MILLIMAN WHITE PAPER

Milliman VALUES™
2018 GLWB Industry utilization study

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In 2014, Milliman kicked off a series of policyholder behavior experience studies on variable annuities using predictive analytics, starting with an industry lapse study. The goal of our Milliman VALUES™ series is to evaluate and improve common assumptions using advanced analytics, and to provide implementable suggestions. Past studies include:

- The 2014 Milliman VALUES Lapse study assessed the drivers of lapse behavior, using 117 million observations from 12 distinct companies with exposure between 2007 and 2013. Total assets under management in the dataset at the end of 2012 was roughly $500 billion. The report detailed many complex relationships between policyholder characteristics and lapse behavior for variable annuities with GMAB, GLWB, GMWB, and GMIB riders as well as those with no living benefit riders.
- The 2016 Milliman VALUES GLWB Utilization study looked at both when the policyholders chose to begin taking lifetime withdrawals, as well as how efficiently they continued to take them thereafter. The study included two million policyholders from seven large VA writers, representing roughly $220 billion of account value (based on initial purchase amounts) and covering a wide range of GLWB product designs as well as demographic attributes. Our experience spanned from 2007 through 2015. Total assets under management in the dataset at the end of 2012 was roughly $220 billion. The report also shared some emerging insights into how inefficient withdrawal behavior might influence lapse.

Our 2018 Milliman VALUES GLWB Industry lapse and utilization studies included three million policyholders from eight large VA writers, representing roughly $350 billion of account value and covering a range of GLWB product designs as well as demographic attributes. Our experience spanned from 2007 through 2017. We studied when policyholders chose to begin taking lifetime withdrawals, how efficiently they continued to take them thereafter, and what drove them to lapse. With this utilization study, we significantly increase the amount of exposure in late durations—allowing us to share the following insights into several important areas of emerging experience.

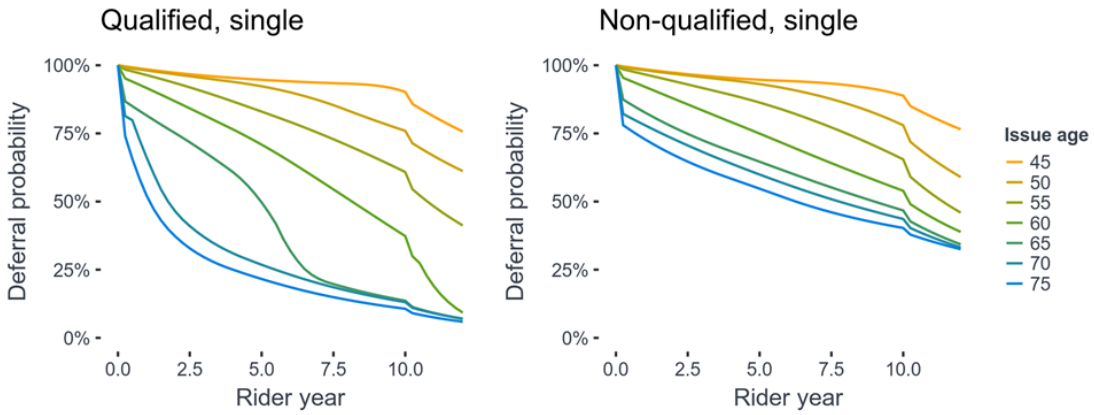
Emerging GLWB utilization and lapse behavior

Utilization commencement is elevated in the first year after benefit base rollups end. In the first year after benefit base rollups end, policyholders commence lifetime withdrawals at a rate that is approximately 3 times higher than the commencement rate observed on otherwise similar policies during the benefit base rollup period.

A large portion of policyholders continue to defer GLWB utilization commencement beyond the first year after the benefit base rollup period ends. Our predictive model based on industry experience shows, for example, that approximately 50% of policyholders with a 10-year rollup who purchased their policy at age 55 will continue to defer GLWB utilization beyond policy duration 11. This may be surprising relative to expectations given that such policyholders can expect no further rollups to be credited to their benefit base, they have just passed age 65 when many products feature an increase to their allowed annual withdrawal percent, and they have reached a typical retirement age when many begin to access savings.

Utilization experience at late durations shows large differences between tax-qualified and non-qualified policyholders. Though deferring for 12 years (the current limit of our data) is not equivalent to “never” withdrawing, it appears likely a notable portion of nonqualified policies will not withdraw. For qualified policies on the other hand, this is unlikely to be true, i.e. all qualified policies will withdraw by some ultimate duration. The details of these behaviors are likely to be further influenced by product-specific features such as rollups (as just discussed), and potential future increases in maximum allowed withdrawal amounts (MAWAs), so this will continue to be best addressed by individual companies.

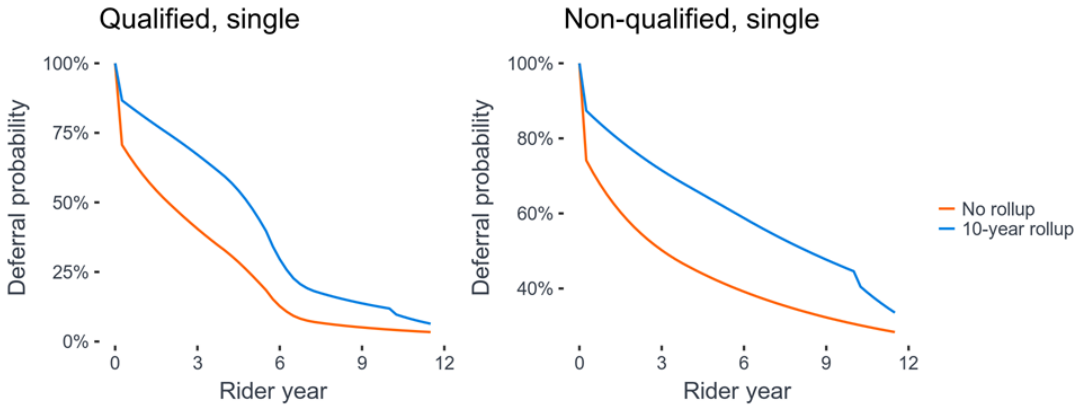
FIGURE 1: PREDICTED DEFERRAL PROBABILITIES FOR POLICYHOLDERS ELIGIBLE AT ISSUE WITH 10-YEAR ROLLUP



Inefficient utilization behavior in prior years is associated with elevated subsequent lapse behavior. Policyholders withdrawing more than the MAWA are about twice as likely to lapse in the subsequent year as policyholders withdrawing less than the MAWA. In turn, policyholders taking less than the MAWA are about 1.25 times as likely to lapse as those withdrawing efficiently. For example, consider a policyholder with an at-the-money policy and a 7-year surrender charge period. If this policyholder had been moderately overutilizing leading up to the shock year, our model would predict her lapse rate to be 21% in the shock year. Had she been moderately underutilizing, our model would predict 9%, and had she been utilizing efficiently, our model would predict 7%. The exact multipliers will vary based on the cohort and duration. It is expected that many overutilizers take the next step and lapse. However, it may be surprising to realize that those who are taking a smaller-than-allowed amount are also more likely than efficient utilizers to exit the policy. Companies should consider the potential impact of differentiating by past utilization behavior when setting lapse assumptions, and how best to implement it in actuarial projection models.

Benefit base rollup features have a strong dampening effect on policyholder utilization commencement while they are in effect. As expected, we observed that policyholders defer utilization commencement in pursuit of higher guaranteed lifetime withdrawal amounts provided by rollup provisions. Figure 2 shows the gap in deferral probability between policyholders with and without a benefit base rollup. While the rollup is in effect, the difference in deferral rates is large, but it quickly tapers off once the rollup has ended. Again, this figure represents a single cohort, predictions vary accordingly for other combinations of drivers.

FIGURE 2: PREDICTED DEFERRAL PROBABILITIES FOR POLICYHOLDERS WITH VS. WITHOUT ROLLUP



The implication of people behaving differently with and without a rollup is tremendously important. As large cohorts of policies exit their rollup period, the industry as a whole will continue to see a larger percent of policyholders beginning utilization each year. With more experience, it will be possible to delve deeper into nuances among these late durations. It is therefore important that the industry monitor emerging experience closely over the next couple of years in order to stay on top of how this critical element affects their expected payouts.

Our goal

This study builds on the effort we began in 2014 to provide insights into policyholder behavior based on scientifically sound principles. The report contains a comprehensive analysis of all the drivers we studied related to GLWB utilization, and for each driver the report provides more details, including charts, tables, etc. It also provides the models for both timing of first GLWB utilization and efficiency of utilization, which are designed to be straightforward to implement in an actuarial projection.

We go beyond the report, however, giving subscribers access to Recon® GLWB, an interactive, web-based platform that allows them to visualize and download both the data and predictions from the models in an effective way. Recon GLWB is updated each quarter as participants send in updated experience data. Each year, we fully refresh the platform with updated models and new insights based on the VALUES studies.

Our goal is to continue to expand the insights we provide via the VALUES studies on the Recon platform to help our clients with the following:

- To closely monitor the emerging industry experience;
- To use industry data to benchmark company experience against the industry and supplement assumption setting, particularly where a company's own experience is scarce;
- To allow companies with no GLWB products to get a view on behavior as they contemplate market entry;
- To support inforce management and product development strategies.

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For more information on the purchase of the full 2018 GLWB utilization or lapse report, and to participate in our ongoing industry experience studies, please contact:

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