

POLICYHOLDER BEHAVIOR IN THE TAIL UL WITH SECONDARY GUARANTEE SURVEY 2013 RESULTS

Survey Highlights

- The latest survey reflects a different response group from those in the prior survey. Some of the changes described below reflect different respondents, not necessarily a change by any given company. There were a total of 25 respondents in 2013. The responding group can be further divided into 9 new respondents and 16 returning respondents from the 2012 version of the survey.
- Most companies continue to view the investment return and lapsation assumptions to be their most critical risks. Concern about investment returns has reemerged as the most common response as indicated by 19 of 24 (79%) companies responding to the question. Lapsation was felt to be a critical assumption by 18 (75%) of the respondents. (Figure 41)
- Nearly half, 11 of 24 (46%), of responding companies are varying assumptions dynamically for UL policies with a secondary guarantee (Figure 28).
- Of those that specifically use dynamic lapse assumptions, nearly two-thirds, (7 of 11) 64%, state that they set lapses to zero if the guarantee is in-the-money and no further premium is required. This is up from 50% in 2012 (Page 16).
- Median mortality rates at higher attained ages continue to be lower than mortality rates from the 2001 VBT. However, companies showed a wide range of assumptions (Figure 31-36).
- Only 24% (6 of 25) of respondents use stochastic modeling to set or analyze capital levels for UL with secondary guarantees. This is down from 2012 and closer to the responses in the 2011 version of this survey (Figure 1).
- The two most popular durations of projection used to set or analyze capital levels are “76-100 years” and “31-50 years”. About half of the respondents, 11 of 23 (48%) indicated using 76+ years in the projection while 35% (8 of 23) project for 31-50 years. (Figure 4).
- Lapse rates continue to vary widely amongst insurers in the tail. The highest lapse rates in all age bands increased in early years compared to 2012 (Figure 18 and Figure 20). Assumed lapse rates do not show substantial variation by issue age for most individual insurers, with the exception of being lower for the highest issue ages (70+).

- Median lapse rates for 2013 are similar to those of 2012 and 2011 (Figure 19 and Figure 21). However, the average (mean) lapse rate saw an increase in the first two policy years due to an increase in the highest lapse rates reported.
- 2013 saw significant growth, 9 of 17 (53%) in 2013 compared to 5 of 15 (33%) in 2012, in the number of companies that measure lapses by distribution system. Three of those companies (18%) have discovered that their lapse assumptions vary by distribution system. (Page 20)
- Half (12 of 24) of companies vary lapse assumptions by premium pattern (about the same as 2012 but down from 63% in 2011), with several responses mentioning higher lapse rates for level premium patterns and/or lower lapse rates for single premiums (Figure 24).
- Company experience and actuarial best estimates dominated as sources of base lapse assumptions (96% and 88% respectively) for the third consecutive year. Consultant advice increased significantly to 38% (9 of 24) in 2013 from 20% (5 of 25) in 2012 (Figure 25).
- Actuarial best estimates were chosen by 82% of respondents as a source for dynamic lapse assumptions. Company experience was also a source for 45% (5 of 11) companies, up from 22% (only 2 of 9) in 2012 (Figure 29).
- Companies responding in 2013 used less years of experience in their latest lapse study. In 2012, 50% of companies used 8+ years of experience. In 2013, over 70% of respondents used 7 years of experience or less (Figure 27).
- The 2001 VBT table was the most commonly used mortality table (48% of responses). 2008 VBT table usage increased from 12% to 17% (Figure 30). In addition, 3 of the 6 respondents answering “Other” mentioned a modification or combination of the 2001 or 2008 VBT tables.
- Future mortality improvement is modeled by 78% of responding companies. There has been an increase each year since 2009 when the response was 50% (Figure 39). Improvements typically vary by gender, age and policy duration (Figure 40).

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Background

In 2013, the Policyholder Behavior in the Tail (PBITT) committee distributed a survey to insurers and asked for feedback on assumptions used in their modeling of Universal Life with Secondary Guarantees. The goal of the survey was to gain insight into companies' assumptions in the tail of a stochastic capital calculation. This survey had 25 usable responses which is in line with 26 from 2012 and 23 in 2009 although down from 32 in 2011. Not every company answers every question. To illustrate the credibility of results, most charts indicate how many companies responded to the question.

It is the intention of the PBITT committee to conduct this survey annually. It is our hope that with the publication of these and future survey results, we will increase the awareness of expected industry experience for all companies to consider when setting assumptions or when extrapolating to the tail. Others may wish to consider the relative financial impact of the various assumptions shown. Individual companies may also want to use the results to help design stress tests and experience studies.

While the exact relationships of new versus prior respondents vary by individual question, at the level of the total survey there are 9 new respondents in 2013 and 16 respondents from both 2012 and 2013. Therefore, some of the changes described below reflect different respondents, not necessarily a change by any given company. Figure 42 shows the change in the distribution by size over the last four surveys.

Parameters of Stochastic Capital Calculation

Insurers were asked in Question 2 of the survey to indicate whether or not they analyze capital levels for UL with Secondary Guarantees using stochastic scenarios, as well as how many scenarios are used and the length of the projection. The following graphs (Figure 1, Figure 3, and Figure 4) below show the responses to these questions. 24% of insurers used stochastic scenarios to set or analyze capital levels, down from 35% in the previous survey. Figure 2 looks at stochastic scenario use by company size. Of those reporting company size and stochastic scenario usage, total face amount does not appear to be a determining factor in the decision to use stochastic scenarios for this purpose.

One third (2 of 6) of the 2013 respondents using stochastic scenarios indicated that they use 1,000 scenarios. The percentage of respondents using 1,000 scenarios has remained consistent although the number of companies using stochastic scenarios has decreased.

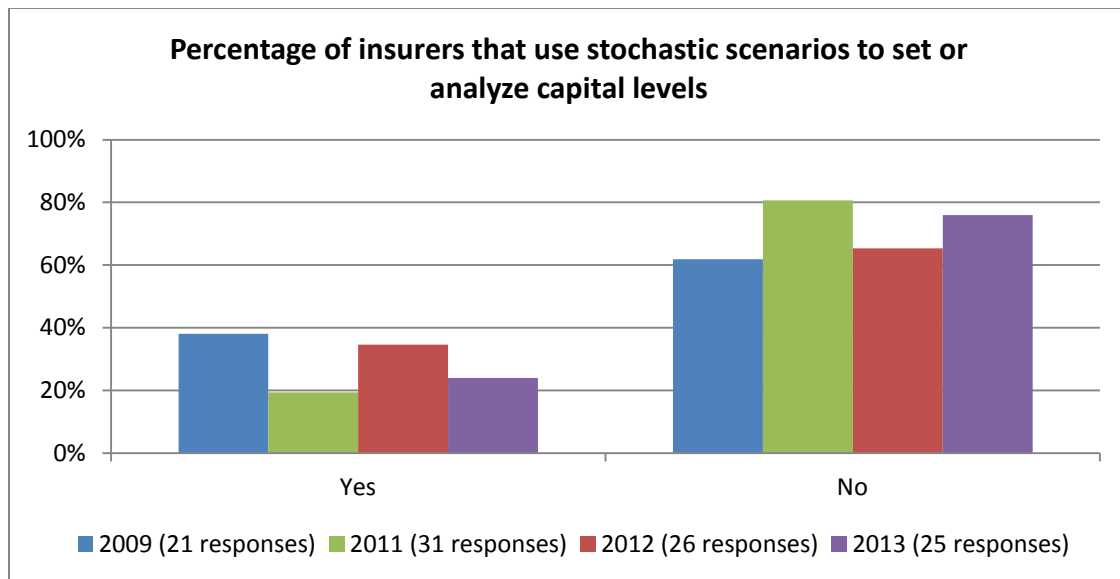


Figure 1

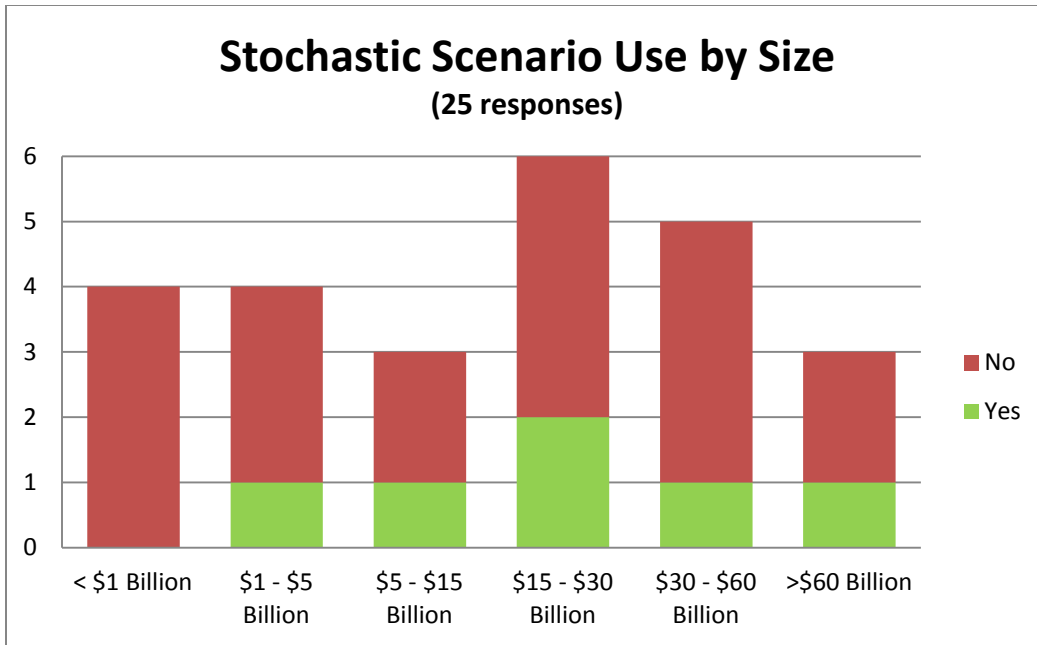


Figure 2

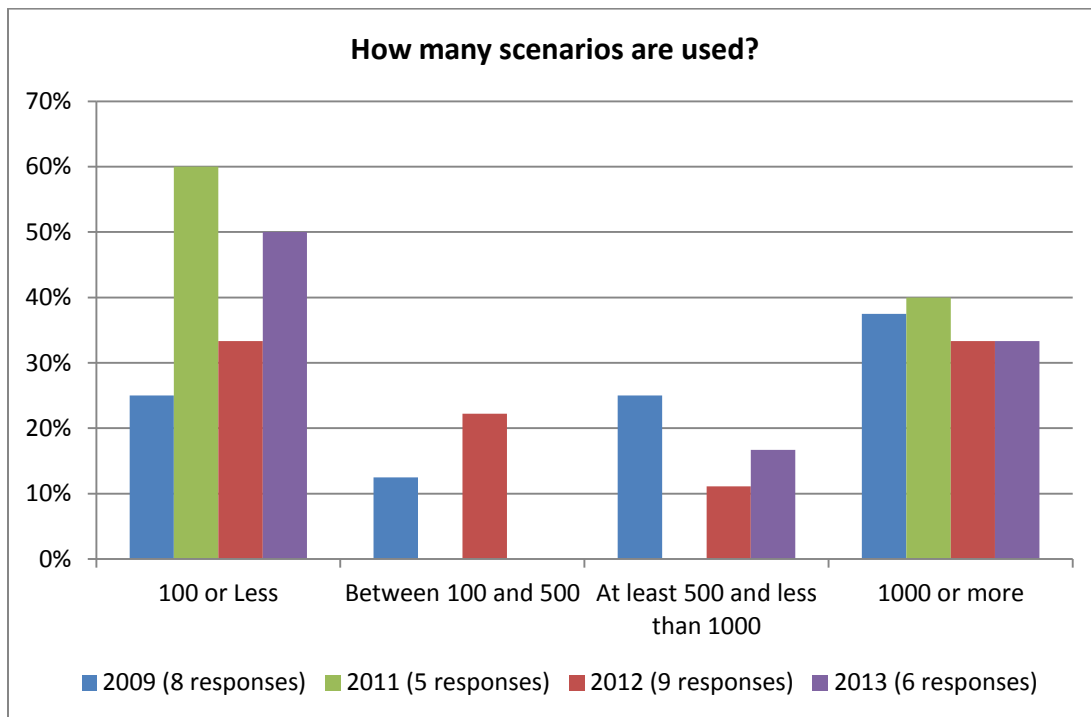


Figure 3

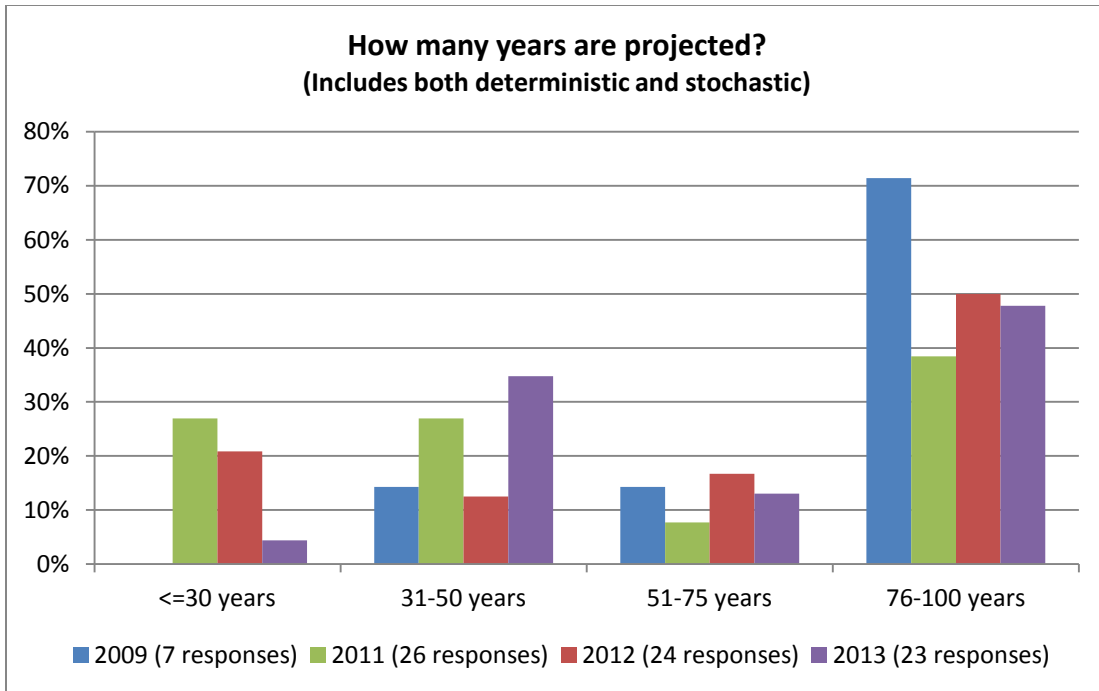


Figure 4

Tail Scenario

The tail scenario is defined as the scenario which gives the largest present value of the death benefits paid in all years where no COI is collected. (This differs from the tail scenario definition used in the committee's VA survey.) Insurers were asked to list 1 year, 7 year, and 30 year interest rates in the tail scenario (whether a stochastic scenario or a deterministic scenario depending on the respondent's methodology). Responses varied widely across insurers regarding the description of the tail scenario. The charts below show each insurer's tail scenario for the three maturities.

Three of the six companies that reported using stochastic modeling provided requested interest rate scenarios. Seven of the 19 companies that do not use stochastic modeling to analyze capital also provided interest rate scenarios. One of the seven indicated that they provided a stochastic scenario even though they do not use stochastic models to analyze capital. As a result there are four sets of stochastic rates and six sets of deterministic rates. The companies are comparable across the figures (i.e. Stochastic, 2 in Figure 5 is the same company as Stochastic, 2 in Figure 7 and Figure 9.)

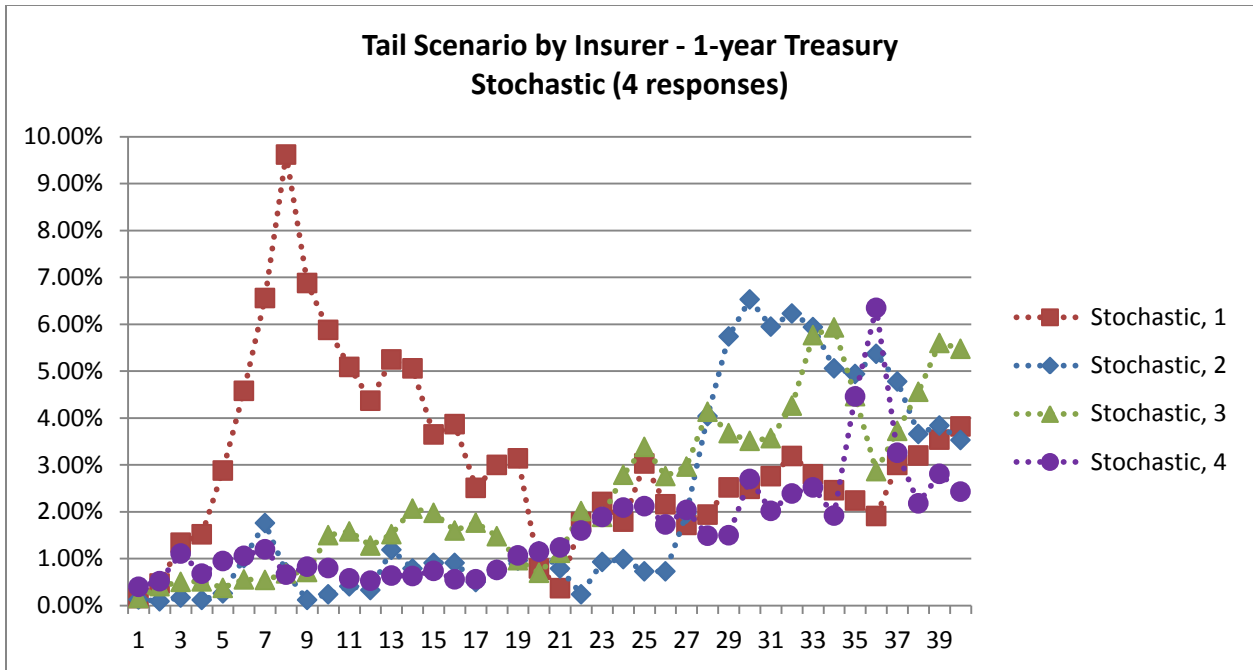


Figure 5

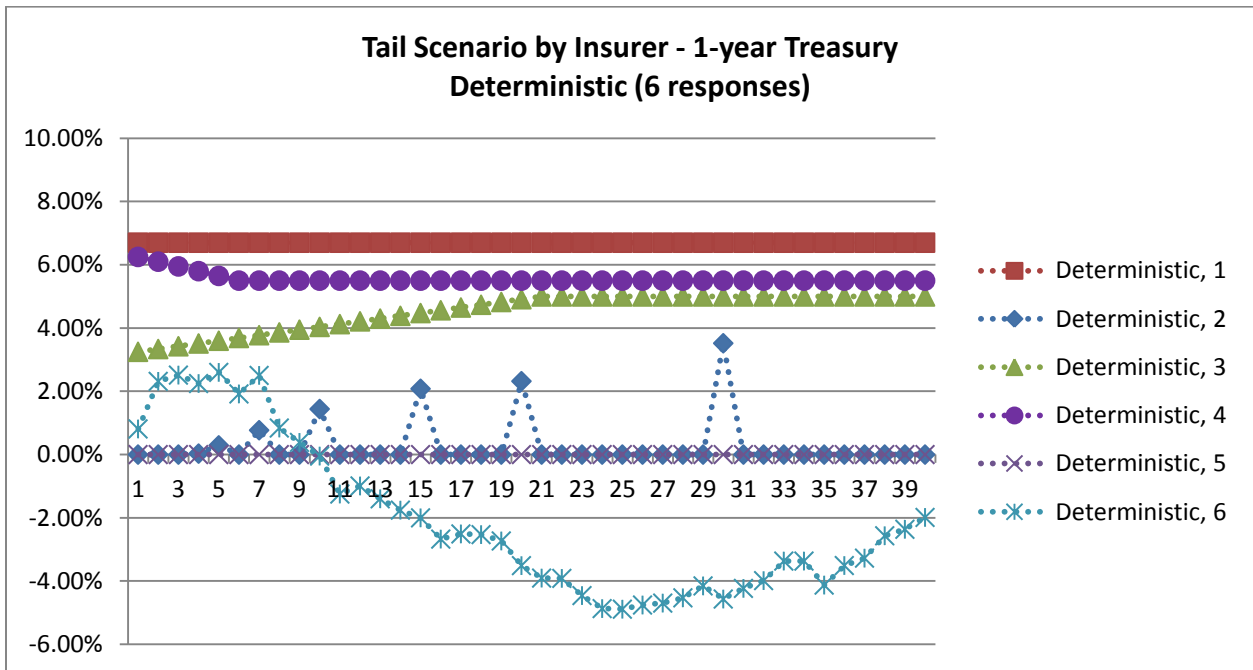


Figure 6

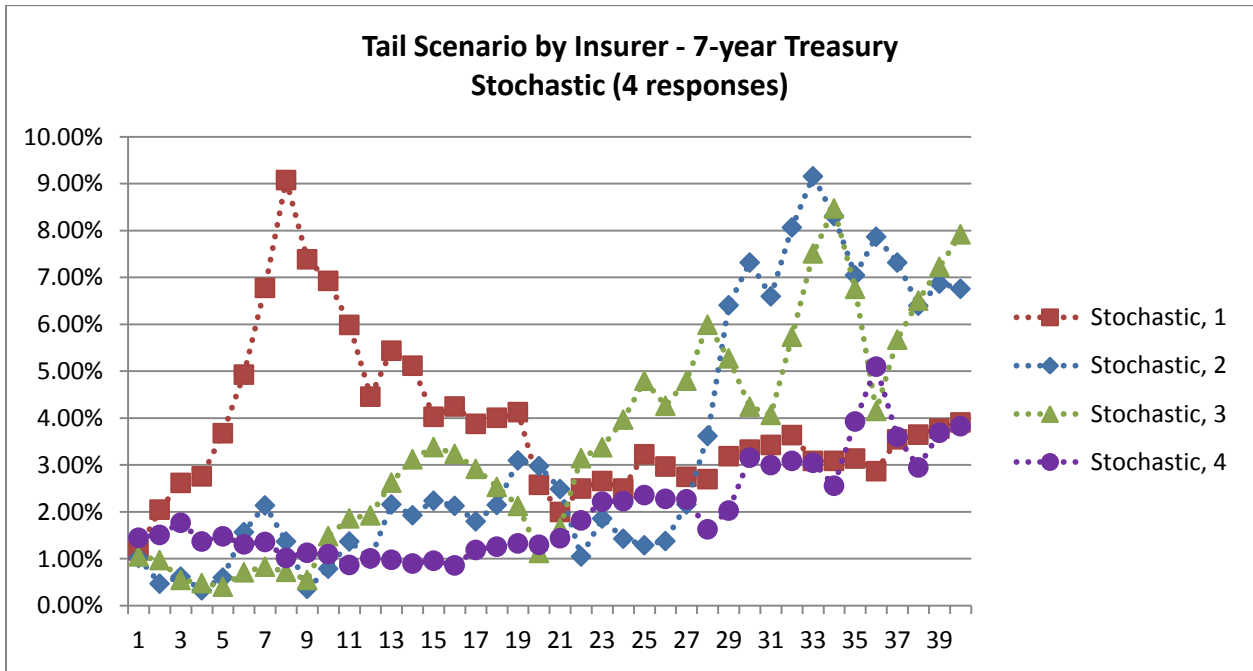


Figure 7

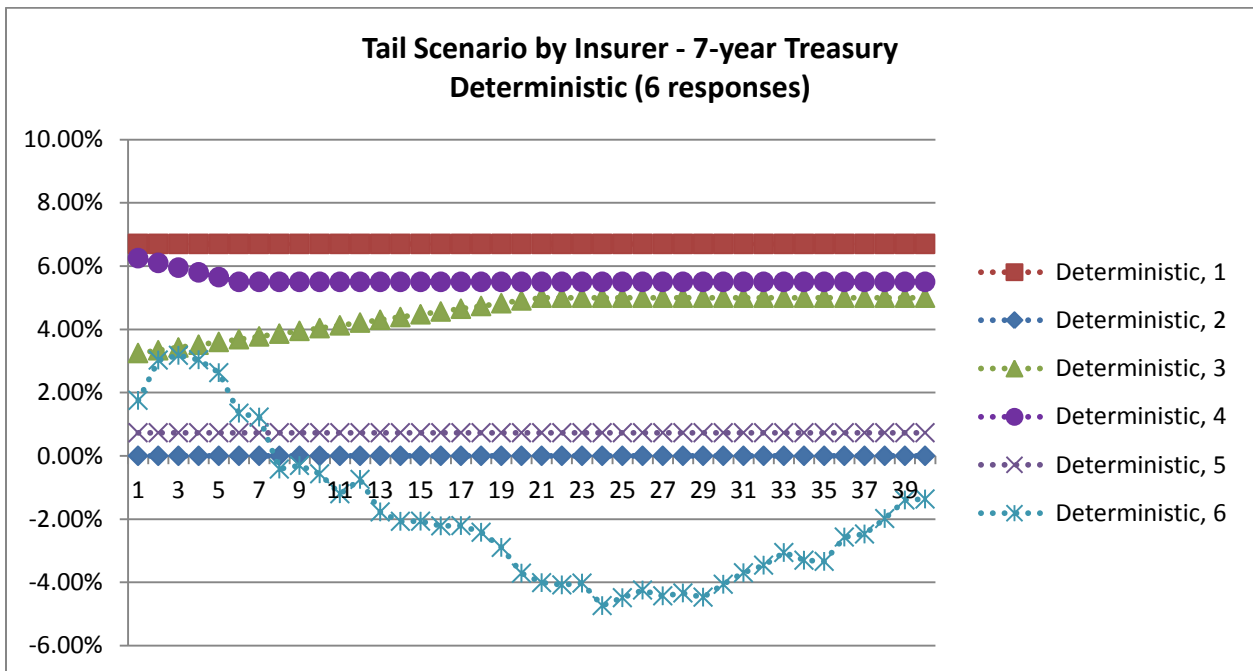


Figure 8

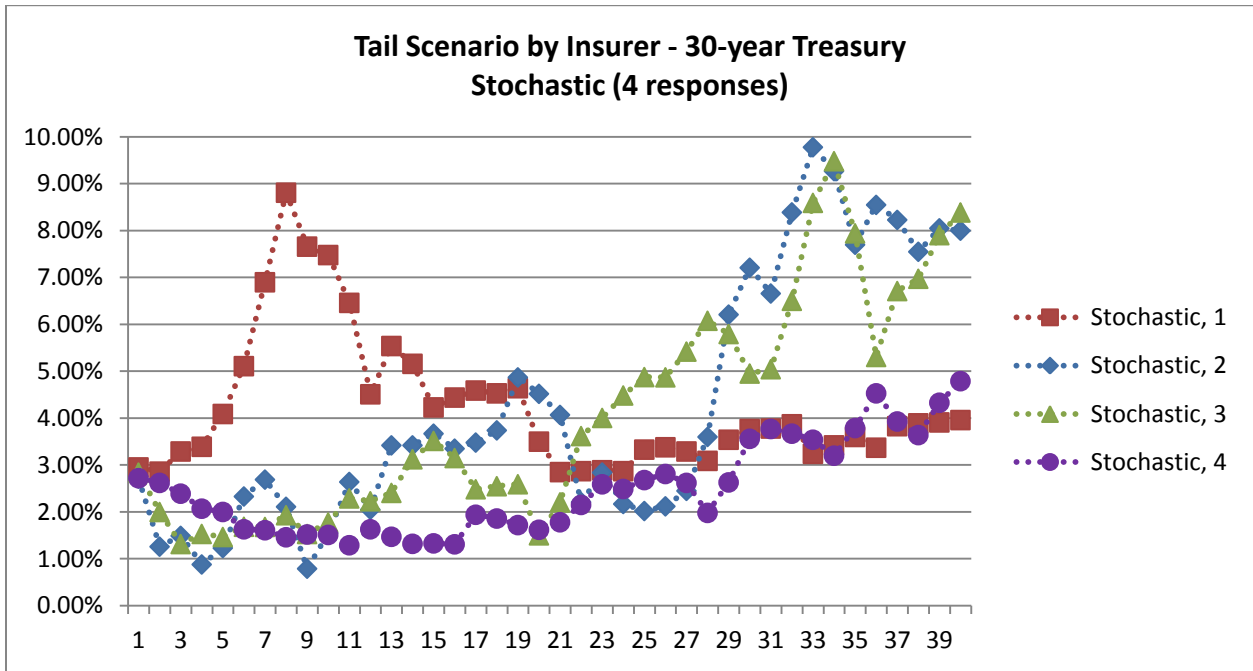


Figure 9

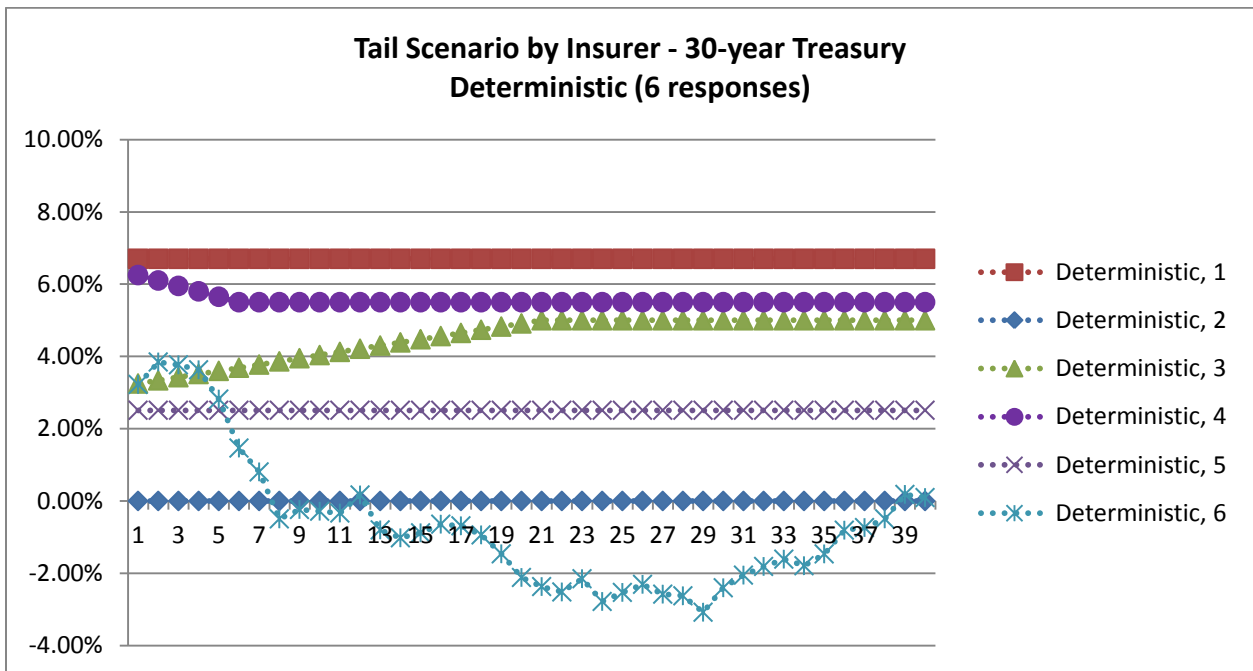


Figure 10

The following graphs of tail scenarios show the median reported value across insurers for each of three maturities (1, 7 and 30 Year Treasuries) for each projected year from the 2009, 2011, 2012 and 2013 survey results. (The first pair of graphs separate stochastic from deterministic for 2013, followed by their combination. Thereafter, only combinations are shown.) It should be noted that these lines do not represent any one single company's response, but rather the median of the rates across all companies' responses at each projection year duration. The 2013 scenarios are not as steep as the 2012 scenarios but more so than the slight upward trend shown in 2009 or the relatively flat scenarios from 2011. The median tail scenarios of 2013 start at approximately the same levels as the 2012 scenarios but have a lower overall ending rate although the ending rates remain higher than those from 2011 and 2009.

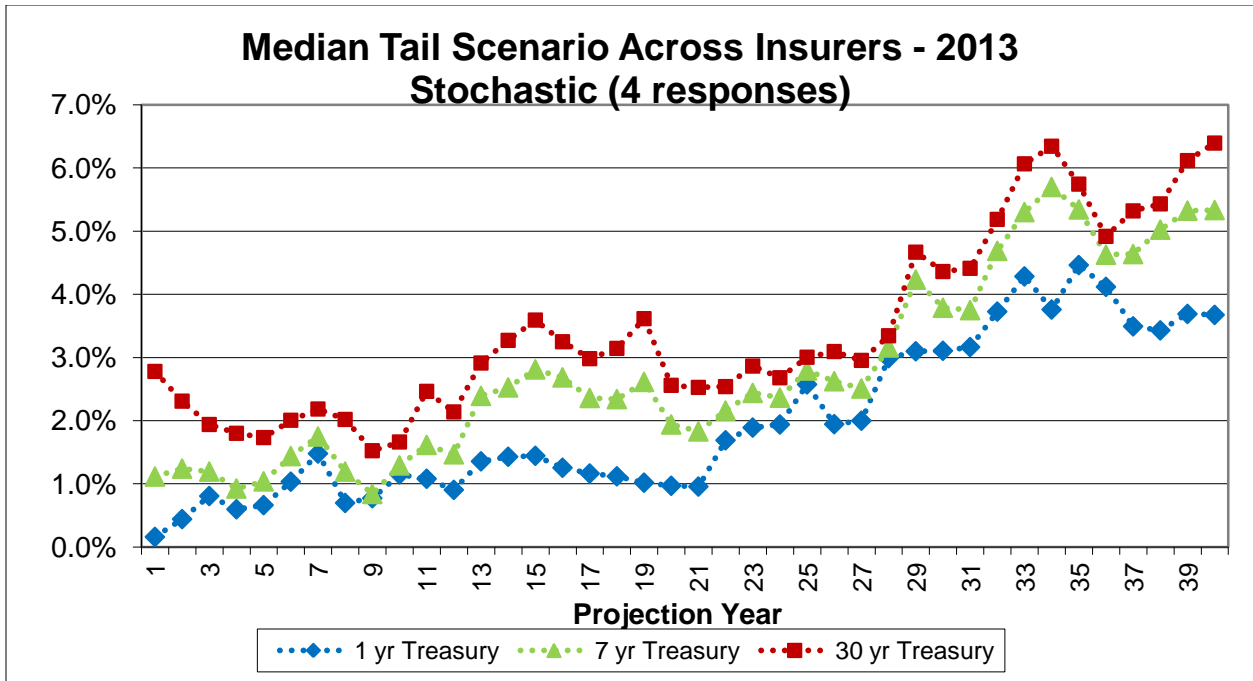


Figure 11

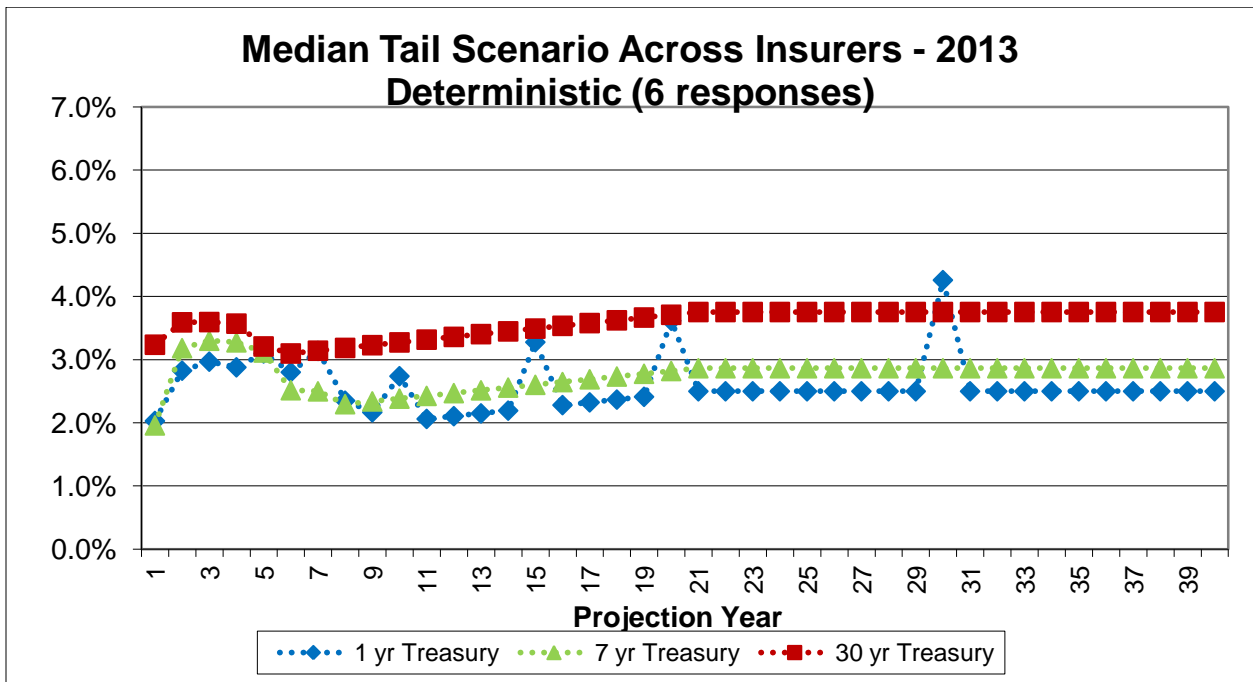


Figure 12

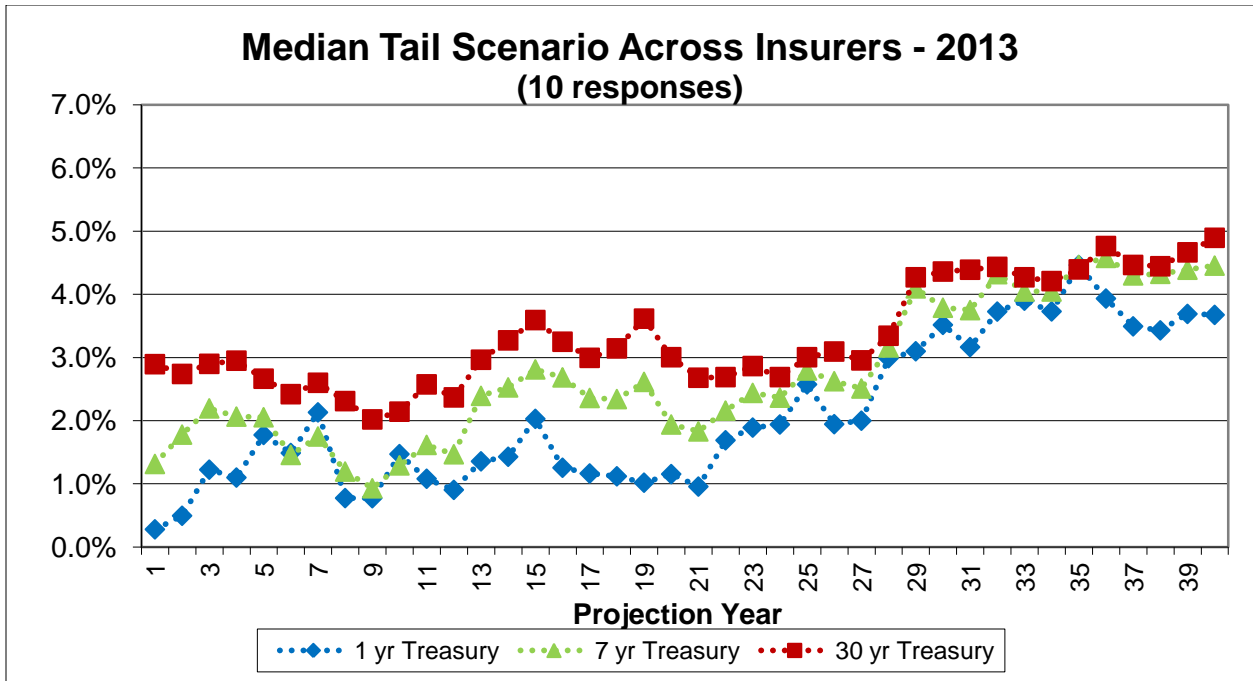


Figure 13

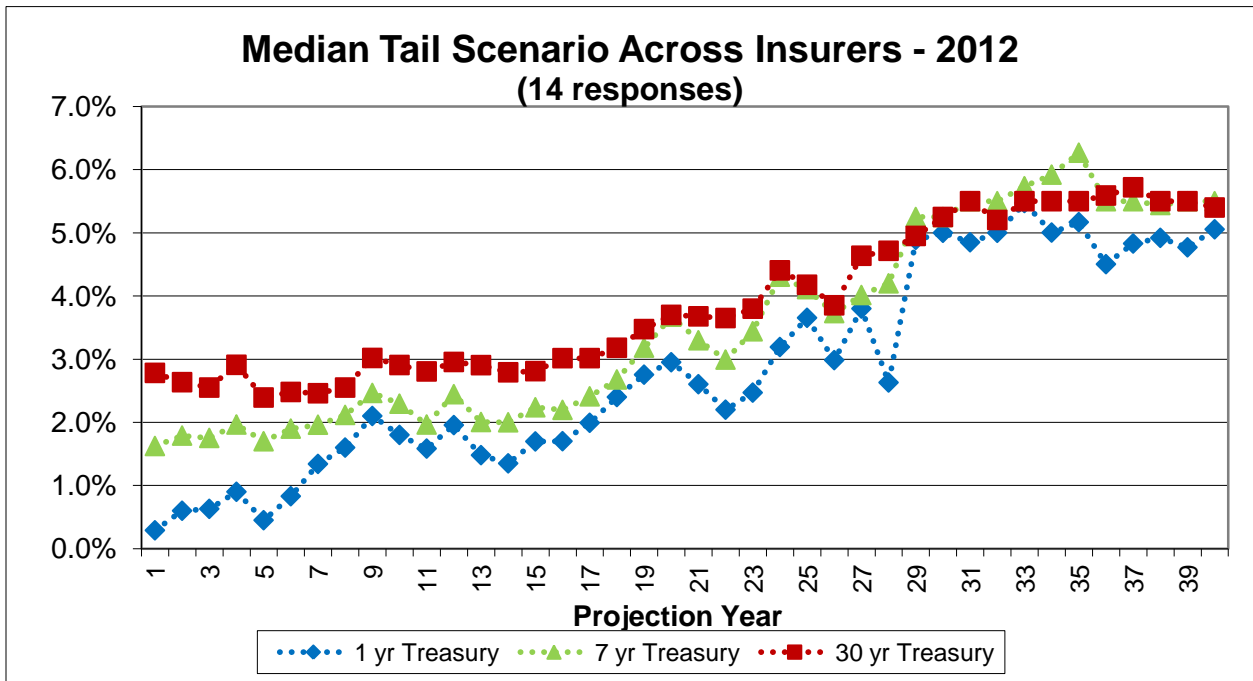


Figure 14

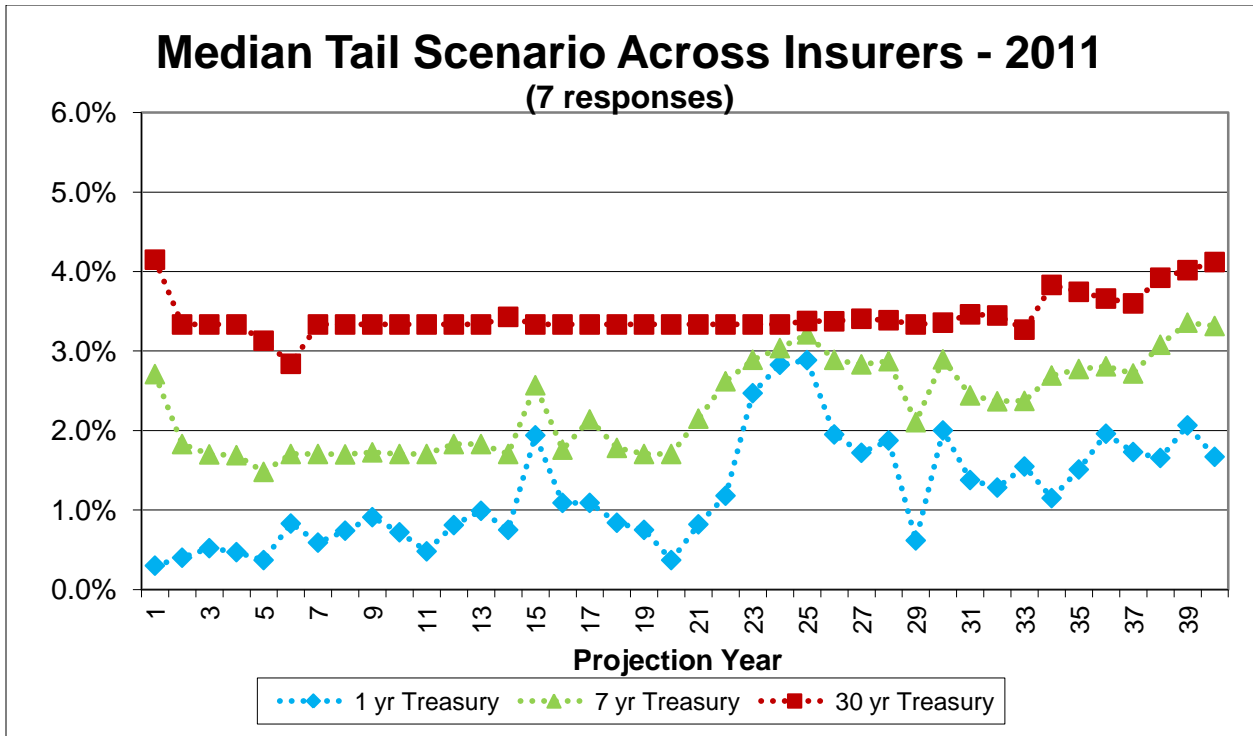


Figure 15

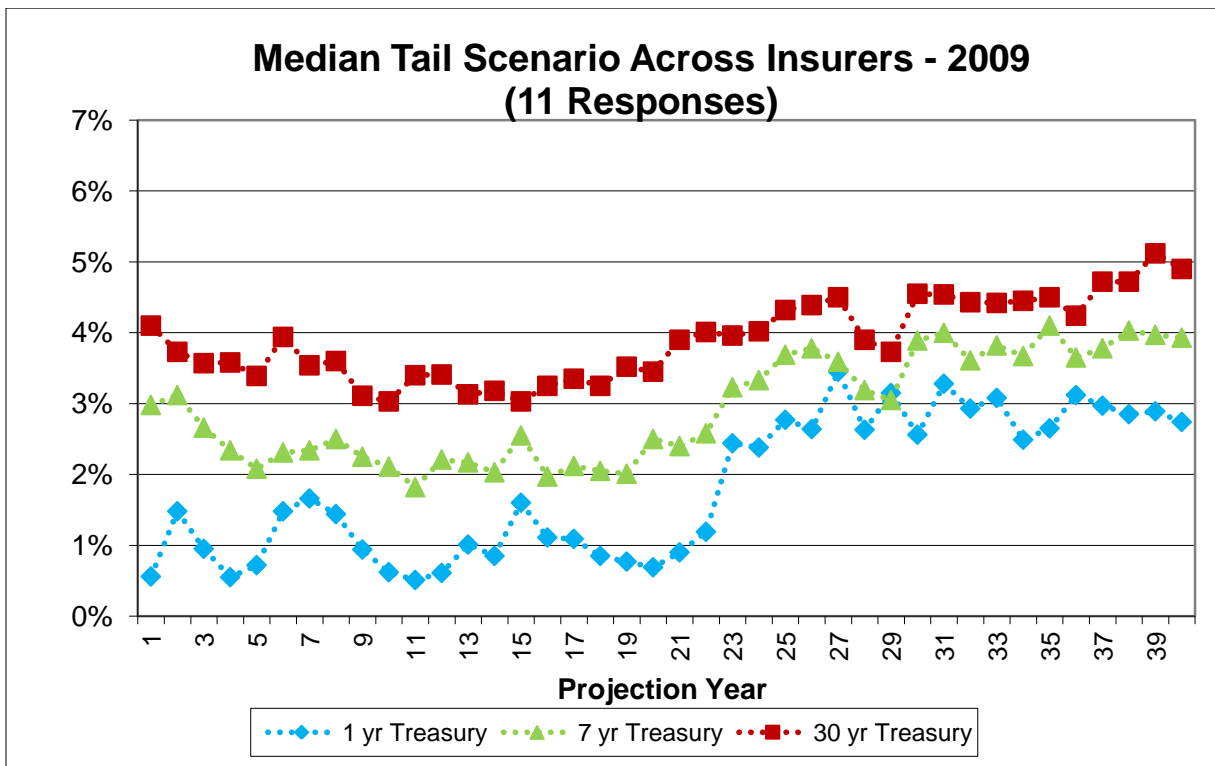


Figure 16

Lapse Assumptions

Question 3 asked about lapse assumptions. The following chart shows the percentage of insurers who use dynamic lapse functions for policies with secondary guarantees. The number of insurers using dynamic lapse functions was about the same this year (44% of responses) as the last two years (40% & 41%). Of those that do use dynamic lapse functions, 64% (7 of 11) specifically said they set the lapse rate to 0% for years where the guarantee is in-the-money and there is no additional premium required. This is an increase compared to 50% from last year and 58% from the 2011 survey. Other factors considered in the dynamic lapse function included the relationship of the current account credited rate to the competitor rate and the in-the-moneyness of the product.

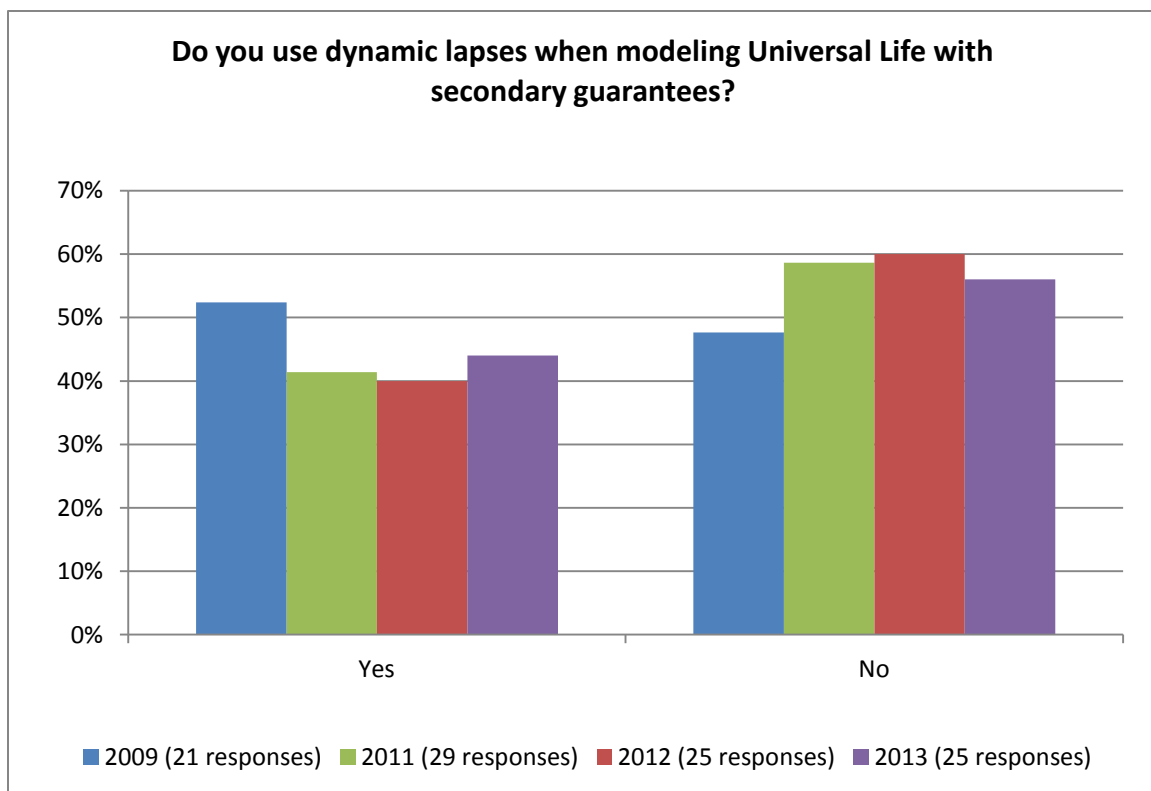


Figure 17

In Question 4, insurers were asked to list their lapse assumption in the tail scenario by duration and by various issue ages. The charts below show the highest, median, and lowest lapse rates used across duration. The graphs show the responses for issue ages 40-49 and 70-79. The 2013

median responses are in line with those from the past two years. However, the highest responses for more than one respondent are significantly higher in 2013 when compared to 2012 for the first two policy years. The responses for other issue ages were very similar to those for age 40-49.

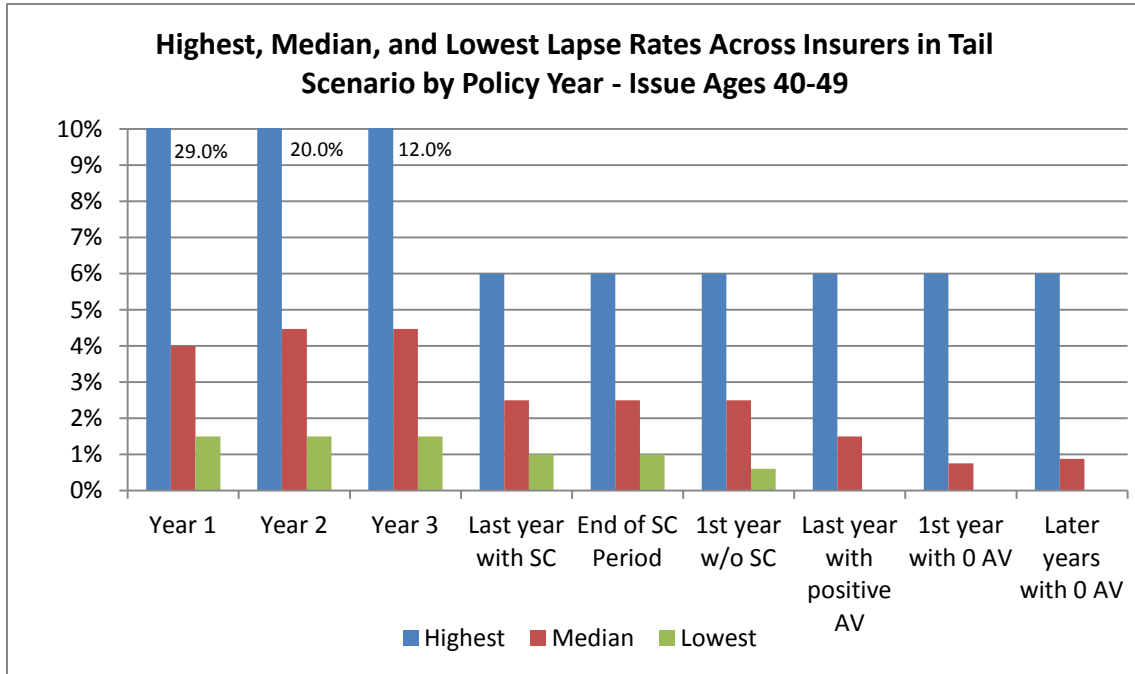


Figure 18

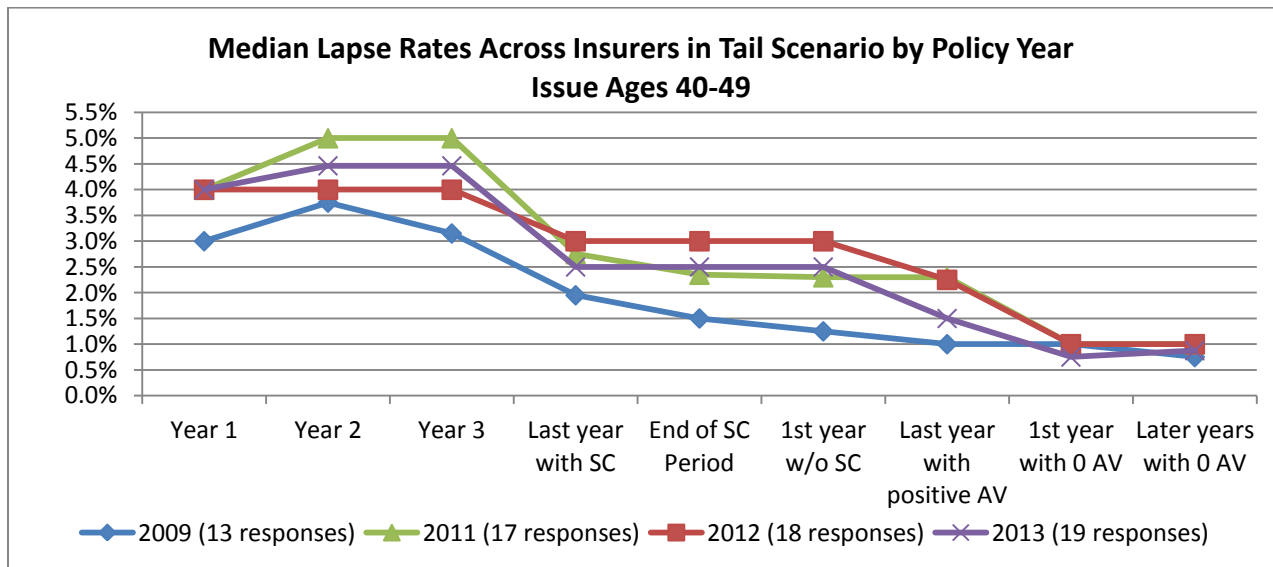


Figure 19

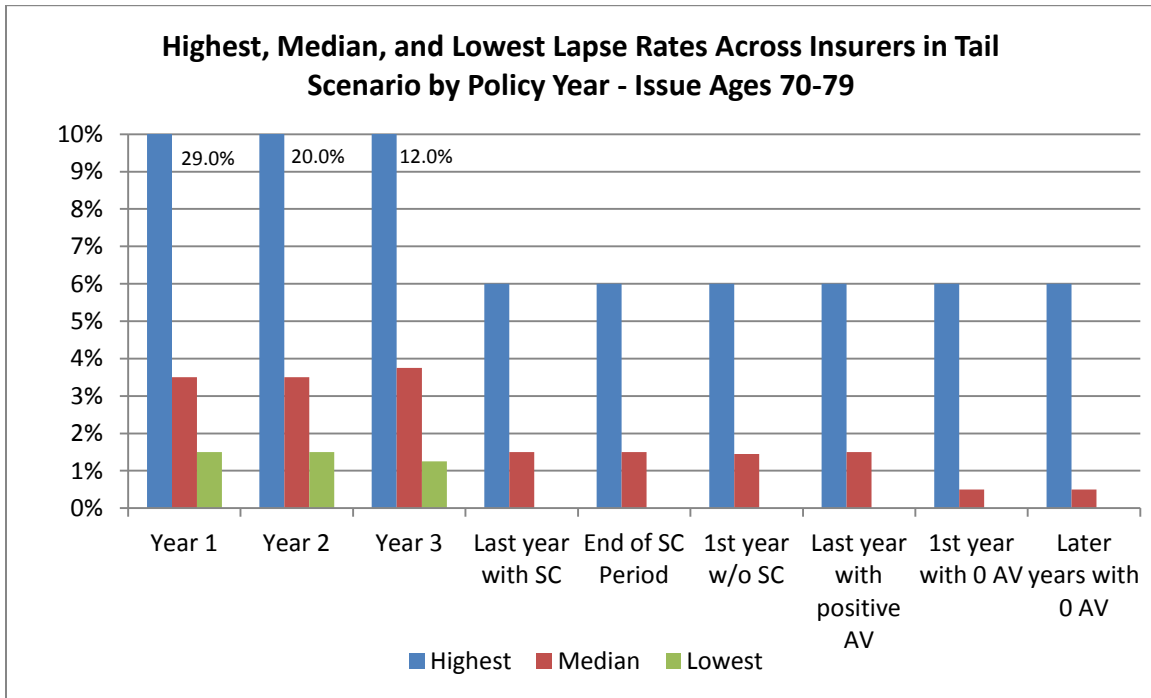


Figure 20

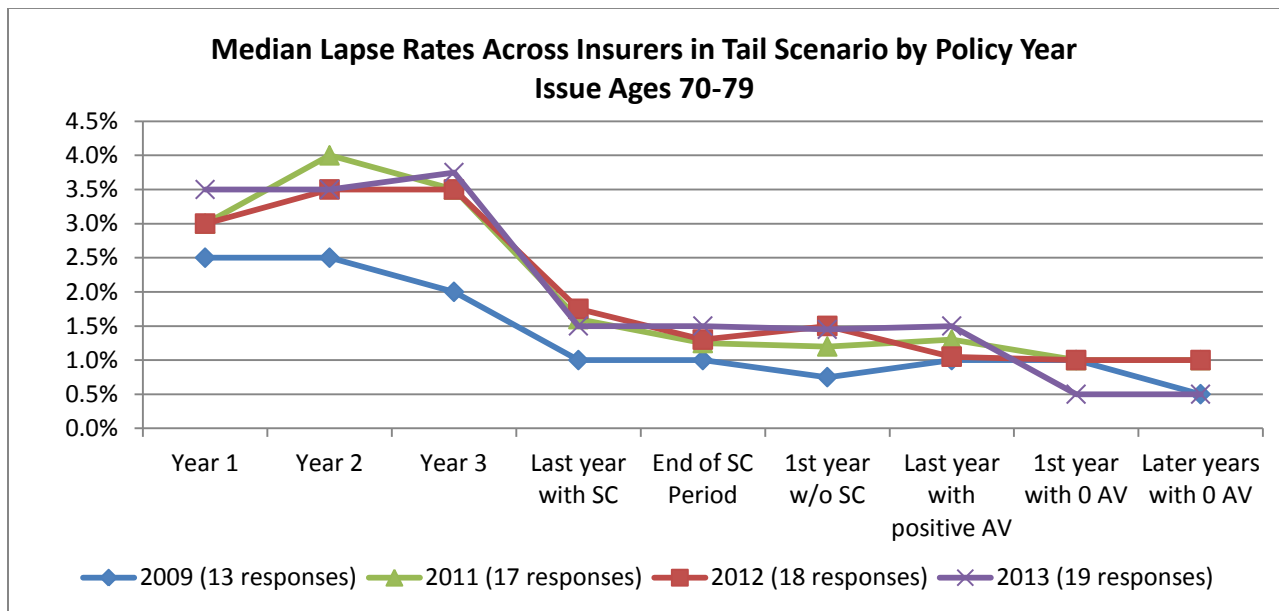


Figure 21

Next, in Question 5, the insurers were asked, out of 10,000 newly issued policies in the given issue age range, how many would first have a zero cash surrender value but be kept in force by the secondary guarantee at a given duration. Insurers were asked to focus on issue ages 50-59 if the requested data was not easily available for all issue ages.

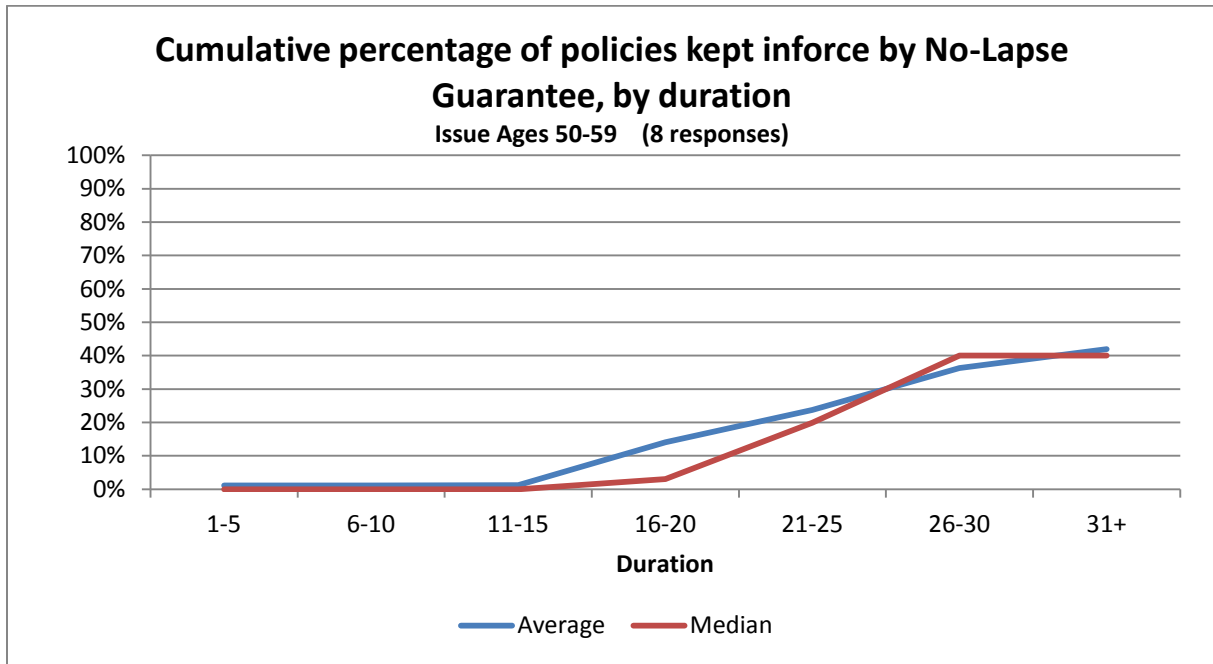


Figure 22

The survey asked insurers in Question 6, whether their lapse assumptions vary by distribution. Out of 24 respondents, 17 (71%) indicated that they sell through multiple distributions. The following graph (Figure 23) indicates the distribution systems used by these respondents.

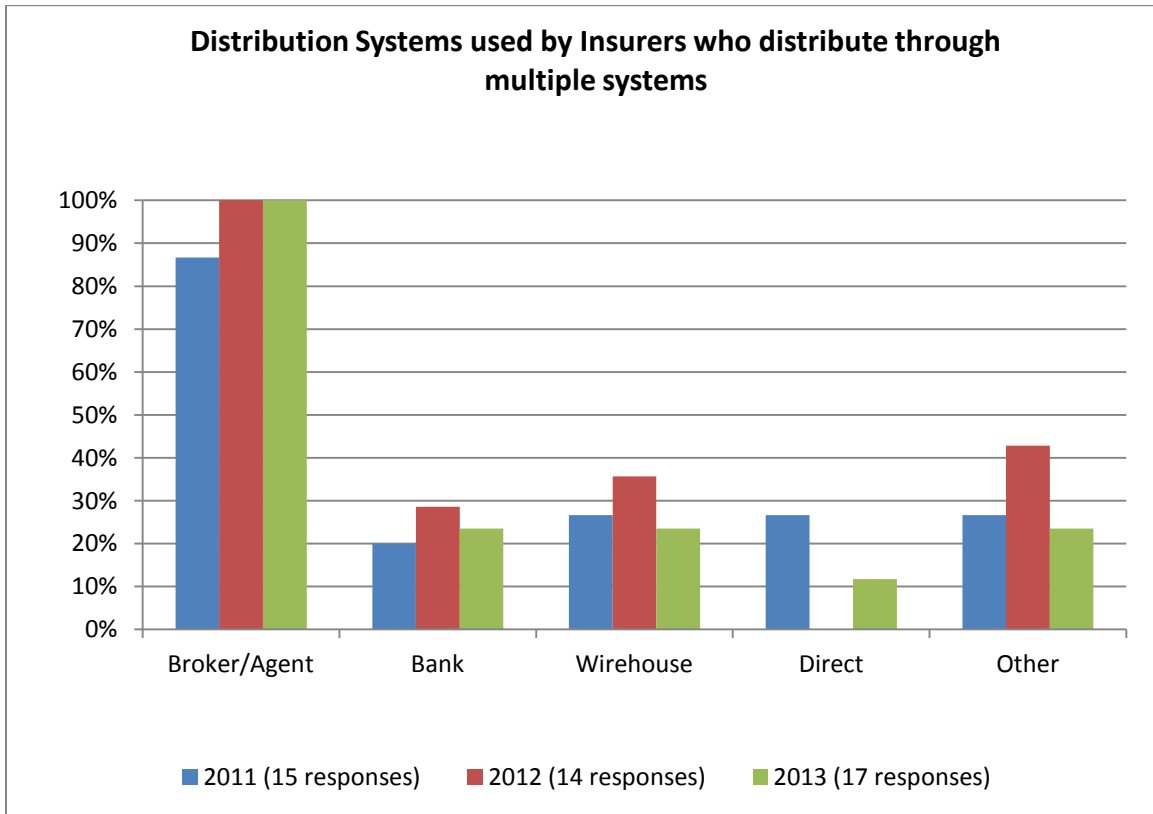


Figure 23

An additional question asked insurers if they measure lapses by distribution system. Of the 17 insurers who responded, 9 (53%) measure lapses by distribution system, and 3 (18%) have found that their lapse assumptions vary by distribution system. These results represent an increase from 2012 where the answers were 33% and 7% respectively.

Question 7 asked about lapses and premium assumptions. Half of the 24 respondents (50%) indicated that lapse rates vary by premium assumption, which is similar to the response in 2012 but remains lower than the results of prior surveys where it had been more common for companies to show a difference in lapse rates by premium assumption. Where the lapse rates do vary by premium assumptions, nearly all of these respondents indicated that lapse rates vary with the ongoing premium requirement. Single pays have the lowest lapse rates and level minimum pays have the highest. Lapse rates tend to drop when the end of the premium paying period is reached and the policy is paid up.

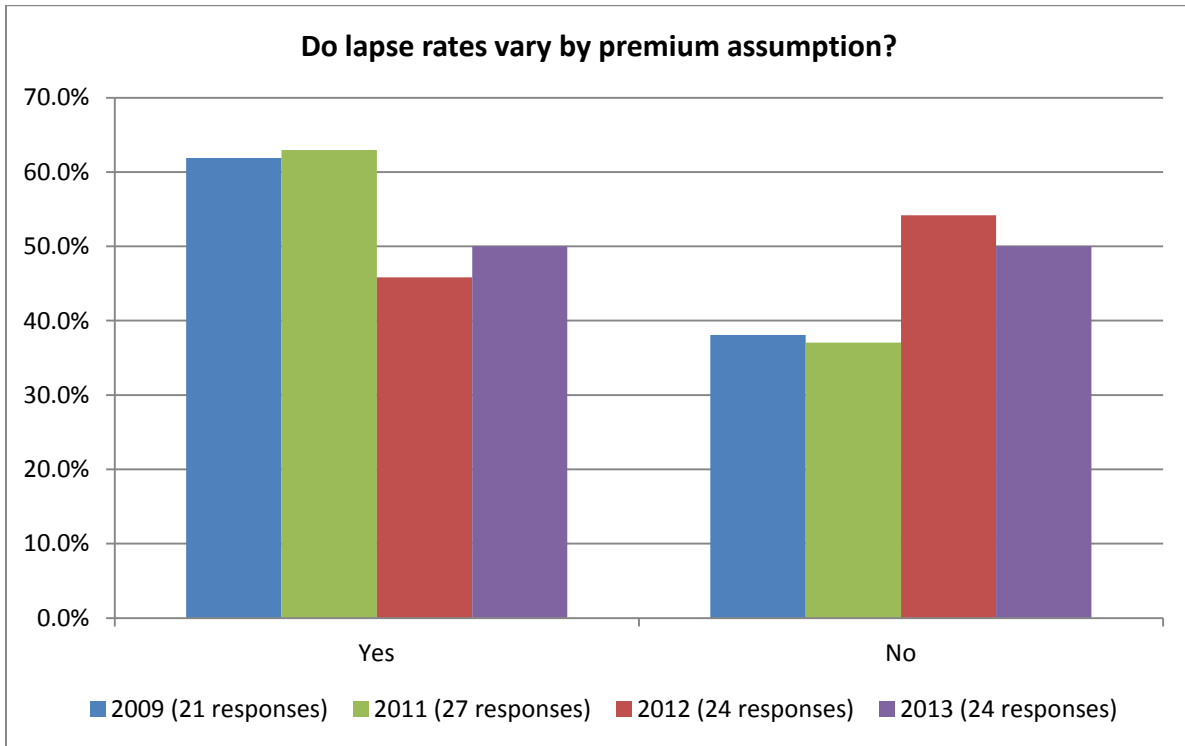


Figure 24

Insurers were asked about the source of their lapse assumptions. Respondents could include more than one source, and 23 of 24 respondents (96%) included “Company experience” among their answers. “Actuarial best estimate” was the next most popular answer with 88% of respondents. About half of the companies chose “Industry study” (42%). “Consultant Advice” (38%) has continued to increase in popularity when compared to 20% and 11% in 2012 and 2011.

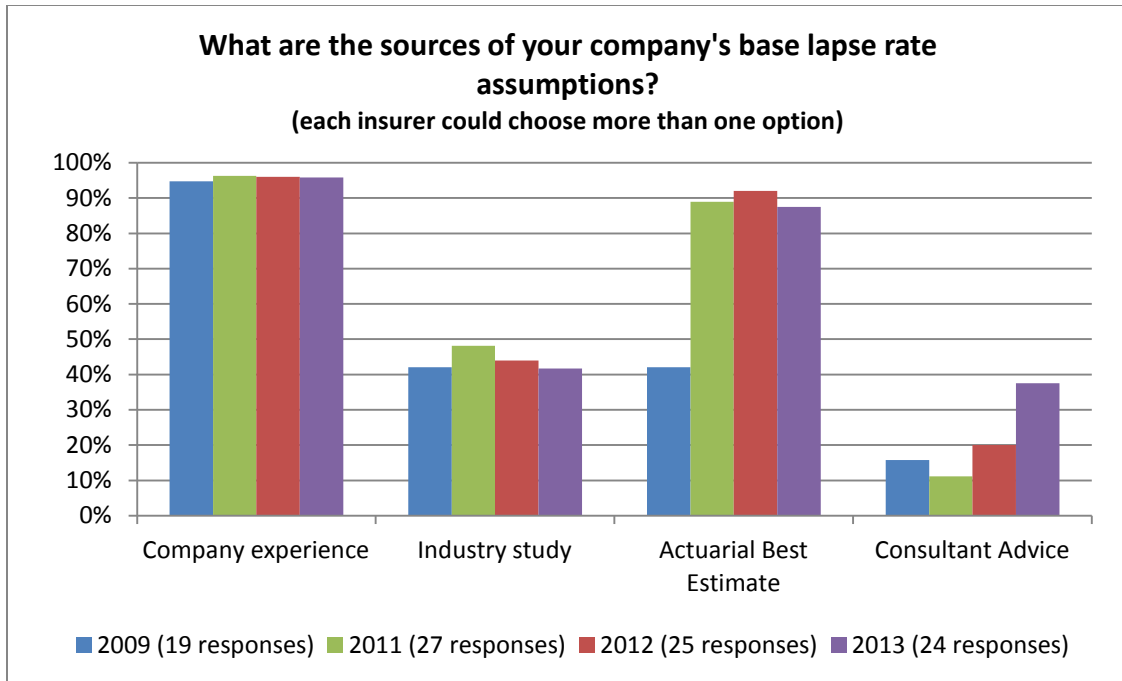


Figure 25

The survey then asked if companies perform lapse studies for UL policies with secondary guarantees, and if so, how frequently. Almost all companies (92%, 22 of 24) perform such lapse studies. Interestingly, similar to last year, one of the companies that selected “Company experience” did not indicate that they performed lapse studies. Most (73%) of those companies perform the studies annually.

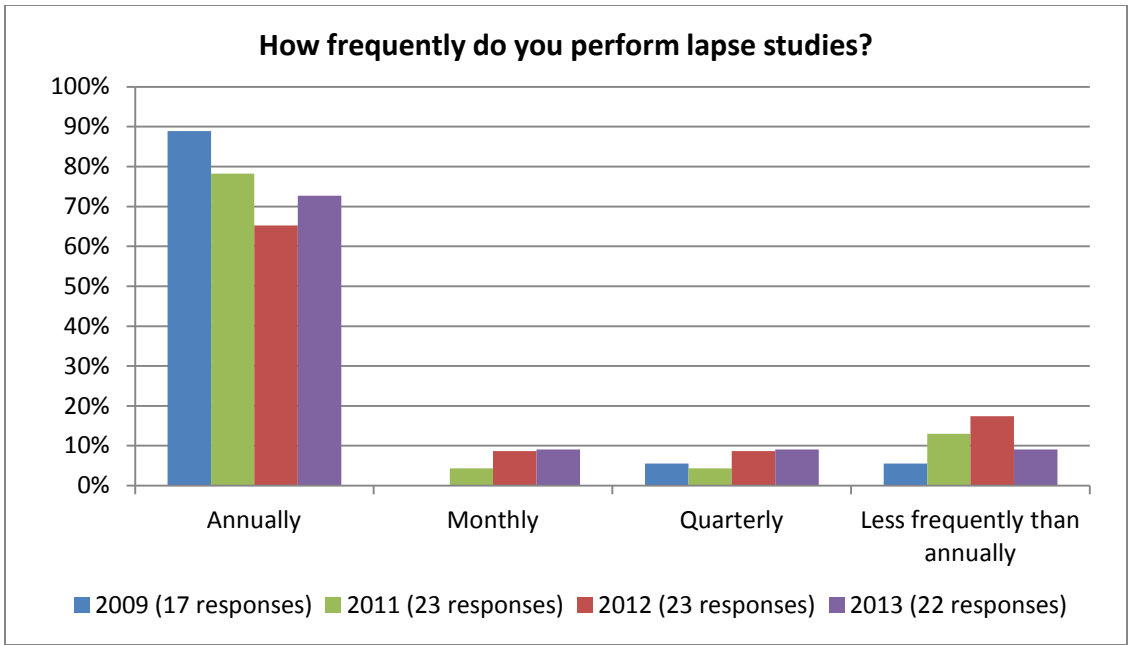


Figure 26

Companies were asked how many years of experience data were used in their latest study. Over 70% of the companies responding used 7 years or less of experience data in their latest lapse study. In 2012, over 50% of respondents used 8 years or more.

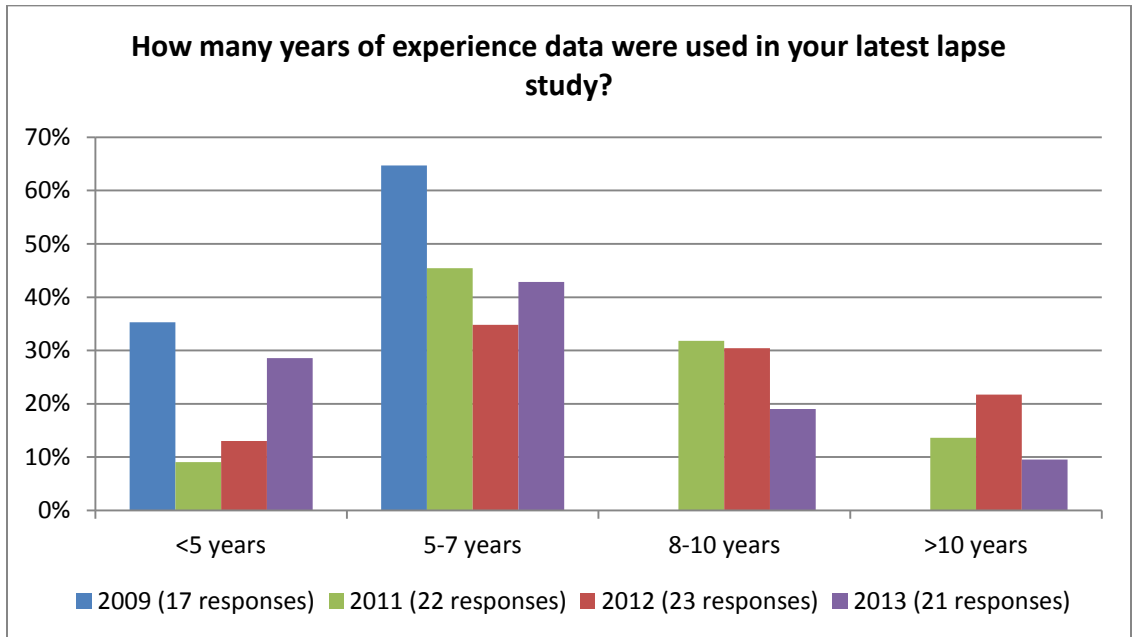


Figure 27

This year companies were asked about their dynamic lapse assumptions specifically. Of the 24 respondents, only 11 (46%) vary their assumptions dynamically (Figure 28). Those companies that vary assumptions dynamically overwhelmingly use (82%) actuarial best estimates in setting those assumptions (Figure 29). However, company experience experienced a significant increase as 45% of companies listed it this year compared to 22% in 2012.

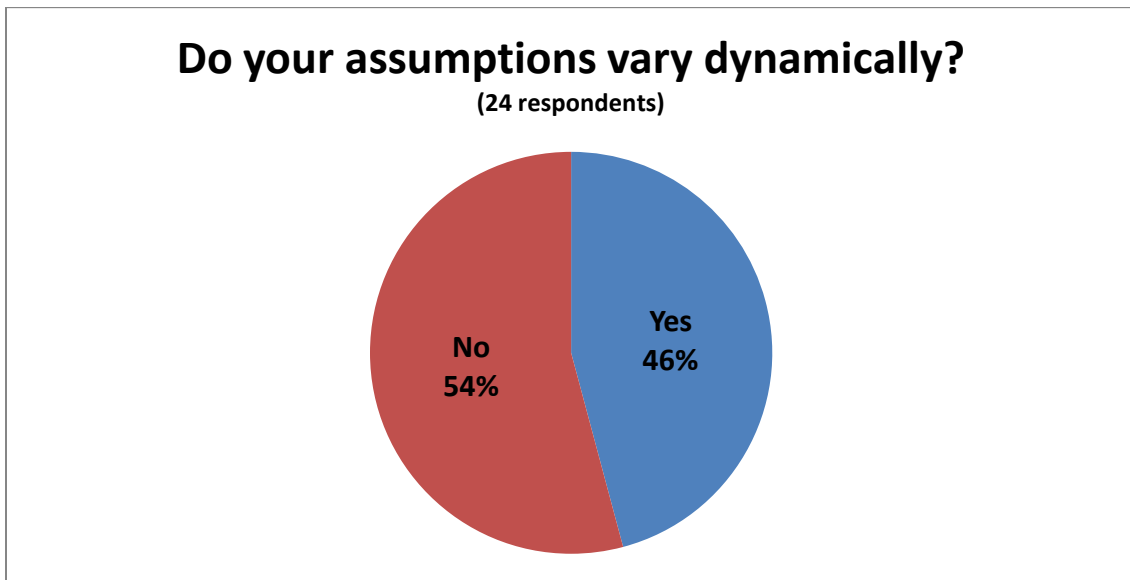


Figure 28

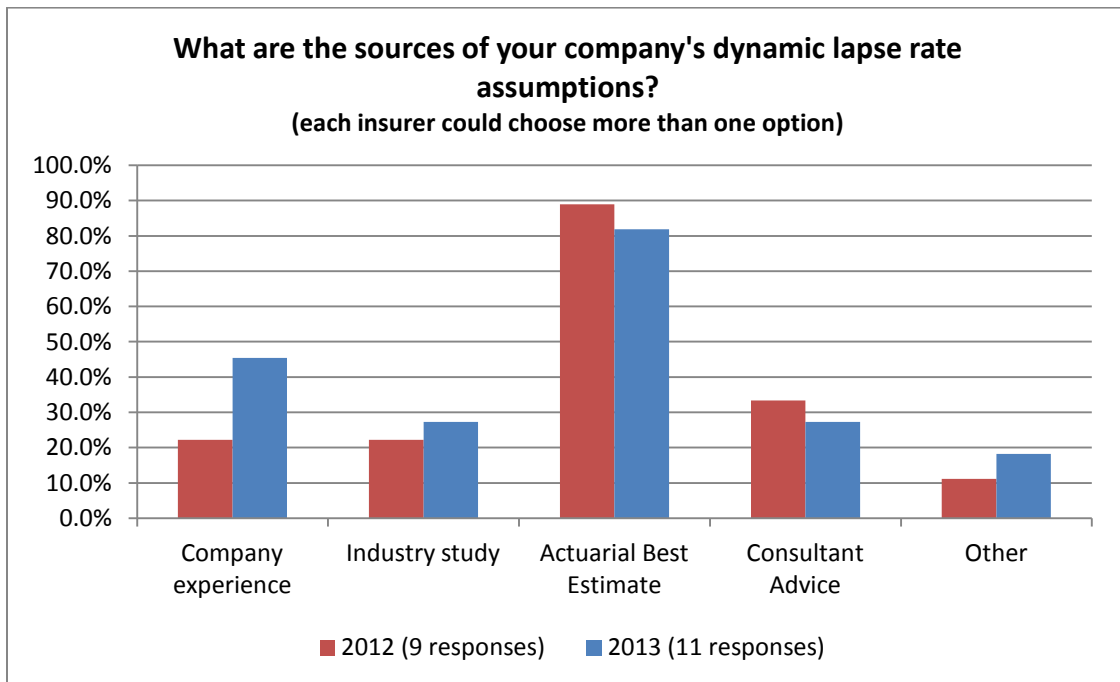


Figure 29

Mortality Assumptions

Companies were asked in Question 9 about their mortality assumptions in the tail.

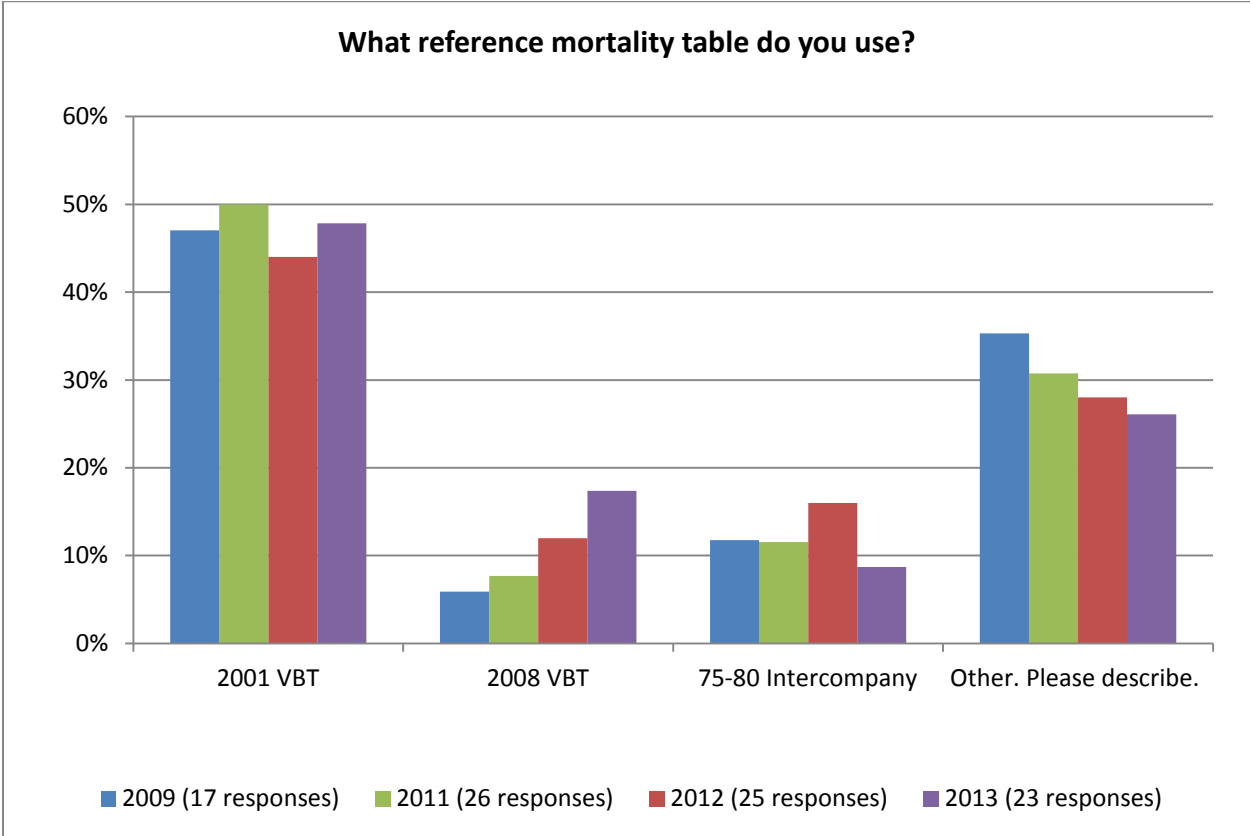


Figure 30

The 2008 VBT table continues to trend upward. In addition, of the six companies that responded “Other”, three of them mentioned a variation or combination of the 2008 VBT table. Other responses included the 90-95 Select and Ultimate Table, tables derived from company experience, and tables derived from consultant or reinsurer experience.

Thirteen companies provided ultimate mortality rates per 1000 at higher attained ages for various underwriting classes for males and females. The minimum, maximum and median of those responses are summarized below, with the 2001 VBT rates (ultimate, sex and tobacco distinct, age nearest birthday) for comparison.

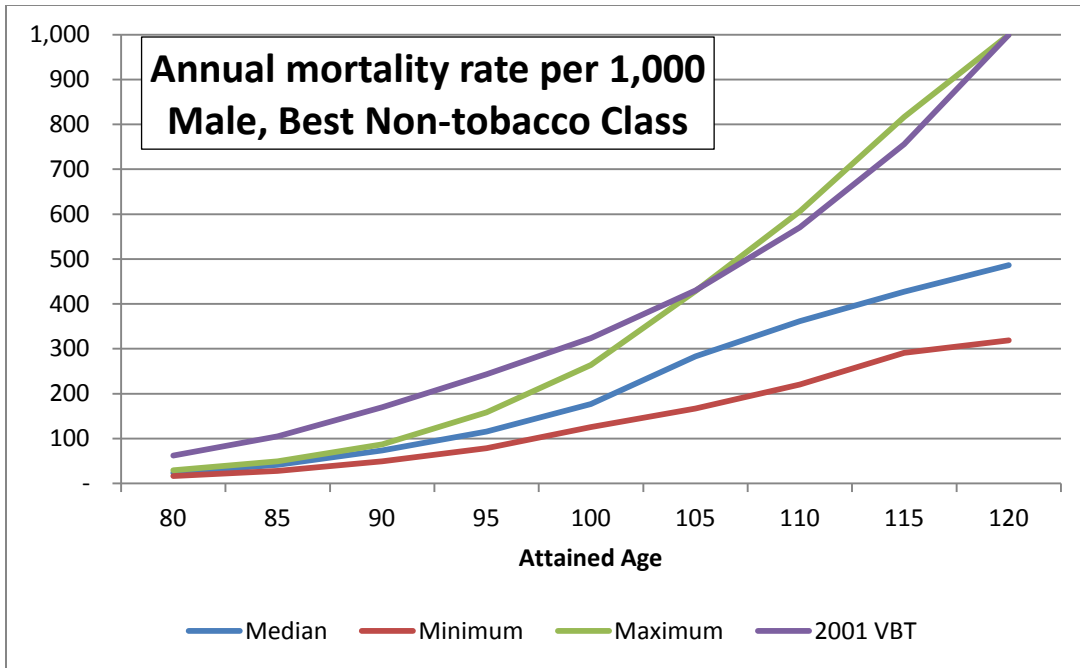


Figure 31

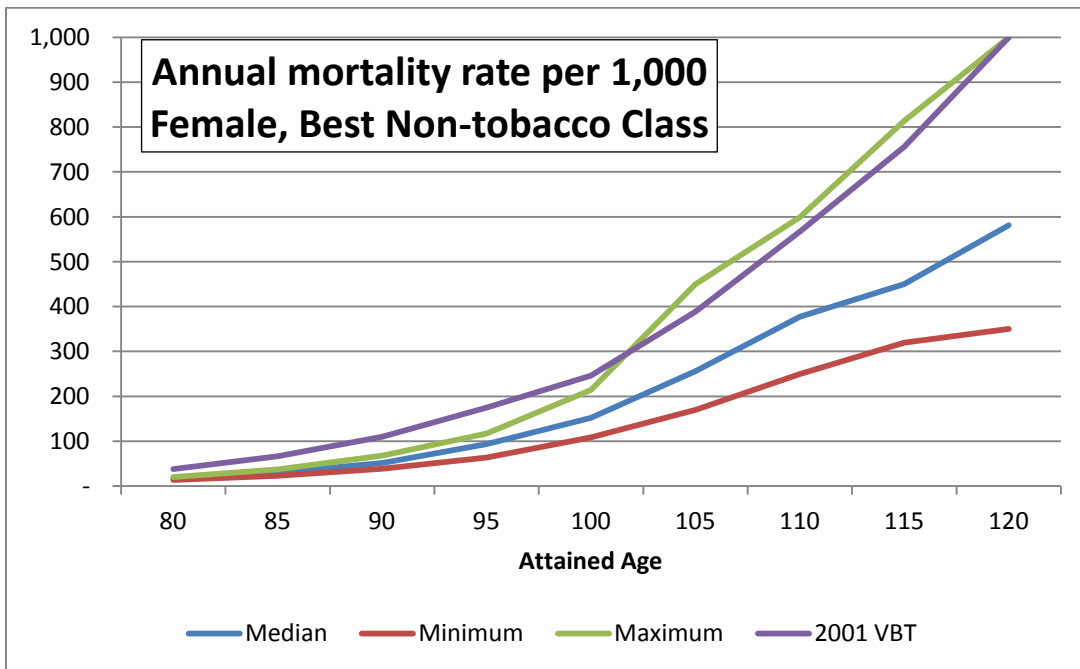


Figure 32

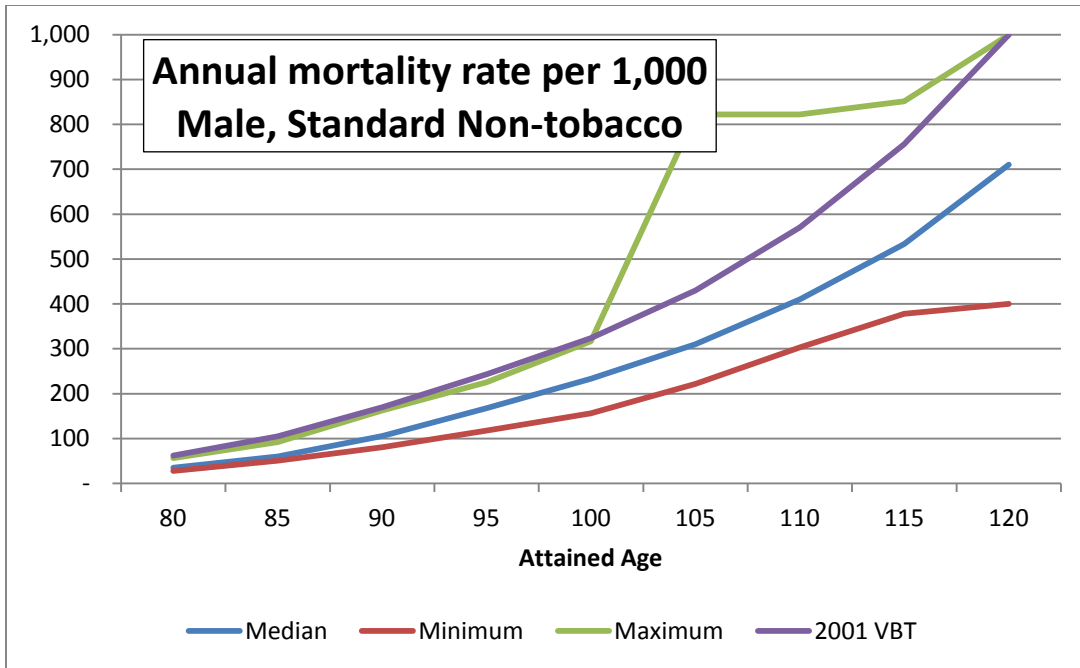


Figure 33

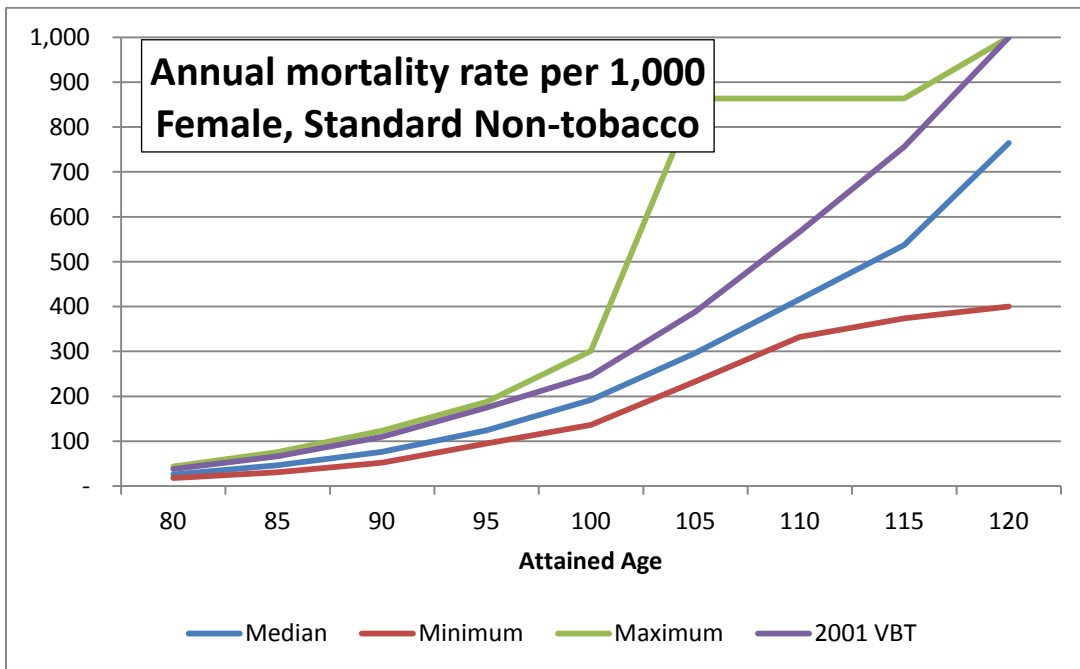


Figure 34

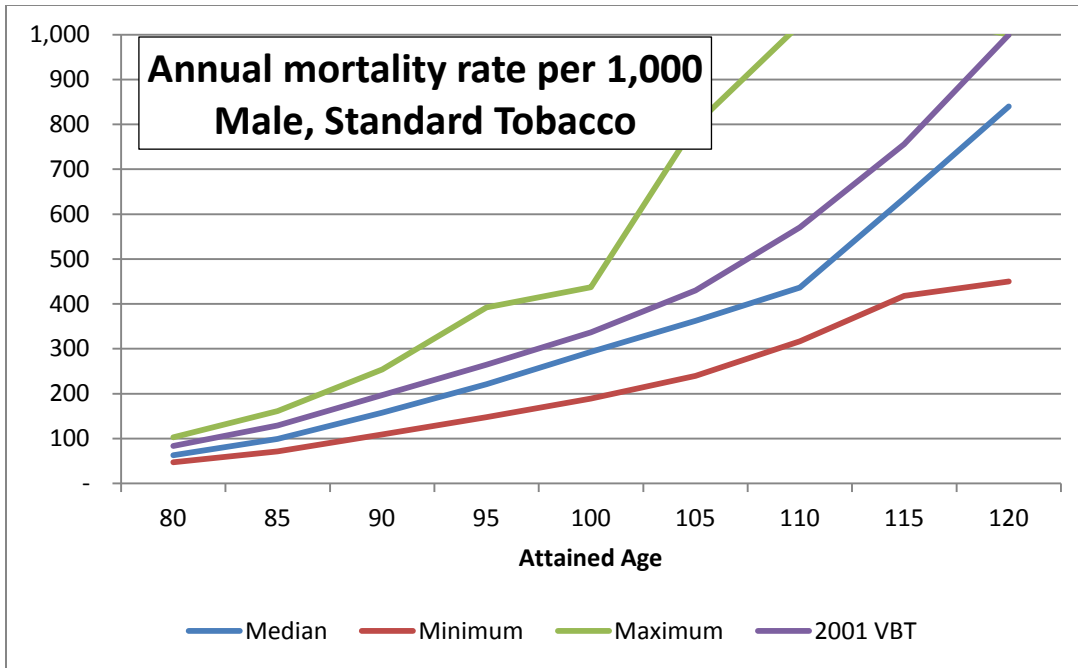


Figure 35

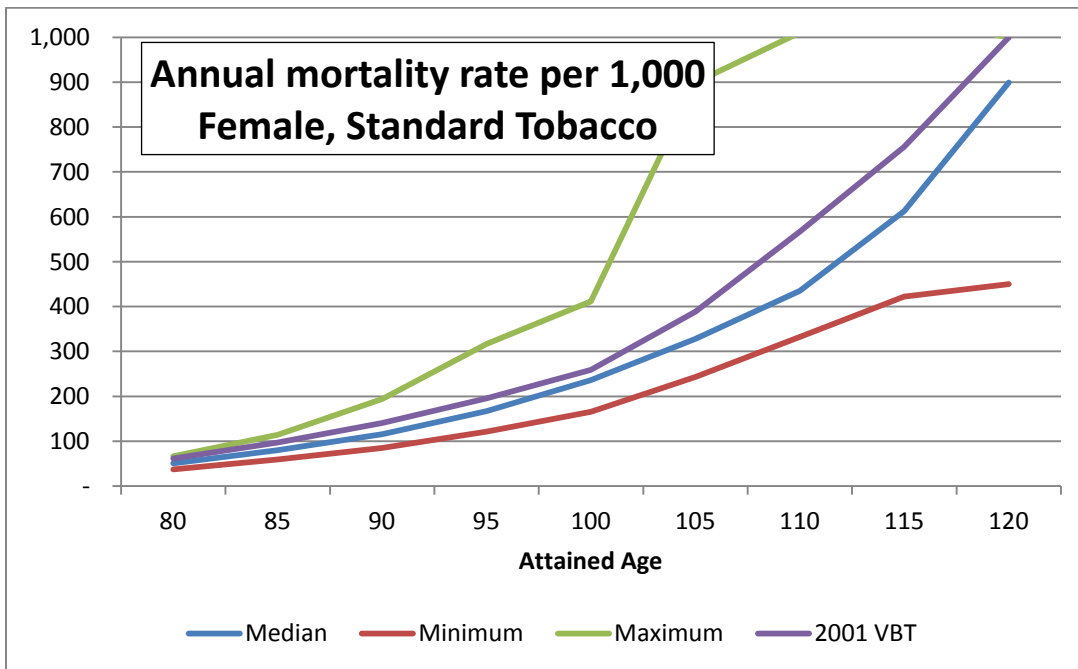


Figure 36

Companies were asked again this year about underwriting classes. The data continues to show a trend of increasingly using more underwriting classes. Several companies indicated that they are using two classes for part of the business and four for other parts. An example of this would be where a company used two non-smoker underwriting classes for older business, but their newer business uses four non-smoker underwriting classes.

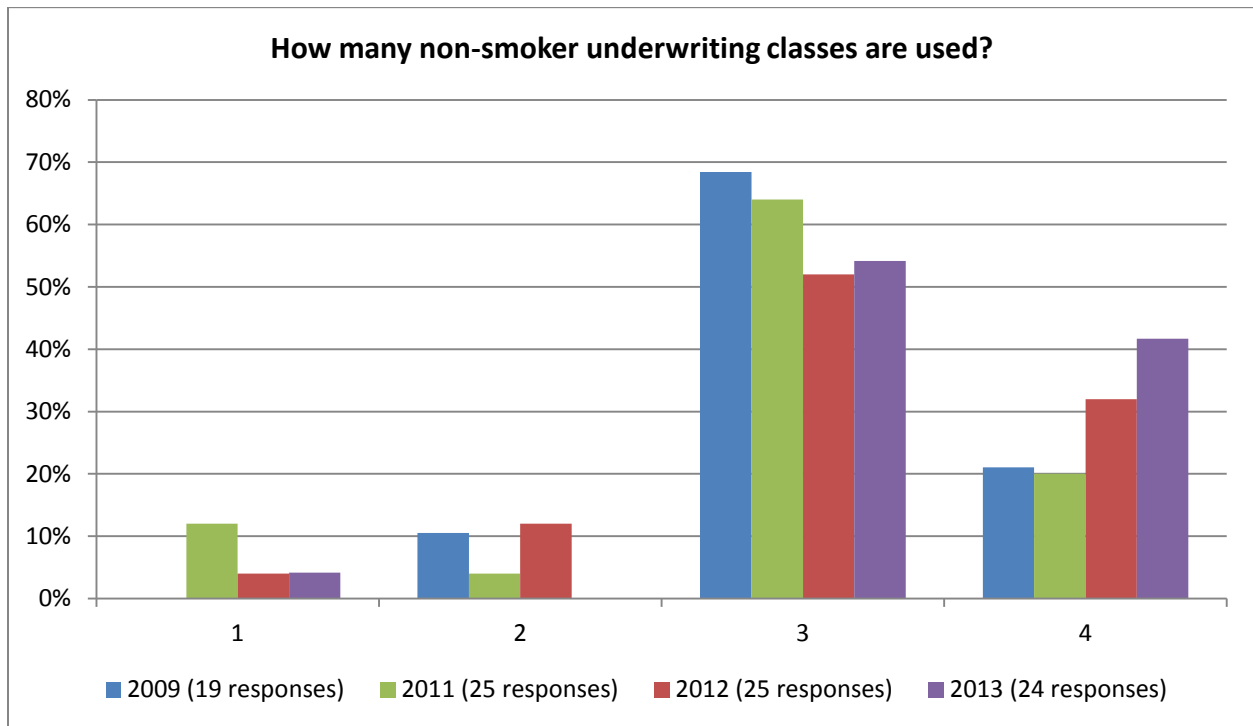


Figure 37

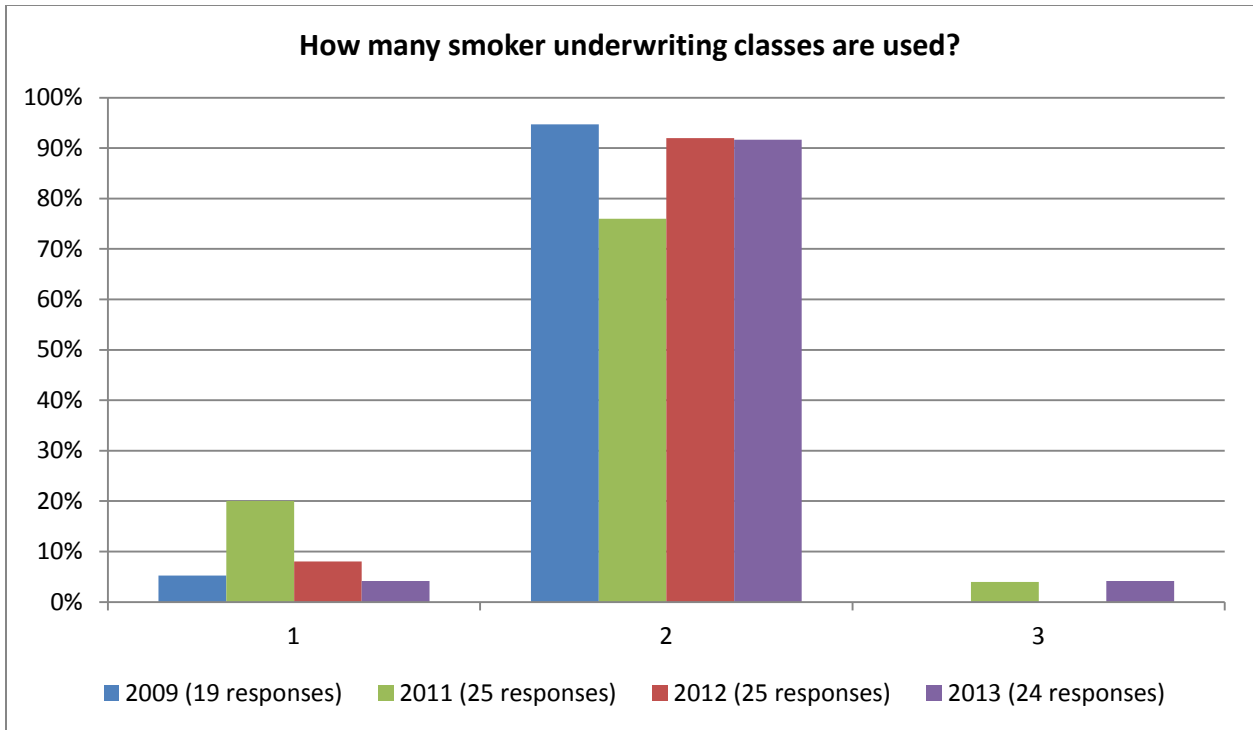


Figure 38

The percentage of respondents incorporating future mortality improvement into their models has increased to 78% (18 of 23).

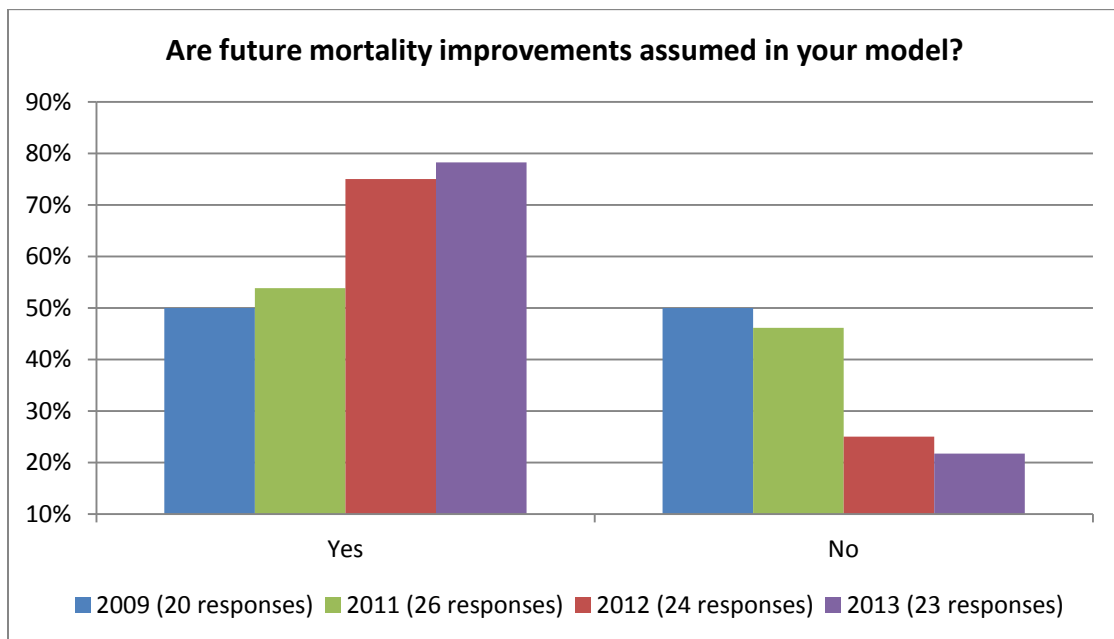


Figure 39

Most of the 18 companies modeling future mortality improvement had assumptions that were sex, age and/or duration distinct. All categories show an increase in responses for 2013. This is likely somewhat due to a limitation in the 2012 survey that only allowed companies to choose one category (although some respondents specified multiple categories through their comments).

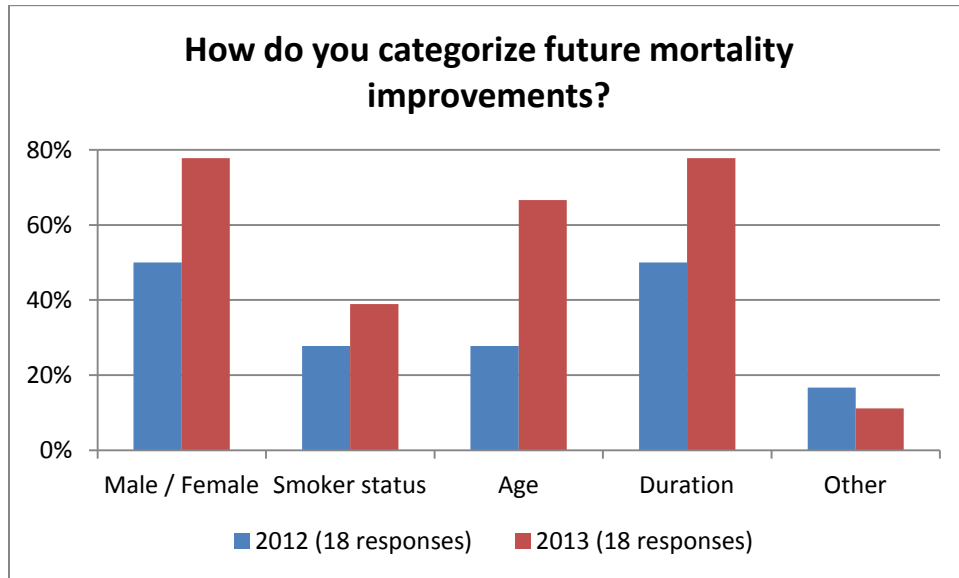


Figure 40

Twenty-four companies responded to a question about whether mortality assumptions change when the secondary guarantee is in-the-money. For the fourth consecutive survey respondents were unanimous in their stance that mortality assumptions do not vary by the in-the-moneyness of the secondary guarantee.

The survey then asked for other assumptions that the companies considered critical to analyzing experience in the tail. A company could indicate more than one response.

Critical Assumptions

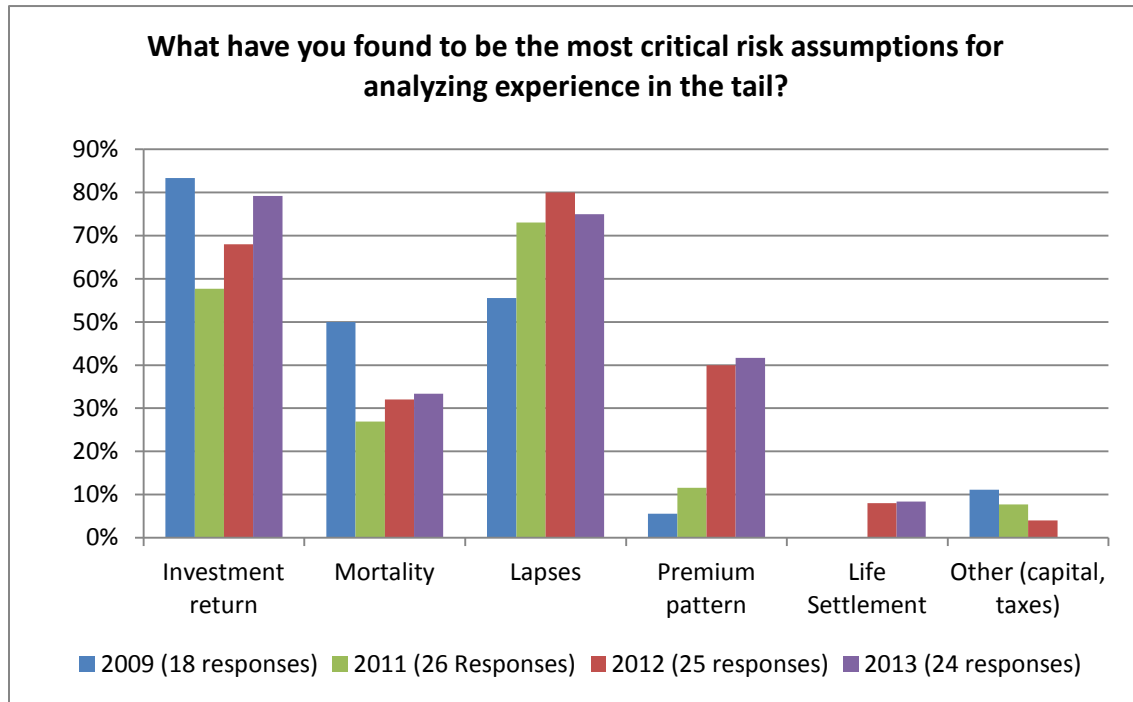


Figure 41

In 2011 we saw a shift in attention from investment return assumptions and mortality assumptions towards lapse assumptions. Last year the importance of investment returns and mortality assumptions saw slight increases along with the importance of lapse assumptions. There was also a large increase in the importance of premium pattern and life settlement assumptions, but 2012 was the first year that they were specifically included as a suggested answer to the question. Investment return has reemerged as the most common response (79%) in 2013. 2013 responses were well aligned with 2012 responses

Respondents Profile

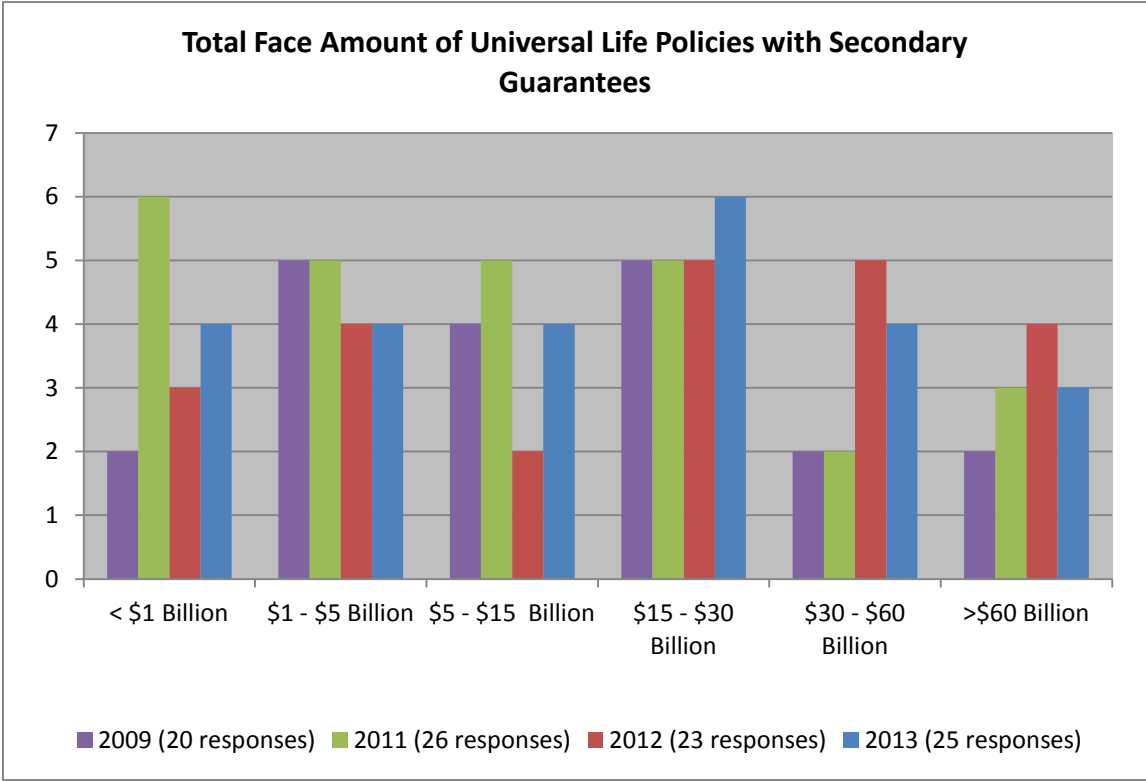


Figure 42