

# **Simplified Issue Report**

The Task Force Request that comments include thoughts on whether the proposed SI tables are appropriate for the calculation of nonforfeiture benefits.

This document is exposed for a 45-day public comment period ending on September 21, 2017.



## **2017 Simplified Issue Composite Mortality Tables Report**

### **American Academy of Actuaries' Life Experience Committee and Society of Actuaries' Preferred Mortality Oversight Group's Guaranteed Issue/Simplified Issue Working Group**

**July 2017**

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# 2017 Simplified Issue Composite Mortality Tables Report

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## 1. Data Selection

### 1.1 Description of Underwriting

The 2011 Data Call that led to the collection of the 2005-2009 data underlying the 2016 Simplified Issue mortality tables did not directly define “simplified issue.” Instead, definitions were provided for guaranteed issue and preneed business and stated the following exclusions from the data call:

- Nonmedical band of a fully underwritten product;
- Routinely required paramedical examinations;
- Routinely collected bodily fluids; (include products with agent-collected oral fluid or urine);
- COLI/BOLI products;
- Credit insurance products;
- "Group" products other than affinity groups solicited by mass marketing;
- Juvenile-only products (e.g., under age 16); and
- Annuity products.

“Simplified Issue” was therefore indirectly defined as individual life business remaining after applying the above exclusions and excluding guaranteed issue business and preneed business.

An official definition of simplified issue is currently being developed by a joint SOA/AAA effort. In the meantime, the following direct definition may suffice:

Underwriting classified as simplified issue typically has the following characteristics:

- A shorter application than that used for fully underwritten business, with a greatly reduced number of underwriting questions.
- An underwriting decision-making process that takes a short amount of time relative to fully underwritten business, with simplified issue applications often accepted or rejected within a day of receipt.

The simplified issue data call resulted in a data base of roughly 273,000 deaths and \$500 billion of exposure.

### 1.2 Background

A data call was issued on March 11, 2011 for guaranteed issue, simplified issue and preneed mortality data for observation years 2005 to 2009. Preneed business written on a simplified Issue basis was included in the preneed study and excluded from the simplified issue study.

The SOA hired MIB to compile the data collected for the simplified issue study. MIB performed numerous syntax and validation checks and worked with SOA staff to ensure that company confidentiality was protected in the production of data views that were provided to the American Academy of Actuaries Life Experience Committee and the 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 were 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**

Throughout this report, the terms non-tobacco and tobacco are used interchangeably with nonsmoker and smoker, respectively. The terms unismoke and composite are used interchangeably to describe a risk class that is not differentiated between smoker and nonsmoker risks. In this report, “unismoke,” is used most often but, for consistency with other SOA mortality tables, “composite” is used in the name of the mortality table and the name of this report.

The study included data from 30 companies, representing an unknown portion of companies writing simplified issue business. The mortality ratio based on the 2008 Valuation Basic Table for Limited Underwriting (“VBTLU”) Ultimate Table was 101.3% for all simplified business combined and 114.6% for unismoke business. Both ratios were based on units. The average size was 26.1 units for all simplified issue business combined and 10.0 units for unismoke business.

For purposes of this study, one unit of coverage was defined as \$1,000 of ultimate face amount. Almost all business provided level death benefits, so one unit of coverage typically represented a level death benefit of \$1,000.

Simplified issue business was analyzed by every significant dimension included in the study. The following subsections document the findings for each dimension.

**1.3.1 Gender**

There was a sufficient mix of male and female data to study results by gender. Overall, female exposure represented 52% of the total, while for unismoke business, females contributed 57% of exposure.

	Unismoke	Nonsmoker	Smoker	Overall
<b>Female</b>	57.1%	53.2%	41.4%	52.2%
<b>Male</b>	42.9%	46.8%	58.6%	47.8%

**1.3.2 Smoking Habit**

Composite or unismoke business is defined as business not differentiated by smoking or tobacco habits. As shown in the following table, unismoke business represented over 80% of deaths, while nonsmoker business represented almost 70% of amount exposed.

	Unknown	Nonsmoker	Smoker	Unismoke
<b>Death Count</b>	0.1%	13.0%	6.0%	80.9%
<b>Units Exposed</b>	0.0%	68.5%	14.5%	17.0%



There were sufficient deaths to develop a unismoke mortality table. The remaining nonsmoker and smoker deaths were judged insufficient to develop nonsmoker and smoker mortality tables, especially when further split between low band (sizes under \$50,000) and high band (sizes of \$50,000 or more). Subsequent to that decision, a method was devised that allowed nonsmoker and smoker deaths for low and high bands to be combined to create sufficient deaths to develop nonsmoker and smoker mortality tables. Additional analysis is required to determine whether the resulting simplified issue nonsmoker and smoker mortality tables would be of value.

<b>Simplified Issue Data Collected by Smoking Status</b>						
<b>Smoker Status</b>	<b>Death Count</b>	<b>Death Units</b>	<b>Count Exposed</b>	<b>Units Exposed</b>	<b>Expctd Dths 2008 VBTLU Ult</b>	<b>A/E Ratio 2008 VBTLU Ult</b>
Unknown	290	3,852	9,917	143,561	1,836	209.8%
Nonsmoker	35,410	707,721	8,062,492	337,024,602	827,452	85.5%
Smoker	16,348	256,196	2,391,923	71,441,523	279,599	91.6%
Unismoker	220,919	1,337,274	8,376,350	83,638,233	1,166,456	114.6%
<b>Grand Total</b>	<b>272,967</b>	<b>2,305,043</b>	<b>18,840,681</b>	<b>492,247,920</b>	<b>2,275,344</b>	<b>101.3%</b>

### 1.3.3 Distribution Channel

Sixty-seven percent of unismoke business was distributed through direct marketing, with independent agents and brokers accounting for 23% and affiliated agents for 10%.

### 1.3.4 Product Type

While 84% of deaths, primarily unismoke, was on permanent products, 61% of exposure, primarily nonsmoker, was from term products.

### 1.3.5 Death Benefit Pattern

Benefits were overwhelmingly level, accounting for 98.7% of exposure, while increasing death benefits accounted for most of the rest, at 1.0%.

### 1.3.6 Premium Payment Pattern

Several different premium patterns were common. Measured by exposure, level premiums accounted for 46% of the business and premiums based on attained age accounted for 33%. Two premium patterns consistent with products such as 10-year and 20-year level term accounted for 17%. These results were consistent with the distribution between permanent and term products.

### 1.3.7 Age Basis

The data was overwhelmingly Age Last Birthday (ALB), accounting for 95% of deaths and 98% of amount exposed. Average ages were adjusted by a tiny fraction to place overall results on a pure ALB basis.

### 1.3.8 Size Band

While 93% of deaths were concentrated in the “\$0-24K” size band, exposure was widely distributed:

	\$0-24K	\$25-49K	\$50-99K	\$100-249K	\$250K+
<b>Death Count</b>	93%	5%	2%	1%	0%
<b>Units Exposed</b>	23%	19%	24%	31%	3%

Unismoke business averaged about \$6,000 per death claim and \$10,000 per policy exposed.

Mortality ratios as a percentage of the 2008 VBTLU Ultimate table declined with increasing size:

\$0-24K	\$25-49K	\$50-99K	\$100-249K	\$250K+
112%	107%	85%	69%	56%

There were several drivers of lower mortality ratios by increasing size:

- Proportionately more smoker and nonsmoker business, which had lower mortality ratios than unismoke business, was issued at the larger sizes.
- Business in force at the larger sizes was predominantly at the lower durations, which had lower mortality ratios due to selection.
- Larger policy sizes were likely subjected to increased underwriting requirements which may have reduced the resulting mortality ratios.

### 1.3.9 Duration

Simplified issue mortality exhibited a faint select pattern. Mortality ratios by duration for all simplified issue business combined as a percentage of the 2008 VBTLU Ultimate mortality table were as follows:

1	2	3	4	5	6	7-8	9-10	11-20	21-30
71.5%	78.8%	98.9%	102.5%	103.8%	109.2%	112.1%	116.3%	119.2%	120.9%

Mortality ratios for unismoke business were consistently higher than those for all simplified issue business combined:

1	2	3	4	5	6	7-8	9-10	11-20	21-30
80.6%	91.2%	114.2%	115.7%	117.9%	120.9%	127.0%	131.0%	132.0%	128.1%

For unismoke business, which has been issued for a much longer time span, non-volatile results were available through duration 49. However, mortality ratios for durations 31 through 49 averaged 90%, a full 25% less than the mortality ratios for durations 11-30. Business in durations 41 and later was written before smoker/nonsmoker products were introduced. The mix of risks contained in the oldest unismoke business may include more nonsmoker risks than more-recently issued business: today’s nonsmokers may be more apt to buy a product with nonsmoker rates rather than one with unismoke rates. Hence, durations 41 and later were excluded from the data used to develop unismoke mortality tables.

No effects of selection were apparent after duration 10, so a 10-year select period was chosen.

### 1.3.10 Issue Age Groups

The following analysis of issue age groups was based on mortality in durations 1-10.

Issue ages 0-17 were combined and produced a total of only 250 deaths. Issue age group 18-24 and quinquennial issue age groups ranging from 25-29 to 80-84, each had 24,000 or more deaths. Issue age group 85-89 had 13,365 deaths while issue age group 90+ had 2,153 deaths.

Overall mortality ratios to the 2008 VBTLU Ultimate table varied considerably by issue age group. Adjacent issue age groups with similar mortality ratios were grouped for the following summary, which shows mortality ratios to the 2008 VBTLU Ultimate table:

<b>0-17</b>	<b>18-29</b>	<b>30-39</b>	<b>40-49</b>	<b>50-64</b>	<b>65-79</b>	<b>80-89</b>	<b>90+</b>
164%	106%	92%	77%	103%	95%	102%	113%

The following summary of unismoke mortality ratios were generally higher, especially at the younger ages, and show a much different pattern than the above ratios for all simplified issue business combined:

<b>0-17</b>	<b>18-29</b>	<b>30-39</b>	<b>40-49</b>	<b>50-64</b>	<b>65-79</b>	<b>80-89</b>	<b>90+</b>
201%	254%	272%	175%	117%	97%	108%	113%

### 1.3.11 Attained Age Groups

The following analysis of attained age groups was based on mortality in durations 11-30 for unismoke business and durations 11-25 for smoker and nonsmoker business.

Of the 97,000 deaths for durations 11-30, 90% of them were concentrated between attained ages 60 to 94, with an average of 12,490 deaths per quinquennial age group. In contrast, attained age groups 0-29, 30-34, 35-39 and 40-44 averaged only 377 deaths. Quinquennial attained age groups 45-49, 50-54 and 55-59 averaged 1,869 deaths while attained age group 95+ had 2,385 deaths.

Mortality ratios using the 2008 VBTLU Ultimate table as the expected basis varied considerably less by attained age group than they did by issue age group. Adjacent attained age groups with similar mortality ratios were grouped for the following summary, which shows mortality ratios to the 2008 VBTLU Ultimate table:

<b>0-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-59</b>	<b>60-69</b>	<b>70-84</b>	<b>85+</b>
175%	125%	105%	116%	128%	118%	121%

The following summary of unismoke mortality by attained age group shows ratios that were significantly higher for attained ages 0-69, when compared to the above ratios for all simplified issue business combined:

<b>0-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-59</b>	<b>60-69</b>	<b>70-84</b>	<b>85+</b>
235%	269%	200%	198%	160%	125%	121%

### 1.3.12 Observation Years

Data was collected for observation years 2005 through 2009. Each grouping showed exposure increasing every year from 2005 to 2009. The following table shows how the grand total of \$492 billion of total exposure was distributed by observation year and smoking category:

	2005	2006	2007	2008	2009	2005-2009
<b>Nonsmoker</b>	10.8%	11.8%	12.9%	15.6%	17.4%	68.5%
<b>Unismoke</b>	2.6%	3.0%	3.4%	3.8%	4.1%	17.0%
<b>Smoker</b>	2.4%	2.6%	2.8%	3.3%	3.4%	14.5%
<b>Total</b>	15.8%	17.4%	19.1%	22.8%	24.9%	100.0%

### 1.4 Data Included in the Study

The following table shows totals for data collected, data excluded and data included in the simplified issue study. Four categories of data were excluded from the development of the simplified issue composite mortality tables:

1. Data with an unknown smoking status, comprising no more than 0.1% of the data,
2. Nonsmoker and smoker data, which included almost 51,000 deaths,
3. Data for durations 41 and higher, as explained in "Subsection 1.3.9, Duration," and
4. Data for policy sizes of \$50,000 and higher, which exhibited much lower mortality ratios.

<b>Unismoker Data Collected, Excluded and Included</b>						
	<b>Death Count</b>	<b>Death Units</b>	<b>Count Exposed</b>	<b>Units Exposed</b>	<b>Expctd Dths 1975-80 Ult</b>	<b>A/E Ratio 1975-80 Ult</b>
<b>Data Collected</b>	220,919	1,337,274	8,376,350	83,638,233	1,283,518	104.2%
<b>Data Excluded*</b>	1,999	64,753	219,744	10,344,987	75,561	85.7%
<b>Data Included</b>	218,920	1,272,521	8,156,606	73,293,246	1,207,958	105.3%
	* Durations 41+ and sizes of 50 or more units					

## 2. Unloaded Mortality Table

### 2.1 Extent of Credible Data

Results for all but the lowest and highest age groups were credible for unismoke business, being based on over 209,000 deaths. Separate composite simplified issue mortality tables were developed for males and females.

### 2.3 Mortality Table Construction

#### 2.3.1 Graduation Methodology

Whitaker-Henderson graduation was performed on mortality ratios that were based on units of death and units of exposure, using expected mortality based on the 1975-80 Basic Ultimate mortality table. This table was found to be the one that most closely match simplified issue unismoke mortality levels. Mortality ratios were graduated with expected mortality used as the weights for the graduation, thereby ensuring that the graduated mortality ratios would reproduce total units of death benefits.

Separate select and ultimate graduations were performed for males and females. A two-dimensional graduation with 4<sup>th</sup> order polynomials was used for each select graduation. A one-dimensional graduation with 4<sup>th</sup> order polynomials was used for each ultimate graduation. The parameter “h” was adjusted to provide the best combination of fit and smoothness as described below.

#### 2.3.2 Use of 90% Confidence Intervals to Guide Graduation

Ninety-percent confidence intervals were calculated for each raw (input) mortality ratio. The primary graduation parameter, “h”, was adjusted with a target of smoothing mortality ratios such that 90% of graduated mortality ratios remained within their 90% confidence intervals. Cells for the lowest and highest ages, where there were too few deaths to produce credible results, were excluded from the confidence interval target. The 90% goal was readily achieved for unismoke risks, with the result that mortality ratios were not excessively smoothed.

The formula for calculating a policy’s mortality-related variance of incurred death benefits is:

$$\text{Variance} = q * (1 - q) * \text{Amount}^2,$$

where q = mortality rate and Amount = death benefit in force.

Ideally, this variance would be calculated as the mortality study data was being assembled, but it requires the cell’s 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. The mortality ratio confidence interval for each graduation cell was calculated as follows:

1. AvgSize = Units Exposed / Count Exposed
2. NumPol = Number of policies = Count Exposed
3. ExpDth = Expected deaths based on the 2008 VBTLU Ultimate table
4. q = Mortality rate calculated as either actual or normalized deaths divided by Units Exposed
5. MortRatio = Mortality ratio calculated as q \* Units Exposed / ExpDth

6. VarAdj = Adjustment for combining policies of different sizes; values are shown in table below
7. Variance =  $\text{VarAdj} * \text{NumPol} * q * (1 - q) * (\text{AvgSize})^2$ ,  
 $= \text{VarAdj} * q * (1 - q) * (\text{Units Exposed})^2 / \text{Count Exposed}$ ,  
 where q is the cell's raw mortality rate based on units, not count.
8. StdDev = Standard Deviation, expressed as a mortality ratio =  $\text{SQRT}(\text{Variance}) / \text{ExpDth}$
9. The 90% confidence interval assumes a normal distribution, which translates to 1.645 standard deviations:
  - a. MR90CI\_low = low end of 90% confidence interval =  $\text{MortRatio} - 1.645 * \text{StdDev}$ .
  - b. MR90CI\_high = high end of 90% confidence interval =  $\text{MortRatio} + 1.645 * \text{StdDev}$ .

### 2.3.3 Adjustment of Graduated Mortality Ratios

Mortality ratios for the youngest ages were set to a weighted average ratio that reproduced total units of death for those ages. Mortality ratios for the highest issue age group were typically set equal to those of the next highest issue age group. Adjustments were made to smooth the progression of mortality ratios in a few instances, most often using the average of adjacent mortality ratios. Adjusted deaths were calculated to reflect the effect of all adjustments to the graduated mortality ratios. For both of the mortality tables, adjusted deaths slightly exceeded actual deaths.

### 2.3.4 Production of Unloaded Mortality Tables

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

1. Imputed 1975-80 Ultimate mortality rates for each graduation cell were calculated from each cell's expected mortality divided by its units exposed.
2. Imputed mortality rates were multiplied by adjusted mortality ratios to obtain adjusted mortality rates.
3. Adjusted mortality rates were interpolated to obtain final select mortality rates for issue ages 0 to 85 and durations 1 to 10 and to obtain ultimate mortality rates for attained ages 10 to 95.
4. Ultimate mortality rates for attained ages 96 to 120 were calculated using the following Old Age Mortality Rate methodology:
  - a. Male and female unismoke mortality rates for age 96 were extrapolated from attained age rates for ages 90 to 95.
  - b. Separately for males and females, annual percentage increases for 2015 VBT Composite mortality rates were calculated for ages 97 through 112.
  - c. Rates for ages 112 to 120 were set equal to 0.5, the same rates used for those ages in the 2015 VBT Composite mortality table.
  - d. Separately for males and females, rates for ages 96 to 111 were calculated based on the 2015 VBT annual percentage increases minus X% (but no less than zero), where X% was solved for to reproduce the age 96 unismoke rate determined in step a.

### 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, respectively, 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 of the monotonicity exhibited when rates were examined by policy year and by issue age.

## 2.4 Mortality Improvement

Overall simplified issue unismoke mortality ratios were studied by observation year as a percentage of the 2008 VBTLU tables. A 50/50 blend of the “Select and Ultimate” and “Ultimate Only” 2008 VBTLU tables was a close fit for the less select nature of simplified issue composite mortality. Fifty-fifty blended mortality ratios are shown in the table below.

	Blended 2008 VBTLU 50% S&U/50% Ult Mortality Ratios						Average
	2005	2006	2007	2008	2009	2005-09	Annual Improvement
<b>Unismoke</b>	153.3%	147.9%	145.5%	152.4%	141.5%	147.8%	1.3%

A least squares fit of the above ratios produced an average annual mortality improvement rate of 1.3% for simplified issue composite business. The mortality improvement rate used by the 2017 CSO tables for ages 18 to 82 was 1.2% for males and 1.0% for females. For conservatism and consistency, the 2017 CSO mortality improvement rates were recommended for simplified issue composite business.

## 2.4 Basic Mortality Tables

The 2007 Basic Simplified Issue, Select and Ultimate, Mortality Tables are shown in Appendices A and B. The 2017 Basic Simplified Issue, Select and Ultimate, Mortality Tables are shown in Appendices C and D.

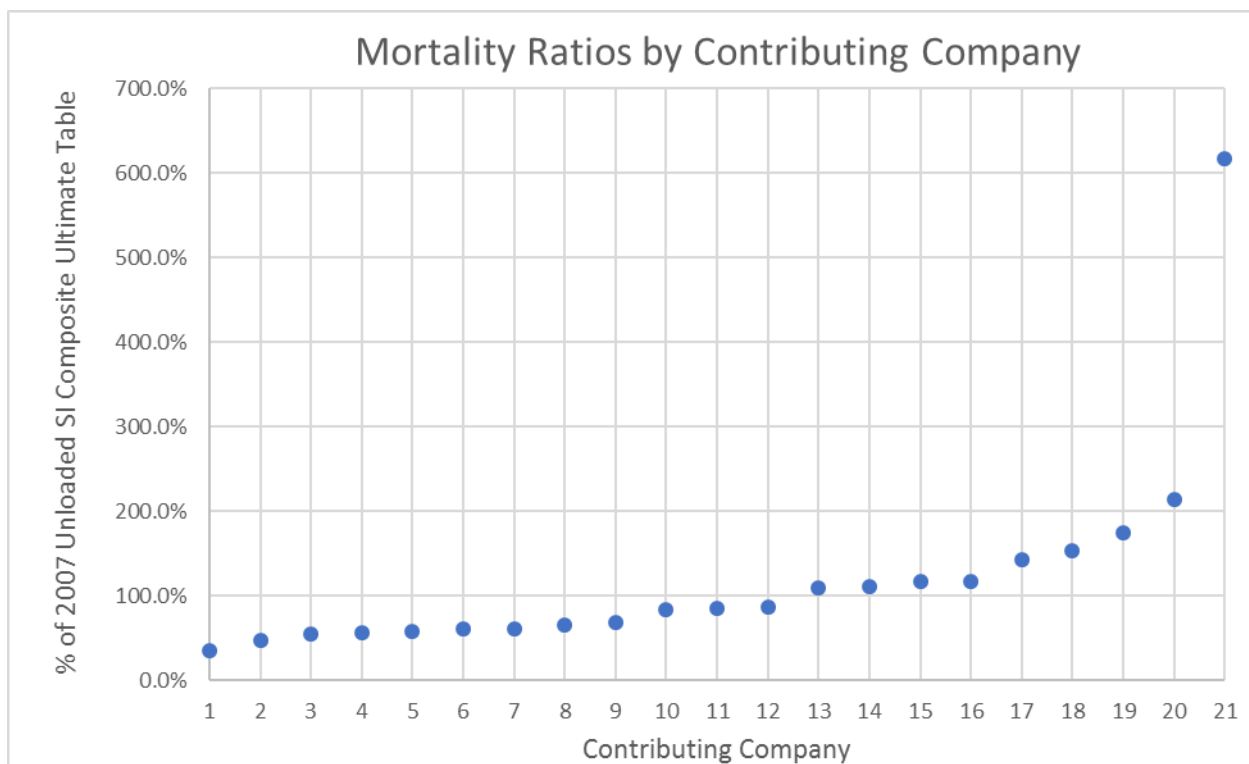
### 3. Loaded Mortality Table

#### 3.1 Scatter Diagram

The experience analysis was rerun using the 2007 Basic Simplified Issue Composite Ultimate mortality table as the basis for expected mortality. The resulting overall A/E ratio was 78.2%. Company-level A/E ratios were ranked from lowest to highest. This allowed for the determination of the percentage of contributing companies whose actual experience was less than a given percentage of the 2007 Basic Simplified Issue Composite Ultimate mortality table.

Previous guidance from the National Association of Insurance Commissioners Life Actuarial Task Force (NAIC LATF) regarding the desired level of loading for similar risks was to target a load such that the resulting mortality covered 70% to 80% of the contributing companies' underlying experience.

The following scatter diagram shows company mortality ratios as a percentage of the 2007 Basic Simplified Issue Composite Ultimate mortality table. The A/E ratios varied significantly by contributing company, ranging from 35% to 616%. The company with the highest ratio was quite small, contributing 0.1% of total deaths and total exposure.





### 3.2 Recommended Loading

The recommended loading percentages are as follows: Level 20% loading percentages for males ages 0 to 82 and females ages 0 to 80. The loading percentages then grade linearly from 20% to zero over the next 13 ages, resulting in loads of 0% for male ages 95 to 120 and female ages 93 to 120. The linear grading was chosen to match the pattern of the 2017 CSO mortality improvement factors, recommended in Section 3.4, which grade to zero over the same age ranges. By matching the patterns of loading and mortality improvement, the two factors offset each other.

The recommended loading would cover 71.4%, or 15, of the 21 contributing companies. These 15 companies accounted for 75.7% of actual deaths and 94.9% of units exposed.

### 3.3 Valuation and Nonforfeiture Recommendations

No existing valuation mortality table matches the mortality level of the Simplified Issue Composite Ultimate mortality table. 2001 CSO and 2017 CSO mortality rates are considerably lower while Preneed and Guaranteed Issue mortality rates are considerably higher. The mortality level of the 2017 Loaded Simplified Issue Composite Ultimate mortality table will result in higher reserves than a table based on the 2001 CSO or 2017 CSO mortality tables.

### 3.4 Final Loading

The 2017 Loaded Simplified Issue Composite ALB Ultimate tables were created by multiplying the following components:

1. Rates from the 2007 Basic Simplified Issue Composite, Ultimate, ALB mortality tables,
2. Mortality improvement factors based on 10 years of compounded improvement using the 2017 CSO mortality improvement factors, and
3. One plus the loading percentages described in Section 3.2.

Age-nearest birthday (ANB) rates were calculated from ALB rates using the SOA's usual ALB to ANB conversion formula, with the exception that ANB age 0 rate was calculated as the ratio of the corresponding 2017 CSO Composite age 0 rate to 2017 CSO Composite age 1 rate times the Simplified Issue Composite age 1 rate.

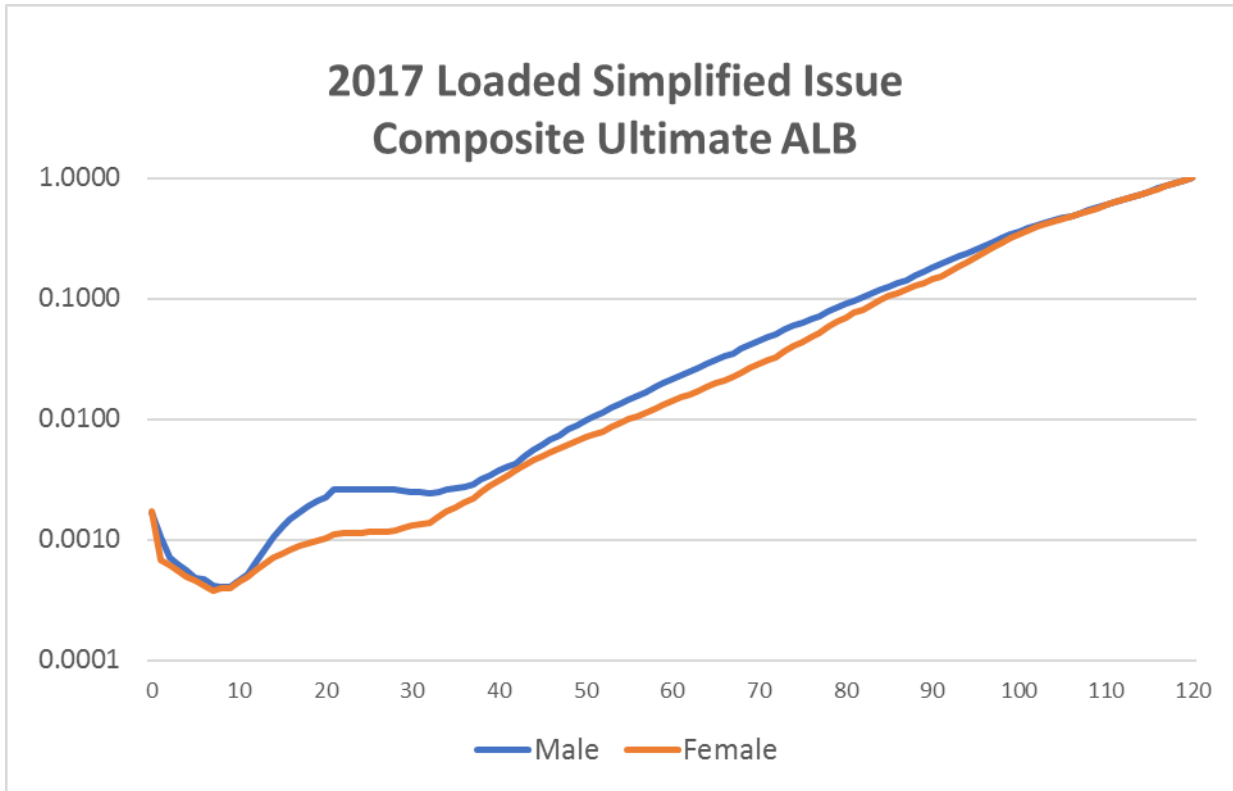
### 3.5 Monotonicity Checks

The relative slopes of the 2017 Loaded Simplified Issue Composite Ultimate Male and Female ALB tables were examined with the following results: male mortality rates had a minimum at age 9 and female rates had a minimum at age 7. Male rates had a very slight maximum at age 28. Female mortality rates were less than male rates at all ages.

### 3.6 Loaded Mortality Tables and Graphs

The 2017 Loaded Simplified Issue Composite, Ultimate Mortality Tables are shown in Appendix E. Gender-blended versions of the 2017 Loaded Simplified Issue Composite ALB tables have been developed and are shown in Appendices F and G.

The following graph illustrates 2017 Loaded Simplified Issue Composite ALB mortality rates:



### 3.7 Model Office Reserves and Graph

A model office was constructed and used to compare reserves based on three tables:

- The 2001 CSO Composite ALB Table,
- The 2017 CSO Composite ALB Table, and
- The 2017 Loaded Simplified Issue Composite, Ultimate, ALB Table.

Mean Commissioners Reserve Valuation Method (CRVM) reserves at 3.5% were projected for 45 years using a single year of issue with \$10 million of face amount issued. The product modeled was level premium permanent life ending at age 100. Reserves for term plans are discussed separately below.

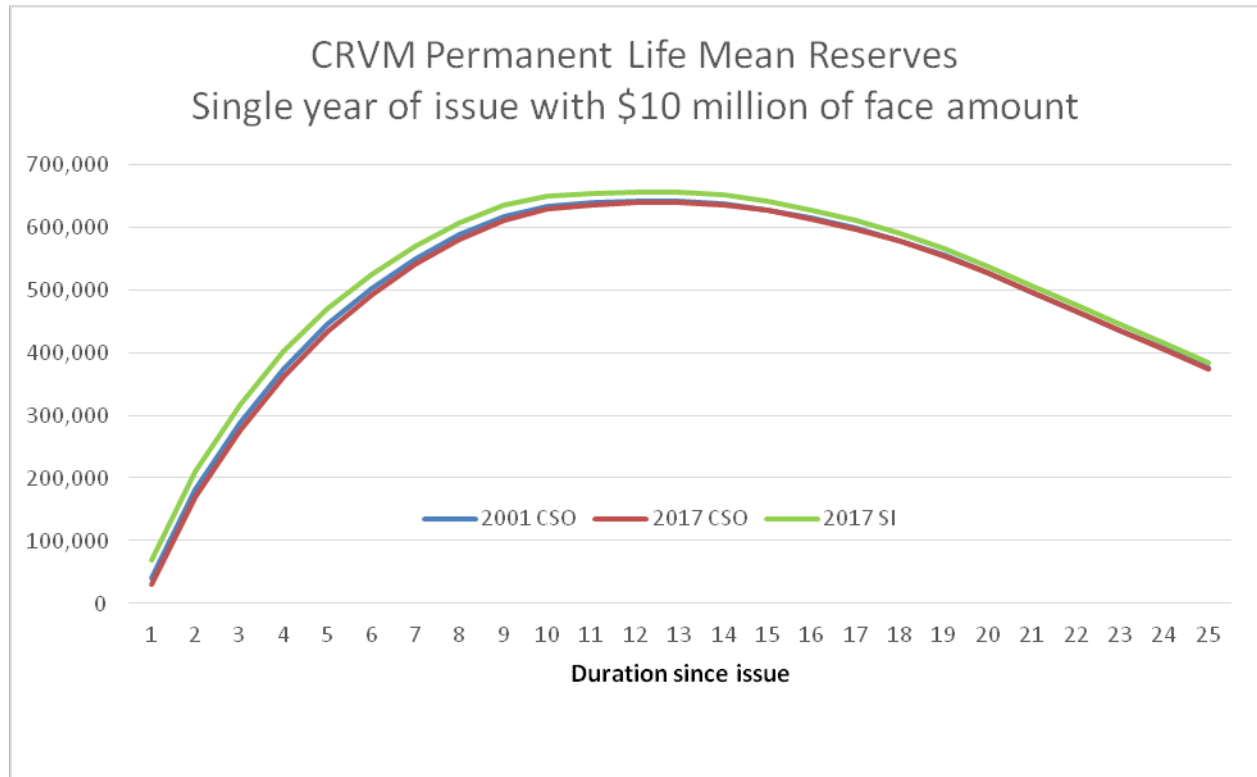
The distribution by issue age group and sex was based on the study exposures. Lapse rates were based on the study lapse experience as developed by LIMRA, using the lapse rates by issue age group and policy count. (The lapse rates by face amount were heavily skewed to the experience on term insurance.) Mortality for the model office projection was based on the 2017 Basic Simplified Issue Composite Select and Ultimate table.

The following graph shows the model office results for durations 1 through 25. Reserves based on the 2017 Simplified Issue Composite Ultimate table were somewhat higher than those based on the 2001 CSO Composite table:

- Year 1 mean reserves based on the 2017 Simplified Issue Composite Ultimate table were 170% of those based on the 2001 CSO Composite table, due to higher first-year net premiums resulting from higher Simplified Issue mortality rates.

- The ratio of reserves based on the 2017 Simplified Issue Composite Ultimate table to those based on the 2001 CSO Composite table decreased from 116% in year 2 to 103% in year 10 and then ranged between 102% and 103% for years 11 to 35.

Reserves based on the 2017 CSO Composite table were slightly lower than those on the 2001 CSO Composite table in all years.



The 2017 Loaded Simplified Issue, Composite, Ultimate table was developed for use with simplified issue composite business (i.e., with premiums not varying by smoking status) with face amounts less than \$50,000.

The simplified issue term insurance market has shifted since the period covered by this study, 2005 through 2009, with more use of smoker/nonsmoker rates and higher face amounts in recent years. The comments that follow will apply to the remaining low face amount term plans with premiums not varying by smoker status, now primarily being sold in the direct response market.

Term insurance reserves based on the 2017 Loaded Simplified Issue Composite Ultimate table will be developed using principle-based reserving (PBR). The net premium reserve will have a lapse component and a revised expense allowance. Net premium reserves depend on the length of each level premium period, the pattern of the gross premiums charged and, in some instances, the percentage increase in the premium at each premium change. Lacking detailed premium information, a model office representing the data submitted for term insurance could not be developed.

The following comments are based on a review of theoretical reserves for typical term insurance plans and premium patterns:

- The low face amount term insurance policies with premiums not varying by smoker status are typically being sold with fairly short level premium periods, most often a series of five-year periods.

- Net level premium (NLP) reserves for such products are often simply one-half the one-year term net premium for the current attained age.
- For attained ages 45 to 75, the mortality rates on the 2017 Loaded Simplified Issue Composite Ultimate table range from 178% to 344% of the 2017 CSO Ultimate rates for females and 207% to 309% for males, so reserves equal to one half the one year term net premium will follow the same ranges of results.

The evaluation of deterministic and stochastic reserves was beyond the scope of this report.

Appendix A. 2007 Basic Simplified Issue, Select and Ultimate, Composite Male Mortality Table, ALB

Issue Age	Duration										Ultimate	Attained Age
	1	2	3	4	5	6	7	8	9	10		
0	0.00168	0.00105	0.00071	0.00063	0.00056	0.00048	0.00047	0.00042	0.00040	0.00040	0.00046	10
1	0.00105	0.00071	0.00063	0.00056	0.00048	0.00047	0.00042	0.00040	0.00040	0.00046	0.00052	11
2	0.00071	0.00063	0.00056	0.00048	0.00047	0.00042	0.00040	0.00040	0.00046	0.00052	0.00064	12
3	0.00063	0.00056	0.00048	0.00047	0.00042	0.00040	0.00040	0.00046	0.00052	0.00064	0.00081	13
4	0.00056	0.00048	0.00047	0.00042	0.00040	0.00040	0.00046	0.00052	0.00064	0.00081	0.00104	14
5	0.00048	0.00047	0.00042	0.00040	0.00040	0.00046	0.00052	0.00064	0.00081	0.00104	0.00125	15
6	0.00047	0.00042	0.00040	0.00040	0.00046	0.00052	0.00064	0.00081	0.00104	0.00125	0.00143	16
7	0.00042	0.00040	0.00040	0.00046	0.00052	0.00064	0.00081	0.00104	0.00125	0.00143	0.00160	17
8	0.00040	0.00040	0.00046	0.00052	0.00064	0.00081	0.00104	0.00125	0.00143	0.00160	0.00177	18
9	0.00040	0.00046	0.00052	0.00064	0.00081	0.00104	0.00125	0.00143	0.00160	0.00177	0.00195	19
10	0.00046	0.00052	0.00064	0.00081	0.00104	0.00125	0.00143	0.00160	0.00177	0.00195	0.00212	20
11	0.00052	0.00064	0.00081	0.00104	0.00125	0.00143	0.00160	0.00177	0.00195	0.00212	0.00247	21
12	0.00064	0.00081	0.00104	0.00125	0.00143	0.00160	0.00177	0.00195	0.00212	0.00247	0.00247	22
13	0.00081	0.00104	0.00125	0.00143	0.00160	0.00177	0.00195	0.00212	0.00247	0.00247	0.00246	23
14	0.00104	0.00124	0.00143	0.00160	0.00177	0.00195	0.00212	0.00247	0.00247	0.00246	0.00246	24
15	0.00124	0.00143	0.00160	0.00177	0.00195	0.00212	0.00247	0.00247	0.00246	0.00246	0.00246	25
16	0.00143	0.00160	0.00176	0.00195	0.00212	0.00232	0.00247	0.00246	0.00246	0.00246	0.00246	26
17	0.00160	0.00176	0.00193	0.00208	0.00222	0.00236	0.00246	0.00246	0.00246	0.00246	0.00246	27
18	0.00176	0.00193	0.00208	0.00220	0.00230	0.00240	0.00246	0.00246	0.00246	0.00246	0.00243	28
19	0.00193	0.00208	0.00220	0.00230	0.00238	0.00244	0.00246	0.00246	0.00246	0.00246	0.00239	29
20	0.00208	0.00220	0.00230	0.00238	0.00244	0.00246	0.00246	0.00246	0.00246	0.00243	0.00239	30
21	0.00220	0.00230	0.00238	0.00244	0.00246	0.00246	0.00246	0.00243	0.00239	0.00235	0.00231	31
22	0.00230	0.00238	0.00244	0.00246	0.00246	0.00246	0.00243	0.00239	0.00235	0.00231	0.00227	32
23	0.00238	0.00244	0.00246	0.00246	0.00246	0.00243	0.00239	0.00235	0.00231	0.00227	0.00234	33
24	0.00244	0.00246	0.00246	0.00246	0.00243	0.00239	0.00235	0.00231	0.00227	0.00234	0.00243	34
25	0.00246	0.00246	0.00246	0.00243	0.00239	0.00235	0.00231	0.00227	0.00234	0.00243	0.00251	35
26	0.00246	0.00243	0.00241	0.00237	0.00234	0.00231	0.00227	0.00234	0.00241	0.00249	0.00260	36
27	0.00243	0.00239	0.00234	0.00230	0.00227	0.00227	0.00230	0.00235	0.00242	0.00253	0.00268	37
28	0.00239	0.00234	0.00230	0.00227	0.00227	0.00230	0.00235	0.00242	0.00253	0.00268	0.00295	38
29	0.00234	0.00230	0.00227	0.00227	0.00230	0.00235	0.00242	0.00253	0.00268	0.00295	0.00322	39
30	0.00230	0.00227	0.00227	0.00230	0.00235	0.00242	0.00253	0.00268	0.00295	0.00322	0.00350	40
31	0.00227	0.00227	0.00230	0.00235	0.00242	0.00253	0.00268	0.00295	0.00322	0.00350	0.00377	41
32	0.00226	0.00230	0.00235	0.00242	0.00253	0.00268	0.00295	0.00322	0.00350	0.00377	0.00404	42
33	0.00230	0.00235	0.00242	0.00253	0.00268	0.00295	0.00322	0.00350	0.00377	0.00404	0.00462	43
34	0.00235	0.00242	0.00253	0.00268	0.00295	0.00322	0.00350	0.00377	0.00404	0.00462	0.00519	44
35	0.00242	0.00253	0.00268	0.00295	0.00322	0.00350	0.00377	0.00404	0.00462	0.00519	0.00577	45
36	0.00253	0.00268	0.00295	0.00322	0.00350	0.00377	0.00404	0.00462	0.00519	0.00577	0.00635	46
37	0.00267	0.00295	0.00322	0.00350	0.00377	0.00404	0.00462	0.00519	0.00577	0.00635	0.00693	47
38	0.00287	0.00322	0.00350	0.00377	0.00404	0.00462	0.00519	0.00577	0.00635	0.00693	0.00768	48
39	0.00307	0.00350	0.00377	0.00404	0.00462	0.00519	0.00577	0.00635	0.00693	0.00768	0.00842	49
40	0.00326	0.00377	0.00404	0.00462	0.00519	0.00577	0.00635	0.00693	0.00768	0.00842	0.00916	50
41	0.00346	0.00404	0.00462	0.00519	0.00577	0.00635	0.00693	0.00768	0.00842	0.00916	0.00990	51
42	0.00366	0.00437	0.00519	0.00577	0.00635	0.00693	0.00768	0.00842	0.00916	0.00990	0.01064	52
43	0.00403	0.00482	0.00576	0.00635	0.00693	0.00768	0.00842	0.00916	0.00990	0.01064	0.01168	53
44	0.00439	0.00526	0.00627	0.00693	0.00768	0.00842	0.00916	0.00990	0.01064	0.01168	0.01269	54
45	0.00475	0.00570	0.00678	0.00768	0.00842	0.00916	0.00990	0.01064	0.01168	0.01269	0.01370	55
46	0.00511	0.00614	0.00729	0.00842	0.00916	0.00990	0.01064	0.01168	0.01269	0.01370	0.01471	56
47	0.00547	0.00658	0.00780	0.00909	0.00990	0.01064	0.01168	0.01269	0.01370	0.01471	0.01572	57
48	0.00581	0.00701	0.00830	0.00964	0.01064	0.01168	0.01269	0.01370	0.01471	0.01572	0.01728	58
49	0.00615	0.00745	0.00881	0.01019	0.01160	0.01269	0.01370	0.01471	0.01572	0.01728	0.01879	59
50	0.00650	0.00788	0.00931	0.01074	0.01218	0.01367	0.01471	0.01572	0.01728	0.01879	0.02030	60
51	0.00684	0.00831	0.00982	0.01129	0.01276	0.01430	0.01572	0.01728	0.01879	0.02005	0.02181	61
52	0.00718	0.00874	0.01032	0.01184	0.01334	0.01492	0.01657	0.01831	0.01996	0.02112	0.02332	62
53	0.00757	0.00931	0.01104	0.01267	0.01424	0.01591	0.01768	0.01961	0.02112	0.02298	0.02533	63
54	0.00795	0.00986	0.01173	0.01345	0.01510	0.01684	0.01873	0.02082	0.02284	0.02471	0.02729	64
55	0.00833	0.01041	0.01242	0.01424	0.01595	0.01777	0.01977	0.02204	0.02424	0.02645	0.02924	65
56	0.00871	0.01095	0.01311	0.01503	0.01680	0.01870	0.02082	0.02325	0.02564	0.02818	0.03120	66
57	0.00909	0.01150	0.01380	0.01581	0.01765	0.01963	0.02187	0.02447	0.02704	0.02992	0.03315	67
58	0.00961	0.01229	0.01486	0.01705	0.01900	0.02108	0.02345	0.02622	0.02901	0.03189	0.03621	68
59	0.01011	0.01306	0.01587	0.01823	0.02029	0.02248	0.02497	0.02792	0.03093	0.03384	0.03914	69
60	0.01061	0.01383	0.01689	0.01942	0.02159	0.02388	0.02650	0.02962	0.03284	0.03579	0.04207	70

Appendix A. 2007 Basic Simplified Issue, Select and Ultimate, Composite Male Mortality Table, ALB  
(continued)

Issue Age	Duration										Ultimate	Attained Age
	1	2	3	4	5	6	7	8	9	10		
61	0.01111	0.01460	0.01791	0.02061	0.02288	0.02528	0.02802	0.03131	0.03476	0.03774	0.04500	71
62	0.01162	0.01537	0.01893	0.02180	0.02418	0.02668	0.02955	0.03301	0.03667	0.03970	0.04793	72
63	0.01237	0.01647	0.02037	0.02352	0.02613	0.02884	0.03189	0.03556	0.03947	0.04280	0.05194	73
64	0.01312	0.01756	0.02180	0.02523	0.02806	0.03098	0.03421	0.03809	0.04224	0.04588	0.05580	74
65	0.01387	0.01865	0.02323	0.02695	0.02999	0.03312	0.03653	0.04061	0.04501	0.04896	0.05966	75
66	0.01462	0.01974	0.02465	0.02866	0.03192	0.03526	0.03885	0.04314	0.04778	0.05203	0.06351	76
67	0.01537	0.02083	0.02608	0.03037	0.03386	0.03741	0.04117	0.04566	0.05055	0.05511	0.06737	77
68	0.01707	0.02297	0.02874	0.03360	0.03741	0.04117	0.04566	0.05055	0.05511	0.06122	0.07351	78
69	0.01860	0.02491	0.03117	0.03655	0.04117	0.04566	0.05027	0.05511	0.06118	0.06677	0.07920	79
70	0.02014	0.02686	0.03360	0.03950	0.04465	0.04975	0.05460	0.06012	0.06624	0.07232	0.08490	80
71	0.02167	0.02881	0.03603	0.04245	0.04813	0.05373	0.05893	0.06478	0.07129	0.07787	0.09059	81
72	0.02320	0.03075	0.03847	0.04541	0.05161	0.05771	0.06326	0.06944	0.07635	0.08342	0.09629	82
73	0.02682	0.03495	0.04347	0.05134	0.05771	0.06326	0.06944	0.07635	0.08342	0.09431	0.10474	83
74	0.03004	0.03872	0.04797	0.05669	0.06326	0.06944	0.07635	0.08342	0.09431	0.10416	0.11250	84
75	0.03326	0.04248	0.05248	0.06204	0.06944	0.07635	0.08342	0.09431	0.10416	0.11250	0.12027	85
76	0.03648	0.04624	0.05698	0.06740	0.07635	0.08342	0.09431	0.10416	0.11250	0.12027	0.12803	86
77	0.03970	0.05000	0.06148	0.07275	0.08328	0.09367	0.10414	0.11250	0.12027	0.12803	0.13580	87
78	0.04683	0.05703	0.06890	0.08120	0.09317	0.10414	0.11250	0.12027	0.12803	0.13580	0.15130	88
79	0.05326	0.06347	0.07580	0.08909	0.10239	0.11250	0.12027	0.12803	0.13580	0.15130	0.16415	89
80	0.05968	0.06991	0.08269	0.09698	0.11162	0.12027	0.12803	0.13580	0.15130	0.16415	0.17699	90
81	0.06611	0.07635	0.08959	0.10488	0.12027	0.12803	0.13580	0.15130	0.16415	0.17699	0.18984	91
82	0.07254	0.08279	0.09648	0.11277	0.12803	0.13580	0.15130	0.16415	0.17699	0.18984	0.20286	92
83	0.08279	0.09648	0.11277	0.12803	0.13580	0.15130	0.16415	0.17699	0.18984	0.20286	0.21601	93
84	0.09648	0.11277	0.12803	0.13580	0.15130	0.16415	0.17699	0.18984	0.20286	0.21601	0.22916	94
85	0.11277	0.12803	0.13580	0.15130	0.16415	0.17699	0.18984	0.20286	0.21601	0.22916	0.24230	95
86	0.12803	0.13580	0.15130	0.16415	0.17699	0.18984	0.20286	0.21601	0.22916	0.24230	0.26125	96
87	0.13580	0.15130	0.16415	0.17699	0.18984	0.20286	0.21601	0.22916	0.24230	0.26125	0.27958	97
88	0.15130	0.16415	0.17699	0.18984	0.20286	0.21601	0.22916	0.24230	0.26125	0.27958	0.29945	98
89	0.16415	0.17699	0.18984	0.20286	0.21601	0.22916	0.24230	0.26125	0.27958	0.29945	0.32038	99
90	0.17699	0.18984	0.20286	0.21601	0.22916	0.24230	0.26125	0.27958	0.29945	0.32038	0.34187	100
91	0.18984	0.20286	0.21601	0.22916	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.36349	101
92	0.20286	0.21601	0.22916	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38480	102
93	0.21601	0.22916	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40538	103
94	0.22916	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42481	104
95	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42224	0.44274	105
96	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42224	0.44274	0.45881	106
97	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42224	0.43979	0.45534	0.47267	107
98	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42195	0.43916	0.45452	0.46773	0.48400	108
99	0.31820	0.33886	0.35972	0.38056	0.40140	0.42195	0.43916	0.45452	0.46773	0.48012	0.49251	109
100	0.33886	0.35972	0.38056	0.40140	0.42195	0.43916	0.45452	0.46773	0.48012	0.49251	0.49793	110
											0.50000	111
											0.50000	112
											0.50000	113
											0.50000	114
											0.50000	115
											0.50000	116
											0.50000	117
											0.50000	118
											0.50000	119
											0.50000	120

Appendix B. 2007 Basic Simplified Issue, Select and Ultimate, Composite Female Mortality Table, ALB

Issue Age	Duration										Ultimate	Attained Age	
	1	2	3	4	5	6	7	8	9	10			11+
0	0.00168	0.00066	0.00060	0.00054	0.00048	0.00044	0.00040	0.00036	0.00038	0.00038	0.00038	0.00043	10
1	0.00066	0.00060	0.00054	0.00048	0.00044	0.00040	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	11
2	0.00060	0.00054	0.00048	0.00044	0.00040	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	12
3	0.00054	0.00048	0.00044	0.00040	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	0.00068	13
4	0.00048	0.00044	0.00040	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	0.00068	0.00073	14
5	0.00044	0.00040	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	0.00068	0.00073	0.00077	15
6	0.00040	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	0.00068	0.00073	0.00077	0.00082	16
7	0.00036	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	0.00068	0.00073	0.00077	0.00082	0.00086	17
8	0.00038	0.00038	0.00043	0.00047	0.00053	0.00060	0.00066	0.00073	0.00077	0.00082	0.00086	0.00090	18
9	0.00038	0.00043	0.00047	0.00053	0.00060	0.00066	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	19
10	0.00043	0.00047	0.00053	0.00060	0.00066	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	0.00103	20
11	0.00047	0.00053	0.00060	0.00066	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	0.00100	0.00104	21
12	0.00053	0.00060	0.00066	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	0.00100	0.00103	0.00104	22
13	0.00060	0.00066	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	0.00100	0.00103	0.00104	0.00105	23
14	0.00066	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	0.00100	0.00103	0.00104	0.00105	0.00106	24
15	0.00072	0.00077	0.00082	0.00086	0.00090	0.00095	0.00100	0.00103	0.00104	0.00105	0.00106	0.00107	25
16	0.00077	0.00082	0.00086	0.00090	0.00095	0.00098	0.00102	0.00104	0.00105	0.00106	0.00106	0.00107	26
17	0.00081	0.00086	0.00090	0.00094	0.00097	0.00100	0.00103	0.00105	0.00106	0.00106	0.00107	0.00111	27
18	0.00086	0.00090	0.00093	0.00096	0.00099	0.00101	0.00104	0.00106	0.00106	0.00106	0.00107	0.00111	28
19	0.00090	0.00093	0.00096	0.00099	0.00101	0.00103	0.00105	0.00106	0.00107	0.00111	0.00115	0.00120	29
20	0.00093	0.00096	0.00099	0.00101	0.00103	0.00104	0.00106	0.00107	0.00111	0.00114	0.00120	0.00124	30
21	0.00096	0.00099	0.00101	0.00103	0.00104	0.00106	0.00107	0.00109	0.00112	0.00116	0.00124	0.00128	31
22	0.00099	0.00101	0.00103	0.00104	0.00106	0.00107	0.00109	0.00111	0.00114	0.00119	0.00128	0.00142	32
23	0.00101	0.00103	0.00104	0.00106	0.00107	0.00109	0.00111	0.00114	0.00119	0.00128	0.00142	0.00156	33
24	0.00103	0.00104	0.00106	0.00107	0.00109	0.00111	0.00114	0.00119	0.00128	0.00142	0.00156	0.00171	34
25	0.00104	0.00106	0.00107	0.00109	0.00111	0.00114	0.00119	0.00128	0.00142	0.00156	0.00171	0.00186	35
26	0.00106	0.00107	0.00109	0.00111	0.00114	0.00119	0.00128	0.00142	0.00156	0.00164	0.00181	0.00200	36
27	0.00107	0.00109	0.00111	0.00114	0.00119	0.00128	0.00138	0.00150	0.00164	0.00181	0.00200	0.00229	37
28	0.00109	0.00111	0.00114	0.00119	0.00128	0.00138	0.00150	0.00164	0.00181	0.00200	0.00229	0.00258	38
29	0.00111	0.00114	0.00119	0.00128	0.00138	0.00150	0.00164	0.00181	0.00200	0.00229	0.00258	0.00287	39
30	0.00114	0.00119	0.00128	0.00138	0.00150	0.00164	0.00181	0.00200	0.00229	0.00258	0.00287	0.00317	40
31	0.00119	0.00128	0.00138	0.00150	0.00164	0.00181	0.00200	0.00229	0.00256	0.00285	0.00317	0.00346	41
32	0.00128	0.00138	0.00150	0.00164	0.00181	0.00200	0.00223	0.00250	0.00280	0.00312	0.00346	0.00383	42
33	0.00138	0.00150	0.00164	0.00181	0.00200	0.00223	0.00250	0.00280	0.00312	0.00346	0.00383	0.00420	43
34	0.00150	0.00164	0.00181	0.00200	0.00223	0.00250	0.00280	0.00312	0.00346	0.00383	0.00420	0.00457	44
35	0.00164	0.00181	0.00200	0.00223	0.00250	0.00280	0.00312	0.00346	0.00383	0.00420	0.00456	0.00494	45
36	0.00181	0.00200	0.00223	0.00250	0.00280	0.00312	0.00346	0.00383	0.00418	0.00455	0.00493	0.00531	46
37	0.00200	0.00223	0.00250	0.00280	0.00312	0.00346	0.00383	0.00418	0.00446	0.00485	0.00526	0.00571	47
38	0.00214	0.00240	0.00270	0.00302	0.00336	0.00372	0.00409	0.00446	0.00485	0.00526	0.00571	0.00610	48
39	0.00227	0.00256	0.00288	0.00322	0.00358	0.00396	0.00434	0.00474	0.00516	0.00559	0.00610	0.00649	49
40	0.00241	0.00272	0.00307	0.00342	0.00380	0.00419	0.00460	0.00502	0.00547	0.00592	0.00649	0.00689	50
41	0.00254	0.00288	0.00325	0.00362	0.00402	0.00443	0.00486	0.00530	0.00577	0.00624	0.00689	0.00728	51
42	0.00267	0.00304	0.00343	0.00382	0.00423	0.00466	0.00511	0.00558	0.00608	0.00657	0.00728	0.00792	52
43	0.00273	0.00312	0.00355	0.00399	0.00445	0.00495	0.00546	0.00601	0.00657	0.00712	0.00792	0.00853	53
44	0.00279	0.00320	0.00367	0.00416	0.00468	0.00523	0.00581	0.00643	0.00706	0.00765	0.00853	0.00915	54
45	0.00284	0.00329	0.00379	0.00433	0.00490	0.00551	0.00616	0.00685	0.00754	0.00818	0.00915	0.00977	55
46	0.00290	0.00337	0.00391	0.00450	0.00512	0.00579	0.00651	0.00726	0.00802	0.00871	0.00977	0.1038	56
47	0.00296	0.00345	0.00403	0.00466	0.00534	0.00607	0.00685	0.00768	0.00851	0.00925	0.1038	0.1127	57
48	0.00304	0.00362	0.00426	0.00495	0.00567	0.00645	0.00729	0.00819	0.00908	0.00987	0.1127	0.1213	58
49	0.00311	0.00378	0.00449	0.00522	0.00599	0.00682	0.00772	0.00869	0.00965	0.1049	0.1213	0.1300	59
50	0.00319	0.00394	0.00471	0.00550	0.00631	0.00719	0.00815	0.00919	0.1022	0.1111	0.1300	0.1386	60
51	0.00327	0.00410	0.00494	0.00577	0.00663	0.00756	0.00858	0.00969	0.1079	0.1173	0.1386	0.1472	61
52	0.00334	0.00426	0.00517	0.00605	0.00695	0.00793	0.00901	0.1018	0.1135	0.1235	0.1472	0.1591	62
53	0.00351	0.00460	0.00562	0.00658	0.00752	0.00856	0.00971	0.1100	0.1228	0.1336	0.1591	0.1707	63
54	0.00367	0.00491	0.00605	0.00707	0.00806	0.00914	0.1037	0.1176	0.1316	0.1432	0.1707	0.1822	64
55	0.00383	0.00522	0.00647	0.00756	0.00860	0.00973	0.1104	0.1253	0.1403	0.1527	0.1822	0.1937	65
56	0.00399	0.00553	0.00689	0.00805	0.00913	0.1032	0.1170	0.1329	0.1491	0.1622	0.1937	0.2052	66
57	0.00414	0.00584	0.00731	0.00855	0.00967	0.1091	0.1236	0.1406	0.1578	0.1718	0.2052	0.2253	67
58	0.00442	0.00634	0.00799	0.00933	0.1052	0.1182	0.1336	0.1521	0.1714	0.1872	0.2253	0.2444	68
59	0.00469	0.00682	0.00863	0.1008	0.1133	0.1270	0.1433	0.1633	0.1845	0.2021	0.2444	0.2635	69
60	0.00496	0.00729	0.00928	0.1083	0.1215	0.1358	0.1530	0.1745	0.1976	0.2217	0.2635		70

Appendix B. 2007 Basic Simplified Issue, Select and Ultimate, Composite Female Mortality Table, ALB (continued)

Issue Age	Duration										Ultimate	Attained Age
	1	2	3	4	5	6	7	8	9	10		
61	0.00523	0.00777	0.00993	0.01158	0.01296	0.01446	0.01627	0.01856	0.02107	0.02319	0.02826	71
62	0.00550	0.00825	0.01057	0.01233	0.01378	0.01533	0.01724	0.01968	0.02238	0.02468	0.03017	72
63	0.00603	0.00903	0.01159	0.01354	0.01515	0.01689	0.01898	0.02169	0.02468	0.02746	0.03382	73
64	0.00656	0.00981	0.01260	0.01474	0.01651	0.01843	0.02069	0.02368	0.02710	0.03021	0.03721	74
65	0.00708	0.01059	0.01361	0.01594	0.01787	0.01997	0.02241	0.02566	0.02945	0.03296	0.04061	75
66	0.00760	0.01136	0.01462	0.01714	0.01922	0.02151	0.02412	0.02765	0.03180	0.03571	0.04400	76
67	0.00813	0.01214	0.01563	0.01833	0.02058	0.02305	0.02584	0.02964	0.03415	0.03846	0.04740	77
68	0.00939	0.01376	0.01770	0.02058	0.02305	0.02584	0.02964	0.03411	0.03846	0.04436	0.05350	78
69	0.01052	0.01524	0.01957	0.02305	0.02584	0.02964	0.03328	0.03814	0.04399	0.04969	0.05908	79
70	0.01164	0.01671	0.02144	0.02547	0.02902	0.03278	0.03679	0.04216	0.04865	0.05502	0.06466	80
71	0.01277	0.01818	0.02331	0.02776	0.03173	0.03591	0.04031	0.04618	0.05331	0.06034	0.07024	81
72	0.01390	0.01965	0.02518	0.03006	0.03444	0.03903	0.04383	0.05020	0.05797	0.06567	0.07581	82
73	0.01685	0.02310	0.02927	0.03444	0.03903	0.04383	0.05020	0.05776	0.06567	0.07444	0.08385	83
74	0.01945	0.02617	0.03293	0.03903	0.04383	0.05020	0.05696	0.06462	0.07360	0.08255	0.09127	84
75	0.02205	0.02924	0.03659	0.04348	0.04987	0.05633	0.06320	0.07149	0.08107	0.09065	0.09869	85
76	0.02465	0.03231	0.04025	0.04779	0.05483	0.06190	0.06944	0.07835	0.08854	0.09869	0.10611	86
77	0.02725	0.03537	0.04391	0.05210	0.05980	0.06747	0.07567	0.08522	0.09602	0.10611	0.11353	87
78	0.03337	0.04112	0.04970	0.05843	0.06702	0.07567	0.08512	0.09543	0.10611	0.11353	0.12310	88
79	0.03886	0.04638	0.05510	0.06438	0.07383	0.08350	0.09399	0.10503	0.11353	0.12310	0.13194	89
80	0.04434	0.05164	0.06050	0.07034	0.08064	0.09127	0.10285	0.11353	0.12310	0.13194	0.14077	90
81	0.04983	0.05690	0.06590	0.07630	0.08746	0.09904	0.11172	0.12310	0.13194	0.14077	0.14961	91
82	0.05531	0.06216	0.07130	0.08226	0.09427	0.10681	0.12059	0.13194	0.14077	0.14961	0.16237	92
83	0.06216	0.07130	0.08226	0.09427	0.10624	0.11940	0.13194	0.14077	0.14961	0.16237	0.17800	93
84	0.07130	0.08226	0.09427	0.10519	0.11633	0.13023	0.14077	0.14961	0.16237	0.17800	0.19364	94
85	0.08226	0.09427	0.10519	0.11541	0.12641	0.14077	0.14961	0.16237	0.17800	0.19364	0.20927	95
86	0.09427	0.10519	0.11541	0.12564	0.13649	0.14961	0.16237	0.17800	0.19364	0.20927	0.23180	96
87	0.10519	0.11541	0.12564	0.13649	0.14961	0.16237	0.17800	0.19364	0.20927	0.23180	0.25430	97
88	0.11541	0.12564	0.13649	0.14961	0.16237	0.17800	0.19364	0.20927	0.23180	0.25430	0.27811	98
89	0.12564	0.13649	0.14961	0.16237	0.17732	0.19364	0.20927	0.23180	0.25430	0.27811	0.30271	99
90	0.13649	0.14961	0.16237	0.17731	0.19067	0.20927	0.23180	0.25430	0.27811	0.30208	0.32757	100
91	0.14961	0.16237	0.17715	0.19008	0.20402	0.22960	0.25190	0.27547	0.29980	0.32437	0.35222	101
92	0.16237	0.17715	0.19008	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.39549	102
93	0.17715	0.19008	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.41534	103
94	0.19008	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.43390	104
95	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.45083	105
96	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.45083	0.46576	106
97	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.44768	0.46212	0.47837	107
98	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.44698	0.46124	0.47323	0.48836	108
99	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.44698	0.46124	0.47323	0.48434	0.49545	109
100	0.32437	0.34938	0.37484	0.40031	0.42577	0.44698	0.46124	0.47323	0.48434	0.49545	0.49941	110
											0.50000	111
											0.50000	112
											0.50000	113
											0.50000	114
											0.50000	115
											0.50000	116
											0.50000	117
											0.50000	118
											0.50000	119
											0.50000	120



Appendix C. 2017 Basic Simplified Issue, Select and Ultimate, Composite Male Mortality Table, ALB

Issue Age	Duration:										Ultimate	Attained Age		
	1	2	3	4	5	6	7	8	9	10				
0	0.00140	0.00087	0.00059	0.00052	0.00046	0.00040	0.00039	0.00035	0.00034	0.00034	0.00034	0.00038	0.00043	10
1	0.00087	0.00059	0.00052	0.00046	0.00040	0.00039	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	11
2	0.00059	0.00052	0.00046	0.00040	0.00039	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	12
3	0.00052	0.00046	0.00040	0.00039	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	13
4	0.00046	0.00040	0.00039	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	14
5	0.00040	0.00039	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	15
6	0.00039	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	16
7	0.00035	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	17
8	0.00034	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	18
9	0.00034	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	19
10	0.00038	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	0.00238	20
11	0.00043	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	0.00238	0.00257	21
12	0.00053	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	0.00238	0.00257	0.00276	22
13	0.00068	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	0.00238	0.00257	0.00276	0.00295	23
14	0.00088	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	0.00238	0.00257	0.00276	0.00295	0.00314	24
15	0.00107	0.00124	0.00140	0.00157	0.00173	0.00188	0.00219	0.00238	0.00257	0.00276	0.00295	0.00314	0.00333	25
16	0.00124	0.00140	0.00156	0.00173	0.00188	0.00206	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	26
17	0.00140	0.00156	0.00171	0.00184	0.00195	0.00204	0.00213	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	27
18	0.00156	0.00171	0.00184	0.00195	0.00204	0.00213	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	28
19	0.00171	0.00184	0.00195	0.00204	0.00211	0.00216	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	29
20	0.00184	0.00195	0.00204	0.00211	0.00216	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	30
21	0.00195	0.00204	0.00211	0.00216	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	31
22	0.00204	0.00211	0.00216	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	32
23	0.00211	0.00216	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	33
24	0.00216	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	34
25	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	0.00218	35
26	0.00218	0.00216	0.00214	0.00210	0.00207	0.00205	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	36
27	0.00216	0.00212	0.00207	0.00204	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	37
28	0.00212	0.00207	0.00204	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	38
29	0.00207	0.00204	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	39
30	0.00204	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	40
31	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	41
32	0.00200	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	0.00201	42
33	0.00204	0.00208	0.00215	0.00224	0.00238	0.00262	0.00286	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	43
34	0.00208	0.00215	0.00224	0.00238	0.00262	0.00286	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	44
35	0.00215	0.00224	0.00238	0.00262	0.00286	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	45
36	0.00224	0.00238	0.00262	0.00286	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	0.00665	46
37	0.00237	0.00262	0.00286	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	0.00665	0.00716	47
38	0.00254	0.00286	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	0.00665	0.00716	0.00767	48
39	0.00272	0.00310	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	0.00665	0.00716	0.00767	0.00818	49
40	0.00289	0.00334	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	0.00665	0.00716	0.00767	0.00818	0.00869	50
41	0.00307	0.00358	0.00409	0.00460	0.00512	0.00563	0.00614	0.00665	0.00716	0.00767	0.00818	0.00869	0.00920	51
42	0.00324	0.00387	0.00460	0.00512	0.00563	0.00614	0.00665	0.00716	0.00767	0.00818	0.00869	0.00920	0.00971	52
43	0.00357	0.00427	0.00511	0.00563	0.00614	0.00665	0.00716	0.00767	0.00818	0.00869	0.00920	0.00971	0.01022	53
44	0.00389	0.00466	0.00556	0.00614	0.00665	0.00716	0.00767	0.00818	0.00869	0.00920	0.00971	0.01022	0.01073	54
45	0.00421	0.00505	0.00601	0.00665	0.00716	0.00767	0.00818	0.00869	0.00920	0.00971	0.01022	0.01073	0.01125	55
46	0.00453	0.00544	0.00646	0.00716	0.00767	0.00818	0.00869	0.00920	0.00971	0.01022	0.01073	0.01125	0.01176	56
47	0.00485	0.00583	0.00691	0.00767	0.00818	0.00869	0.00920	0.00971	0.01022	0.01073	0.01125	0.01176	0.01227	57
48	0.00515	0.00622	0.00736	0.00818	0.00869	0.00920	0.00971	0.01022	0.01073	0.01125	0.01176	0.01227	0.01278	58
49	0.00545	0.00660	0.00781	0.00869	0.00920	0.00971	0.01022	0.01073	0.01125	0.01176	0.01227	0.01278	0.01329	59
50	0.00576	0.00698	0.00825	0.00920	0.00971	0.01022	0.01073	0.01125	0.01176	0.01227	0.01278	0.01329	0.01380	60
51	0.00606	0.00737	0.00870	0.01001	0.01131	0.01267	0.01394	0.01531	0.01665	0.01777	0.01933	0.02067	0.02245	61
52	0.00637	0.00775	0.00915	0.01049	0.01183	0.01323	0.01468	0.01623	0.01769	0.01872	0.02037	0.02245	0.02419	62
53	0.00671	0.00825	0.00979	0.01123	0.01262	0.01410	0.01567	0.01738	0.01872	0.02037	0.02245	0.02419	0.02592	63
54	0.00705	0.00874	0.01040	0.01192	0.01338	0.01492	0.01660	0.01845	0.02025	0.02190	0.02419	0.02592	0.02765	64
55	0.00738	0.00922	0.01101	0.01262	0.01414	0.01575	0.01753	0.01953	0.02149	0.02344	0.02592	0.02765	0.02938	65
56	0.00772	0.00971	0.01162	0.01332	0.01489	0.01657	0.01845	0.02061	0.02273	0.02498	0.02765	0.02938	0.03111	66
57	0.00806	0.01019	0.01223	0.01401	0.01565	0.01739	0.01938	0.02168	0.02397	0.02652	0.02938	0.03111	0.03284	67
58	0.00851	0.01090	0.01317	0.01511	0.01684	0.01868	0.02078	0.02324	0.02571	0.02827	0.03111	0.03284	0.03457	68
59	0.00896	0.01158	0.01407	0.01616	0.01798	0.01992	0.02213	0.02474	0.02741	0.02999	0.03284	0.03457	0.03630	69
60	0.00940	0.01226	0.01497	0.01721	0.01913	0.02116	0.02348	0.02625	0.02911	0.03172	0.03457	0.03630	0.03803	70

Appendix C. 2017 Basic Simplified Issue, Select and Ultimate, Composite Male Mortality Table, ALB (continued)

Issue Age	Duration:										Ultimate 11+	Attained Age
	1	2	3	4	5	6	7	8	9	10		
61	0.00985	0.01294	0.01587	0.01827	0.02028	0.02240	0.02484	0.02775	0.03081	0.03345	0.03988	71
62	0.01029	0.01363	0.01677	0.01932	0.02143	0.02364	0.02619	0.02926	0.03250	0.03518	0.04248	72
63	0.01096	0.01460	0.01805	0.02085	0.02315	0.02556	0.02826	0.03152	0.03498	0.03794	0.04603	73
64	0.01163	0.01556	0.01932	0.02236	0.02487	0.02746	0.03032	0.03375	0.03743	0.04066	0.04945	74
65	0.01229	0.01653	0.02058	0.02388	0.02658	0.02936	0.03237	0.03599	0.03989	0.04339	0.05287	75
66	0.01296	0.01749	0.02185	0.02540	0.02829	0.03125	0.03443	0.03823	0.04235	0.04612	0.05629	76
67	0.01362	0.01846	0.02312	0.02691	0.03001	0.03315	0.03648	0.04047	0.04480	0.04884	0.05971	77
68	0.01513	0.02035	0.02547	0.02978	0.03315	0.03648	0.04047	0.04480	0.04884	0.05425	0.06515	78
69	0.01649	0.02208	0.02763	0.03239	0.03648	0.04047	0.04455	0.04884	0.05422	0.05917	0.07019	79
70	0.01785	0.02380	0.02978	0.03501	0.03957	0.04410	0.04839	0.05328	0.05870	0.06410	0.07524	80
71	0.01920	0.02553	0.03194	0.03763	0.04266	0.04762	0.05223	0.05742	0.06319	0.06902	0.08029	81
72	0.02056	0.02725	0.03409	0.04024	0.04574	0.05115	0.05606	0.06155	0.06767	0.07394	0.08534	82
73	0.02377	0.03098	0.03853	0.04550	0.05115	0.05606	0.06155	0.06767	0.07394	0.08358	0.09370	83
74	0.02663	0.03431	0.04252	0.05024	0.05606	0.06155	0.06767	0.07394	0.08358	0.09318	0.10159	84
75	0.02948	0.03765	0.04651	0.05499	0.06155	0.06767	0.07394	0.08358	0.09318	0.10159	0.10962	85
76	0.03233	0.04098	0.05050	0.05973	0.06767	0.07394	0.08358	0.09318	0.10159	0.10962	0.11779	86
77	0.03518	0.04432	0.05449	0.06448	0.07381	0.08301	0.09316	0.10159	0.10962	0.11779	0.12610	87
78	0.04151	0.05055	0.06107	0.07197	0.08257	0.09316	0.10159	0.10962	0.11779	0.12610	0.14180	88
79	0.04720	0.05625	0.06718	0.07896	0.09160	0.10159	0.10962	0.11779	0.12610	0.14180	0.15528	89
80	0.05290	0.06196	0.07329	0.08676	0.10079	0.10962	0.11779	0.12610	0.14180	0.15528	0.16899	90
81	0.05859	0.06766	0.08014	0.09470	0.10962	0.11779	0.12610	0.14180	0.15528	0.16899	0.18295	91
82	0.06429	0.07406	0.08712	0.10278	0.11779	0.12610	0.14180	0.15528	0.16899	0.18295	0.19732	92
83	0.07406	0.08712	0.10278	0.11779	0.12610	0.14180	0.15528	0.16899	0.18295	0.19732	0.21206	93
84	0.08712	0.10278	0.11779	0.12610	0.14180	0.15528	0.16899	0.18295	0.19732	0.21206	0.22705	94
85	0.10278	0.11779	0.12610	0.14180	0.15528	0.16899	0.18295	0.19732	0.21206	0.22705	0.24230	95
86	0.11779	0.12610	0.14180	0.15528	0.16899	0.18295	0.19732	0.21206	0.22705	0.24230	0.26125	96
87	0.12610	0.14180	0.15528	0.16899	0.18295	0.19732	0.21206	0.22705	0.24230	0.26125	0.27958	97
88	0.14180	0.15528	0.16899	0.18295	0.19732	0.21206	0.22705	0.24230	0.26125	0.27958	0.29945	98
89	0.15528	0.16899	0.18295	0.19732	0.21206	0.22705	0.24230	0.26125	0.27958	0.29945	0.32038	99
90	0.16899	0.18295	0.19732	0.21206	0.22705	0.24230	0.26125	0.27958	0.29945	0.32038	0.34187	100
91	0.18295	0.19732	0.21206	0.22705	0.24230	0.25947	0.27777	0.29751	0.31831	0.33964	0.36349	101
92	0.19732	0.21206	0.22705	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38480	102
93	0.21206	0.22705	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40538	103
94	0.22705	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42481	104
95	0.24230	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42224	0.44274	105
96	0.25947	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42224	0.44274	0.45881	106
97	0.27777	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42224	0.43979	0.45534	0.47267	107
98	0.29751	0.31820	0.33886	0.35972	0.38056	0.40140	0.42195	0.43916	0.45452	0.46773	0.48400	108
99	0.31820	0.33886	0.35972	0.38056	0.40140	0.42195	0.43916	0.45452	0.46773	0.48012	0.49251	109
100	0.33886	0.35972	0.38056	0.40140	0.42195	0.43916	0.45452	0.46773	0.48012	0.49251	0.49793	110
											0.50000	111
											0.50000	112
											0.50000	113
											0.50000	114
											0.50000	115
											0.50000	116
											0.50000	117
											0.50000	118
											0.50000	119
											0.50000	120

Appendix D. 2017 Basic Simplified Issue, Select and Ultimate, Composite Female Mortality Table, ALB

Issue Age	Duration:										Ultimate	Attained Age		
	1	2	3	4	5	6	7	8	9	10			11+	
0	0.00145	0.00057	0.00052	0.00046	0.00041	0.00038	0.00034	0.00031	0.00033	0.00033	0.00033	0.00037	0.00041	10
1	0.00057	0.00052	0.00046	0.00041	0.00038	0.00034	0.00031	0.00033	0.00033	0.00033	0.00037	0.00041	0.00046	11
2	0.00052	0.00046	0.00041	0.00038	0.00034	0.00031	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00059	12
3	0.00046	0.00041	0.00038	0.00034	0.00031	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00059	0.00064	13
4	0.00041	0.00038	0.00034	0.00031	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00059	0.00064	0.00069	14
5	0.00038	0.00034	0.00031	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00059	0.00064	0.00069	0.00073	15
6	0.00034	0.00031	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00059	0.00064	0.00069	0.00073	0.00078	16
7	0.00031	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00059	0.00064	0.00069	0.00073	0.00078	0.00082	17
8	0.00033	0.00033	0.00037	0.00041	0.00046	0.00052	0.00058	0.00064	0.00069	0.00073	0.00078	0.00082	0.00086	18
9	0.00033	0.00037	0.00041	0.00046	0.00052	0.00058	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	19
10	0.00037	0.00041	0.00046	0.00052	0.00058	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	0.00094	20
11	0.00041	0.00046	0.00052	0.00058	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	0.00094	0.00098	21
12	0.00046	0.00052	0.00058	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	0.00094	0.00098	0.00102	22
13	0.00052	0.00058	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	0.00094	0.00098	0.00102	0.00106	23
14	0.00058	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	0.00094	0.00098	0.00102	0.00106	0.00110	24
15	0.00063	0.00069	0.00073	0.00078	0.00082	0.00086	0.00090	0.00094	0.00098	0.00102	0.00106	0.00110	0.00114	25
16	0.00068	0.00073	0.00078	0.00082	0.00086	0.00089	0.00092	0.00094	0.00095	0.00096	0.00096	0.00096	0.00096	26
17	0.00073	0.00078	0.00081	0.00085	0.00088	0.00090	0.00092	0.00094	0.00095	0.00096	0.00096	0.00096	0.00096	27
18	0.00078	0.00081	0.00084	0.00087	0.00089	0.00091	0.00092	0.00094	0.00095	0.00096	0.00096	0.00096	0.00096	28
19	0.00081	0.00084	0.00087	0.00089	0.00091	0.00093	0.00095	0.00096	0.00097	0.00097	0.00097	0.00097	0.00097	29
20	0.00084	0.00087	0.00089	0.00091	0.00093	0.00094	0.00096	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097	30
21	0.00087	0.00089	0.00091	0.00093	0.00094	0.00096	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097	0.00097	31
22	0.00089	0.00091	0.00093	0.00094	0.00096	0.00097	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	32
23	0.00091	0.00093	0.00094	0.00096	0.00097	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	33
24	0.00093	0.00094	0.00096	0.00097	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	34
25	0.00094	0.00096	0.00097	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	35
26	0.00096	0.00097	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	36
27	0.00097	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	37
28	0.00098	0.00100	0.00103	0.00107	0.00116	0.00125	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	38
29	0.00100	0.00103	0.00107	0.00116	0.00125	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	39
30	0.00103	0.00107	0.00116	0.00125	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	40
31	0.00107	0.00116	0.00125	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	41
32	0.00116	0.00125	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	0.00367	42
33	0.00125	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	0.00367	0.00394	43
34	0.00135	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	0.00367	0.00394	0.00421	44
35	0.00149	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	0.00367	0.00394	0.00421	0.00448	45
36	0.00163	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	0.00367	0.00394	0.00421	0.00448	0.00475	46
37	0.00181	0.00207	0.00234	0.00260	0.00286	0.00313	0.00340	0.00367	0.00394	0.00421	0.00448	0.00475	0.00502	47
38	0.00194	0.00217	0.00244	0.00273	0.00304	0.00337	0.00370	0.00403	0.00439	0.00475	0.00511	0.00547	0.00583	48
39	0.00206	0.00232	0.00261	0.00291	0.00324	0.00358	0.00393	0.00429	0.00467	0.00505	0.00543	0.00581	0.00619	49
40	0.00218	0.00246	0.00277	0.00310	0.00343	0.00379	0.00416	0.00454	0.00494	0.00535	0.00576	0.00617	0.00658	50
41	0.00230	0.00260	0.00294	0.00328	0.00363	0.00400	0.00439	0.00480	0.00522	0.00565	0.00608	0.00651	0.00694	51
42	0.00242	0.00275	0.00310	0.00346	0.00383	0.00422	0.00462	0.00505	0.00550	0.00595	0.00644	0.00693	0.00742	52
43	0.00247	0.00282	0.00321	0.00361	0.00403	0.00447	0.00494	0.00544	0.00595	0.00644	0.00693	0.00742	0.00791	53
44	0.00252	0.00290	0.00332	0.00376	0.00423	0.00473	0.00526	0.00581	0.00638	0.00692	0.00742	0.00791	0.00840	54
45	0.00257	0.00297	0.00343	0.00391	0.00443	0.00498	0.00557	0.00619	0.00682	0.00740	0.00800	0.00858	0.00916	55
46	0.00262	0.00305	0.00353	0.00407	0.00463	0.00523	0.00588	0.00657	0.00726	0.00798	0.00866	0.00934	0.01002	56
47	0.00268	0.00312	0.00364	0.00422	0.00483	0.00549	0.00620	0.00695	0.00769	0.00836	0.00903	0.00970	0.01038	57
48	0.00275	0.00327	0.00385	0.00448	0.00513	0.00583	0.00659	0.00740	0.00821	0.00893	0.00963	0.01033	0.01103	58
49	0.00282	0.00342	0.00406	0.00472	0.00541	0.00616	0.00698	0.00786	0.00873	0.00959	0.01044	0.01129	0.01214	59
50	0.00288	0.00356	0.00426	0.00497	0.00570	0.00650	0.00737	0.00831	0.00924	0.01005	0.01086	0.01167	0.01248	60
51	0.00295	0.00371	0.00447	0.00522	0.00599	0.00684	0.00776	0.00876	0.00975	0.01061	0.01142	0.01223	0.01304	61
52	0.00302	0.00385	0.00467	0.00547	0.00628	0.00717	0.00815	0.00921	0.01027	0.01117	0.01207	0.01297	0.01387	62
53	0.00318	0.00416	0.00509	0.00595	0.00680	0.00774	0.00878	0.00995	0.01111	0.01209	0.01309	0.01409	0.01509	63
54	0.00332	0.00444	0.00547	0.00640	0.00729	0.00827	0.00938	0.01064	0.01190	0.01295	0.01395	0.01495	0.01595	64
55	0.00346	0.00472	0.00585	0.00684	0.00778	0.00880	0.00998	0.01133	0.01269	0.01381	0.01481	0.01581	0.01681	65
56	0.00360	0.00500	0.00623	0.00728	0.00826	0.00933	0.01058	0.01202	0.01348	0.01467	0.01572	0.01672	0.01772	66
57	0.00375	0.00528	0.00661	0.00773	0.00875	0.00986	0.01118	0.01271	0.01427	0.01553	0.01653	0.01753	0.01853	67
58	0.00400	0.00573	0.00722	0.00843	0.00951	0.01069	0.01209	0.01376	0.01550	0.01693	0.01813	0.01913	0.02013	68
59	0.00425	0.00616	0.00781	0.00911	0.01025	0.01148	0.01296	0.01477	0.01668	0.01828	0.01963	0.02083	0.02203	69
60	0.00449	0.00660	0.00839	0.00979	0.01099	0.01228	0.01384	0.01578	0.01787	0.01963	0.02163	0.02363	0.02563	70

Appendix D. 2017 Basic Simplified Issue, Select and Ultimate, Composite Female Mortality Table, ALB (continued)

Issue Age	Duration:										Ultimate 11+	Attained Age
	1	2	3	4	5	6	7	8	9	10		
61	0.00473	0.00703	0.00898	0.01047	0.01172	0.01307	0.01472	0.01679	0.01905	0.02097	0.02556	71
62	0.00498	0.00746	0.00956	0.01115	0.01246	0.01387	0.01559	0.01780	0.02024	0.02232	0.02729	72
63	0.00546	0.00817	0.01048	0.01225	0.01370	0.01528	0.01716	0.01962	0.02232	0.02484	0.03058	73
64	0.00593	0.00887	0.01140	0.01333	0.01493	0.01667	0.01871	0.02141	0.02451	0.02732	0.03365	74
65	0.00640	0.00957	0.01231	0.01441	0.01616	0.01806	0.02026	0.02321	0.02664	0.02981	0.03672	75
66	0.00688	0.01027	0.01323	0.01550	0.01739	0.01945	0.02181	0.02501	0.02876	0.03230	0.03980	76
67	0.00735	0.01098	0.01414	0.01658	0.01862	0.02084	0.02337	0.02680	0.03085	0.03478	0.04287	77
68	0.00849	0.01245	0.01601	0.01862	0.02084	0.02337	0.02680	0.03085	0.03478	0.04012	0.04839	78
69	0.00951	0.01378	0.01770	0.02084	0.02337	0.02680	0.03009	0.03449	0.03978	0.04494	0.05343	79
70	0.01053	0.01511	0.01939	0.02303	0.02624	0.02965	0.03328	0.03813	0.04400	0.04976	0.05848	80
71	0.01155	0.01644	0.02108	0.02511	0.02869	0.03247	0.03646	0.04177	0.04821	0.05457	0.06402	81
72	0.01257	0.01777	0.02277	0.02718	0.03114	0.03530	0.03964	0.04540	0.05243	0.05985	0.06964	82
73	0.01524	0.02090	0.02647	0.03114	0.03530	0.03964	0.04540	0.05223	0.05985	0.06838	0.07761	83
74	0.01759	0.02367	0.02978	0.03530	0.03964	0.04540	0.05151	0.05890	0.06760	0.07641	0.08514	84
75	0.01994	0.02644	0.03309	0.03932	0.04510	0.05094	0.05760	0.06566	0.07505	0.08457	0.09278	85
76	0.02229	0.02922	0.03640	0.04322	0.04959	0.05642	0.06378	0.07253	0.08260	0.09278	0.10053	86
77	0.02464	0.03199	0.03971	0.04712	0.05450	0.06197	0.07005	0.07950	0.09027	0.10053	0.10840	87
78	0.03018	0.03719	0.04494	0.05325	0.06156	0.07005	0.07941	0.08971	0.10053	0.10840	0.11845	88
79	0.03514	0.04194	0.05022	0.05914	0.06834	0.07789	0.08836	0.09951	0.10840	0.11845	0.12793	89
80	0.04010	0.04707	0.05557	0.06512	0.07523	0.08580	0.09745	0.10840	0.11845	0.12793	0.13756	90
81	0.04541	0.05227	0.06100	0.07118	0.08222	0.09383	0.10667	0.11845	0.12793	0.13756	0.14732	91
82	0.05081	0.05754	0.06652	0.07734	0.08932	0.10198	0.11603	0.12793	0.13756	0.14732	0.16113	92
83	0.05754	0.06652	0.07734	0.08932	0.10144	0.11489	0.12793	0.13756	0.14732	0.16113	0.17800	93
84	0.06652	0.07734	0.08932	0.10043	0.11193	0.12628	0.13756	0.14732	0.16113	0.17800	0.19364	94
85	0.07734	0.08932	0.10043	0.11105	0.12257	0.13756	0.14732	0.16113	0.17800	0.19364	0.20927	95
86	0.08932	0.10043	0.11105	0.12183	0.13337	0.14732	0.16113	0.17800	0.19364	0.20927	0.23180	96
87	0.10043	0.11105	0.12183	0.13337	0.14732	0.16113	0.17800	0.19364	0.20927	0.23180	0.25430	97
88	0.11105	0.12183	0.13337	0.14732	0.16113	0.17800	0.19364	0.20927	0.23180	0.25430	0.27811	98
89	0.12183	0.13337	0.14732	0.16113	0.17732	0.19364	0.20927	0.23180	0.25430	0.27811	0.30271	99
90	0.13337	0.14732	0.16113	0.17731	0.19067	0.20927	0.23180	0.25430	0.27811	0.30208	0.32757	100
91	0.14732	0.16113	0.17715	0.19008	0.20402	0.22960	0.25190	0.27547	0.29980	0.32437	0.35222	101
92	0.16113	0.17715	0.19008	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.39549	102
93	0.17715	0.19008	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.41534	103
94	0.19008	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.43390	104
95	0.20402	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.45083	105
96	0.22746	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.45083	0.46576	106
97	0.25190	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.44768	0.46212	0.47837	107
98	0.27547	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.44698	0.46124	0.47323	0.48836	108
99	0.29980	0.32437	0.34938	0.37484	0.40031	0.42577	0.44698	0.46124	0.47323	0.48434	0.49545	109
100	0.32437	0.34938	0.37484	0.40031	0.42577	0.44698	0.46124	0.47323	0.48434	0.49545	0.49941	110
											0.50000	111
											0.50000	112
											0.50000	113
											0.50000	114
											0.50000	115
											0.50000	116
											0.50000	117
											0.50000	118
											0.50000	119
											0.50000	120

Appendix E. 2017 Simplified Issue Composite, Ultimate, Mortality Tables

Att. Age	Basic, ALB		Basic, ANB		Loaded, ALB		Loaded, ANB	
	Male Rate	Female Rate	Male Rate	Female Rate	Male Rate	Female Rate	Male Rate	Female Rate
0	0.00140	0.00145	0.00163	0.00167	0.00168	0.00174	0.00195	0.00200
1	0.00087	0.00057	0.00113	0.00101	0.00105	0.00068	0.00136	0.00121
2	0.00059	0.00052	0.00073	0.00054	0.00070	0.00062	0.00087	0.00065
3	0.00052	0.00046	0.00055	0.00049	0.00063	0.00056	0.00066	0.00059
4	0.00046	0.00041	0.00049	0.00044	0.00055	0.00050	0.00059	0.00053
5	0.00040	0.00038	0.00043	0.00040	0.00048	0.00045	0.00052	0.00047
6	0.00039	0.00034	0.00039	0.00036	0.00046	0.00041	0.00047	0.00043
7	0.00035	0.00031	0.00037	0.00033	0.00042	0.00037	0.00044	0.00039
8	0.00034	0.00033	0.00034	0.00032	0.00040	0.00039	0.00041	0.00038
9	0.00034	0.00033	0.00034	0.00033	0.00040	0.00039	0.00040	0.00039
10	0.00038	0.00037	0.00036	0.00035	0.00046	0.00045	0.00043	0.00042
11	0.00043	0.00041	0.00041	0.00039	0.00052	0.00049	0.00049	0.00047
12	0.00053	0.00046	0.00048	0.00043	0.00064	0.00055	0.00058	0.00052
13	0.00068	0.00052	0.00061	0.00049	0.00082	0.00063	0.00073	0.00059
14	0.00088	0.00059	0.00078	0.00056	0.00106	0.00071	0.00094	0.00067
15	0.00107	0.00064	0.00098	0.00062	0.00129	0.00077	0.00117	0.00074
16	0.00124	0.00069	0.00115	0.00066	0.00148	0.00082	0.00139	0.00080
17	0.00140	0.00073	0.00132	0.00071	0.00168	0.00088	0.00158	0.00085
18	0.00157	0.00078	0.00149	0.00075	0.00189	0.00093	0.00178	0.00091
19	0.00173	0.00082	0.00165	0.00080	0.00207	0.00098	0.00198	0.00096
20	0.00188	0.00086	0.00180	0.00084	0.00226	0.00103	0.00216	0.00101
21	0.00219	0.00093	0.00203	0.00089	0.00262	0.00112	0.00244	0.00107
22	0.00218	0.00094	0.00219	0.00093	0.00262	0.00112	0.00262	0.00112
23	0.00218	0.00094	0.00218	0.00094	0.00262	0.00113	0.00262	0.00113
24	0.00218	0.00095	0.00218	0.00095	0.00262	0.00114	0.00262	0.00114
25	0.00218	0.00096	0.00218	0.00095	0.00262	0.00115	0.00262	0.00114
26	0.00218	0.00096	0.00218	0.00096	0.00262	0.00115	0.00262	0.00115
27	0.00218	0.00097	0.00218	0.00097	0.00262	0.00116	0.00262	0.00116
28	0.00215	0.00100	0.00217	0.00098	0.00258	0.00120	0.00260	0.00118
29	0.00212	0.00104	0.00214	0.00102	0.00254	0.00125	0.00256	0.00123
30	0.00208	0.00108	0.00210	0.00106	0.00250	0.00130	0.00252	0.00127
31	0.00205	0.00112	0.00206	0.00110	0.00246	0.00135	0.00248	0.00132
32	0.00201	0.00116	0.00203	0.00114	0.00241	0.00139	0.00244	0.00137
33	0.00207	0.00128	0.00204	0.00122	0.00249	0.00154	0.00245	0.00147
34	0.00215	0.00141	0.00211	0.00135	0.00258	0.00170	0.00253	0.00162
35	0.00223	0.00155	0.00219	0.00148	0.00267	0.00186	0.00263	0.00178
36	0.00230	0.00168	0.00226	0.00161	0.00276	0.00201	0.00272	0.00194
37	0.00238	0.00181	0.00234	0.00174	0.00285	0.00217	0.00281	0.00209
38	0.00262	0.00207	0.00250	0.00194	0.00314	0.00249	0.00300	0.00233
39	0.00286	0.00234	0.00274	0.00220	0.00343	0.00280	0.00328	0.00264
40	0.00310	0.00260	0.00298	0.00247	0.00372	0.00312	0.00357	0.00296
41	0.00334	0.00286	0.00322	0.00273	0.00401	0.00344	0.00386	0.00328
42	0.00358	0.00313	0.00346	0.00299	0.00430	0.00375	0.00415	0.00359
43	0.00409	0.00346	0.00384	0.00329	0.00491	0.00415	0.00460	0.00395
44	0.00460	0.00380	0.00435	0.00363	0.00552	0.00456	0.00522	0.00436
45	0.00512	0.00413	0.00486	0.00396	0.00614	0.00496	0.00583	0.00476
46	0.00563	0.00447	0.00537	0.00430	0.00675	0.00536	0.00645	0.00516
47	0.00614	0.00480	0.00588	0.00464	0.00737	0.00576	0.00706	0.00556
48	0.00681	0.00516	0.00647	0.00498	0.00817	0.00619	0.00777	0.00598
49	0.00746	0.00552	0.00713	0.00534	0.00895	0.00662	0.00856	0.00641
50	0.00812	0.00587	0.00779	0.00570	0.00974	0.00705	0.00935	0.00683
51	0.00878	0.00623	0.00845	0.00605	0.01053	0.00748	0.01014	0.00726
52	0.00943	0.00659	0.00910	0.00641	0.01132	0.00790	0.01092	0.00769
53	0.01035	0.00716	0.00989	0.00687	0.01242	0.00859	0.01187	0.00825
54	0.01125	0.00772	0.01080	0.00744	0.01350	0.00926	0.01295	0.00893
55	0.01214	0.00828	0.01169	0.00800	0.01457	0.00993	0.01403	0.00959
56	0.01304	0.00883	0.01259	0.00855	0.01565	0.01060	0.01510	0.01026
57	0.01394	0.00939	0.01348	0.00911	0.01672	0.01127	0.01618	0.01093
58	0.01531	0.01019	0.01462	0.00979	0.01838	0.01223	0.01754	0.01175
59	0.01665	0.01097	0.01598	0.01058	0.01998	0.01317	0.01917	0.01270
60	0.01799	0.01175	0.01732	0.01136	0.02159	0.01410	0.02078	0.01363

Appendix E. 2017 Simplified Issue Composite, Ultimate, Mortality Tables (continued)

Att. Age	Basic, ALB		Basic, ANB		Loaded, ALB		Loaded, ANB	
	Male Rate	Female Rate	Male Rate	Female Rate	Male Rate	Female Rate	Male Rate	Female Rate
61	0.01933	0.01253	0.01865	0.01214	0.02319	0.01504	0.02238	0.01457
62	0.02067	0.01331	0.01999	0.01292	0.02480	0.01598	0.02399	0.01550
63	0.02245	0.01439	0.02155	0.01385	0.02694	0.01727	0.02586	0.01662
64	0.02419	0.01543	0.02331	0.01491	0.02902	0.01852	0.02797	0.01789
65	0.02592	0.01648	0.02504	0.01595	0.03110	0.01977	0.03005	0.01914
66	0.02765	0.01752	0.02677	0.01699	0.03318	0.02102	0.03212	0.02039
67	0.02938	0.01856	0.02850	0.01803	0.03526	0.02227	0.03420	0.02164
68	0.03209	0.02038	0.03072	0.01946	0.03851	0.02445	0.03686	0.02335
69	0.03469	0.02211	0.03337	0.02123	0.04163	0.02653	0.04004	0.02548
70	0.03729	0.02383	0.03597	0.02296	0.04474	0.02860	0.04315	0.02755
71	0.03988	0.02556	0.03856	0.02469	0.04786	0.03067	0.04627	0.02962
72	0.04248	0.02729	0.04115	0.02641	0.05097	0.03274	0.04938	0.03169
73	0.04603	0.03058	0.04422	0.02891	0.05524	0.03670	0.05305	0.03469
74	0.04945	0.03365	0.04770	0.03209	0.05934	0.04038	0.05723	0.03851
75	0.05287	0.03672	0.05112	0.03516	0.06345	0.04407	0.06133	0.04219
76	0.05629	0.03980	0.05453	0.03823	0.06755	0.04775	0.06543	0.04587
77	0.05971	0.04287	0.05795	0.04130	0.07165	0.05144	0.06953	0.04955
78	0.06515	0.04839	0.06234	0.04557	0.07818	0.05806	0.07479	0.05466
79	0.07019	0.05343	0.06759	0.05085	0.08423	0.06412	0.08108	0.06100
80	0.07524	0.05848	0.07263	0.05588	0.09029	0.07017	0.08713	0.06704
81	0.08029	0.06402	0.07767	0.06116	0.09635	0.07583	0.09317	0.07290
82	0.08534	0.06964	0.08271	0.06673	0.10240	0.08142	0.09922	0.07852
83	0.09370	0.07761	0.08933	0.07348	0.11099	0.08955	0.10647	0.08532
84	0.10159	0.08514	0.09745	0.08123	0.11878	0.09693	0.11466	0.09307
85	0.10962	0.09278	0.10539	0.08879	0.12648	0.10420	0.12239	0.10038
86	0.11779	0.10053	0.11346	0.09647	0.13409	0.11136	0.13003	0.10758
87	0.12610	0.10840	0.12168	0.10426	0.14162	0.11840	0.13759	0.11467
88	0.14180	0.11845	0.13342	0.11314	0.15707	0.12756	0.14876	0.12269
89	0.15528	0.12793	0.14803	0.12289	0.16961	0.13581	0.16281	0.13140
90	0.16899	0.13756	0.16156	0.13242	0.18199	0.14391	0.17523	0.13956
91	0.18295	0.14732	0.17533	0.14208	0.19421	0.15186	0.18749	0.14757
92	0.19732	0.16113	0.18941	0.15368	0.20642	0.16710	0.20075	0.16095
93	0.21206	0.17800	0.20388	0.16883	0.22040	0.18449	0.21762	0.17725
94	0.22705	0.19364	0.21866	0.18506	0.23712	0.20089	0.23331	0.19329
95	0.24230	0.20927	0.23370	0.20061	0.25486	0.21964	0.24714	0.21031
96	0.26125	0.23180	0.25047	0.21922	0.27329	0.24141	0.26511	0.23144
97	0.27958	0.25430	0.26904	0.24157	0.29327	0.26493	0.28442	0.25438
98	0.29945	0.27811	0.28790	0.26447	0.31494	0.28997	0.30563	0.27908
99	0.32038	0.30271	0.30807	0.28842	0.33788	0.31612	0.32833	0.30509
100	0.34187	0.32757	0.32907	0.31292	0.36089	0.34218	0.35209	0.33199
101	0.36349	0.35222	0.35045	0.33748	0.38306	0.36726	0.37447	0.35742
102	0.38480	0.39549	0.37178	0.36923	0.40502	0.39549	0.39680	0.38258
103	0.40538	0.41534	0.39264	0.40297	0.42637	0.41572	0.41866	0.40703
104	0.42481	0.43390	0.41262	0.42219	0.44673	0.43829	0.43965	0.43037
105	0.44274	0.45083	0.43136	0.44002	0.46570	0.45924	0.45936	0.45219
106	0.45881	0.46576	0.44849	0.45612	0.48631	0.48109	0.47743	0.47210
107	0.47267	0.47837	0.46368	0.47015	0.51238	0.50727	0.50332	0.49811
108	0.48400	0.48836	0.47658	0.48179	0.53981	0.53485	0.53061	0.52554
109	0.49251	0.49545	0.48690	0.49076	0.56867	0.56389	0.55939	0.55448
110	0.49793	0.49941	0.49434	0.49678	0.59903	0.59447	0.58972	0.58502
111	0.50000	0.50000	0.49862	0.49961	0.63096	0.62665	0.62170	0.61724
112	0.50000	0.50000	0.50000	0.50000	0.66453	0.66051	0.65542	0.65123
113	0.50000	0.50000	0.50000	0.50000	0.69981	0.69612	0.69096	0.68710
114	0.50000	0.50000	0.50000	0.50000	0.73687	0.73355	0.72843	0.72494
115	0.50000	0.50000	0.50000	0.50000	0.77578	0.77288	0.76794	0.76487
116	0.50000	0.50000	0.50000	0.50000	0.81660	0.81418	0.80958	0.80699
117	0.50000	0.50000	0.50000	0.50000	0.85940	0.85750	0.85348	0.85143
118	0.50000	0.50000	0.50000	0.50000	0.90421	0.90289	0.89977	0.89833
119	0.50000	0.50000	0.50000	0.50000	0.95108	0.95039	0.94856	0.94780
120	0.50000	0.50000	0.50000	0.50000	1.00000	1.00000	1.00000	1.00000

Appendix F. 2017 Loaded Simplified Issue Composite, Ultimate, Gender Blended Mortality Tables, ALB

Male %:	100%	80%	60%	50%	40%	20%	0%
Female %:	0%	20%	40%	50%	60%	80%	100%
Att. Age	Rate	Rate	Rate	Rate	Rate	Rate	Rate
0	0.00168	0.00169	0.00170	0.00171	0.00171	0.00172	0.00174
1	0.00105	0.00097	0.00090	0.00086	0.00083	0.00075	0.00068
2	0.00070	0.00069	0.00067	0.00066	0.00065	0.00064	0.00062
3	0.00063	0.00061	0.00060	0.00059	0.00059	0.00057	0.00056
4	0.00055	0.00054	0.00053	0.00052	0.00052	0.00051	0.00050
5	0.00048	0.00047	0.00047	0.00047	0.00046	0.00046	0.00045
6	0.00046	0.00045	0.00044	0.00044	0.00043	0.00042	0.00041
7	0.00042	0.00041	0.00040	0.00040	0.00039	0.00038	0.00037
8	0.00040	0.00040	0.00040	0.00040	0.00040	0.00039	0.00039
9	0.00040	0.00040	0.00040	0.00040	0.00040	0.00039	0.00039
10	0.00046	0.00046	0.00045	0.00045	0.00045	0.00045	0.00045
11	0.00052	0.00051	0.00051	0.00050	0.00050	0.00049	0.00049
12	0.00064	0.00062	0.00060	0.00059	0.00059	0.00057	0.00055
13	0.00082	0.00078	0.00074	0.00072	0.00070	0.00067	0.00063
14	0.00106	0.00099	0.00092	0.00089	0.00085	0.00078	0.00071
15	0.00129	0.00118	0.00108	0.00103	0.00098	0.00087	0.00077
16	0.00148	0.00135	0.00122	0.00115	0.00109	0.00095	0.00082
17	0.00168	0.00152	0.00136	0.00128	0.00120	0.00104	0.00088
18	0.00189	0.00170	0.00150	0.00141	0.00131	0.00112	0.00093
19	0.00207	0.00185	0.00163	0.00153	0.00142	0.00120	0.00098
20	0.00226	0.00201	0.00176	0.00164	0.00152	0.00127	0.00103
21	0.00262	0.00232	0.00202	0.00187	0.00172	0.00142	0.00112
22	0.00262	0.00232	0.00202	0.00187	0.00172	0.00142	0.00112
23	0.00262	0.00232	0.00203	0.00188	0.00173	0.00143	0.00113
24	0.00262	0.00232	0.00203	0.00188	0.00173	0.00144	0.00114
25	0.00262	0.00233	0.00203	0.00188	0.00174	0.00144	0.00115
26	0.00262	0.00233	0.00203	0.00189	0.00174	0.00145	0.00115
27	0.00262	0.00233	0.00204	0.00189	0.00174	0.00145	0.00116
28	0.00258	0.00231	0.00203	0.00189	0.00175	0.00148	0.00120
29	0.00254	0.00228	0.00202	0.00190	0.00177	0.00151	0.00125
30	0.00250	0.00226	0.00202	0.00190	0.00178	0.00154	0.00130
31	0.00246	0.00223	0.00201	0.00190	0.00179	0.00157	0.00135
32	0.00241	0.00221	0.00201	0.00190	0.00180	0.00160	0.00139
33	0.00249	0.00230	0.00211	0.00201	0.00192	0.00173	0.00154
34	0.00258	0.00240	0.00223	0.00214	0.00205	0.00187	0.00170
35	0.00267	0.00251	0.00235	0.00226	0.00218	0.00202	0.00186
36	0.00276	0.00261	0.00246	0.00239	0.00231	0.00216	0.00201
37	0.00285	0.00272	0.00258	0.00251	0.00244	0.00231	0.00217
38	0.00314	0.00301	0.00288	0.00281	0.00275	0.00262	0.00249
39	0.00343	0.00330	0.00318	0.00312	0.00305	0.00293	0.00280
40	0.00372	0.00360	0.00348	0.00342	0.00336	0.00324	0.00312
41	0.00401	0.00389	0.00378	0.00372	0.00366	0.00355	0.00344
42	0.00430	0.00419	0.00408	0.00402	0.00397	0.00386	0.00375
43	0.00491	0.00476	0.00461	0.00453	0.00446	0.00431	0.00415
44	0.00552	0.00533	0.00514	0.00504	0.00494	0.00475	0.00456
45	0.00614	0.00590	0.00567	0.00555	0.00543	0.00520	0.00496
46	0.00675	0.00647	0.00620	0.00606	0.00592	0.00564	0.00536
47	0.00737	0.00705	0.00673	0.00657	0.00641	0.00608	0.00576
48	0.00817	0.00777	0.00738	0.00718	0.00698	0.00659	0.00619
49	0.00895	0.00849	0.00802	0.00779	0.00755	0.00709	0.00662
50	0.00974	0.00920	0.00867	0.00840	0.00813	0.00759	0.00705
51	0.01053	0.00992	0.00931	0.00900	0.00870	0.00809	0.00748
52	0.01132	0.01064	0.00995	0.00961	0.00927	0.00859	0.00790
53	0.01242	0.01165	0.01089	0.01051	0.01012	0.00936	0.00859
54	0.01350	0.01265	0.01180	0.01138	0.01096	0.01011	0.00926
55	0.01457	0.01364	0.01271	0.01225	0.01179	0.01086	0.00993
56	0.01565	0.01464	0.01363	0.01312	0.01262	0.01161	0.01060
57	0.01672	0.01563	0.01454	0.01400	0.01345	0.01236	0.01127
58	0.01838	0.01715	0.01592	0.01530	0.01469	0.01346	0.01223
59	0.01998	0.01862	0.01726	0.01658	0.01589	0.01453	0.01317
60	0.02159	0.02009	0.01859	0.01785	0.01710	0.01560	0.01410

Appendix F. 2017 Loaded Simplified Issue Composite, Ultimate, Gender Blended Mortality Tables, ALB (continued)

Male %:	100%	80%	60%	50%	40%	20%	0%
Female %:	0%	20%	40%	50%	60%	80%	100%
Att. Age	Rate	Rate	Rate	Rate	Rate	Rate	Rate
61	0.02319	0.02156	0.01993	0.01912	0.01830	0.01667	0.01504
62	0.02480	0.02303	0.02127	0.02039	0.01951	0.01774	0.01598
63	0.02694	0.02501	0.02307	0.02211	0.02114	0.01921	0.01727
64	0.02902	0.02692	0.02482	0.02377	0.02272	0.02062	0.01852
65	0.03110	0.02884	0.02657	0.02544	0.02430	0.02204	0.01977
66	0.03318	0.03075	0.02832	0.02710	0.02588	0.02345	0.02102
67	0.03526	0.03266	0.03006	0.02876	0.02747	0.02487	0.02227
68	0.03851	0.03570	0.03289	0.03148	0.03008	0.02727	0.02445
69	0.04163	0.03861	0.03559	0.03408	0.03257	0.02955	0.02653
70	0.04474	0.04151	0.03829	0.03667	0.03506	0.03183	0.02860
71	0.04786	0.04442	0.04098	0.03927	0.03755	0.03411	0.03067
72	0.05097	0.04733	0.04368	0.04186	0.04004	0.03639	0.03274
73	0.05524	0.05153	0.04782	0.04597	0.04412	0.04041	0.03670
74	0.05934	0.05555	0.05176	0.04986	0.04797	0.04418	0.04038
75	0.06345	0.05957	0.05570	0.05376	0.05182	0.04794	0.04407
76	0.06755	0.06359	0.05963	0.05765	0.05567	0.05171	0.04775
77	0.07165	0.06761	0.06357	0.06155	0.05952	0.05548	0.05144
78	0.07575	0.07161	0.06741	0.06527	0.06311	0.05894	0.05477
79	0.08023	0.07592	0.07153	0.06927	0.06700	0.06261	0.05821
80	0.08519	0.08072	0.07619	0.07382	0.07143	0.06694	0.06235
81	0.09063	0.08602	0.08134	0.07886	0.07637	0.07178	0.06709
82	0.09655	0.09177	0.08694	0.08435	0.08175	0.07706	0.07227
83	0.10297	0.09797	0.09297	0.09027	0.08757	0.08278	0.07789
84	0.10999	0.10477	0.09955	0.09675	0.09395	0.08906	0.08407
85	0.11761	0.11220	0.10666	0.10386	0.10106	0.09607	0.09108
86	0.12583	0.12022	0.11457	0.11167	0.10877	0.10368	0.09859
87	0.13465	0.12884	0.12303	0.11993	0.11683	0.11154	0.10625
88	0.14407	0.13807	0.13216	0.12896	0.12576	0.12037	0.11508
89	0.15409	0.14790	0.14189	0.13859	0.13529	0.12970	0.12501
90	0.16471	0.15832	0.15221	0.14881	0.14541	0.13962	0.13483
91	0.17593	0.16934	0.16313	0.15963	0.15613	0.15024	0.14535
92	0.18775	0.18096	0.17465	0.17095	0.16725	0.16116	0.15607
93	0.19997	0.19297	0.18656	0.18276	0.17896	0.17257	0.16718
94	0.21259	0.20530	0.19889	0.19499	0.19109	0.18450	0.17891
95	0.22561	0.21802	0.21151	0.20751	0.20351	0.19672	0.19113
96	0.23903	0.23114	0.22463	0.22053	0.21643	0.20944	0.20385
97	0.25285	0.24456	0.23805	0.23385	0.22965	0.22226	0.21667
98	0.26707	0.25838	0.25187	0.24757	0.24327	0.23548	0.22989
99	0.28169	0.27250	0.26609	0.26179	0.25749	0.24930	0.24371
100	0.29671	0.28702	0.28061	0.27631	0.27201	0.26342	0.25783
101	0.31213	0.30194	0.29553	0.29123	0.28693	0.27794	0.27235
102	0.32795	0.31726	0.31085	0.30655	0.30225	0.29286	0.28727
103	0.34417	0.33298	0.32657	0.32227	0.31797	0.30818	0.30259
104	0.36079	0.34900	0.34259	0.33829	0.33399	0.32360	0.31791
105	0.37781	0.36552	0.35911	0.35481	0.35051	0.33952	0.33383
106	0.39523	0.38244	0.37603	0.37173	0.36743	0.35584	0.35015
107	0.41305	0.40026	0.39385	0.38955	0.38525	0.37316	0.36747
108	0.43127	0.41798	0.41157	0.40727	0.40297	0.39048	0.38479
109	0.44989	0.43610	0.42969	0.42539	0.42109	0.40820	0.40251
110	0.46891	0.45412	0.44771	0.44341	0.43911	0.42582	0.42013
111	0.48833	0.47294	0.46673	0.46243	0.45813	0.44444	0.43875
112	0.50815	0.49216	0.48615	0.48185	0.47755	0.46346	0.45777
113	0.52837	0.51178	0.50577	0.50147	0.49717	0.48268	0.47709
114	0.54899	0.53180	0.52579	0.52149	0.51719	0.50230	0.49671
115	0.56991	0.55212	0.54611	0.54181	0.53751	0.52212	0.51653
116	0.59113	0.57274	0.56673	0.56243	0.55813	0.54214	0.53655
117	0.61275	0.59376	0.58775	0.58345	0.57915	0.56256	0.55697
118	0.63477	0.61518	0.60917	0.60487	0.60057	0.58348	0.57789
119	0.65719	0.63660	0.63059	0.62629	0.62199	0.60440	0.59881
120	0.68001	0.65842	0.65241	0.64811	0.64381	0.62572	0.62013



Appendix G. 2017 Loaded Simplified Issue Composite, Ultimate, Gender Blended Mortality Tables, ANB

Male %:	100%	80%	60%	50%	40%	20%	0%
Female %:	0%	20%	40%	50%	60%	80%	100%
Att. Age	Rate	Rate	Rate	Rate	Rate	Rate	Rate
0	0.00195	0.00196	0.00197	0.00198	0.00198	0.00199	0.00200
1	0.00136	0.00133	0.00130	0.00129	0.00127	0.00124	0.00121
2	0.00087	0.00083	0.00078	0.00076	0.00074	0.00070	0.00065
3	0.00066	0.00065	0.00063	0.00063	0.00062	0.00060	0.00059
4	0.00059	0.00058	0.00056	0.00056	0.00055	0.00054	0.00053
5	0.00052	0.00051	0.00050	0.00050	0.00049	0.00048	0.00047
6	0.00047	0.00046	0.00046	0.00045	0.00045	0.00044	0.00043
7	0.00044	0.00043	0.00042	0.00042	0.00041	0.00040	0.00039
8	0.00041	0.00040	0.00040	0.00040	0.00039	0.00039	0.00038
9	0.00040	0.00040	0.00040	0.00040	0.00040	0.00039	0.00039
10	0.00043	0.00043	0.00043	0.00042	0.00042	0.00042	0.00042
11	0.00049	0.00048	0.00048	0.00048	0.00048	0.00047	0.00047
12	0.00058	0.00057	0.00055	0.00055	0.00054	0.00053	0.00052
13	0.00073	0.00070	0.00067	0.00066	0.00064	0.00062	0.00059
14	0.00094	0.00089	0.00083	0.00080	0.00078	0.00072	0.00067
15	0.00117	0.00109	0.00100	0.00096	0.00091	0.00083	0.00074
16	0.00139	0.00127	0.00115	0.00109	0.00103	0.00091	0.00080
17	0.00158	0.00144	0.00129	0.00122	0.00114	0.00100	0.00085
18	0.00178	0.00161	0.00143	0.00134	0.00126	0.00108	0.00091
19	0.00198	0.00177	0.00157	0.00147	0.00137	0.00116	0.00096
20	0.00216	0.00193	0.00170	0.00158	0.00147	0.00124	0.00101
21	0.00244	0.00217	0.00189	0.00176	0.00162	0.00135	0.00107
22	0.00262	0.00232	0.00202	0.00187	0.00172	0.00142	0.00112
23	0.00262	0.00232	0.00202	0.00188	0.00173	0.00143	0.00113
24	0.00262	0.00232	0.00203	0.00188	0.00173	0.00143	0.00114
25	0.00262	0.00232	0.00203	0.00188	0.00173	0.00144	0.00114
26	0.00262	0.00233	0.00203	0.00189	0.00174	0.00144	0.00115
27	0.00262	0.00233	0.00203	0.00189	0.00174	0.00145	0.00116
28	0.00260	0.00232	0.00203	0.00189	0.00175	0.00147	0.00118
29	0.00256	0.00230	0.00203	0.00189	0.00176	0.00149	0.00123
30	0.00252	0.00227	0.00202	0.00190	0.00177	0.00152	0.00127
31	0.00248	0.00225	0.00202	0.00190	0.00178	0.00155	0.00132
32	0.00244	0.00222	0.00201	0.00190	0.00180	0.00158	0.00137
33	0.00245	0.00225	0.00206	0.00196	0.00186	0.00166	0.00147
34	0.00253	0.00235	0.00217	0.00208	0.00199	0.00180	0.00162
35	0.00263	0.00246	0.00229	0.00220	0.00212	0.00195	0.00178
36	0.00272	0.00256	0.00240	0.00233	0.00225	0.00209	0.00194
37	0.00281	0.00266	0.00252	0.00245	0.00238	0.00224	0.00209
38	0.00300	0.00286	0.00273	0.00266	0.00260	0.00246	0.00233
39	0.00328	0.00316	0.00303	0.00296	0.00290	0.00277	0.00264
40	0.00357	0.00345	0.00333	0.00327	0.00321	0.00308	0.00296
41	0.00386	0.00375	0.00363	0.00357	0.00351	0.00339	0.00328
42	0.00415	0.00404	0.00393	0.00387	0.00382	0.00371	0.00359
43	0.00460	0.00447	0.00434	0.00428	0.00421	0.00408	0.00395
44	0.00522	0.00504	0.00487	0.00479	0.00470	0.00453	0.00436
45	0.00583	0.00562	0.00540	0.00529	0.00519	0.00497	0.00476
46	0.00645	0.00619	0.00593	0.00580	0.00567	0.00542	0.00516
47	0.00706	0.00676	0.00646	0.00631	0.00616	0.00586	0.00556
48	0.00777	0.00741	0.00705	0.00687	0.00669	0.00634	0.00598
49	0.00856	0.00813	0.00770	0.00748	0.00727	0.00684	0.00641
50	0.00935	0.00884	0.00834	0.00809	0.00784	0.00734	0.00683
51	0.01014	0.00956	0.00899	0.00870	0.00841	0.00784	0.00726
52	0.01092	0.01028	0.00963	0.00931	0.00898	0.00834	0.00769
53	0.01187	0.01114	0.01042	0.01006	0.00969	0.00897	0.00825
54	0.01295	0.01215	0.01134	0.01094	0.01054	0.00973	0.00893
55	0.01403	0.01314	0.01226	0.01181	0.01137	0.01048	0.00959
56	0.01510	0.01414	0.01317	0.01268	0.01220	0.01123	0.01026
57	0.01618	0.01513	0.01408	0.01356	0.01303	0.01198	0.01093
58	0.01754	0.01638	0.01522	0.01465	0.01407	0.01291	0.01175
59	0.01917	0.01788	0.01658	0.01593	0.01529	0.01399	0.01270
60	0.02078	0.01935	0.01792	0.01721	0.01649	0.01506	0.01363

Appendix G. 2017 Loaded Simplified Issue Composite, Ultimate, Gender Blended Mortality Tables, ANB (continued)

Male %:	100%	80%	60%	50%	40%	20%	0%
Female %:	0%	20%	40%	50%	60%	80%	100%
Att. Age	Rate	Rate	Rate	Rate	Rate	Rate	Rate
61	0.02238	0.02082	0.01926	0.01848	0.01769	0.01613	0.01457
62	0.02399	0.02229	0.02059	0.01975	0.01890	0.01720	0.01550
63	0.02586	0.02401	0.02216	0.02124	0.02031	0.01847	0.01662
64	0.02797	0.02595	0.02394	0.02293	0.02192	0.01991	0.01789
65	0.03005	0.02787	0.02568	0.02459	0.02350	0.02132	0.01914
66	0.03212	0.02978	0.02743	0.02626	0.02508	0.02274	0.02039
67	0.03420	0.03169	0.02918	0.02792	0.02666	0.02415	0.02164
68	0.03686	0.03416	0.03145	0.03010	0.02875	0.02605	0.02335
69	0.04004	0.03713	0.03422	0.03276	0.03130	0.02839	0.02548
70	0.04315	0.04003	0.03691	0.03535	0.03379	0.03067	0.02755
71	0.04627	0.04294	0.03961	0.03794	0.03628	0.03295	0.02962
72	0.04938	0.04584	0.04230	0.04053	0.03877	0.03523	0.03169
73	0.05305	0.04938	0.04571	0.04387	0.04203	0.03836	0.03469
74	0.05723	0.05349	0.04974	0.04787	0.04600	0.04225	0.03851
75	0.06133	0.05750	0.05367	0.05176	0.04985	0.04602	0.04219
76	0.06543	0.06152	0.05761	0.05565	0.05369	0.04978	0.04587
77	0.06953	0.06553	0.06154	0.05954	0.05754	0.05355	0.04955
78	0.07479	0.07077	0.06674	0.06473	0.06272	0.05869	0.05466
79	0.08108	0.07706	0.07305	0.07104	0.06903	0.06502	0.06100
80	0.08713	0.08311	0.07909	0.07709	0.07508	0.07106	0.06704
81	0.09317	0.08912	0.08506	0.08304	0.08101	0.07695	0.07290
82	0.09922	0.09508	0.09094	0.08887	0.08680	0.08266	0.07852
83	0.10647	0.10224	0.09801	0.09589	0.09378	0.08955	0.08532
84	0.11466	0.11034	0.10602	0.10386	0.10170	0.09739	0.09307
85	0.12239	0.11798	0.11358	0.11138	0.10918	0.10478	0.10038
86	0.13003	0.12554	0.12105	0.11881	0.11656	0.11207	0.10758
87	0.13759	0.13300	0.12842	0.12613	0.12384	0.11926	0.11467
88	0.14876	0.14354	0.13833	0.13573	0.13312	0.12791	0.12269
89	0.16281	0.15653	0.15025	0.14711	0.14397	0.13768	0.13140
90	0.17523	0.16810	0.16096	0.15740	0.15383	0.14670	0.13956
91	0.18749	0.17958	0.17167	0.16772	0.16377	0.15586	0.14795
92	0.20075	0.19279	0.18483	0.18085	0.17687	0.16891	0.16095
93	0.21762	0.20955	0.20147	0.19744	0.19340	0.18532	0.17725
94	0.23331	0.22531	0.21730	0.21330	0.20930	0.20129	0.19329
95	0.24714	0.23977	0.23241	0.22873	0.22504	0.21768	0.21031
96	0.26511	0.25838	0.25164	0.24828	0.24491	0.23817	0.23144
97	0.28442	0.27841	0.27240	0.26940	0.26640	0.26039	0.25438
98	0.30563	0.30032	0.29501	0.29236	0.28970	0.28439	0.27908
99	0.32833	0.32368	0.31903	0.31671	0.31439	0.30974	0.30509
100	0.35209	0.34807	0.34405	0.34204	0.34003	0.33601	0.33199
101	0.37447	0.37106	0.36765	0.36595	0.36424	0.36083	0.35742
102	0.39680	0.39396	0.39111	0.38969	0.38827	0.38542	0.38258
103	0.41866	0.41633	0.41401	0.41285	0.41168	0.40936	0.40703
104	0.43965	0.43779	0.43594	0.43501	0.43408	0.43223	0.43037
105	0.45936	0.45793	0.45649	0.45578	0.45506	0.45362	0.45219
106	0.47743	0.47636	0.47530	0.47477	0.47423	0.47317	0.47210
107	0.50332	0.50228	0.50124	0.50072	0.50019	0.49915	0.49811
108	0.53061	0.52960	0.52858	0.52808	0.52757	0.52655	0.52554
109	0.55939	0.55841	0.55743	0.55694	0.55644	0.55546	0.55448
110	0.58972	0.58878	0.58784	0.58737	0.58690	0.58596	0.58502
111	0.62170	0.62081	0.61992	0.61947	0.61902	0.61813	0.61724
112	0.65542	0.65458	0.65374	0.65333	0.65291	0.65207	0.65123
113	0.69096	0.69019	0.68942	0.68903	0.68864	0.68787	0.68710
114	0.72843	0.72773	0.72703	0.72669	0.72634	0.72564	0.72494
115	0.76794	0.76733	0.76671	0.76641	0.76610	0.76548	0.76487
116	0.80958	0.80906	0.80854	0.80829	0.80803	0.80751	0.80699
117	0.85348	0.85307	0.85266	0.85246	0.85225	0.85184	0.85143
118	0.89977	0.89948	0.89919	0.89905	0.89891	0.89862	0.89833
119	0.94856	0.94841	0.94826	0.94818	0.94810	0.94795	0.94780
120	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000