Report of the Individual Life Insurance Experience Committee

Mortality for Standard Individually Underwritten Life Insurance Between 2005 and 2007 Policy Anniversaries

Introduction

This study is the latest in the continuing reports from the Society of Actuaries (SOA) on inter-company mortality experience. The previous report discussed policy anniversary to anniversary experience for 2004-2005, a one-year study period. This report includes policy anniversary to anniversary mortality experience for 2005-2007, a two-year study period.

The purpose of this report is to present an overview of mortality results relative to the 2001 Valuation Basic Tables and present some comparisons to the prior 2004-2005 study period. Consistent with prior reports, the study was performed on a gross basis without consideration of reinsurance. The reader should exercise caution in any direct application of these results as they are generally presented in a one-dimensional view. Results can be influenced by the distributions within the one-dimensional view, e.g., by face amounts, issue ages, and policy durations. The user is encouraged to use the detailed Excel pivot tables that accompany this study in order to examine multi-dimensional views relevant to the user.

Thirty-nine companies contributed data to the SOA for the 2005-2007 study period compared to 42 companies for the 2004-2005 study. The face amount exposure is about $8.8 trillion and the number of deaths is 209,089 in the select period (policy years 1-25) in this two-year study. This compares to just over $4.6 trillion in face amount exposure and 111,810 deaths in the prior one-year study. Select period results are presented in Appendix A, and ultimate period results are presented in Appendix B. Appendix A1 presents variability of company results, which is a significant enhancement from prior reports. In order to preserve confidentiality of individual company results, Appendix A1 is presented based on quintile groupings of company results as determined by the actual-to-expected ratios. The quintile is determined separately for male nonsmokers for policies with face amounts less than $100,000, male nonsmokers for policies with face amounts $100,000 and greater, female nonsmokers for policies with face amounts less than $100,000, and female nonsmokers for policies with face amounts $100,000 and greater. The same breakdowns are provided for smoker policies.

For the 2002-2004 ILEC study, contributors were asked for the first time to provide information related to their preferred risk class structure. ILEC study results were presented for only three nonsmoker risk classes with the middle class representing all experience other than the best or residual standard classes. For smoker experience, only two classes were presented. The 2004-2005 and 2005-2007 studies used enhanced data validation techniques, and results are presented at the more granular level described in the preferred risk class section below. Appendices C and D provide summaries of results for the 36 companies that contributed preferred experience to the 2005-2007 study, as well as results and trends for the 23 common companies that submitted preferred risk class data for the 2004-2005 study and both years of the 2005-2007 study.

The data request for both the 2004-2005 report and this report asked companies to classify the smoking status of each policy as unknown, no tobacco usage, nonsmoker, cigarette smoker or tobacco user. The nonsmoker category in the pivot table and experience summaries for this report consists of business classified as nonsmoker or no tobacco usage and the smoker category is the business classified by

contributing companies as cigarette smoker or tobacco user. Some companies allow some tobacco usage within a nonsmoker classification (e.g., occasional cigar). This data would be classified as nonsmoker.

Although only discussed at a high level in this report, actual-to-expected experience has been separately studied for the 21 common companies that contributed to each of the five policy year studies 2002-2003, 2003-2004, 2004-2005, 2005-2006, and 2006-2007. A high-level comparison of all-company to common-company experience over these five policy years is shown in Appendix E and in greater detail in Appendix F for a subset of this data.

Consistent with previous studies, this report examines mortality under standard individually underwritten life insurance and excludes rated, converted, and other guaranteed or simplified issued business as indicated by the individual company data submissions. Policies in force under non-forfeiture provisions are also excluded. It should be noted that the definition of standard may not be consistent across companies. In addition, higher mortality ratios, particularly at the lower face amount bands for recent issues, suggest that the data may include policies that are not fully underwritten. Data was reviewed for reasonableness to check that late reported claims have been included in the study and it is intended that any remaining incurred, but not reported, claims are not material. Although the volume relative to the total in-force is probably not significant, experience for term policies that have reached durations with large premium increases cannot yet be isolated in this study. Going forward, as larger blocks of in-force level term are anticipated to reach the end of the level premium period, this issue will need to be addressed.

As noted above, the expected mortality basis used to compute actual-to-expected ratios in this report is the 2001 Valuation Basic Tables (2001 VBT), which have composite and smoker distinct versions and are based on experience from contributors to the SOA intercompany studies for the 1990-95 study period. The Age Nearest Birthday (ANB) and Age Last Birthday (ALB) versions of the tables are used consistent with the issue basis coded for the individual policy records. The application of the composite or smoker distinct tables in the expected calculations relies on the smoking status information provided in the individual company submissions. Composite tables apply to policies with unknown smoking status. All policies with issue dates prior to 1981 are assumed to be of unknown smoking status. Some inaccuracies in the smoker and nonsmoker coding may exist for certain companies, particularly for policies issued in the 1980s. Regardless of individual policy coding, juvenile policies are all reported as unknown smoking status and the expected basis is composite for these policies. In previous studies, the composite expected basis applied but the reporting was based on individual company coding of the smoking status.

Although high level summaries of experience based on the 2001 VBT are provided in the Appendices to this report, more detailed results are available in Excel pivot table format from the SOA. Results based on the 1975-80 Basic Tables, with the Milliman extension for issue ages 71-87, are also available in the Excel pivot format. The extension through issue age 87 is identical to the one used for prior studies. For this analysis, a new extension for ages 88-95 was developed by the ILEC committee allowing issue ages 88-90 to be included in the study for the first time--90 is the oldest issue age for the 2001 VBT. The extension also includes higher attained ages to age 120 consistent with the 2001 VBT.

There are four sets of pivot tables published with this report:

- The 2005-2007 all-company data;
- 2005-2007 only for data with a preferred/residual risk structure;
- 2002-2007 common-company data; and
- 2004-2007 common-company data with the preferred/residual risk structure.

The experience for 2002-2007 represents five policy years starting with the 2002-2003 policy year and ending with the 2006-2007 policy year, and the other study periods are defined the same way. For labeling simplicity, the appendices refer to only the later year in the policy year study so the 2002-2007 individual year results are labeled 2003, 2004, 2005, 2006, and 2007. Additional pivot table details, including the study period and number of participating companies, are listed in the table below. These files are located on the SOA website (www.SOA.org) under Research, Experience Studies, Individual Life. While not included in the pivot tables listed below, all-company data for prior time periods referenced in this report can also be found in the same directory on the SOA website—see the 2002-2004 and 2004-2005 Individual Life Experience Reports.

Study Period	Number of Years in Study	All Experience or Preferred Structure	All Companies or Common Companies	Number of Companies
2005-2007	2	All Experience	All Companies	39
2005-2007	2	Preferred Structure	All Companies	36
2002-2007	5	All Experience	Common Companies	21
2004-2007	3	Preferred Structure	Common Companies	23

For the first time, the pivot tables also include results relative to both the 2008 VBT Primary Tables and Limited Underwriting tables. While not discussed within this report, Appendix G presents a summary of results by gender, smoking status, issue age, and policy duration using the 2008 VBT Primary Tables as the expected basis. Policies with face amounts of $100,000 and over are presented separately from policies with face amounts of $50,000 and over. The user is encouraged to review the 2008 VBT Report for details on the derivation of these tables. The report is located at the SOA website under Research, Experience Studies, Individual Life, 2008 Preferred Mortality Report.

These pivot tables also include results by product type for the first time. Based on individual company reporting, policies have been grouped into the following product categories: Term, Traditional Whole Life, Universal Life, Variable Life, and Variable Universal Life. There is also a small volume of data for which the product type could not be determined. Appendix H includes a summary of by product type results by face amount groupings and policy duration. The reader is cautioned that when reviewing product results, differences in underlying distributions of the business by issue age, face amount, and policy duration need to be considered. It should be noted that this study was not able to accurately identify post level premium period term data. The Society of Actuaries is conducting a separate study of term mortality. The first report on this work is titled Post Level Premium Period Lapse and Mortality Assumptions and Experience. It can be found on the SOA website under Research, Research Projects, Life Insurance. The second report on this work is expected to be available in the second quarter of 2010.

Select Period Results Based On 2001 VBT (Appendix A, E, and F)

Overall, all-company mortality experience in the 25-year select period is as follows:

	Study Period		
	2002-04	**2004-05**	**2005-07**
By Face Amount	71.5%	67.4%	66.3%
By Policy	88.2%	82.7%	80.6%

From Appendix E, comparing common-company vs. all-company mortality experience (by amount), the individual study year ratios are as follows:

	Study Period				
	2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**
All Companies	72.9%	70.3%	67.4%	66.9%	65.8%
Common Companies	73.9%	71.2%	68.9%	65.3%	64.7%

Of note, the five-year change in mortality ratios is 64.7% / 73.9% = 87.5% (for an average annual decrease of 3.3%) on a common-company basis, but only 65.8% / 72.9% = 90.2% (for an annual average annual decrease of 2.5%) on the all-company basis.

Additional details for the common companies by individual study years, gender and smoking status, as well as results on a policy basis, are included in Appendices E and F. For example, comparing Appendices E and F, we see similar overall reductions in mortality ratios over the five-year study period, but when the study period data includes only face amounts from $100,000-$2,499,999 (from Appendix F) the actual-to-expected ratios are approximately five percentage points lower than when all face amounts are included (from Appendix E). Additionally, we see (from Appendix E and excluding policies with unknown smoker status) that the substantial overall reductions in mortality ratios varies considerably by gender and smoker status, with the largest reduction for male nonsmokers, and the smallest reduction for female nonsmokers. Although the common-company results can be viewed as a more reliable indicator of trends in overall reductions in mortality ratios as this measure removes the impact on experience of changes in the list of participating companies, other factors, such as changes in the relative contributions of the common companies and the mix of business in each year, can influence results.

The variability between results by policy and by face amount (with actual-to-expected ratios by policy significantly greater than similar ratios by face amount) is apparent for all breakdowns except by policy size. Therefore, differences between policy count results and face amount results may be attributed to the mix of business by face amount within individual reporting categories. Policies under $100,000 comprise 53.4% (53.5% in the 2004-05 study) of the exposure by policy, but only 11.2% (10.7% in the 2004-05 study) of the exposure by face amount. Overall results on a policy count basis are weighted heavily towards the higher A/E ratios in the lower face amount bands.

The actual-to-expected ratio (by amount) for females is generally slightly higher than for males as follows:

| | | Study Period | | | | |
		2002-03	2003-04	2004-05	2005-06	2006-07
All Companies	**Male**	72.6%	69.5%	67.0%	66.1%	64.2%
	Female	73.8%	72.3%	68.6%	69.2%	70.2%
Common Companies	**Male**	73.9%	71.6%	67.9%	63.7%	62.7%
	Female	73.9%	70.4%	71.5%	69.7%	70.2%

The higher concentration of female experience at the smaller policy sizes and (to a lesser extent) at the older issue ages is a likely contributing factor to the higher actual-to-expected ratio. In considering this possibility, the reader should remember that the underlying expected-basis tables (male and female) are not the same.

By issue age, actual-to-expected ratios (by amount) drop significantly after age 24, with age 25+ actual-to-expected ratios ranging from 61.5% to 83.2% (72.2% excluding issue age band 70-79). At ages below 25, actual-to-expected ratios range from 68.6% to 100.5%. Similar to the 2002-04 study (but not exhibited in the 2004-05 study), we see a spike in the ratio at ages 70-79 when the ratio is on a face amount basis. On a policy count basis, the spike in age 70-79 mortality ratios is exhibited in all three study periods: 2002-04, 2004-05, and 2005-07.

Drilling further into multi-dimensional views (via manipulation of the pivot table data) shows other distinctive patterns. For example, for male policies below $500,000, the actual-to-expected ratios (by amount) exhibit a "U" shape with respect to issue age, with the lowest ratios in the very narrow range 66.1%-68.7% at issue ages 30-59. As with the female-to-male relationship discussed above, the source of such relationships can often be traced to the distribution of business. In this instance, one contributing factor to the significantly higher actual-to-expected ratios at issue ages below 25 is the smaller size policies issued at these ages.

A second example, by sex and insurance plan, shows that although male ratios are lower than female ratios for all plans combined, the male ratios exceed the female ratios for Term and VUL plans. This suggests that further analysis should be done to determine if product category is a consideration in setting mortality assumptions.

A third example, by gender and issue age, shows that although male ratios are moderately lower than female ratios for all issue ages combined, the male ratios are considerably higher than the female ratios at issue ages below 30, and considerably lower (especially for smokers) at issue ages 70+. If credible, these differences may be an important consideration in the setting of higher issue age premiums (assuming the 2001 VBT is the assumed mortality table basis).

In examining detailed splits such as those shown in the above examples, the reader should keep in mind that the resultant ratios and relationships may be due in part to changes in mortality improvement since 1990-1995, the experience period underlying the 2001 VBT.

Mortality ratios are 52.5% and 56.9% (by amount) in durations 1 and 2, respectively, increasing to the 68.8%-70.7% range at durations 3-5. Ratios drop to the 63.4%-67.6% range at durations 6-20 (very similar to the 2004-05 study but a significant improvement over the 2002-04 study), and increase to 70.5% at select durations 21-25 (down from 76.8% in the 2004-05 study).

Mortality ratios (by amount) generally decrease with increasing policy size, from 96.7% for policies with face amounts between \$1 and \$9,999 to 53.1% for policies with face amounts of \$5,000,000+. Actual deaths (by policy) total roughly 100 per individual study year in the \$2,500,000-\$4,999,999 size band, and 50 per individual study year in the \$5,000,000+ size band, raising credibility issues in these very large size bands. The general trend of decreasing mortality ratios with increasing policy size is assumed to be attributed to socioeconomic effects, as well as additional underwriting as the face amount increases. Drilling into the detail for policies below \$50,000 shows very high actual-to-expected ratios (by amount) at durations 10 and under, with the ratios worsening with each successively smaller size band. Although a definitive cause is not known, this experience may include some guaranteed or simplified-issue business (not properly coded for exclusion from this study) or conversions with the date of conversion (instead of the date of issue of the original policy) listed as the policy issue date.

The smoker status mortality ratios (by amount) as a percentage of the corresponding 2001 VBT are as follows:

		Study Period				
		2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**
All Companies	**Nonsmoker**	69.9%	66.9%	64.3%	63.6%	63.1%
	Smoker	84.6%	85.4%	83.5%	83.0%	80.8%
	Unknown Status	84.9%	85.5%	83.1%	79.9%	77.2%
Common Companies	**Nonsmoker**	70.6%	67.3%	65.0%	62.0%	62.2%
	Smoker	86.4%	87.8%	87.2%	82.8%	79.4%
	Unknown Status	85.1%	85.3%	81.9%	77.1%	73.6%

The overall all-company mortality ratio (by amount) of 66.3% for the 2005-07 study continues the overall apparent trend of reductions in mortality ratios over time, with individual study year ratios decreasing steadily from 72.9% for 2002-03 to 65.8% for 2006-07. A similar trend is apparent on a common-company basis with individual study year ratios decreasing steadily from 73.9% for 2002-03 to 64.7% for 2006-07.

Select Period Results – Company Variability (Appendix A1)

Appendix A1 contains some experience summaries by quintile for each of the eight combinations of gender, smoking status and policies with face amounts under $100,000 and $100,000 and over. For a given combination, companies were assigned to a quintile based on their overall actual-to-expected ratio for that gender/smoking status/size combination. The table below summarizes the overall actual-to-expected ratios by quintile for each of the eight combinations. The range of actual-to-expected ratios is quite broad.

A/E Ratios by Amount and Quintile Durations 1-25 Only (Expected Basis = 2001 VBT)								
Face Amount	Gender	Smoking Status	A/E Ratio					
			1	2	3	4	5	All
<$100k	Male	NS	63.3%	74.6%	78.5%	82.9%	105.8%	75.9%
		S	81.7%	88.7%	98.4%	107.4%	128.8%	91.9%
	Female	NS	55.1%	67.9%	72.3%	78.6%	90.4%	71.6%
		S	74.9%	87.0%	89.6%	104.4%	117.2%	89.0%
>=$100k	Male	NS	48.1%	58.0%	62.4%	69.4%	76.2%	59.5%
		S	54.6%	69.0%	79.1%	84.9%	106.2%	76.6%
	Female	NS	47.1%	58.7%	64.4%	68.6%	87.0%	65.6%
		S	57.1%	72.7%	81.0%	87.0%	113.9%	78.4%

Appendix A1 shows actual-to-expected ratios for some more granular breakdowns as well, but since quintile assignments were made based on overall actual-to-expected ratios, the pattern of actual-to-expected ratios at a more granular level will not always increase for each quintile from Quintile 1 (lowest A/E ratios) to Quintile 5 (highest A/E ratios) and the range of actual-to-expected ratios for these more granular splits may be smaller than it would be if new quintile assignments had been made for each of the more granular splits. Nonetheless, the range of A/E ratios can still be quite wide--e.g., for Males, Nonsmokers, and Face Amounts of $100-249k, actual-to-expected ratios in page 2 of Appendix A1 range from 51.7% to 76.3%, with an actual-to-expected ratio of 65.4% for all quintiles combined.

Ultimate Period Results Based On 2001 VBT (Appendices B and E)

Overall for 2005-2007, the actual-to-expected ratio (by amount) in the ultimate period (durations 26+) was 81.1% of the 2001 VBT. This ratio dropped significantly from 88.2% for 2003-04 study years and only slightly from 81.8% in study year 2004-2005. Some of the change is due to differences in the mix of companies in each study period.

As with the prior study, the results differ significantly for males and females. The female actual-to-expected ratio (by amount) is 88.8% while the male mortality ratio (by amount) is 79.6%. Mortality ratios for both males and females tend to be higher at the younger and older attained ages. Mortality ratios for males are highest between attained ages 25 and 49 at 97.0-137.0%, lowest between ages 60-69 at 67.0%, and increase to 91.8% at ages 90+. Mortality ratios for females are highest between ages 25-29, 35-39 and ages 90+ at 107.8%, 108.6% and 105.5%, respectively, and lowest between ages 50-59 at 66.4%. The number of deaths is significantly lower for ages less than 40 than for higher ages.

Also similar to the 2004-2005 study, mortality ratios generally decrease by increasing face amount in the ultimate durations (as they do in the select period), suggesting lower mortality associated with higher socioeconomic status and/or, that some impact of underwriting may persist beyond the 25-year select

period. One exception is the female highest face amount band ($100,000 and over) where the mortality ratio increases to 81.5% (but with only 334 deaths).

For the 21 common companies, the mortality experience improved each year of the five-year period of 2002-07. The actual-to-expected ratios (by amount) were 90.7%, 88.4%, 84.8%, 81.3% and 78.9%. This yearly decrease in A/E was also evident across gender and in the majority of face amount bands.

Additional details by individual study years and for the 21 common companies by gender are included in Appendix E.

Results By Preferred Class Structure (PCS) Based On 2001 VBT
(Appendix C, Appendix D)

As was true for the 2004-2005 study, contributors to the 2005-2007 Intercompany Study were asked to provide information related to their preferred risk class structure. In particular, for each policy, companies were asked to provide the total number of preferred classes in their preferred class structure. Companies were also asked to provide a rank for each preferred class policy using "1" for the most restrictive preferred class,"2" for the next most restrictive preferred class, up to the total number of classes in their preferred structure. Overall, 36 of the 39 companies contributing to the 2005-2007 study contributed at least some data by number of risk classes and risk class rank.

As was done for the 2002-2004 and 2004-2005 studies, the many different actual preferred class structures ("PCSs") were aggregated over all companies into one combined structure with three (3) nonsmoker classes and two (2) smoker classes for some of the experience summaries in Appendices C and D. For nonsmokers, results in PCS Band 1 of the combined structure are the aggregate results of companies' best preferred class. Results in PCS Band 3 of the combined structure are the results of companies' residual standard class. Lastly, results for PCS Band 2 of the combined structure are the results for policies that fit into neither Band 1 nor Band 3. For example, if a company had four nonsmoker classes, the experience for classes 2 and 3 would have been combined and reported in PCS Band 2. For smokers, results are provided for PCS Band 1 and PCS Band 3. Results for PCS Band 2 are immaterial because most companies with more than one smoker class have only two smoker classes. It should be noted that companies with a preferred class structure for nonsmokers, but one class for smokers, have only risk class rank data included for nonsmokers.

Only data for issue ages 25 and older, durations 1 to 15 and face amounts of $100,000 up to $2,500,000 are summarized in Appendices C and D. The 2005-2007 experience for all companies submitting preferred experience (page 1 of Appendix C) has just under $4.1 trillion of exposure and 14,167 deaths. Experience may include some lapse anti-selection effects since we were not able to exclude experience beyond the level premium period for level premium term plans. There may also be significant variations in experience by company.

Overall ($100,000-$2,499,999, durations 1-15, all companies, smoker/nonsmoker and male/female combined), 2005-2007 actual-to-expected ratios (2001 VBT S/NS expected basis) for this block of multiple risk class business are 66.8% by policy and 63.5% by amount. Corresponding ratios for the 2004-2005 experience were 70.1% by policy and 64.7% by amount. It is not clear if the apparent decrease in mortality is real, due to changes in the contributing companies (i.e., different companies and/or different relative contributions) or due to other factors.

Tables 1 and 2 below compare both All Company and Common Company preferred experience by smoking status and PCS Band for 2004-2005 and 2005-2007. To maintain comparability across exposure periods, only experience for 2, 3 or 4 nonsmoker and 2 smoker classes is included. For purposes of the preferred experience, a company is deemed to be a Common Company if it contributed experience with preferred class splits for the 2004-2005 study and for each year of the 2005-2007 study, i.e., for policy years ending in each of calendar years 2005-2007. There are 23 preferred Common Companies. It should be noted that "Common Company" experience for a given risk class structure (e.g., 3 nonsmoker classes) does not necessarily reflect experience for the same companies for all experience periods. Moreover, the relative contributions from one period to the next can vary even when comparing companies that contributed to each period. For example, Company XYZ could have contributed only 2-class nonsmoker business for 2004-2005, and only 3-class nonsmoker experience for 2005-2007 and it would be considered a "Common Company."

Table 1 Preferred Experience by PCS Band—All Companies Durations 1-15—Male/Female Combined—Face Amounts of $100-2,499k—Issue Ages 25+ (Expected Basis = 2001 VBT)					
Smoking Status	Item	Exposure Period	PCS Band 1 (Best)	PCS Band 2 (Middle)	PCS Band 3 (Residual)
Nonsmoker*	Actual # of Deaths	2004-2005	2,633	1,201	2,908
		2005-2007	4,502	2,130	5,567
	A/E by Count	2004-2005	57.0%	67.7%	82.6%
		2005-2007	53.7%	64.9%	77.7%
	A/E by Amount	2004-2005	52.0%	60.2%	81.2%
		2005-2007	50.8%	64.1%	75.7%
Smoker	Actual # of Deaths	2004-2005	616	NA	468
		2005-2007	1,044	NA	924
	A/E by Count	2004-2005	80.3%	NA	103.5%
		2005-2007	72.8%	NA	95.6%
	A/E by Amount	2004-2005	78.6%	NA	101.8%
		2005-2007	66.7%	NA	87.3%

Table 2 Preferred Experience by PCS Band—Common Companies Durations 1-15—Male/Female Combined—Face Amounts of $100-2,499k—Issue Ages 25+ (Expected Basis = 2001 VBT)					
Smoking Status	Item	Exposure Period	PCS Band 1 (Best)	PCS Band 2 (Middle)	PCS Band 3 (Residual)
Nonsmoker*	Actual # of Deaths	2004-2005	1,752	554	1,787
		2005-2007	3,550	1,438	3,600
	A/E by Count	2004-2005	55.8%	64.6%	84.3%
		2005-2007	54.1%	60.8%	77.5%
	A/E by Amount	2004-2005	51.1%	57.8%	81.3%
		2005-2007	50.3%	60.9%	76.2%
Smoker	Actual # of Deaths	2004-2005	393	NA	300
		2005-2007	688	NA	641
	A/E by Count	2004-2005	78.7%	NA	98.4%
		2005-2007	70.3%	NA	94.0%
	A/E by Amount	2004-2005	74.1%	NA	97.2%
		2005-2007	63.8%	NA	84.4%

*Nonsmoker experience includes only experience for 2, 3 or 4 nonsmoker classes.

Although differences in mortality experience between risk classes appear to persist for the first 10 years (see Appendix D), there is insufficient experience to draw firm conclusions about whether (or how rapidly) A/E's are converging, particularly when considering how convergence rates may differ by issue age, gender, face amount band, etc.

When developing assumptions for multi-class business, actuaries sometimes use aggregate experience by smoking status and then make assumptions about relative mortality among classes and the proportion of the business in each class. Tables 3 and 4 below summarize the 2004-2007 experience for durations 1-10 (to eliminate most lapse anti-selection) by issue age band for two-, three- and four-class nonsmoker business and two-class smoker business for (a) all 36 companies with preferred class splits and (b) the 23 companies with preferred class splits that contributed preferred experience for each of the policy years ending in 2005 to 2007 (the Common Companies).

	# of Risk Class	Risk Class	Issue Ages	# of Deaths	% of Age Band Exposure		Dur 1-10 A/E	Ratio of A/Es*
S/NS					Dur 1	Dur 1-10		
NS	2	1	25-39	820	69.6%	72.9%	55.1%	100.0%
			40-59	1,885	59.3	63.8	52.9	100.0
			60-79	749	47.1	49.8	59.7	100.0
			All	3,454	62.6%	68.0%	54.9%	100.0%
		2	25-39	545	30.4%	27.1%	88.5%	160.8%
			40-59	1,593	40.7	36.2	70.2	132.7
			60-79	1,071	52.9	50.2	80.5	134.7
			All	3,209	37.4%	32.0%	76.6%	139.5%
	3	1	25-39	362	42.0%	44.6%	47.9%	100.0%
			40-59	785	31.9	35.6	44.9	100.0
			60-79	229	17.6	21.4	50.7	100.0
			All	1,376	37.0%	39.9%	46.4%	100.0%
		2	25-39	345	29.5%	29.8%	61.8%	129.1%
			40-59	999	31.5	32.5	55.5	123.4
			60-79	405	32.2	34.0	59.4	117.3
			All	1,749	30.4%	31.1%	57.5%	123.9%
		3	25-39	399	28.5%	25.6%	82.2%	171.8%
			40-59	1,452	36.5	31.9	79.8	177.6
			60-79	703	50.2	44.6	75.1	148.2
			All	2,554	32.6%	29.0%	79.1%	170.5%
	4	1	25-39	164	46.1%	44.6%	54.9%	100.0%
			40-59	356	37.4	36.1	42.5	100.0
			60-79	108	22.5	24.7	53.8	100.0
			All	628	40.8%	39.5%	46.8%	100.0%
		2	25-39	97	17.7%	20.3%	67.3%	122.7%
			40-59	490	23.3	26.8	64.5	151.7
			60-79	201	28.1	31.1	59.4	110.3
			All	788	20.9%	24.0%	63.9%	136.5%
		3	25-39	121	21.4%	20.0%	88.3%	160.8%
			40-59	444	24.1	22.3	66.7	156.8
			60-79	184	25.0	23.7	87.3	162.1
			All	749	22.9%	21.3%	74.0%	158.0%
		4	25-39	147	14.8%	15.1%	104.6%	190.6%
			40-59	485	15.2	14.8	81.2	190.9
			60-79	223	24.4	20.4	92.4	171.7
			All	855	15.4%	15.1%	88.0%	187.7%
S	2	1	25-39	285	63.9%	65.4%	58.4%	100.0%
			40-59	822	60.6	59.7	70.8	100.0
			60-79	184	52.7	48.5	99.7	100.0
			All	1,291	62.2%	62.4%	70.6%	100.0%
		2	25-39	185	36.1%	34.6%	70.5%	120.8%
			40-59	731	39.4	40.3	86.7	122.3
			60-79	256	47.3	51.5	122.9	123.3
			All	1,172	37.8%	37.6%	89.6%	126.9%

Table 3
2004-2007 Experience – All Companies
$100,000 - $2,499,999 – Male/Female and All Products Combined – Durations 1-10
(Expected Basis: 2001 VBT)

* Ratio of A/E (in the adjacent column) to corresponding best class A/E for the same issue age group.

	# of Risk Class	Risk Class	Issue Ages	# of Deaths	% of Age Band Exposure		Dur 1-10 A/E	Ratio of A/Es*
S/NS					**Dur 1**	**Dur 1-10**		
NS	2	1	25-39	650	68.8%	74.0%	53.2%	100.0%
			40-59	1,409	59.8	65.3	52.0	100.0
			60-79	508	44.0	49.3	59.7	100.0
			All	2,567	61.4%	69.3%	53.8%	100.0%
		2	25-39	412	31.2%	26.0%	92.8%	174.3%
			40-59	1,140	40.2	34.7	69.1	133.0
			60-79	747	56.0	50.7	82.4	138.1
			All	2,299	38.6%	30.7%	77.4%	143.9%
	3	1	25-39	246	44.3%	46.9%	44.7%	100.0%
			40-59	590	34.1	37.6	44.3	100.0
			60-79	181	19.5	23.4	49.2	100.0
			All	1,017	39.1%	42.0%	45.0%	100.0%
		2	25-39	215	27.1%	27.9%	62.4%	139.5%
			40-59	641	29.8	31.5	52.3	118.1
			60-79	302	31.4	34.4	62.2	126.4
			All	1,158	28.4%	29.7%	56.2%	124.9%
		3	25-39	279	28.6%	25.2%	85.5%	191.1%
			40-59	988	36.2	30.9	76.1	171.9
			60-79	505	49.1	42.1	75.3	153.1
			All	1,772	32.5%	28.3%	77.6%	172.5%
	4	1	25-39	83	43.7%	46.1%	55.2%	100.0%
			40-59	228	35.6	37.5	43.8	100.0
			60-79	81	24.9	27.8	62.5	100.0
			All	392	38.7%	40.9%	48.8%	100.0%
		2	25-39	40	15.0%	17.8%	52.6%	95.4%
			40-59	198	19.7	24.0	55.0	125.6
			60-79	117	24.8	29.1	70.6	112.9
			All	355	17.8%	21.5%	57.9%	118.7%
		3	25-39	69	28.4%	25.9%	81.7%	148.1%
			40-59	292	32.0	28.3	68.1	155.4
			60-79	106	35.8	31.0	80.3	128.3
			All	467	30.6%	27.4%	72.5%	148.6%
		4	25-39	40	12.9%	10.2%	97.9%	177.5%
			40-59	138	12.7	10.3	74.4	169.7
			60-79	70	14.6	12.2	123.7	197.9
			All	248	12.9%	10.3%	88.3%	181.1%
S	2	1	25-39	181	57.2%	62.6%	58.7%	100.0%
			40-59	471	53.1	55.6	67.0	100.0
			60-79	106	39.8	43.6	84.4	100.0
			All	758	54.9%	59.0%	66.7%	100.0%
		2	25-39	126	42.8%	37.4%	72.7%	123.8%
			40-59	486	46.9	44.4	84.0	125.3
			60-79	167	60.2	56.4	111.0	131.6
			All	779	45.1%	41.0%	86.2%	129.3%

Table 4
2004-2007 Experience – Common Companies
$100,000 - $2,499,999 – Male/Female and All Products Combined – Durations 1-10
(Expected Basis: 2001 VBT)

* Ratio of A/E (in the adjacent column) to corresponding best class A/E for the same issue age group.

Some observations based on the results summarized in Tables 3 and 4 are:

1. For a given risk class structure, the percentage of the exposure in the best preferred class decreases as issue age increases. For the three nonsmoker class structure, most of the decrease in best preferred class exposure appears as an increase in the residual class exposure since the exposure percentage for class 2 increases only slightly as issue age increases, particularly for business in the first policy year.

2. With a few exceptions, nonsmoker A/Es for a given risk class have a U-shaped pattern for the issue age breakdowns shown. Smoker A/Es increase with issue age band.

3. Looking at ratios of A/Es to the best class A/E by issue age group in the last column of Table 3, we can also see that ratios of A/Es for nonsmoker issue ages 60-79 tend to be lower than those for the younger issue age bands. In other words, the relative difference in mortality results between the best and worst risk classes tends to be smaller at the older issue ages.

Ratios of A/Es to the A/E for the best class, for all ages and all companies or common companies combined, are summarized in Tables 5 and 6 below for 2005-2007 and compared to the corresponding ratios for the 2004-2005 experience. The differences in the ratios of A/Es between the best preferred and residual nonsmoker classes appear to be somewhat less for the 2005-2007 experience study than for the 2004-2005 experience study. The opposite is true for smokers. One possible driver of the difference is a different mix of participating companies. Thirty-one companies contributed preferred "All Companies" data to the 2004-2005 study, while 36 companies were included in the 2005-2007 study. As noted previously, even the Common Company experience can, for a given risk class structure, reflect variations in the list of contributing companies and their relative contributions from one exposure period to the next.

Table 5 $100,000 - $2,499,999 – Male/Female Combined – Issue Ages 25-79 Durations 1-10 Combined--All Companies (Expected Basis: 2001 VBT)								
			2004-2005			**2005-2007**		
S/NS	**# of Risk Classes**	**Risk Class**	**# of Deaths**	**A/E**	**Ratios of A/Es**	**# of Deaths**	**A/E**	**Ratios of A/Es**
NS	2	1	1,393	55.4%	100%	2,061	54.5%	100%
		2	1,159	79.6	144	2,050	75.0	138
	3	1	371	48.5%	100%	1,005	45.7%	100%
		2	543	56.7	117	1,206	57.9	127
		3	754	88.2	182	1,800	75.9	166
S	2	1	479	81.4%	100%	812	65.0%	100%
		2	394	99.2	122	778	85.4	131

Table 6 $100,000 - $2,499,999 – Male/Female Combined – Issue Ages 25-79 Durations 1-10 Combined--Common Companies (Expected Basis: 2001 VBT)								
			2004-2005			**2005-2007**		
S/NS	**# of Risk Classes**	**Risk Class**	**# of Deaths**	**A/E**	**Ratios of A/Es**	**# of Deaths**	**A/E**	**Ratios of A/Es**
NS	2	1	913	53.8%	100%	1,654	53.7%	100%
		2	790	81.2	151	1,509	75.5	140
	3	1	287	46.2%	100%	730	44.5%	100%
		2	373	56.5	122	785	56.0	126
		3	547	81.8	177	1,225	76.1	171
S	2	1	265	76.3%	100%	493	62.3%	100%
		2	243	96.3	126	536	82.1	132

The following companies contributed data from 2002-07 and are included in the five-year common company analysis:

Aviva Life Ins. Co.
Columbus Life Ins. Co.
Empire General Life Assur. Corp.
Farm Bureau Life Ins. Co.
Fidelity Investments Life Ins. Co.
Government Personnel Mutual Life Ins. Co.
Horace Mann Life Ins. Co.
ING
Jackson National Life Ins. Co.
Massachusetts Mutual Life Ins. Co.
Metropolitan Life Ins. Co.
Mutual of Omaha Ins. Co.
Northwestern Mutual Life Ins. Co.
Pacific Life Ins. Co.
Protective Life & Annuity Ins. Co.
Protective Life Ins. Co.
Prudential Ins. Co. of America
State Farm Life Ins. Co.
Thrivent Financial for Lutherans
USAA Life Ins. Co.
West Coast Life Insurance Company

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