Assumptions of either no improvement or no deterioration fit well within one standard deviation for all five years of observations.

2.5 Basic Mortality Tables

2015 Preneed Basic Composite (or unismoke) tables were developed for male, female and unisex business on a 10 year select and ultimate and an age last birthday (ALB) basis. These tables are shown in Appendices A (Male), B (Female) and C (Unisex).

III. Valuation Mortality Table

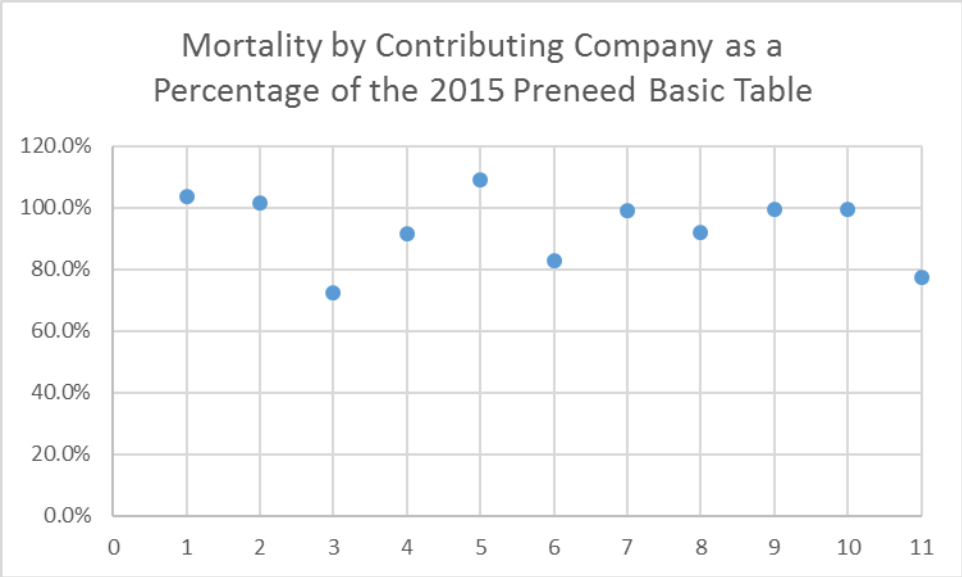
Three options were examined for the next Preneed valuation mortality table:

1. Retain the current 1980 CSO mortality table. Most states use 1980 CSO Table E, which is a blend of 60% female and 40% male rates.
2. Use the 2017 CSO Ultimate mortality table. Most states would use a blend of 60% female and 40% male rates.
3. Use the 10-year anti-select and ultimate Preneed mortality table. Most states would use the unisex version of this table.

As of 2016, the 1980 CSO was the recognized valuation table for Preneed business in 40 states. When compared to the other two options, the 1980 CSO Table produced the highest overall reserves.

3.1 Scatter Diagram

Mortality by contributing company as a percentage of the 2015 Preneed Basic Table was tightly grouped around 100%, as shown in the following scatter diagram.



3.2 Coverage for Various Loadings

Overall Preneed mortality was 99.8% of the 2015 Preneed Table. The following table shows the overall percentage of the 2015 Preneed Table and the loading percentage needed to cover the mortality levels of 8, 9 and 10 of the 11 contributing companies:

Number of Companies Covered	Percentage of Companies Covered	Overall Percentage of 2015 Preneed Table Needed to Cover	Excess over 100% of the 2015 Preneed Table Needed to Cover
8	73%	99.8%	-0.2%
9	82%	102.3%	2.3%
10	91%	103.9%	3.9%

The one company not covered by 3.9% loading was the smallest in the study, with only 46 claims and accounting for less than 0.01% of total exposure.

3.3 Model Office Reserves and Graphs

Model office projections were created by Jeff Johnson, AVP, Product Development, Global Atlantic Financial Group. The model office was used to compare reserves generated by three mortality tables: 2015 Preneed Basic (Unisex), 1980 CSO Table E and a 60% female, 40% male blend of 2017 CSO.

- The model focused on two main plans: Single Pay Whole Life, which represented 75% of Preneed reserves, and 10-Pay Whole Life, which represented 25% of Preneed reserves.
- The model focused on issue ages 65, 75 and 85, which were representative of the high issue ages associated with Preneed business.

For single-pay business, which represented 75% of Preneed reserves:

- 1980 CSO produced the highest reserves in every year
- 2015 Preneed Basic produced reserves that averaged 8% less than 1980 CSO
- 2017 CSO produced reserves about 12% less than 1980 CSO

For 10-pay business, which represented 25% of Preneed reserves:

- 1980 CSO produced the highest reserves in every year but the first year
- 2017 CSO produced reserves very close to 1980 CSO reserves for the first 9 years, about 4% less than 1980 CSO reserves for years 10 and later and about 2% less than 1980 CSO for all years combined.
- 2015 Preneed Basic produced reserves that averaged 8% less than 1980 CSO

Overall, for 100% of Preneed reserves:

- 1980 CSO produced the highest reserves in every year
- 2015 Preneed Basic reserves averaged 8% less than 1980 CSO reserves

- 2017 CSO reserves averaged 9.5% less than 1980 CSO reserves

3.4 Valuation and Nonforfeiture Recommendations

At the August 24, 2016 meeting of the NAIC's Life Actuarial Task Force ("LATF"), May Bahna-Nolan presented the results of the SOA's Preneed mortality study and valuation analyses. With support from the Preneed industry, 1980 CSO Table was recommended as the preferred mortality table for calculating Preneed reserves for several reasons:

- In the model office calculations, reserves for the 1980 CSO Table, while generally comparable to those produced by the 2015 Preneed Basic Table, proved more conservative overall. This conservatism is beneficial when performing cash flow testing with future expected, but non-guaranteed, benefit increases are assumed.
- 1980 CSO Table is an ultimate-only table, which simplifies the calculation of reserves, especially compared to the 10-year anti-select and ultimate mortality rates of the 2015 Preneed Basic Table.
- As the Preneed industry already uses 1980 CSO Table for valuation and nonforfeiture purposes in 40 states, the implementation costs would be much less than for the other alternatives.

LATF considered and approved the recommendation to continue the use of the 1980 CSO Table in the 40 states that have adopted 1980 CSO Table for Preneed reserves and nonforfeiture values. VM-20 already references the use of the 1980 CSO Table for Preneed reserves. Missing is an equivalent mandate to use of the 1980 CSO Table for Preneed nonforfeiture values.

3.5 Other Valuation Sections

Because the 2015 Preneed Basic Table was not used for valuation, the following sections were moot and were not populated: Final Loading, Grading to Omega of 1.0 by Age 121, Slope Checks, and Valuation Mortality Tables and Graphs.

Appendix A. 2015 Preneed Male Basic Select and Ultimate, Composite Mortality Table, ALB

Issue	Duration										Ultimate	Attained
Age	1	2	3	4	5	6	7	8	9	10	11+	Age
0	0.16895	0.13520	0.10913	0.09072	0.07995	0.07095	0.06196	0.05297	0.04397	0.03498	0.02484	10
1	0.09944	0.02239	0.02514	0.02646	0.02655	0.02563	0.02390	0.02424	0.02391	0.02356	0.02370	11
2	0.09615	0.02152	0.02386	0.02494	0.02495	0.02406	0.02247	0.02258	0.02247	0.02236	0.02256	12
3	0.09286	0.02064	0.02257	0.02342	0.02334	0.02250	0.02104	0.02091	0.02103	0.02115	0.02141	13
4	0.08957	0.01976	0.02128	0.02190	0.02174	0.02094	0.01960	0.01925	0.01959	0.01994	0.02027	14
5	0.08628	0.01888	0.01999	0.02037	0.02013	0.01937	0.01817	0.01758	0.01815	0.01874	0.01916	15
6	0.08300	0.01800	0.01871	0.01885	0.01853	0.01781	0.01674	0.01592	0.01671	0.01753	0.01808	16
7	0.07971	0.01712	0.01742	0.01733	0.01692	0.01624	0.01531	0.01425	0.01527	0.01632	0.01700	17
8	0.07705	0.01663	0.01669	0.01647	0.01603	0.01538	0.01454	0.01355	0.01451	0.01549	0.01592	18
9	0.07460	0.01627	0.01614	0.01582	0.01535	0.01474	0.01397	0.01314	0.01395	0.01477	0.01483	19
10	0.07214	0.01590	0.01559	0.01517	0.01468	0.01410	0.01341	0.01274	0.01339	0.01406	0.01375	20
11	0.06969	0.01553	0.01504	0.01453	0.01401	0.01346	0.01284	0.01234	0.01283	0.01334	0.01275	21
12	0.06724	0.01516	0.01449	0.01388	0.01333	0.01282	0.01228	0.01194	0.01227	0.01262	0.01226	22
13	0.06478	0.01480	0.01394	0.01323	0.01266	0.01218	0.01172	0.01153	0.01172	0.01190	0.01177	23
14	0.06233	0.01443	0.01339	0.01258	0.01199	0.01154	0.01115	0.01113	0.01116	0.01119	0.01128	24
15	0.06036	0.01425	0.01309	0.01222	0.01162	0.01120	0.01087	0.01088	0.01089	0.01091	0.01080	25
16	0.05850	0.01412	0.01283	0.01192	0.01131	0.01093	0.01065	0.01067	0.01069	0.01073	0.01031	26
17	0.05663	0.01398	0.01258	0.01161	0.01100	0.01065	0.01043	0.01046	0.01049	0.01055	0.00982	27
18	0.05477	0.01384	0.01233	0.01131	0.01070	0.01038	0.01020	0.01025	0.01029	0.01037	0.00958	28
19	0.05291	0.01370	0.01208	0.01101	0.01039	0.01011	0.00998	0.01003	0.01009	0.01019	0.00950	29
20	0.05105	0.01357	0.01182	0.01070	0.01009	0.00983	0.00976	0.00982	0.00989	0.01001	0.00942	30
21	0.04918	0.01343	0.01157	0.01040	0.00978	0.00956	0.00954	0.00961	0.00969	0.00983	0.00935	31
22	0.04770	0.01340	0.01143	0.01022	0.00960	0.00941	0.00944	0.00953	0.00965	0.00983	0.00927	32
23	0.04659	0.01347	0.01139	0.01014	0.00954	0.00938	0.00945	0.00959	0.00976	0.01001	0.00946	33
24	0.04548	0.01354	0.01135	0.01007	0.00948	0.00935	0.00947	0.00965	0.00987	0.01018	0.00976	34
25	0.04437	0.01361	0.01131	0.01000	0.00942	0.00933	0.00948	0.00971	0.00998	0.01035	0.01005	35
26	0.04325	0.01369	0.01128	0.00993	0.00936	0.00930	0.00950	0.00977	0.01009	0.01052	0.01035	36
27	0.04214	0.01376	0.01124	0.00986	0.00930	0.00927	0.00951	0.00983	0.01020	0.01070	0.01065	37
28	0.04214	0.01402	0.01139	0.00998	0.00944	0.00943	0.00969	0.01003	0.01043	0.01099	0.01109	38
29	0.04248	0.01435	0.01160	0.01016	0.00964	0.00965	0.00993	0.01028	0.01071	0.01131	0.01157	39
30	0.04282	0.01468	0.01181	0.01035	0.00984	0.00987	0.01016	0.01053	0.01098	0.01164	0.01205	40
31	0.04316	0.01500	0.01202	0.01053	0.01003	0.01009	0.01040	0.01079	0.01126	0.01197	0.01253	41
32	0.04350	0.01533	0.01223	0.01071	0.01023	0.01031	0.01064	0.01104	0.01153	0.01229	0.01302	42
33	0.04469	0.01579	0.01257	0.01102	0.01054	0.01064	0.01095	0.01135	0.01186	0.01266	0.01354	43
34	0.04623	0.01630	0.01296	0.01137	0.01090	0.01100	0.01131	0.01169	0.01220	0.01305	0.01408	44
35	0.04777	0.01681	0.01335	0.01173	0.01126	0.01137	0.01166	0.01203	0.01255	0.01344	0.01462	45
36	0.04931	0.01733	0.01375	0.01208	0.01162	0.01173	0.01201	0.01238	0.01289	0.01382	0.01516	46
37	0.05085	0.01784	0.01414	0.01244	0.01198	0.01210	0.01237	0.01272	0.01324	0.01421	0.01570	47
38	0.05289	0.01852	0.01493	0.01325	0.01278	0.01286	0.01305	0.01333	0.01386	0.01498	0.01657	48
39	0.05512	0.01926	0.01587	0.01422	0.01374	0.01377	0.01386	0.01404	0.01457	0.01589	0.01755	49
40	0.05734	0.02000	0.01680	0.01519	0.01469	0.01468	0.01466	0.01474	0.01528	0.01679	0.01853	50
41	0.05956	0.02074	0.01774	0.01616	0.01565	0.01559	0.01547	0.01545	0.01600	0.01770	0.01951	51
42	0.06178	0.02148	0.01867	0.01714	0.01661	0.01650	0.01627	0.01616	0.01671	0.01861	0.02048	52
43	0.06440	0.02230	0.01940	0.01779	0.01722	0.01709	0.01684	0.01670	0.01726	0.01918	0.02105	53
44	0.06715	0.02315	0.02005	0.01833	0.01771	0.01758	0.01733	0.01718	0.01775	0.01963	0.02146	54
45	0.06991	0.02399	0.02071	0.01886	0.01820	0.01806	0.01781	0.01766	0.01824	0.02009	0.02187	55
46	0.07267	0.02483	0.02136	0.01940	0.01869	0.01854	0.01830	0.01814	0.01873	0.02054	0.02228	56
47	0.07542	0.02568	0.02202	0.01994	0.01918	0.01903	0.01878	0.01862	0.01922	0.02100	0.02269	57
48	0.07770	0.02646	0.02261	0.02045	0.01965	0.01948	0.01925	0.01911	0.01973	0.02148	0.02316	58
49	0.07980	0.02721	0.02319	0.02095	0.02010	0.01992	0.01971	0.01960	0.02025	0.02199	0.02364	59
50	0.08190	0.02797	0.02377	0.02146	0.02056	0.02036	0.02018	0.02010	0.02078	0.02249	0.02413	60

Appendix A. 2015 Preneed Male Basic Select and Ultimate, Composite Mortality Table, ALB

Issue Age	Duration 1	2	3	4	5	6	7	8	9	10	Ultimate 11+	Attained Age
51	0.08399	0.02872	0.02435	0.02196	0.02101	0.02080	0.02064	0.02060	0.02130	0.02299	0.02461	61
52	0.08609	0.02947	0.02492	0.02246	0.02147	0.02125	0.02111	0.02110	0.02182	0.02350	0.02510	62
53	0.08745	0.03014	0.02548	0.02302	0.02201	0.02178	0.02170	0.02177	0.02255	0.02423	0.02589	63
54	0.08856	0.03077	0.02604	0.02359	0.02258	0.02235	0.02233	0.02250	0.02335	0.02503	0.02675	64
55	0.08967	0.03141	0.02659	0.02417	0.02315	0.02291	0.02296	0.02323	0.02414	0.02583	0.02761	65
56	0.09078	0.03205	0.02714	0.02475	0.02372	0.02348	0.02359	0.02396	0.02494	0.02663	0.02847	66
57	0.09190	0.03268	0.02770	0.02533	0.02429	0.02405	0.02422	0.02470	0.02573	0.02743	0.02933	67
58	0.09271	0.03349	0.02849	0.02622	0.02524	0.02504	0.02531	0.02595	0.02711	0.02885	0.03087	68
59	0.09345	0.03434	0.02935	0.02720	0.02630	0.02614	0.02653	0.02735	0.02864	0.03043	0.03265	69
60	0.09418	0.03519	0.03020	0.02817	0.02735	0.02724	0.02775	0.02875	0.03018	0.03201	0.03443	70
61	0.09492	0.03604	0.03106	0.02915	0.02841	0.02834	0.02896	0.03015	0.03171	0.03359	0.03621	71
62	0.09566	0.03689	0.03192	0.03013	0.02947	0.02944	0.03018	0.03155	0.03324	0.03517	0.03800	72
63	0.09717	0.03846	0.03352	0.03187	0.03137	0.03148	0.03239	0.03399	0.03588	0.03792	0.04086	73
64	0.09897	0.04029	0.03538	0.03389	0.03357	0.03385	0.03496	0.03681	0.03892	0.04110	0.04436	74
65	0.10077	0.04212	0.03725	0.03591	0.03578	0.03623	0.03753	0.03963	0.04195	0.04427	0.04785	75
66	0.10257	0.04395	0.03911	0.03793	0.03798	0.03860	0.04010	0.04245	0.04499	0.04745	0.05135	76
67	0.10437	0.04578	0.04098	0.03994	0.04018	0.04098	0.04268	0.04527	0.04803	0.05062	0.05485	77
68	0.10800	0.04906	0.04428	0.04336	0.04385	0.04494	0.04693	0.04981	0.05282	0.05566	0.06006	78
69	0.11210	0.05270	0.04794	0.04712	0.04787	0.04931	0.05160	0.05477	0.05806	0.06116	0.06607	79
70	0.11619	0.05635	0.05161	0.05089	0.05190	0.05368	0.05628	0.05974	0.06330	0.06666	0.07208	80
71	0.12028	0.06000	0.05527	0.05465	0.05593	0.05804	0.06095	0.06471	0.06855	0.07216	0.07809	81
72	0.12437	0.06364	0.05893	0.05842	0.05996	0.06241	0.06562	0.06967	0.07379	0.07767	0.08378	82
73	0.13090	0.06939	0.06469	0.06427	0.06610	0.06899	0.07262	0.07702	0.08148	0.08573	0.09152	83
74	0.13812	0.07575	0.07105	0.07071	0.07285	0.07619	0.08029	0.08506	0.08988	0.09452	0.10002	84
75	0.14535	0.08210	0.07740	0.07715	0.07959	0.08340	0.08796	0.09309	0.09827	0.10331	0.10932	85
76	0.15257	0.08846	0.08376	0.08360	0.08633	0.09061	0.09562	0.10113	0.10667	0.11211	0.11950	86
77	0.15979	0.09481	0.09012	0.09004	0.09308	0.09782	0.10329	0.10916	0.11506	0.12090	0.13062	87
78	0.17027	0.10402	0.09927	0.09935	0.10274	0.10798	0.11398	0.12032	0.12670	0.13309	0.14272	88
79	0.18153	0.11392	0.10911	0.10936	0.11311	0.11885	0.12540	0.13223	0.13913	0.14611	0.15574	89
80	0.19279	0.12382	0.11894	0.11937	0.12349	0.12972	0.13682	0.14415	0.15156	0.15913	0.16960	90
81	0.20405	0.13373	0.12878	0.12938	0.13386	0.14059	0.14825	0.15606	0.16399	0.17214	0.18421	91
82	0.21531	0.14363	0.13861	0.13938	0.14423	0.15146	0.15967	0.16797	0.17642	0.18516	0.19948	92
83	0.23095	0.15739	0.15219	0.15326	0.15858	0.16628	0.17503	0.18393	0.19308	0.20271	0.21534	93
84	0.24688	0.17140	0.16600	0.16738	0.17319	0.18136	0.19064	0.20015	0.21002	0.22054	0.23165	94
85	0.26281	0.18541	0.17982	0.18150	0.18780	0.19644	0.20626	0.21638	0.22696	0.23838	0.24833	95
86	0.27874	0.19943	0.19364	0.19562	0.20241	0.21152	0.22187	0.23260	0.24390	0.25622	0.26524	96
87	0.29518	0.21406	0.20807	0.21039	0.21767	0.22726	0.23814	0.24947	0.26152	0.27480	0.28363	97
88	0.31480	0.23255	0.22638	0.22913	0.23700	0.24709	0.25844	0.27042	0.28338	0.29800	0.30354	98
89	0.33443	0.25103	0.24469	0.24787	0.25632	0.26693	0.27874	0.29136	0.30524	0.32121	0.32449	99
90	0.35405	0.26952	0.26300	0.26662	0.27565	0.28676	0.29905	0.31231	0.32710	0.34442	0.34598	100
91	0.37367	0.28801	0.28131	0.28536	0.29498	0.30659	0.31935	0.33325	0.34895	0.36763	0.36757	101
92	0.39409	0.30845	0.30170	0.30621	0.31449	0.32456	0.33824	0.35295	0.36933	0.38851	0.38881	102
93	0.41576	0.33188	0.32528	0.33029	0.33429	0.33967	0.35494	0.37073	0.38743	0.40583	0.40927	103
94	0.43743	0.35532	0.34886	0.35436	0.35409	0.35478	0.37165	0.38851	0.40553	0.42314	0.42856	104
95	0.45910	0.37875	0.37245	0.37040	0.36988	0.36989	0.38835	0.40629	0.42363	0.44045	0.44630	105
96	0.48076	0.40218	0.39603	0.39211	0.38850	0.38500	0.40506	0.42407	0.44173	0.45776	0.46213	106
97	0.49495	0.41541	0.40919	0.40472	0.40025	0.40028	0.41982	0.43797	0.45437	0.46868	0.47572	107
98	0.50662	0.42521	0.41884	0.41426	0.40969	0.41562	0.43392	0.45055	0.46516	0.47743	0.48675	108
99	0.51828	0.43500	0.42848	0.42380	0.41912	0.43096	0.44803	0.46314	0.47596	0.48675	0.49493	109
100	0.52995	0.44479	0.43813	0.43334	0.42856	0.44630	0.46213	0.47572	0.48675	0.49493	0.50000	110

Appendix B. 2015 Preneed Female Basic Select and Ultimate, Composite Mortality Table, ALB

Issue	Duration										Ultimate	Attained
Age	1	2	3	4	5	6	7	8	9	10	11+	Age
0	0.13466	0.10776	0.08698	0.07231	0.06372	0.05655	0.04938	0.04222	0.03505	0.02788	0.01980	10
1	0.07925	0.01785	0.02004	0.02109	0.02116	0.02043	0.01905	0.01932	0.01906	0.01878	0.01889	11
2	0.07663	0.01715	0.01901	0.01988	0.01989	0.01918	0.01791	0.01800	0.01791	0.01782	0.01798	12
3	0.07401	0.01645	0.01799	0.01866	0.01861	0.01793	0.01677	0.01667	0.01676	0.01686	0.01707	13
4	0.07139	0.01575	0.01696	0.01745	0.01733	0.01669	0.01563	0.01534	0.01562	0.01590	0.01616	14
5	0.06877	0.01505	0.01594	0.01624	0.01605	0.01544	0.01448	0.01401	0.01447	0.01493	0.01527	15
6	0.06615	0.01435	0.01491	0.01502	0.01477	0.01419	0.01334	0.01269	0.01332	0.01397	0.01441	16
7	0.06353	0.01365	0.01388	0.01381	0.01349	0.01295	0.01220	0.01136	0.01217	0.01301	0.01355	17
8	0.06141	0.01326	0.01330	0.01313	0.01277	0.01226	0.01159	0.01080	0.01156	0.01235	0.01269	18
9	0.05946	0.01296	0.01287	0.01261	0.01224	0.01175	0.01114	0.01048	0.01112	0.01177	0.01182	19
10	0.05750	0.01267	0.01243	0.01209	0.01170	0.01124	0.01069	0.01015	0.01067	0.01120	0.01096	20
11	0.05554	0.01238	0.01199	0.01158	0.01116	0.01073	0.01024	0.00983	0.01023	0.01063	0.01016	21
12	0.05359	0.01209	0.01155	0.01106	0.01063	0.01022	0.00979	0.00951	0.00978	0.01006	0.00977	22
13	0.05163	0.01179	0.01111	0.01055	0.01009	0.00971	0.00934	0.00919	0.00934	0.00949	0.00938	23
14	0.04968	0.01150	0.01067	0.01003	0.00955	0.00920	0.00889	0.00887	0.00889	0.00892	0.00899	24
15	0.04811	0.01136	0.01043	0.00974	0.00926	0.00893	0.00866	0.00867	0.00868	0.00870	0.00860	25
16	0.04662	0.01125	0.01023	0.00950	0.00901	0.00871	0.00849	0.00851	0.00852	0.00855	0.00822	26
17	0.04514	0.01114	0.01003	0.00926	0.00877	0.00849	0.00831	0.00834	0.00836	0.00841	0.00783	27
18	0.04365	0.01103	0.00983	0.00901	0.00853	0.00827	0.00813	0.00817	0.00820	0.00827	0.00763	28
19	0.04217	0.01092	0.00963	0.00877	0.00828	0.00805	0.00796	0.00800	0.00804	0.00812	0.00757	29
20	0.04069	0.01081	0.00942	0.00853	0.00804	0.00784	0.00778	0.00783	0.00788	0.00798	0.00751	30
21	0.03920	0.01070	0.00922	0.00829	0.00780	0.00762	0.00760	0.00766	0.00772	0.00784	0.00745	31
22	0.03802	0.01068	0.00911	0.00814	0.00765	0.00750	0.00752	0.00760	0.00769	0.00784	0.00739	32
23	0.03713	0.01074	0.00908	0.00809	0.00760	0.00748	0.00753	0.00765	0.00778	0.00797	0.00754	33
24	0.03625	0.01079	0.00905	0.00803	0.00756	0.00745	0.00755	0.00769	0.00786	0.00811	0.00778	34
25	0.03536	0.01085	0.00902	0.00797	0.00751	0.00743	0.00756	0.00774	0.00795	0.00825	0.00801	35
26	0.03448	0.01091	0.00899	0.00792	0.00746	0.00741	0.00757	0.00779	0.00804	0.00839	0.00825	36
27	0.03359	0.01097	0.00896	0.00786	0.00741	0.00739	0.00758	0.00783	0.00813	0.00853	0.00849	37
28	0.03358	0.01118	0.00908	0.00796	0.00752	0.00752	0.00772	0.00800	0.00832	0.00876	0.00884	38
29	0.03386	0.01144	0.00924	0.00810	0.00768	0.00769	0.00791	0.00820	0.00853	0.00902	0.00922	39
30	0.03413	0.01170	0.00941	0.00825	0.00784	0.00787	0.00810	0.00840	0.00875	0.00928	0.00961	40
31	0.03440	0.01196	0.00958	0.00839	0.00800	0.00804	0.00829	0.00860	0.00897	0.00954	0.00999	41
32	0.03467	0.01222	0.00975	0.00854	0.00815	0.00822	0.00848	0.00880	0.00919	0.00980	0.01038	42
33	0.03562	0.01258	0.01002	0.00878	0.00840	0.00848	0.00873	0.00905	0.00945	0.01009	0.01079	43
34	0.03685	0.01299	0.01033	0.00906	0.00869	0.00877	0.00901	0.00932	0.00973	0.01040	0.01122	44
35	0.03808	0.01340	0.01064	0.00935	0.00898	0.00906	0.00929	0.00959	0.01000	0.01071	0.01165	45
36	0.03930	0.01381	0.01096	0.00963	0.00926	0.00935	0.00958	0.00986	0.01028	0.01102	0.01208	46
37	0.04053	0.01422	0.01127	0.00991	0.00955	0.00964	0.00986	0.01014	0.01055	0.01133	0.01251	47
38	0.04225	0.01462	0.01133	0.00989	0.00956	0.00970	0.00992	0.01020	0.01059	0.01130	0.01254	48
39	0.04414	0.01502	0.01129	0.00975	0.00948	0.00967	0.00991	0.01018	0.01055	0.01115	0.01245	49
40	0.04603	0.01541	0.01125	0.00961	0.00939	0.00964	0.00990	0.01017	0.01051	0.01100	0.01236	50
41	0.04792	0.01581	0.01121	0.00947	0.00930	0.00961	0.00988	0.01016	0.01046	0.01085	0.01226	51
42	0.04981	0.01620	0.01118	0.00933	0.00922	0.00958	0.00987	0.01014	0.01042	0.01070	0.01217	52
43	0.05081	0.01654	0.01141	0.00953	0.00943	0.00981	0.01008	0.01032	0.01061	0.01093	0.01243	53
44	0.05151	0.01687	0.01175	0.00986	0.00975	0.01013	0.01037	0.01058	0.01089	0.01130	0.01281	54
45	0.05220	0.01719	0.01209	0.01018	0.01007	0.01045	0.01066	0.01083	0.01116	0.01167	0.01320	55
46	0.05290	0.01751	0.01242	0.01050	0.01039	0.01077	0.01095	0.01108	0.01143	0.01204	0.01358	56
47	0.05359	0.01783	0.01276	0.01082	0.01071	0.01109	0.01124	0.01133	0.01171	0.01240	0.01396	57
48	0.05415	0.01810	0.01309	0.01115	0.01105	0.01142	0.01158	0.01165	0.01204	0.01282	0.01441	58
49	0.05465	0.01834	0.01342	0.01149	0.01139	0.01177	0.01192	0.01199	0.01239	0.01326	0.01489	59
50	0.05515	0.01859	0.01375	0.01183	0.01173	0.01211	0.01227	0.01233	0.01274	0.01370	0.01536	60

Appendix B. 2015 Preneed Female Basic Select and Ultimate, Composite Mortality Table, ALB

Issue	Duration										Ultimate	Attained
Age	1	2	3	4	5	6	7	8	9	10	11+	Age
51	0.05566	0.01883	0.01408	0.01217	0.01208	0.01246	0.01262	0.01267	0.01309	0.01414	0.01583	61
52	0.05616	0.01908	0.01441	0.01252	0.01242	0.01280	0.01297	0.01300	0.01344	0.01458	0.01631	62
53	0.05653	0.01935	0.01477	0.01293	0.01285	0.01324	0.01343	0.01349	0.01394	0.01519	0.01697	63
54	0.05686	0.01963	0.01514	0.01336	0.01331	0.01371	0.01393	0.01401	0.01450	0.01585	0.01768	64
55	0.05719	0.01991	0.01551	0.01379	0.01377	0.01418	0.01442	0.01454	0.01506	0.01652	0.01839	65
56	0.05751	0.02020	0.01589	0.01422	0.01423	0.01465	0.01491	0.01507	0.01561	0.01718	0.01909	66
57	0.05784	0.02048	0.01626	0.01466	0.01468	0.01512	0.01541	0.01559	0.01617	0.01784	0.01980	67
58	0.05816	0.02102	0.01686	0.01534	0.01543	0.01591	0.01622	0.01649	0.01714	0.01894	0.02096	68
59	0.05847	0.02164	0.01753	0.01609	0.01626	0.01679	0.01713	0.01747	0.01822	0.02015	0.02228	69
60	0.05878	0.02226	0.01820	0.01684	0.01709	0.01767	0.01803	0.01846	0.01930	0.02136	0.02361	70
61	0.05909	0.02288	0.01886	0.01759	0.01792	0.01854	0.01894	0.01945	0.02038	0.02258	0.02493	71
62	0.05940	0.02350	0.01953	0.01835	0.01875	0.01942	0.01984	0.02044	0.02146	0.02379	0.02626	72
63	0.06055	0.02477	0.02084	0.01975	0.02027	0.02102	0.02153	0.02226	0.02345	0.02594	0.02844	73
64	0.06199	0.02628	0.02239	0.02139	0.02205	0.02289	0.02350	0.02439	0.02577	0.02843	0.03112	74
65	0.06343	0.02779	0.02393	0.02303	0.02383	0.02475	0.02547	0.02651	0.02810	0.03092	0.03380	75
66	0.06487	0.02930	0.02548	0.02467	0.02560	0.02661	0.02744	0.02863	0.03042	0.03341	0.03649	76
67	0.06632	0.03080	0.02702	0.02631	0.02738	0.02848	0.02941	0.03075	0.03274	0.03590	0.03917	77
68	0.06953	0.03358	0.02983	0.02927	0.03052	0.03175	0.03288	0.03447	0.03676	0.04012	0.04348	78
69	0.07319	0.03668	0.03295	0.03256	0.03400	0.03537	0.03674	0.03859	0.04121	0.04479	0.04854	79
70	0.07686	0.03977	0.03607	0.03586	0.03747	0.03899	0.04059	0.04271	0.04566	0.04946	0.05360	80
71	0.08052	0.04287	0.03919	0.03915	0.04095	0.04261	0.04444	0.04683	0.05011	0.05412	0.05866	81
72	0.08418	0.04597	0.04232	0.04244	0.04443	0.04623	0.04829	0.05095	0.05456	0.05879	0.06339	82
73	0.09013	0.05101	0.04738	0.04781	0.05008	0.05210	0.05448	0.05751	0.06155	0.06605	0.07028	83
74	0.09674	0.05660	0.05300	0.05378	0.05636	0.05863	0.06133	0.06477	0.06927	0.07405	0.07798	84
75	0.10335	0.06220	0.05862	0.05975	0.06263	0.06515	0.06818	0.07204	0.07698	0.08205	0.08659	85
76	0.10996	0.06779	0.06425	0.06571	0.06891	0.07168	0.07504	0.07930	0.08470	0.09005	0.09618	86
77	0.11656	0.07339	0.06987	0.07168	0.07519	0.07820	0.08189	0.08656	0.09242	0.09805	0.10686	87
78	0.12601	0.08159	0.07824	0.08057	0.08456	0.08799	0.09205	0.09717	0.10349	0.10942	0.11867	88
79	0.13614	0.09043	0.08728	0.09018	0.09468	0.09856	0.10301	0.10860	0.11537	0.12159	0.13159	89
80	0.14628	0.09927	0.09633	0.09978	0.10480	0.10914	0.11397	0.12002	0.12726	0.13377	0.14558	90
81	0.15641	0.10810	0.10537	0.10939	0.11492	0.11971	0.12493	0.13145	0.13914	0.14595	0.16057	91
82	0.16655	0.11694	0.11441	0.11899	0.12504	0.13029	0.13589	0.14288	0.15103	0.16057	0.17651	92
83	0.18069	0.12899	0.12706	0.13235	0.13921	0.14523	0.15135	0.15871	0.16709	0.17651	0.19331	93
84	0.19509	0.14126	0.13993	0.14596	0.15364	0.16045	0.16711	0.17483	0.18342	0.19331	0.21082	94
85	0.20948	0.15352	0.15281	0.15956	0.16806	0.17568	0.18286	0.19095	0.19976	0.21082	0.22886	95
86	0.22388	0.16578	0.16569	0.17316	0.18249	0.19090	0.19861	0.20707	0.21609	0.22886	0.24727	96
87	0.23873	0.17849	0.17906	0.18729	0.19752	0.20680	0.21508	0.22389	0.23346	0.24727	0.27005	97
88	0.25640	0.19401	0.19546	0.20471	0.21629	0.22688	0.23602	0.24507	0.25729	0.27005	0.29400	98
89	0.27407	0.20952	0.21186	0.22213	0.23506	0.24696	0.25697	0.26625	0.28112	0.29608	0.31857	99
90	0.29174	0.22504	0.22827	0.23955	0.25383	0.26705	0.27791	0.28743	0.30494	0.32345	0.34319	100
91	0.30941	0.24056	0.24467	0.25697	0.27259	0.28713	0.29885	0.30861	0.32877	0.35082	0.36738	101
92	0.32768	0.25723	0.26223	0.27582	0.29194	0.30705	0.32012	0.33090	0.35236	0.37583	0.39069	102
93	0.34685	0.27569	0.28156	0.29686	0.31218	0.32672	0.34188	0.35489	0.37558	0.39724	0.41266	103
94	0.36602	0.29414	0.30089	0.31790	0.33241	0.34639	0.36365	0.37888	0.39880	0.41864	0.43292	104
95	0.38519	0.31259	0.32023	0.33894	0.35265	0.36606	0.38541	0.40288	0.42202	0.44004	0.45110	105
96	0.40436	0.33105	0.33956	0.35998	0.37288	0.38572	0.40717	0.42687	0.44524	0.46145	0.46685	106
97	0.41690	0.34202	0.35366	0.37474	0.38895	0.40274	0.42348	0.44229	0.45884	0.47280	0.47988	107
98	0.42721	0.35047	0.36601	0.38738	0.40361	0.41886	0.43793	0.45482	0.46920	0.48076	0.48991	108
99	0.43751	0.35893	0.37835	0.40002	0.41826	0.43498	0.45239	0.46735	0.47988	0.48991	0.49669	109
100	0.44781	0.36738	0.39069	0.41266	0.43292	0.45110	0.46685	0.47988	0.48991	0.49669	0.50000	110

Appendix C. 2015 Preneed Unisex Basic Select and Ultimate, Composite Mortality Table, ALB

Issue	Duration										Ultimate	Attained
Age	1	2	3	4	5	6	7	8	9	10	11+	Age
0	0.15278	0.12226	0.09868	0.08204	0.07229	0.06416	0.05603	0.04790	0.03976	0.03163	0.02247	10
1	0.08992	0.02025	0.02274	0.02393	0.02401	0.02318	0.02161	0.02192	0.02162	0.02131	0.02124	11
2	0.08694	0.01946	0.02157	0.02255	0.02256	0.02176	0.02031	0.02042	0.02032	0.02022	0.02027	12
3	0.08397	0.01866	0.02041	0.02118	0.02111	0.02035	0.01902	0.01891	0.01902	0.01913	0.01929	13
4	0.08100	0.01787	0.01924	0.01980	0.01966	0.01893	0.01773	0.01741	0.01772	0.01804	0.01831	14
5	0.07802	0.01707	0.01808	0.01842	0.01821	0.01752	0.01643	0.01590	0.01641	0.01694	0.01733	15
6	0.07505	0.01628	0.01692	0.01705	0.01675	0.01610	0.01514	0.01439	0.01511	0.01585	0.01635	16
7	0.07208	0.01548	0.01575	0.01567	0.01530	0.01469	0.01385	0.01289	0.01381	0.01476	0.01537	17
8	0.06968	0.01504	0.01509	0.01489	0.01449	0.01391	0.01315	0.01225	0.01312	0.01401	0.01439	18
9	0.06746	0.01471	0.01460	0.01431	0.01388	0.01333	0.01264	0.01189	0.01261	0.01336	0.01341	19
10	0.06524	0.01438	0.01410	0.01372	0.01327	0.01275	0.01213	0.01152	0.01211	0.01271	0.01244	20
11	0.06302	0.01404	0.01360	0.01314	0.01266	0.01217	0.01162	0.01116	0.01160	0.01206	0.01153	21
12	0.06080	0.01371	0.01310	0.01255	0.01206	0.01160	0.01110	0.01079	0.01110	0.01141	0.01109	22
13	0.05858	0.01338	0.01261	0.01196	0.01145	0.01102	0.01059	0.01043	0.01059	0.01076	0.01065	23
14	0.05636	0.01305	0.01211	0.01138	0.01084	0.01044	0.01008	0.01006	0.01009	0.01011	0.01020	24
15	0.05458	0.01289	0.01183	0.01105	0.01050	0.01013	0.00983	0.00984	0.00985	0.00987	0.00976	25
16	0.05290	0.01276	0.01161	0.01078	0.01023	0.00988	0.00963	0.00965	0.00967	0.00970	0.00932	26
17	0.05121	0.01264	0.01138	0.01050	0.00995	0.00963	0.00943	0.00946	0.00949	0.00954	0.00888	27
18	0.04953	0.01252	0.01115	0.01023	0.00967	0.00939	0.00923	0.00926	0.00931	0.00938	0.00866	28
19	0.04784	0.01239	0.01092	0.00995	0.00940	0.00914	0.00903	0.00907	0.00913	0.00922	0.00859	29
20	0.04616	0.01227	0.01069	0.00968	0.00912	0.00889	0.00883	0.00888	0.00894	0.00905	0.00852	30
21	0.04447	0.01214	0.01046	0.00940	0.00884	0.00864	0.00863	0.00869	0.00876	0.00889	0.00845	31
22	0.04314	0.01211	0.01033	0.00924	0.00868	0.00851	0.00853	0.00862	0.00872	0.00889	0.00838	32
23	0.04213	0.01218	0.01030	0.00917	0.00863	0.00848	0.00855	0.00867	0.00882	0.00905	0.00855	33
24	0.04113	0.01224	0.01026	0.00911	0.00857	0.00846	0.00856	0.00873	0.00892	0.00920	0.00882	34
25	0.04012	0.01231	0.01023	0.00904	0.00852	0.00843	0.00857	0.00878	0.00902	0.00936	0.00909	35
26	0.03911	0.01238	0.01020	0.00898	0.00847	0.00841	0.00859	0.00883	0.00912	0.00952	0.00936	36
27	0.03811	0.01244	0.01016	0.00892	0.00841	0.00838	0.00860	0.00889	0.00922	0.00967	0.00963	37
28	0.03810	0.01268	0.01030	0.00903	0.00854	0.00853	0.00876	0.00907	0.00943	0.00994	0.01002	38
29	0.03841	0.01298	0.01049	0.00919	0.00871	0.00873	0.00898	0.00930	0.00968	0.01023	0.01046	39
30	0.03872	0.01327	0.01068	0.00936	0.00889	0.00893	0.00919	0.00953	0.00993	0.01053	0.01090	40
31	0.03903	0.01357	0.01087	0.00952	0.00907	0.00913	0.00940	0.00975	0.01018	0.01082	0.01133	41
32	0.03934	0.01386	0.01106	0.00969	0.00925	0.00933	0.00962	0.00998	0.01043	0.01112	0.01177	42
33	0.04041	0.01428	0.01137	0.00996	0.00953	0.00962	0.00991	0.01026	0.01072	0.01145	0.01224	43
34	0.04181	0.01474	0.01172	0.01028	0.00986	0.00995	0.01022	0.01057	0.01103	0.01180	0.01273	44
35	0.04320	0.01520	0.01208	0.01061	0.01019	0.01028	0.01054	0.01088	0.01135	0.01215	0.01322	45
36	0.04459	0.01567	0.01243	0.01093	0.01051	0.01061	0.01086	0.01119	0.01166	0.01250	0.01371	46
37	0.04598	0.01613	0.01279	0.01125	0.01084	0.01094	0.01118	0.01150	0.01197	0.01285	0.01419	47
38	0.04766	0.01665	0.01320	0.01161	0.01120	0.01130	0.01152	0.01182	0.01229	0.01319	0.01464	48
39	0.04945	0.01719	0.01363	0.01200	0.01157	0.01166	0.01186	0.01213	0.01260	0.01354	0.01507	49
40	0.05123	0.01773	0.01406	0.01238	0.01194	0.01203	0.01221	0.01245	0.01292	0.01388	0.01550	50
41	0.05301	0.01827	0.01449	0.01276	0.01231	0.01240	0.01255	0.01277	0.01323	0.01423	0.01594	51
42	0.05479	0.01880	0.01492	0.01314	0.01269	0.01276	0.01289	0.01308	0.01355	0.01457	0.01637	52
43	0.05649	0.01932	0.01534	0.01352	0.01304	0.01312	0.01322	0.01339	0.01386	0.01490	0.01676	53
44	0.05815	0.01983	0.01576	0.01389	0.01340	0.01346	0.01355	0.01369	0.01416	0.01523	0.01714	54
45	0.05981	0.02033	0.01618	0.01425	0.01375	0.01381	0.01388	0.01399	0.01446	0.01555	0.01752	55
46	0.06148	0.02084	0.01660	0.01462	0.01410	0.01415	0.01421	0.01430	0.01476	0.01588	0.01790	56
47	0.06314	0.02134	0.01702	0.01499	0.01445	0.01450	0.01453	0.01460	0.01507	0.01620	0.01827	57
48	0.06448	0.02178	0.01740	0.01534	0.01479	0.01484	0.01487	0.01493	0.01541	0.01657	0.01869	58
49	0.06571	0.02219	0.01776	0.01569	0.01513	0.01517	0.01521	0.01528	0.01576	0.01696	0.01912	59
50	0.06694	0.02260	0.01813	0.01604	0.01547	0.01551	0.01556	0.01562	0.01612	0.01734	0.01956	60

Appendix C. 2015 Preneed Unisex Basic Select and Ultimate, Composite Mortality Table, ALB

Issue	Duration										Ultimate	Attained
Age	1	2	3	4	5	6	7	8	9	10	11+	Age
51	0.06816	0.02301	0.01850	0.01638	0.01580	0.01585	0.01590	0.01597	0.01647	0.01773	0.01999	61
52	0.06939	0.02342	0.01886	0.01673	0.01614	0.01618	0.01624	0.01631	0.01683	0.01811	0.02042	62
53	0.07014	0.02381	0.01925	0.01714	0.01656	0.01662	0.01671	0.01683	0.01738	0.01871	0.02109	63
54	0.07073	0.02419	0.01964	0.01757	0.01702	0.01709	0.01723	0.01739	0.01799	0.01938	0.02180	64
55	0.07132	0.02458	0.02004	0.01800	0.01747	0.01756	0.01774	0.01796	0.01860	0.02005	0.02251	65
56	0.07192	0.02496	0.02043	0.01843	0.01792	0.01803	0.01825	0.01852	0.01921	0.02071	0.02323	66
57	0.07251	0.02535	0.02083	0.01887	0.01838	0.01850	0.01876	0.01909	0.01982	0.02138	0.02394	67
58	0.07290	0.02597	0.02148	0.01960	0.01917	0.01935	0.01968	0.02011	0.02095	0.02260	0.02520	68
59	0.07323	0.02666	0.02220	0.02041	0.02006	0.02030	0.02071	0.02126	0.02221	0.02396	0.02666	69
60	0.07357	0.02735	0.02292	0.02123	0.02095	0.02125	0.02173	0.02241	0.02348	0.02532	0.02811	70
61	0.07390	0.02803	0.02365	0.02204	0.02184	0.02220	0.02276	0.02355	0.02474	0.02669	0.02957	71
62	0.07423	0.02872	0.02437	0.02285	0.02273	0.02315	0.02378	0.02470	0.02600	0.02805	0.03103	72
63	0.07547	0.03011	0.02579	0.02439	0.02440	0.02492	0.02569	0.02678	0.02827	0.03048	0.03344	73
64	0.07703	0.03175	0.02747	0.02619	0.02634	0.02699	0.02790	0.02919	0.03089	0.03328	0.03641	74
65	0.07858	0.03340	0.02915	0.02798	0.02828	0.02906	0.03012	0.03160	0.03351	0.03609	0.03937	75
66	0.08014	0.03504	0.03083	0.02978	0.03022	0.03113	0.03233	0.03401	0.03613	0.03889	0.04234	76
67	0.08170	0.03668	0.03251	0.03157	0.03217	0.03320	0.03455	0.03642	0.03876	0.04170	0.04531	77
68	0.08515	0.03967	0.03552	0.03471	0.03550	0.03673	0.03830	0.04042	0.04305	0.04625	0.04992	78
69	0.08907	0.04299	0.03886	0.03819	0.03919	0.04063	0.04244	0.04483	0.04776	0.05123	0.05531	79
70	0.09299	0.04632	0.04220	0.04167	0.04287	0.04454	0.04658	0.04924	0.05247	0.05622	0.06069	80
71	0.09691	0.04964	0.04555	0.04515	0.04656	0.04844	0.05073	0.05365	0.05717	0.06121	0.06607	81
72	0.10084	0.05297	0.04889	0.04863	0.05025	0.05235	0.05487	0.05806	0.06188	0.06620	0.07113	82
73	0.10692	0.05825	0.05420	0.05414	0.05602	0.05842	0.06126	0.06479	0.06898	0.07363	0.07828	83
74	0.11363	0.06409	0.06007	0.06022	0.06240	0.06512	0.06831	0.07219	0.07675	0.08176	0.08621	84
75	0.12034	0.06993	0.06594	0.06630	0.06878	0.07182	0.07535	0.07959	0.08453	0.08989	0.09499	85
76	0.12704	0.07577	0.07181	0.07238	0.07515	0.07852	0.08239	0.08699	0.09230	0.09802	0.10470	86
77	0.13375	0.08161	0.07768	0.07846	0.08153	0.08522	0.08944	0.09438	0.10007	0.10615	0.11542	87
78	0.14317	0.09001	0.08619	0.08733	0.09081	0.09495	0.09960	0.10495	0.11104	0.11747	0.12719	88
79	0.15325	0.09903	0.09534	0.09686	0.10080	0.10541	0.11051	0.11629	0.12278	0.12957	0.13999	89
80	0.16334	0.10806	0.10450	0.10639	0.11079	0.11587	0.12142	0.12763	0.13452	0.14167	0.15374	90
81	0.17342	0.11708	0.11366	0.11593	0.12078	0.12633	0.13234	0.13897	0.14626	0.15376	0.16838	91
82	0.18350	0.12611	0.12281	0.12546	0.13077	0.13679	0.14325	0.15030	0.15800	0.16838	0.18385	92
83	0.19779	0.13831	0.13537	0.13863	0.14466	0.15138	0.15842	0.16593	0.17395	0.18385	0.20005	93
84	0.21236	0.15072	0.14814	0.15203	0.15879	0.16623	0.17387	0.18184	0.19018	0.20005	0.21685	94
85	0.22692	0.16313	0.16092	0.16542	0.17293	0.18107	0.18931	0.19775	0.20640	0.21685	0.23410	95
86	0.24149	0.17555	0.17369	0.17882	0.18707	0.19592	0.20476	0.21366	0.22263	0.23410	0.25166	96
87	0.25647	0.18841	0.18697	0.19278	0.20182	0.21145	0.22092	0.23028	0.23969	0.25166	0.27281	97
88	0.27406	0.20413	0.20339	0.21020	0.22043	0.23118	0.24150	0.25136	0.26199	0.27427	0.29534	98
89	0.29165	0.21984	0.21980	0.22762	0.23903	0.25090	0.26208	0.27243	0.28429	0.29967	0.31871	99
90	0.30924	0.23555	0.23621	0.24505	0.25764	0.27063	0.28267	0.29351	0.30658	0.32506	0.34237	100
91	0.32683	0.25126	0.25263	0.26247	0.27625	0.29036	0.30325	0.31459	0.32888	0.35046	0.36583	101
92	0.34462	0.26824	0.27049	0.28159	0.29547	0.30963	0.32374	0.33610	0.35141	0.37423	0.38862	102
93	0.36273	0.28716	0.29059	0.30331	0.31565	0.32821	0.34410	0.35829	0.37429	0.39550	0.41029	103
94	0.38083	0.30607	0.31068	0.32502	0.33583	0.34678	0.36445	0.38048	0.39717	0.41678	0.43045	104
95	0.39894	0.32499	0.33077	0.34674	0.35601	0.36536	0.38480	0.40266	0.42005	0.43805	0.44870	105
96	0.41705	0.34391	0.35087	0.36845	0.37618	0.38393	0.40516	0.42485	0.44293	0.45933	0.46470	106
97	0.42934	0.35507	0.36246	0.38119	0.39108	0.40060	0.42115	0.43996	0.45667	0.47095	0.47811	107
98	0.43967	0.36361	0.37118	0.39089	0.40421	0.41664	0.43566	0.45268	0.46733	0.47931	0.48865	108
99	0.45000	0.37216	0.37990	0.40059	0.41733	0.43267	0.45018	0.46539	0.47811	0.48865	0.49602	109
100	0.46033	0.38070	0.38862	0.41029	0.43045	0.44870	0.46470	0.47811	0.48865	0.49602	0.50000	110