

# Utilization Assumptions of Guaranteed Living Benefits for Deferred Annuities

A Resource and Discussion Guide



AMERICAN ACADEMY  
*of* ACTUARIES

[actuary.org](http://actuary.org)

MAY 2024

## Life Experience Committee

Donna Claire, MAAA, FSA—*Chairperson*  
Robert Astleford, MAAA, FSA  
Mary Bahna-Nolan, MAAA, FSA  
Mary Elizabeth Caramagno, MAAA, FSA  
Lori Helge, MAAA, FSA  
Allen Klein, MAAA, FSA  
Leonard Mangini, MAAA, FSA  
John R. Miller, MAAA, FSA  
Melissa J. Miller, MAAA, FSA  
Craig Morrow, MAAA, FSA  
Maambo Mujala, MAAA, FSA  
Catherine Murphy, MAAA, FCIA, FSA  
Marianne Purushotham, MAAA, FSA  
Leonard Mangini, MAAA, FSA  
Alan Routhenstein, MAAA, FSA  
Mary Simmons, MAAA, FSA  
Connie Tang, MAAA, FSA  
Kyle Wan, MAAA, FSA  
Yuwen Wang, MAAA, FSA  
Shuhan Wang, MAAA, FSA  
Michael Watanabe, MAAA, FSA  
Haofeng Yu, MAAA, FSA

*This document is not a promulgation of the Actuarial Standards Board, is not an actuarial standard of practice (ASOP), is not binding upon any actuary and is not a definitive statement as to what constitutes generally accepted practice in the area under discussion. This document should not be treated as guidance but rather it should be read and utilized as a list of considerations and resources on a particular topic. Events occurring subsequent to this publication of the topic may make the practices described or referred to in this document irrelevant or obsolete.*

The American Academy of Actuaries is a 20,000-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

## Contents

<b>Introduction .....</b>	<b>1</b>
<b>Descriptions of Various GLBs.....</b>	<b>2</b>
<b>Data Sources Within the Company .....</b>	<b>4</b>
<b>Other Data Considerations .....</b>	<b>5</b>
<b>Assumption Structure and Modeling Approach.....</b>	<b>6</b>
Overall Modeling .....	6
Items Specific to the Withdrawal Assumptions.....	7
<b>Timing of When the Guaranteed Living Benefit Utilization Begins .....</b>	<b>9</b>
Reasons to Delay Utilization .....	9
Reasons to Have Earlier/Excess Utilization .....	10
<b>Never-Utilize Considerations.....</b>	<b>10</b>
<b>Sample Utilizations Formula .....</b>	<b>11</b>
<b>Sample Table .....</b>	<b>13</b>
<b>Sources of Information.....</b>	<b>14</b>
<b>Summary .....</b>	<b>15</b>



**AMERICAN ACADEMY  
of ACTUARIES**

AMERICAN ACADEMY OF ACTUARIES  
1850 M STREET NW, SUITE 300, WASHINGTON, D.C. 20036  
202-223-8196 | WWW.ACTUARY.ORG

© 2024 American Academy of Actuaries. All rights reserved.

**May 2024**

# Utilization Assumptions of Guaranteed Living Benefits for Deferred Annuities

## Introduction

In principle-based reserving, asset adequacy testing, and profitability testing, actuaries often need to develop assumptions for benefits where there is not sufficient data. One assumption that may lack sufficient data to develop a robust assumption structure is the withdrawals expected from products that provide guaranteed living benefits (GLBs).

These benefits are typically attached to a variable annuity (VA) or fixed index annuity (FIA) product, and will guarantee a stream of payments, either for life or a specified number of years. Typically, there is a charge for this benefit, which may include a charge of a number of basis points times the account value or as a percentage of account value. The account value for this benefit (the income account value or benefit base) may or may not be equal to the contract account value. The payout benefit is typically based on the income account value of the underlying variable or fixed indexed annuity at the time payouts begin. The contractholder may choose when to start the payments.

The GLB amounts guaranteed in the contract are typically based on the income account value at the time of withdrawal. Economically, there are times when it seems that the election of the GLB would be optimal. However, there are several reasons why this may not be when the contractholder elects the benefits. There are many reasons why a contractholder may not elect a GLB at an optimal time, and an exhaustive list is beyond the scope of this guide. However, one example is that a contractholder may believe the market will rapidly grow, so the contract's account value will continue to grow, and thus the contractholder puts more emphasis on growth over income. Also, if a contractholder is in poor health, they may prioritize other financial goals over lifetime income.

Unlike other assumptions that are “one-directional” (i.e., either higher or lower is aggressive), GLB utilization can be inefficient, namely not maximizing the benefits and claims, at both ends of the spectrum. Examples include:

- a. Delaying withdrawals or taking withdrawals “too soon” (e.g., before it’s allowable under the benefit, not waiting for the end of a deferral period / when a bonus or an increase in a tiered benefit is applied).
- b. Taking less than the maximum allowed under the contract or taking excess withdrawals (more than the contractual maximum and effectively reducing the guarantee in the process).

Contractholders who choose to take out either more or less than the GLB amount can impact their ultimate payouts. There may also be a “never utilize” cohort—those who choose never to withdraw from their annuity contracts. This guide discusses items that may be considered by actuaries modeling GLB utilizations.

If a contractholder will not elect a GLB because the value of the GLB is less than the actual account value (i.e., out of the money), that may have a small, positive impact on profitability, because the company continues to collect fees each year without having to pay out benefits. Assuming that a contractholder will not elect a GLB when its benefit is greater than the actual account value (i.e., in the money) can have a more positive impact on the assumed profitability of the business because the company would not have to put forth additional reserves to support the payout benefits.

Allowing companies to assume that there is a “never utilize” cohort may understate the reserves required, especially when a company assumes its “never utilize” cohort is a material proportion of its total business. This guide suggests some reasons why there may be a “never utilize” cohort. It also provides sources of information on how to develop reasonable assumptions regarding GLB withdrawals.

## Descriptions of Various GLBs<sup>1</sup>

As variable annuities were originally designed, they transferred most of the investment risk to the contract owner. Accordingly, the contract owner could incur a significant loss if they surrendered the contract when the financial markets were performing poorly. Because of the risk-averse nature of most contract owners, life insurance companies began offering increasingly more generous guarantees.

<sup>1</sup> Most of this section comes from Chapter 19 of *Statutory Valuation of Individual Life and Annuity Contracts*, Fifth Edition; 2018.

In the mid-1990s, insurance companies began offering guaranteed living benefits (GLBs) to address this concern. One of the first popular living benefits was a guaranteed minimum income benefit (GMIB). A variable annuity contract with a GMIB promised a minimum income benefit on a life annuity for each dollar of premium paid if the individual annuitized after a date specified in the contract. For example, if a 45-year-old male made a \$100,000 single deposit on the inception date of a variable annuity contract, the life insurance company might guarantee minimum income benefit of \$1,000 per month through an immediate life annuity starting at age 65. Thus, after a certain date, the owner of a variable annuity contract could annuitize and receive this GMIB as a life annuity regardless of investment performance of the account balance.

However, a traditional GMIB requires annuitization. A major drawback of both fixed annuities and variable annuities not addressed by the insurance industry is when an individual annuitizes the contract for a life contingent annuity, the contract owner loses his or her liquidity—and in many instances, their death benefit. An article in *Best's Review* captures this concern, “But for most, the biggest drawback to annuitization is losing access to savings. Whether for an inheritance, illness or a nursing home, people want their money available.”<sup>2</sup>

This drawback was also noted in the book *Variable Contracts*, “One long-standing criticism of the annuity focuses on the very feature that others hold up as its primary benefit: the income guarantee. More specifically, critics argue that the irrevocability of the annuitant’s decision to pay benefits for the annuitant’s lifetime—locks consumers into a financial contract that may one day prove unsuitable.”<sup>3</sup>

In the early 2000s, a new product was introduced that allows systematic withdrawal as an alternative to annuitization by annuity companies called guaranteed minimum withdrawal benefits (GMWBs). The advantage of this distribution method is its flexibility; contract owners may suspend and resume payments as well as maintaining continued stock/fund exposure. Consumers who are uncertain about their income needs (for example, early retirees) could find GMWBs to be an appealing alternative to annuitization. GMIBs, though, offer a more predictable income for those consumers less concerned about maintaining stock/fund exposure.

<sup>2</sup> “Annuities Sellers Shift Focus to Payout Benefits”; *Best's Review*; October 1996.  
<sup>3</sup> *Variable Contracts*; Dearborn Financial Publication; 1995; p. 89.

Another product that entered the marketplace was equity-indexed annuities (now called FIA). An equity-indexed annuity is a fixed annuity where the rate of interest is linked to the returns of a stock index, such as the S&P 500. Equity-indexed annuities may appeal to moderately conservative investors. The GMWB option is a feature on many of the fixed indexed annuities.

A disadvantage to some of the systematic withdrawal benefits was that it would only make payouts if there was money in the account. Some contractholders were concerned they might outlive this money, so some insurance companies offered guaranteed payouts if certain conditions were met. These guarantees have risks to the insurance companies in that it is possible that they may be paying out benefits when there is no money left in the account. Insurance companies impose risk charges on the variable annuities and fixed indexed annuities that have these enhanced benefits.

At this time, there are a variety of GLBs in the market where the guarantees can be exercised by the contract owner while he or she is still alive. This category includes:

- Annuitization (or payout annuity) options
  - Annuity certain
  - Life contingent annuity
  - n-year certain and life thereafter
- Guaranteed minimum accumulation benefits (GMAB)
- GMIB
- GMWB
- Guaranteed minimum withdrawal benefits for life (GMWBL)

## Data Sources Within the Company

To better understand how a particular company's experience will develop, there are sources of information within the company that could give more information to the actuary as to expectations of the use of GLBs. Sources include:

- a. **Contract, application, and prospectus:** If a qualified or appointed actuary wants to understand more about the contract, reading the contract and prospectus can show the actuary what the contractholder sees and how the benefits are described. Additional insights into policyholder responses and elections/defaults selected can be obtained from how information is presented on the application.

- b. Product, Pricing, and Investment Teams:** The product, pricing, and investment teams can explain what the goals of the GLB is and when they think it is best utilized.
- c. Marketing Materials:** How are the variable annuity GLBs (VAGLB) or FIA with GLBs marketed? Is the GLB feature prominently displayed in the material? Are there examples shown as to when the GLB can be most valuable? For example, does it show how delaying the election can increase the payouts (particularly if there are bonuses)?
- d. Sales Force:** Some companies have actuaries involved in sales meetings. This is a good opportunity to find out what the contractholder is being told by the agent or broker. Insights from the distribution force (from talking to policyholders, what they are seeing in the industry), and the nature and impact of the ongoing distribution force contact can also impact when a contractholder elects a GLB.
- e. Statements Sent to Contractholder:** Annual information sent to the contractholder can be useful to actuaries. Key information may include:
  - Is the information regarding GLBs displayed in a fashion that would be understandable to a typical contractholder?
  - When and how are policyholders notified of various events or any default options?
  - What happens for non-responses, or retention efforts (e.g., that explain the value of benefits either proactively or in reaction to a call)?
- f. Service Centers:** Some actuaries have found it useful to spend time in the service centers. Insights from service center employees or records can provide information on why contractholders take withdrawals, lapse, and the types of questions or comments they make when requesting or setting up withdrawals.

## Other Data Considerations

In reviewing a company's own experience regarding GLBs, as stated in the prior sections, there are many factors that can influence when and how much a contractholder may withdraw from their contract. Company data may have factors that influence results that are inconsistent in certain periods. For example, Congress suspended Required Minimum Distributions (RMDs) during financial crises in 2008 and again in 2020 and 2022. Also, the age at which beneficiaries are required to take RMDs has changed over time, as has

the minimum amount of the RMD. There have also been changes in product features and/or richness over time. There are different behaviors for different “generations” of policyholders or products. Additionally, policyholder behavior changes over time (even within the same group). Also, a company may not have data at key points or ages yet. There are also challenges that stem from having a lot of categories, (e.g., different product features, differences in behavior of qualified versus nonqualified business, and different results by age and duration).

The actuary may want to consider predictive analytics.<sup>4</sup> By using these techniques, a company can add increased granularity to their assumptions. For example, companies can introduce new factors and evaluate their impacts without having to rely on traditional actual/expected (A/E) results for increasingly smaller blocks of business—which would not be credible. Predictive analytics provides better insight into the interaction of various factors, because it isolates the true effect of each factor by standardizing the effect of all other factors in the model.

## Assumption Structure and Modeling Approach

### Overall Modeling

An actuary who is setting up or reviewing a model reviews several variables to understand the modeled results. These variables include:

- a. **Product Design/Tax Requirements:** Factors that can vary by policy design or age—such as whether there is a period of years that the contract owner can be guaranteed to earn a certain interest rate that would be credited to the contract even if the underlying investments do not perform well—will encourage people not to take withdrawals immediately. The tax requirement to take required minimum distributions from qualified plans will typically have many contractholders starting withdrawals at age 73. These items would typically be considered when developing assumptions.
- b. **Cohorts:** Determine the number of cohorts to be modeled, which could include variations such as tax-qualified / nonqualified status, product type / generation, distribution channel, etc.

<sup>4</sup> [“The Use of Predictive Analytics in the Development of Experience Studies”](#); *The Actuary*; October/November 2015.



- c. **Efficient / Inefficient behavior?** Define what constitutes efficient or inefficient behavior. For example, at older ages where the GLB is not in-the-money, does the death benefit potentially become more valuable than a GLB benefit, particularly after considering taxes?
- d. **Relationship between claims and account values:** Withdrawals matter if they generate GLB claims where the benefits will continue to be paid even after the account values are exhausted, or if the claim amounts for other benefits within the contract. (Never-withdraw vs. withdrawing policyholders may not make much of a difference if projected account values are not likely to be exhausted.)
- e. **Historical experience versus future expectations:** Contractholders may become more efficient over time. Events could trigger changes in understanding of the product (e.g., newspaper articles, evolving views, or requirements for adviser/sales force/company interactions), changes in administrative practices, etc. An actuary projecting future benefits might consider accounting for these dynamics in their modeling.

### Items Specific to the Withdrawal Assumptions

Due to a myriad of factors, the experience regarding withdrawals will differ by company. Key items to consider regarding withdrawal utilization assumptions and modeling decisions include:

- a. **Granularity:** Whether there are (or should be) different assumptions depending on the number of cohorts being modeled, e.g., by tax-qualified / nonqualified, product type / generation, distribution channel, etc.
- b. **Distribution Channel:** With regard to distribution channels, a recent Society of Actuaries (SOA) study<sup>5</sup> of FIA withdrawals found differences in withdrawal rates by distribution channel, with the withdrawal activity being the highest when the product was sold by an independent broker-dealer, next highest being those sold by broker-dealers, and the lowest withdrawals when the product was sold by a bank, with broker-dealers.

<sup>5</sup> From the 2019–2020 *Fixed Indexed Annuity Contract Owner Behavior Experience Study*; Society of Actuaries; August 2023.

- c. **Withdrawal Timing:** This is an assumption regarding when withdrawals will start. As stated above, the age at which the withdrawals start partly depends on whether the business is qualified or nonqualified, with many first withdrawals from qualified contracts occurring at the RMD age. However, there are withdrawals occurring at all ages.
- d. **Withdrawal Amount:** This is an assumption regarding the percentage of dollar amount to withdraw once withdrawals are elected (note: may not be constant). Most withdrawals are efficient, defined as between 95% and 105% of the GLB amount: the 2019–2020 Society of Actuaries study<sup>6</sup> showed that efficient withdrawals averaged about 73% of the total withdrawals in the qualified annuities, 79% in the nonqualified business. The efficiency depended on age at withdrawal, with the least efficient withdrawers being those under 60 years of age.
- e. **Assigning or reassigning contract to withdrawal cohorts in the modeling:** These assignments are typically made before and after a policyholder starts withdrawing.
- f. **Interactions with other policyholder behavior assumptions:** Whether excess withdrawals are implicitly or explicitly modeled: Some companies may treat any excess withdrawals implicitly as part of the lapses; others may explicitly identify the excess withdrawal assumption and model it as an add-on to lapses. The 2019–2020 Society of Actuaries study<sup>7</sup> showed large differences in lapses by whether a contractholder was taking efficient withdrawals: If they were, the lapse rates were under 0.5%.
- g. **Updating assumptions for experience data:** It would be prudent for the actuary modeling the utilization assumptions to have a methodology for updating assumptions for experience data.
- h. **Never-Withdraw Assumption:** Because GLBs have only become a major benefit in many insurance companies in the past couple of decades, there is not that much experience available to determine how many contractholders will never withdraw. A potential reference point is the assumption being used by the National Association of Insurance Commissioners’ Life Actuarial Task Force’s Standard Projection Amount Task Force used as an assumption in projections that 5% of the Qualified and 20% of the Non-Qualified Business for Guaranteed Minimum Withdrawal Benefits would never withdraw.

<sup>6</sup> Ibid.  
<sup>7</sup> Ibid.

## Timing of When the Guaranteed Living Benefit Utilization Begins

When modeling GLB utilization, an actuary could determine what the optimal utilization point would be that would maximize the benefit to a particular policyholder. However, not all contractholders will elect to start benefits when it appears it would be optimal.

### Reasons to Delay Utilization

There are several reasons contractholders may not exercise a GLB option even when it appears to be in the contractholder's best interest. These reasons include:

- a. **Believing that waiting will increase base amounts:** The contractholder believes that if they wait a few years longer, the underlying benefits of the variable or fixed index annuity—such as the contract value, and thus the ultimate GLB payouts—will increase.
- b. **Bonuses:** There may be bonuses within the contract, e.g., an increase in benefit payouts every 10 years of non-election. Contractholders may decide to delay utilizing their GLB to capitalize on these benefits. This may be an example of the contractholder's decision being aligned with their best interest, because the contractholder's higher payouts may offset the delay in the start of the payouts, depending on the contractholder's life expectancy.
- c. **Alignment With Policyholder Goals:** The contract with the GLB may be part of a complex optimization strategy across multiple assets (vs. within a single annuity contract), benefits within the contract, financial needs, tax implications, etc.
- d. **Saving for Emergencies:** The contractholder views the variable or fixed index annuity with GLB as part of an estate plan and may be willing to begin the payouts only in the event of emergencies, such as using it to fund long-term care needs.
- e. **Lack of Benefit Understanding:** The contractholder does not understand the benefit that was purchased and when it may be optimal to utilize this benefit.

## Reasons to Have Earlier/Excess Utilization

There are also reasons that contractholders may make earlier or excess withdrawals. These include:

- a. **Financial Needs:** The contractholder may need funds from the contract.
- b. **Required Minimum Distributions (RMDs):** If the annuity is tax-qualified, the contractholder is required to take minimum distributions out each year starting at age 73.<sup>8</sup> If the annuity product was not designed with consideration to the current regulations, some contractholders may need to take distributions in excess of those that were stated in the annuity contract.
- c. **Lack of Benefit Understanding:** As with those who delay taking payouts, it is possible that the contractholder does not understand the benefit that was purchased.

## Never-Utilize Considerations

Due to the potential impact to profitability of the actuary assuming that there is a cohort in the model that never utilize, particularly if the contractholder has paid fees on the GLB, the prudent actuary who prices or determines the reserves on these blocks will likely pay particular attention to this assumption and be able to justify that this cohort exists. Some considerations for determining what percentage of the total block falls into this category:

- a. **Selection criteria for the never-utilize cohort.** One decision to be made: Is a contract placed in the never-utilize cohort based on particular characteristics or is a replication-and-weighting approach in place where every contract is run with every possible never-utilize timing cohort, or is it selected by random selection? It is notable that assuming all policies have an equal likelihood to never utilize versus concentrating never-utilize behavior in certain demographics or behavior types (e.g., inefficient withdrawal and inefficient lapse behavior) can produce different results.
- b. **Definition of “never”?** Does never utilize mean “never ever” withdraw, or does the model automatically assume any in-the-money benefits are paid at the end of the projection or at the mandatory annuitization date?

<sup>8</sup> The rules as to when the minimum required distributions occur was at age 70½ prior to 2019. It increased to 72 in 2019, and further increased to age 73 in 2023. In 2033, it will increase to age 75.

- c. **Impact of Other Withdrawal Cohorts on the Never-Utilize Cohort:** In determining whether to have a never-utilize cohort, the company may instead consider other alternatives. This includes shifting some of the never-utilize cohorts to other cohorts. For example, modeling late utilizations in policy year 25 or 30, or to age 95, might be done so that a policyholder would likely get some benefit for an option they have paid for (versus having a never-utilize cohort) and potentially be more accurate, but may or may not practically be that different from “never utilize.” Another potential to consider is to assume that there is a subset of policies that start utilization at later ages, but with the assumption that these contractholders may not be efficient in taking their withdrawals. However, these alternatives must be justifiable.

It is noted that the latest SOA Study<sup>9</sup> found that less than 5% of the FIA contractholders age 80 and above never utilized the GLB benefit.

## Sample Utilizations Formula

Annuity partial withdrawals formulas can be quite complex due to the diversity of the contracts, riders, and underlying options within them. The reader is referred to VM-21, Section 6: Requirements for the Additional Standard Projection Amount, subsections C.4 Partial Withdrawals and C.5 Withdrawal Delay Cohort Method (*Valuation Manual* Jan. 1, 2023, Edition) for an example of partial withdrawal utilization modeling. Note that along with modeling the utilization, one needs to also model the associated dollar amounts withdrawn.

The following is a high-level summary of some of the approaches and considerations that have been used to model partial withdrawals.

Utilization formulas may be distinct for broad categories based on, for example, contract provisions (guaranteed minimum death benefit [GMDB]-only contracts versus contracts with VAGLBs) and type of contract (qualified vs nonqualified). This may be based on historical experience where contracts with VAGLBs and qualified contracts with or without VAGLBs have exhibited higher partial withdrawals utilization than other contracts.

<sup>9</sup> *Fixed Indexed Annuity Contract Owner Behavior Experience Study*; Op. cit.

For contracts currently taking partial withdrawals under a contractual or administrative automatic withdrawal option, it may be assumed that such contracts continue taking withdrawals of the same amount each period. If the withdrawal amounts exceed the penalty-free maximum in the contract, such amounts may be reduced.

Alternatively, experience may suggest that the above assumptions are not supportable. Predictive modeling can be used to determine whether a more supportable assumption would allow some contracts on an automatic withdrawal option to revoke such option. Such modeling may also support some level of withdrawals above penalty-free maximums.

For contracts that are not currently taking withdrawals, one typically needs to model some level of withdrawal utilization for some of these policyholders in the future.

This can be accomplished by splitting each individual contract into separate buckets (the buckets are sometimes called “cohorts”), where each would assume withdrawals occur at some time in the future (there may even be a cohort where no withdrawals are assumed). The cohorts would also assume some level of withdrawal amount. There are also random assignment approaches (to avoid running # of contracts \* N model points), and one could also have a more sophisticated way of assigning contracts to any of the behavior cohorts (e.g., based on certain characteristics) instead of randomly.

Predictive modeling can be used to help formulate the assumptions as to both when withdrawals are likely to occur, and the amount withdrawn.

## Sample Table

As mentioned in previous sections, there are a number of factors that may influence when a contractholder will utilize their GLWBs. Listed below is an example of a utilization table that an actuary may use in the asset adequacy testing for a nonqualified FIA product. This product guarantees that the annuity value will roll-up (increase) at least 7% a year for 10 years. In addition, rather than having the GLWBs percentages go up each year due to the aging of the contractholder, it provides for payouts as a percentage of the underlying account value based on age groupings based on the following chart, with age 95 as the last age one can elect yearly payments:

**Table 1. Sample Utilization Table**

Ages	Yearly Payment as Percent of Account Value At Time of First Withdrawal
51<56	5.00%
56<61	5.25%
61<66	5.50%
66<71	6.00%
71<76	6.50%
76<81	7.25%
81-95	9.00%
95	15.00%

For the purpose of keeping the table relatively simple, the utilization table conservatively assumes that all contractholders will elect to utilize at the time the payout rates increase. It is also assumed that 7% of the contractholders will wait until age 95, the last age to elect the GLWB.

Table 2. Utilization Table (More Complex)

SAMPLE UTILIZATION TABLE														
Age/Wait	0	1	2	3	4	5	6	7	8	9	10	11	Age 100	Total
<50	wait until age 50, then do same pattern as age 50													
50	0	0	0	10	0	10	0	10	0	0	63	0	7	100
51	0	0	0	0	10	0	10	0	0	10	63	0	7	100
52	0	0	0	10	0	10	0	0	10	0	63	0	7	100
53	0	0	10	0	10	0	0	10	0	0	63	0	7	100
54	0	0	0	10	0	0	10	0	0	0	63	10	7	100
55	0	0	10	0	0	10	0	0	0	0	73	0	7	100
56	0	0	0	0	10	0	10	0	0	10	63	0	7	100
57	0	0	0	10	0	10	0	0	15	0	58	0	7	100
58	0	0	10	0	10	0	0	15	0	0	58	0	7	100
59	0	10	0	10	0	0	15	0	0	0	48	10	7	100
60	10	0	10	0	0	15	0	0	0	0	58	0	7	100
61	0	10	0	0	20	0	0	0	0	10	53	0	7	100
62	0	0	0	20	0	10	0	0	10	0	53	0	7	100
63	0	0	20	0	10	0	0	10	0	0	53	0	7	100
64	0	20	0	10	0	0	10	0	0	0	43	10	7	100
65	10	0	10	0	0	20	0	0	0	0	53	0	7	100
66	0	0	0	0	35	0	0	0	0	10	48	0	7	100
67	0	0	0	35	0	0	0	0	10	0	48	0	7	100
68	0	0	35	0	0	0	0	10	0	0	48	0	7	100
69	0	35	0	0	0	0	10	0	0	0	38	10	7	100
70	15	0	10	0	0	20	0	0	0	0	48	0	7	100
71	0	10	0	0	30	0	0	0	0	10	43	0	7	100
72	10	0	0	30	0	0	0	0	10	0	43	0	7	100
73	0	0	30	0	10	0	0	10	0	0	43	0	7	100
74	0	30	0	10	0	0	10	0	0	0	33	10	7	100
75	10	0	10	0	0	25	0	10	0	0	38	0	7	100
76	0	10	0	0	30	0	10	0	0	10	33	0	7	100
77	10	0	0	35	0	10	0	0	20	0	18	0	7	100
78	0	0	35	0	10	0	0	35	0	13	0	0	7	100
79	0	35	0	10	0	0	35	0	13	0	0	0	7	100
80	10	0	20	0	0	50	0	13	0	0	0	0	7	100
81+	0	30	0	0	50	0	13	0	0	0	0	0	7	100

Table 2 shows that developing utilization tables can be complex. Table 2 does not show differences by sex, nonqualified versus qualified assumptions, etc. Sensitivity testing the impact of different utilization assumptions in pricing and asset adequacy testing is prudent.

## Sources of Information

There is public information with regards to GLBs. These sources include:

- a. **SOA/LIMRA:** The SOA/LIMRA published a comprehensive paper on the 2015 Experience on the Variable Annuity Guaranteed Living Benefits Utilization. Briefer updates were published periodically, e.g., in 2016, 2017, and 2018. This report can be found at: [Variable Annuity Guaranteed Living Benefits Utilization | SOA](#). The SOA has recently released an updated study, but there is a cost to get a copy of the detailed study.
- b. **Consulting Firms:** There are consulting firms that do some extensive studies. Some information is available on their websites; more comprehensive information is available to clients.



- c. **Research Papers on Optimal / Efficient behavior:** Companies can analogize and use insights from other industries and/or behavioral economics research (e.g., people who don't refinance mortgages) to determine a justifiable level of inefficiency.
- d. **Statutory Valuation of Individual Life and Annuity Contracts**, specifically Chapter 19, Fifth Edition (2018), Volume 1, published by Actex.

## Summary

It is important that actuaries stay current on the expected assumptions that can impact the profitability and required reserving level, such as the assumption regarding the “never utilize” cohort of variable or fixed index annuities with GLBs. The considerations in this guide will help the actuary increase their knowledge on what can influence a contractholder not to elect a potentially valuable benefit in the GLBs.

For more information on the American Academy of Actuaries and resources available on life-related topics, visit the [Academy's website](#). If you have any feedback on this document, please contact the Academy's life policy analyst, [Amanda Barry-Moilanen](#).



1850 M STREET NW, SUITE 300, WASHINGTON, D.C. 20036  
202-223-8196 | [ACTUARY.ORG](https://www.actuary.org)

© 2024 American Academy of Actuaries. All rights reserved.