Variable Annuity Guaranteed Living Benefits Utilization

2017 Experience

Guaranteed Lifetime Withdrawal Benefits (GLWB)

A Joint Study Sponsored by the
Society of Actuaries and LIMRA

SOCIETY OF ACTUARIES
Secure Retirement INSTITUTE

Variable Annuity Guaranteed Living Benefits Utilization

2017 EXPERIENCE

About the Study

LIMRA Secure Retirement Institute and Society of Actuaries Variable Annuity Guaranteed Living Benefit Utilization Study (VAGLBUS) — 2017 Experience is an update of earlier investigations, conducted since 2006.

The study examines the GLB utilization of over 4.3 million contracts that were either issued during or in force as of 2017. Eighteen insurance companies participated in this study. These 18 companies made up 65 percent of all GLB sales in 2017 and 68 percent of GLB assets at year-end, and thus provide a substantial representation of this business.

Few product innovations have transfigured the variable annuity (VA) industry as much as guaranteed living benefits (GLBs). Evolving from simple income benefits, they are now offered in a variety of forms on the vast majority of VA products sold today.

Knowing more about benefit utilization — as well as the connection with behaviors such as persistency — can assist insurers with assessing and managing the long-term risks of these GLBs.

Companies should use the data provided in this tool as a basis for monitoring the following:

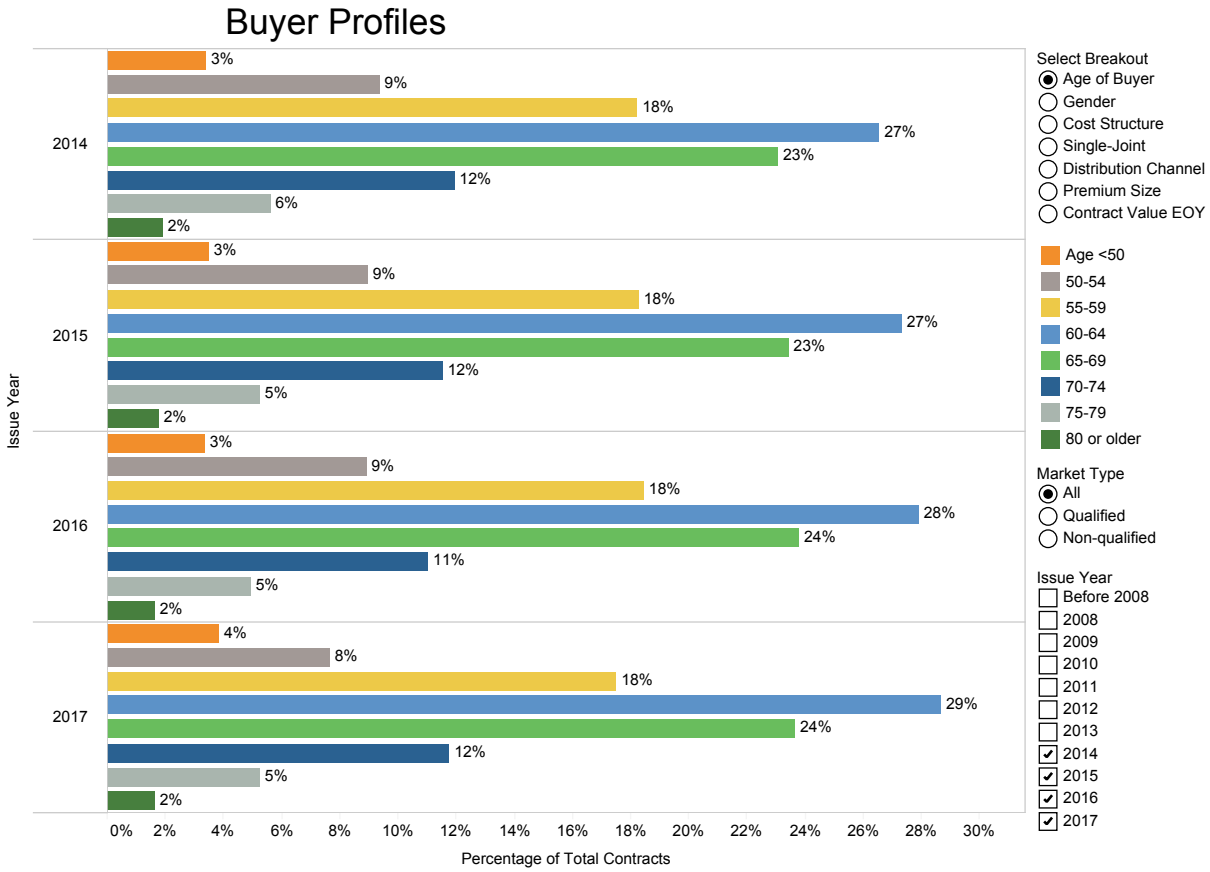
- Customer mix versus the industry
- Risks associated with providing a guarantee to younger buyers —both short- and long-term – including growth in benefit base relative to cash value, customer withdrawal deferral periods, sources of funds used to purchase the annuity, percentage of customers begin to take withdrawals due to the required minimum distribution (RMD) rule, and the persistency of their contracts.
- Competitiveness of the maximum payout rates that are typically set by age bands
- Customer behavior in general and how it changes the dynamics of a company's in-force book of business

CONFIDENTIALITY: For industry results, confidentiality is protected with limits on filtered data. Each data point must have a minimum number of companies reporting. None of the individual companies can represent a majority of market share. Some results may not follow the trend because there is a relatively small number of contracts being reported. Hover over a data point to see how many contracts are being reported.

Click on the tabs at the top of the screen to move between pages. The buttons and menus on the right side of each screen allow you to filter results.

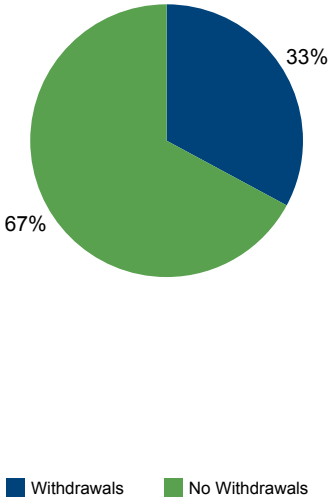
Since 2011, the average and median buyer age has been slowly increasing. This increase has been driven by the continued popularity of this rider with leading edge Baby Boomers (age 60 to 69) — combined with some manufacturers that have raised the minimum age requirements over the years.

Buyer age is about the same for males and females. Buyer age trends slightly higher for the non-qualified market than the qualified market and for those with higher premium deposits.



Summary of Withdrawal Activity

Percentage of owners who have taken withdrawals in 2017:



Determining whether a contract owner has actively "used" a GLWB during the year is straightforward. If partial withdrawals have occurred, then benefit utilization has occurred. However, determining whether contract owners will continue to take withdrawals up to the maximum allowed under the terms of the benefit, or whether they will take benefits for life, is more difficult to determine. However, owners' inclinations to take lifetime withdrawals are more obvious when they take withdrawals from a systematic withdrawal plan (SWP).

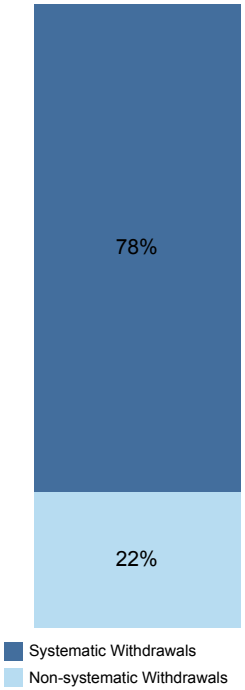
Much of the present study is based on a single calendar year. However, in some sections we analyzed withdrawal activity over time. To try and assess overall withdrawal behavior, we asked companies to provide cumulative total withdrawals prior to 2017 (not all companies could provide this information). In addition, some companies found it difficult to distinguish systematic withdrawals — which are more likely to be associated with utilization of GLWBs — from non-systematic withdrawals. So, LIMRA defined "utilization" of GLWBs as the presence of partial withdrawals during the year, with the caveat that benefit "use" may occur in other ways. In this report, we emphasize five key determinants that will guide companies in understanding the intention of owners to use withdrawals as a lifetime income stream:

- Age of customers taking withdrawals — At what ages are owners likely to take withdrawals and how many are likely to take withdrawals?
- Source of funding for their annuities and how this impacts withdrawal behavior
- When they take their first withdrawal —Are they likely to continue withdrawals once they start?
- Method for withdrawals — Are the customers taking withdrawals through an SWP or through occasional withdrawals?
- Amount of withdrawals — Are withdrawal amounts within the maximum annual income amount allowed in their contracts?

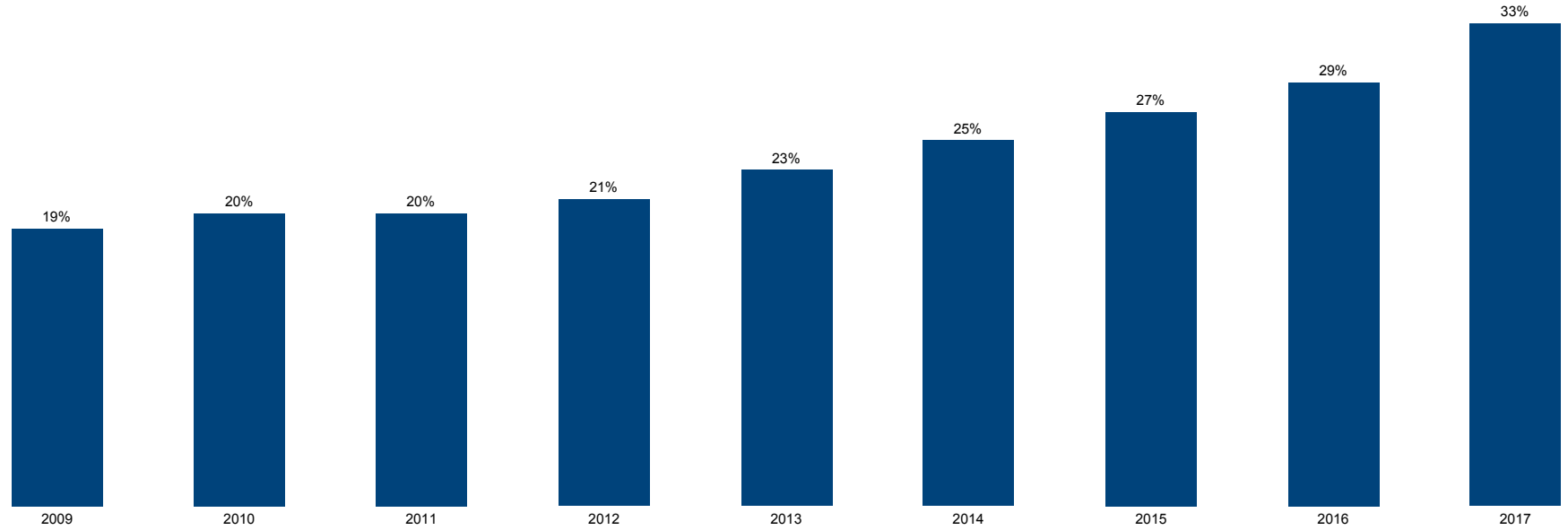
If customers take withdrawals on a continuous basis through SWPs, and withdrawal amounts remain within the maximum allowed, it is very likely they are utilizing the GLWB in their contracts. Our findings suggest that this is the case for most of these owners.

For VA contracts with GLWBs issued before 2016 and still in-force at the EOY 2017, one-third had some withdrawal activity. Just over three-quarters of those withdrawals were taken systematically.

Of those taking withdrawals in 2017:



Overall Withdrawal Rates by Study Year

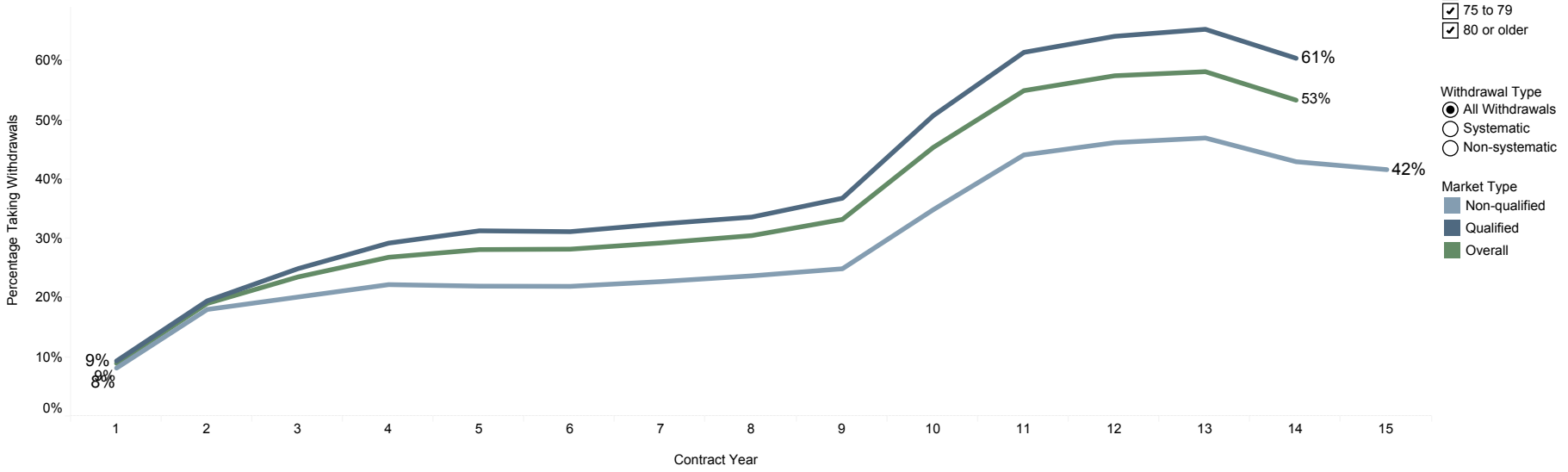


This chart shows overall utilization rates over study years - from 2009 to 2017 Note the increasing trend as the underlying population ages.

Withdrawal Activity by Contract Year

Contract duration (i.e., the number of years since contract purchase) is an important measure in determining what proportion of new buyers or existing owners take withdrawals from their annuities. In some cases, immediate utilization of the GLWB is appropriate for certain customers' retirement income needs, but there are also circumstances in which delaying withdrawals makes sense. By comparing their own withdrawal activity by contract duration to that of the industry, companies can assess the extent to which their customers' usage patterns match both their own expectations and the experience of other VA companies. The comparison will also facilitate internal forecasts by estimating when and how many of the GLWB customers will likely take withdrawals, and the resulting cash flow needed for the book of business.

In the long run, the changing customer mix as well as the need to satisfy RMDs, will influence the slope of the withdrawal rates by duration.



Some data are suppressed for confidentiality reasons.

Withdrawal Activity by Age of Owner

Withdrawal Type
- (●) All Withdrawals
- ( ) Systematic
- ( ) Non-systematic

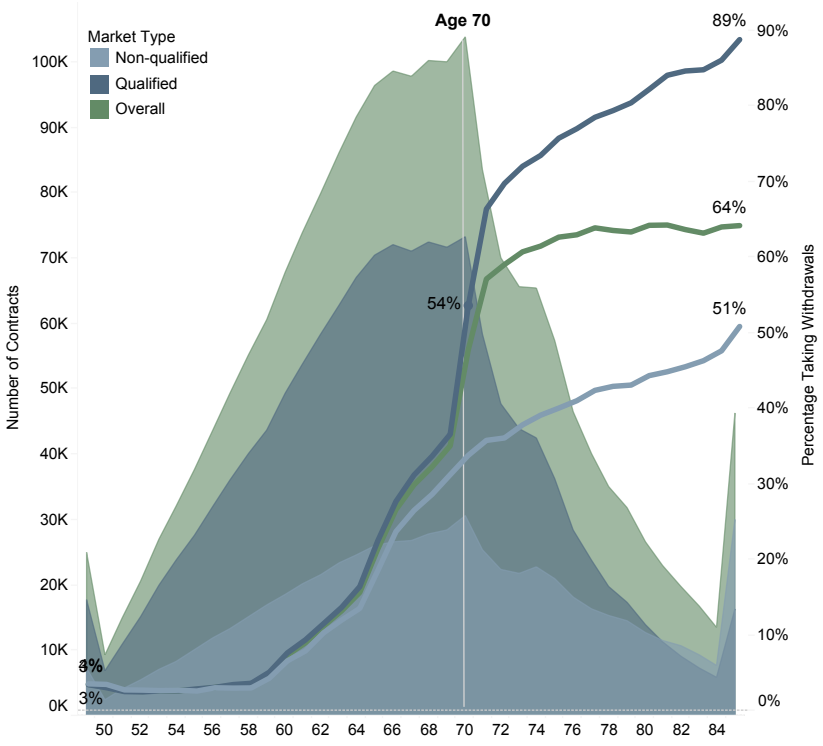
Single-Joint
All

Contract Value (EOY)
- [x] $0 to $24,999
- [x] $25,000 to $49,999
- [x] $50,000 to $99,999
- [x] $100,000 to $249,999
- [x] $250,000 to $499,999
- [x] $500,000 or higher

Distribution Channel
- [x] Bank/S&L
- [x] Career Agent
- [x] Direct Response
- [x] Full Service National B-D
- [x] Independent Agent
- [x] Independent B-D

In-the-Moneyness
- [x] ITM <= 75%
- [x] ITM >75% TO 90%
- [x] ITM >90% TO 110%
- [x] ITM >110% TO 125%
- [x] ITM >125%

ITM definition= Benefit Base/Contract Value so larger ratios indicate a greater degree of in-the-moneyness



The source of funds is one of the most important factors in understanding customer withdrawal behavior. Examining withdrawal activity by source of funds and customer age shows that GLWB utilization rate is quite high for older customer segments.

The withdrawal behavior of GLWB owners can be categorized into three life stages: pre-retirement, entering retirement, and RMD. Up to age 60, when most owners are not retired, withdrawals rates for customers who use either qualified or non-qualified money to buy their contracts remains low. Withdrawals for both types of owners do not start to rise until they reach age 60 or later, when some of the owners enter the retirement phase. In this phase the percent of customers taking withdrawals rises steadily in parallel for both qualified and non-qualified owners. In many GLWBs owners become eligible to withdraw starting at age 60. However, between ages 60 and 70 — sometimes termed as the transition ages in retirement — few customers are fully utilizing the withdrawal benefits.

The overall percent of older owners taking withdrawals is closer to the percent of customers withdrawing from non-qualified annuities, since more customers aged 70 or over own a non-qualified annuity (and a majority of them are not taking withdrawals). However, this pattern will change as more customers with qualified annuities age and start to withdraw due to RMDs. The distinction between qualified and non-qualified sources of funds is important for several reasons:

- Overall withdrawal activity — even the composite withdrawal activity by age cohort — is not a reliable measure of actual risk. The measure is particularly skewed downward because the majority of current GLWB owners are under age 70, and most of them have not yet started withdrawals.

Only 478,900 GLWB owners aged 70 or over funded their contracts with qualified money. They represent only a quarter of all GLWB owners who funded their annuities with qualified savings. In the next decade, another half of owners (more than 850,000) currently between ages 60 and 69 will reach age 70 and a majority of them will take withdrawals from their contracts to meet RMDs.

- 68 percent of owners aged 70 or older, who funded their GLWB contracts with qualified savings, took withdrawals. In comparison, only 21 percent of qualified owners aged 60–69 took withdrawals. The need to take RMDs will essentially drive withdrawal behavior for contract owners, and the more a company's customer mix is weighted with qualified contract owners, the more carefully it needs to manage its book of business.

- In comparison, 40 percent of non-qualified annuity owners were aged 70 or above. The percent of non-qualified owners taking withdrawals in this age group was 36 percent, roughly half of the percentage of owners withdrawing from their qualified annuity.

It is important for companies to look at their own in-force business and evaluate how their customer mix can impact risk and cash-flow. For insurance companies, qualified annuities could cost more to administer than non-qualified contracts as more customers begin to take withdrawals at age 70½. As younger investors buy annuities with qualified sources of funds, the disparity between the cost of offering qualified annuities and non-qualified annuities could continue to increase.

Issue Age

Withdrawals started at	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	All Ages
55	4%																					
56	3%	3%																				
57	2%	2%	3%																			
58	2%	2%	2%	2%																		
59	4%	4%	4%	4%	5%																	
60	6%	6%	6%	7%	6%	8%																
61	4%	5%	5%	5%	5%	6%	9%															
62	4%	5%	6%	5%	5%	6%	6%	12%														
63	4%	3%	5%	5%	4%	5%	5%	8%	11%													
64	3%	4%	4%	5%	4%	5%	5%	5%	7%	11%												
65	15%	7%	6%	7%	8%	9%	8%	8%	8%	9%	14%											
66		16%	6%	7%	7%	8%	9%	7%	10%	9%	9%	16%										
67			11%	5%	4%	5%	6%	8%	7%	8%	8%	9%	16%									
68				10%	4%	4%	5%	5%	6%	6%	8%	7%	8%	17%								
69					10%	5%	5%	5%	5%	6%	7%	8%	8%	9%	19%							
70						19%	13%	14%	17%	19%	20%	20%	23%	10%	26%	30%						
71							17%	12%	13%	13%	15%	17%	19%	32%	9%	32%	36%					
72								6%	3%	4%	4%	5%	6%	8%	20%	5%	27%	38%				
73									5%	2%	3%	3%	3%	5%	5%	10%	5%	26%	35%			
74										4%	2%	2%	3%	4%	4%	5%	9%	5%	29%	41%		
75											4%	2%	2%	3%	3%	4%	5%	9%	4%	25%	39%	11%
76												3%	2%	2%	3%	3%	4%	4%	10%	3%	28%	9%
77													3%	2%	2%	2%	2%	3%	4%	9%	5%	5%
78														3%	1%	2%	2%	3%	4%	5%	9%	8%
79															2%	1%	2%	2%	2%	5%	4%	6%
80																2%	1%	2%	2%	2%	4%	6%
81																	2%	2%	2%	2%	3%	6%
82																		2%	1%	1%	2%	5%
83																			1%	1%	1%	4%
84																				1%	1%	4%
85																					1%	7%
Total	51%	56%	59%	62%	64%	79%	87%	90%	91%	92%	93%	93%	94%	94%	95%	96%	96%	96%	97%	97%	98%	70%
Took withdrawals all subsequent years	68%	69%	73%	76%	78%	78%	81%	86%	85%	85%	86%	85%	86%	87%	80%	76%	74%	76%	73%	74%	72%	78%

In order to get a clear and consistent picture of when owners first start to take withdrawals and how many start to take their first withdrawals in the following years we followed 2007 VA GLWB buyers and tracked their withdrawal behaviors. This chart focuses on qualified buyers.

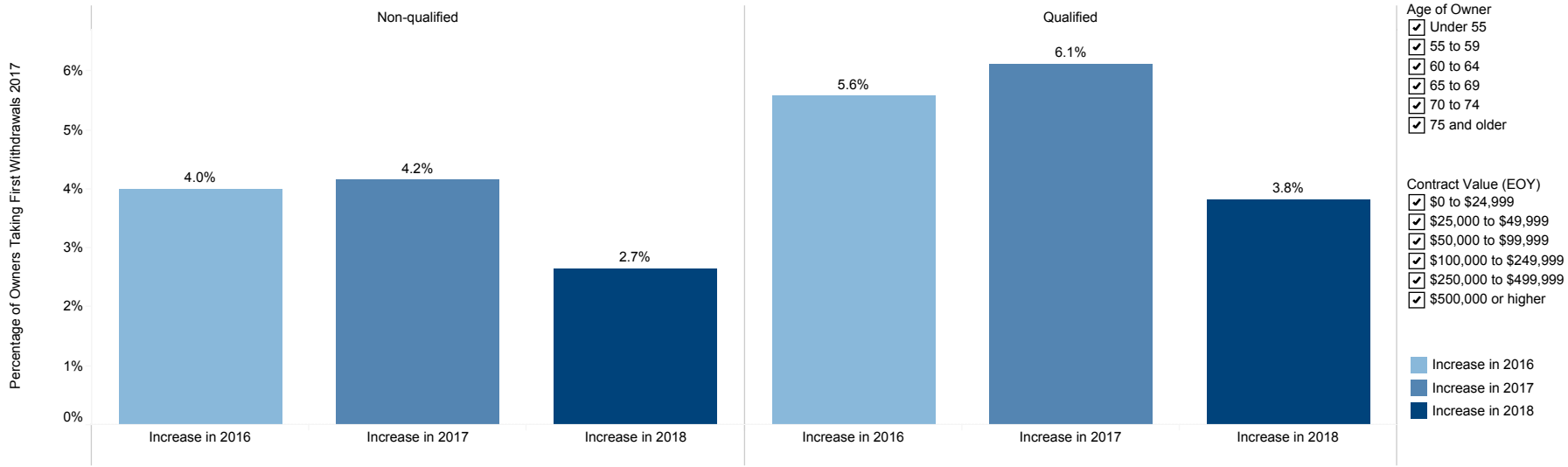
The last row of the table provides the percent of owners taking withdrawals in all subsequent years, based on contracts where the first withdrawal occurred between 2007 and 2017 and with withdrawals continuing every year through 2017 Overall, once owners begin to take withdrawals, they are more likely to continue utilizing the withdrawal benefit.

Select a View
- (●) Qualified - Issue Yr 2007
- ( ) Qualified - Issue Yr 2008
- ( ) Non-qualified - Issue Yr 2007
- ( ) Non-qualified - Issue Yr 2008

Withdrawal Type
- (●) All Withdrawals
- ( ) Systematic

- Contract Year 1
- Contract Year 2
- Contract Year 3
- Contract Year 4
- Contract Year 5
- Contract Year 6
- Contract Year 7
- Contract Year 8
- Contract Year 9
- Contract Year 10
- Contract Year 11

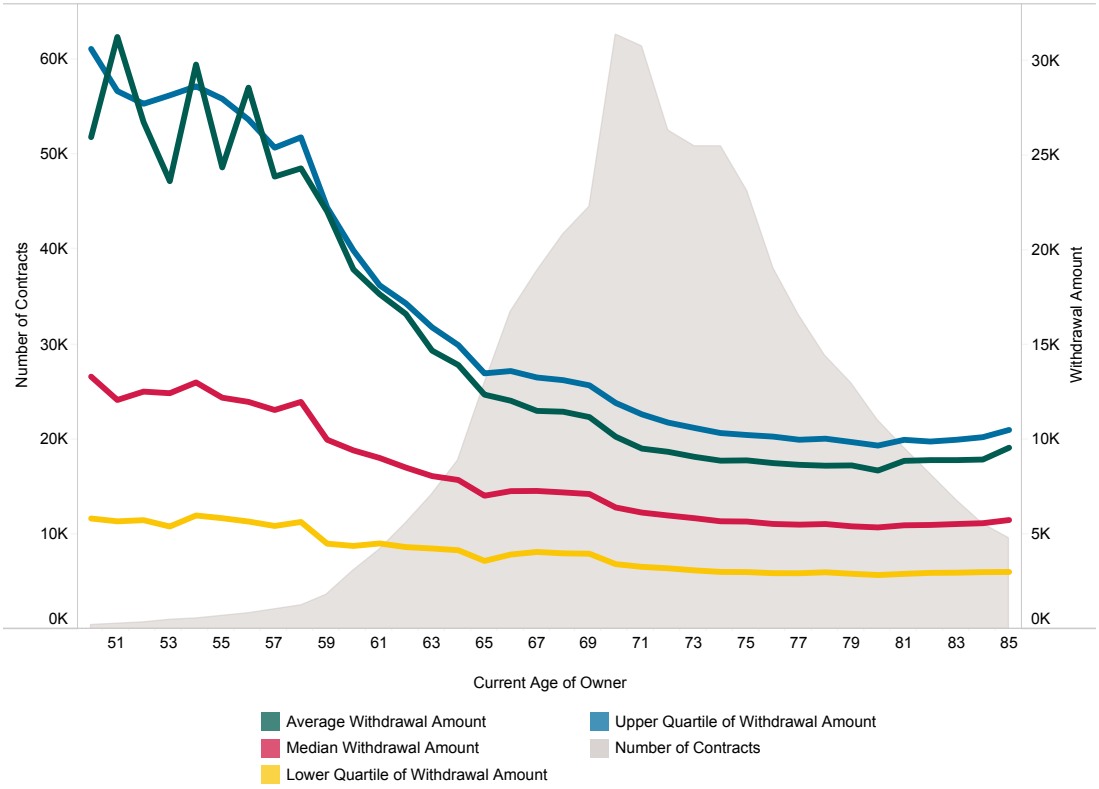
First Withdrawals Based on Proximity to Max Withdrawal Rate Increase



Most GLWB contracts provide owners with a step-up in guaranteed annual withdrawal rates based on certain age bands or owners reaching a certain age, e.g., age 60, 65, 70 or 75 — if they wait to initiate their first withdrawals until obtaining these ages. If owners are sensitive to the potential increase in maximum annual withdrawal percentage, then they will wait until after they have reached one of the ages where the maximum percentage increases. For example, if the owner reached age 65, they might be expected to initiate their first withdrawal activity after reaching age 65 to take advantage of the higher annual income. On the other hand, if an owner is currently aged 64, the owner may wait until they reach age 65 if a step-up in annual withdrawal percentage is to occur at age 65.

Our analysis of a subset of owners who are close to reaching an age threshold (one year before, current year, and one year after) where a step-up in annual guaranteed withdrawal rates can occur shows that some owners do wait to initiate their first withdrawals and take advantage of higher annual guaranteed withdrawal rates offered on those particular age thresholds in the GLWB contracts.

Withdrawal Amounts by Owners' Current Age



With increasing age, a greater number of owners took withdrawals in more sustainable withdrawal patterns and amounts.

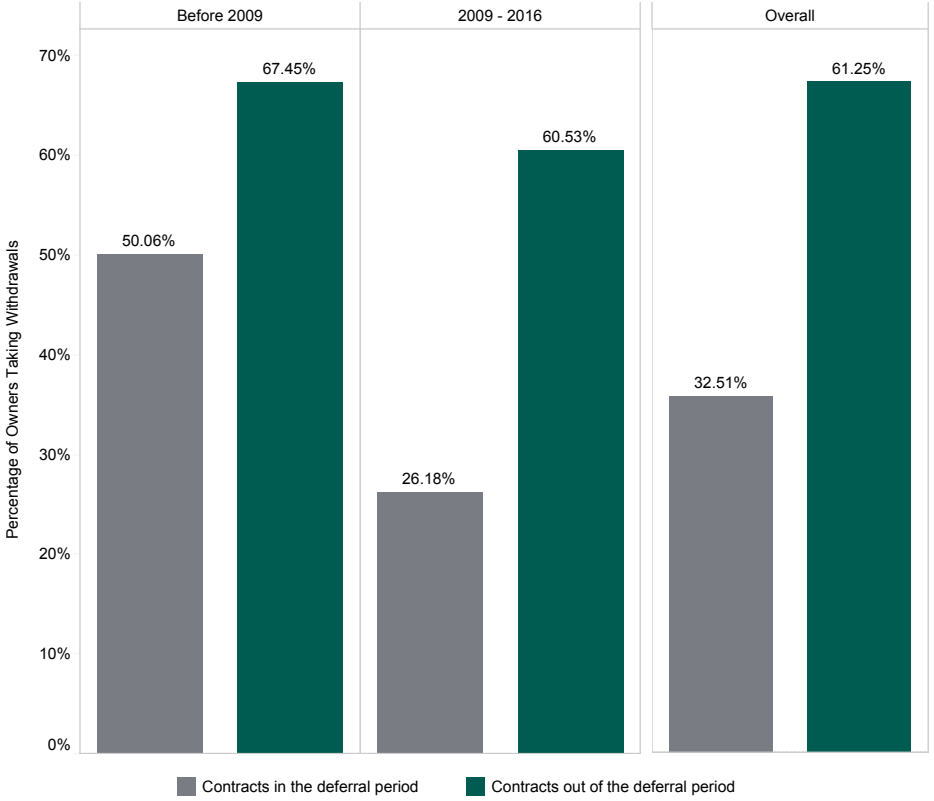
Market Type
- (•) All
- ( ) Qualified
- ( ) Non-qualified

Gender
All

Contract Value (EOY)
- [x] $0 to $24,999
- [x] $25,000 to $49,999
- [x] $50,000 to $99,999
- [x] $100,000 to $249,999
- [x] $250,000 to $499,999
- [x] $500,000 or higher

Withdrawal Type
- (•) All Withdrawals
- ( ) Systematic
- ( ) Non-systematic

Withdrawal Activity for Contracts with and without Deferral Incentives

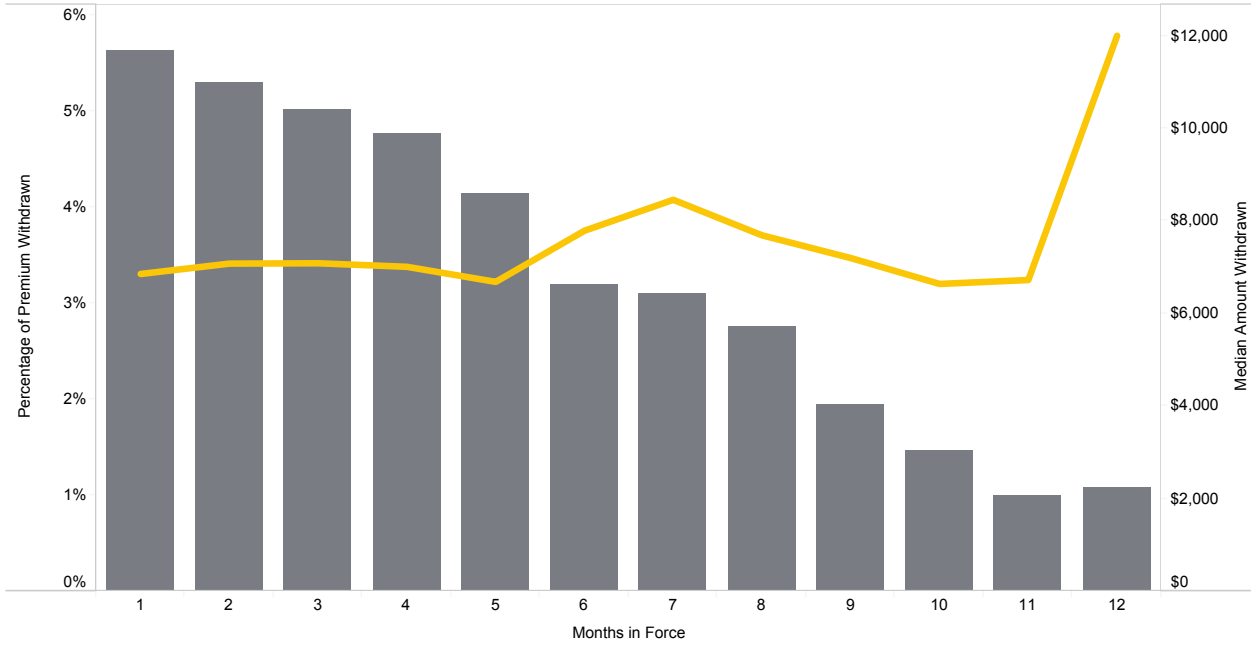


Withdrawal activity can vary depending on whether a contract offers incentives for owners to defer withdrawals. Many GLWB offerings include “roll-ups,” or deferral bonuses, that increase the benefit base by a certain percent — typically 5 percent or more a year for a certain period — for typically 10 years or until the first withdrawal, whichever comes first.

When we examined contracts that offer both a deferral bonus and no increase to the benefit base when an owner defers withdrawals, we found that withdrawal activity is lower when a contract has incentives for non-withdrawals. Even among longer-duration contracts, a larger percent of owners take withdrawals when no incentive is present.

These findings suggest that pre-withdrawal benefit base growth does provide incentives for owners to postpone withdrawals. It is likely that owner expectations of when to take withdrawals are set during the purchase process.

Withdrawal Activity for Contracts Issued in 2017



	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
Percent of Contracts Taking Withdrawals	19.9%	19.8%	19.4%	18.9%	19.3%	20.4%	19.8%	19.4%	19.8%	18.1%	17.7%	15.0%	19.1%

Median Amount Withdrawn
- (●) Annualized*
- ( ) Not Annualized

Median Amount Withdrawn
Percentage of Premium Withdrawn

Withdrawal activity for contracts issued in the observation year and still in-force at EOY was less common than for contracts issued before the observation year.

The lag between the issuance of the contract and the onset of withdrawals can be approximated by examining the proportion of contracts with withdrawal activity by year end.

*Withdrawal amounts were annualized by multiplying them by 12/(13-months since BOY).

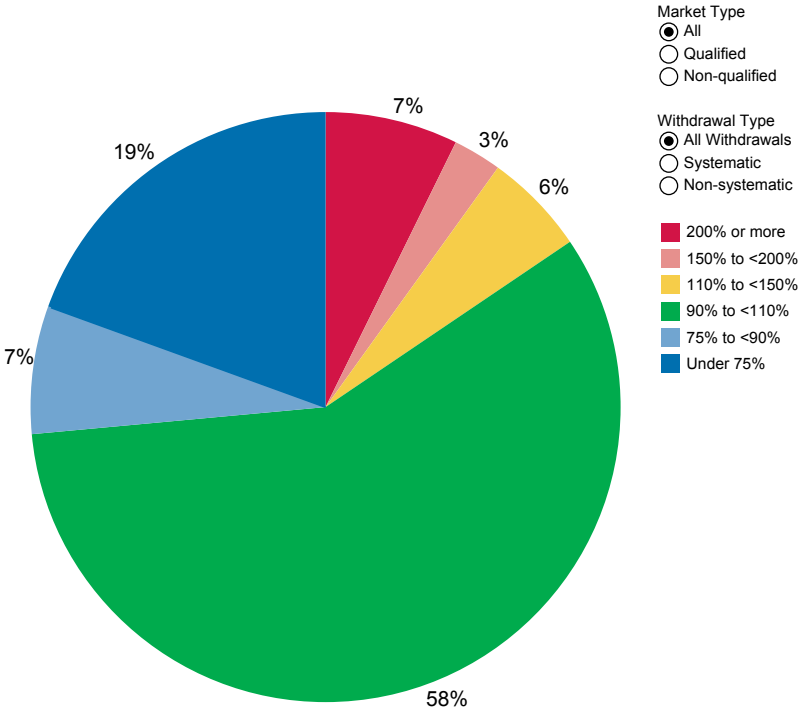
Withdrawals as a Percentage of Annual Benefit Maximum

GLWBs provide a specified maximum withdrawal amount annually for life, through periodic withdrawals from annuity contracts, thus ensuring protection against adverse market performance. However, if the owner withdraws more than the maximum allowed in a contract year, they have taken an excess withdrawal. Excess withdrawals trigger an adjustment of the benefit's guaranteed amount, which reduces the benefit base.

For percentage of benefit maximum withdrawn, we looked at the relationship of customers' actual withdrawal amounts in the calendar year to the maximum withdrawal amounts allowed in the contracts. Given that our study is done on a calendar-year basis, there is some imprecision in measuring the maximum annual withdrawal amounts because benefit bases can vary under certain circumstances during the year (e.g., if additional premium is received) and most benefit base increases occur on a contract anniversary. Accordingly, we used a conservative measure of excess withdrawals — if partial withdrawals exceeded the maximum annual withdrawal as of BOY by at least 10 percent, then we considered the contract to have exceeded the benefit maximum.

We asked participating companies to provide this allowed maximum amount as of the BOY. If companies did not provide the maximum withdrawal amount but provided the benefit base as well as the maximum percentage of this base that could be withdrawn each year, then we calculated an estimate of the percent of maximum annual benefit withdrawn in the following manner:

- If the company provided BOY maximum withdrawal amount, then it equals partial withdrawals divided by this amount.
- If the company did not provide BOY maximum withdrawal amount, then the percent of maximum annual benefit = partial withdrawals divided by (BOY maximum withdrawal percentage) x (BOY benefit base).
- If the company did not provide BOY maximum withdrawal amount or BOY maximum withdrawal percentage, the percent of maximum annual benefit = partial withdrawals divided by (maximum withdrawal percentage from rider specs) x (BOY benefit base).



Withdrawals as a Percentage of Annual Benefit Maximum by Age

When we look at the age of owners and their withdrawal amounts in relation to maximum amounts allowed, we see that younger owners are more likely to take 150 percent or more of the maximum amount allowed.

There are some salient insights from the chart at right:

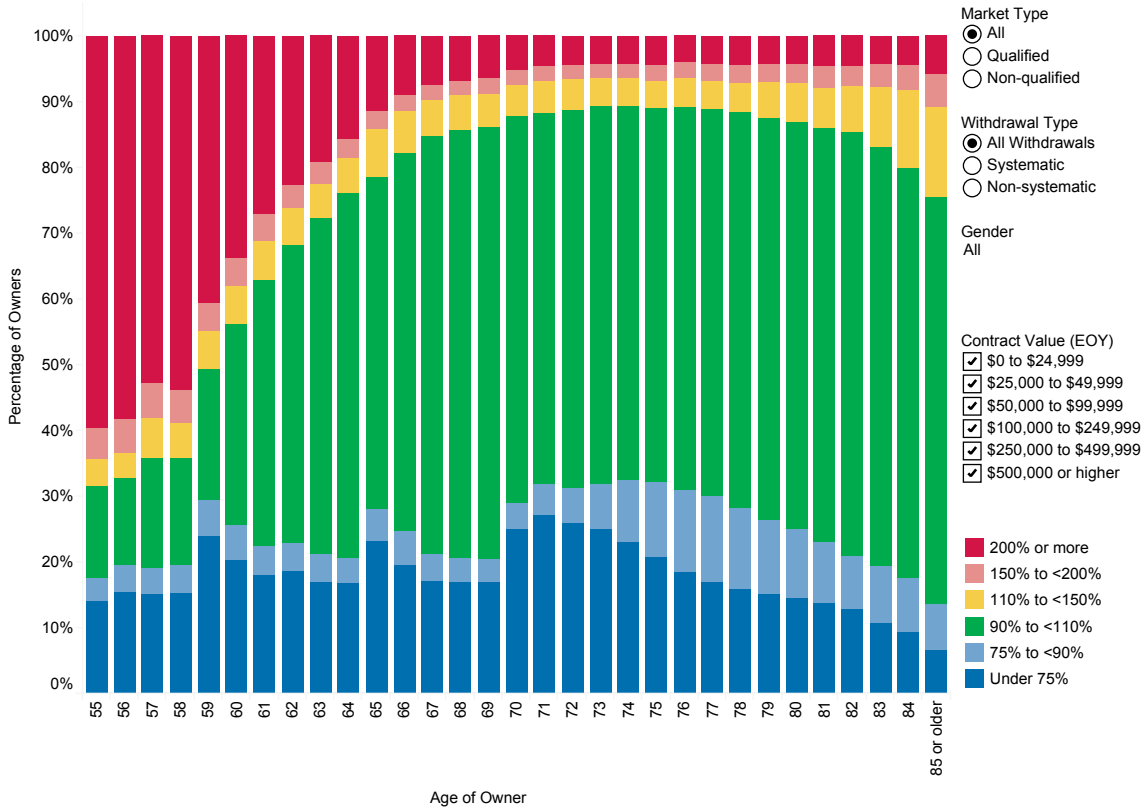
- The majority of owners taking withdrawals, as we have seen in previous sections, are typically aged 65 or older. There are very few instances where these older owners take more than the annual benefit maximum.

- Younger owners, particularly under age 60, are more likely to take 200 percent or more of the benefit maximum allowed in the contract.

- There is a noticeable increase at ages 70 and 71 in the percentage of owners taking withdrawals of less than 90 percent of the benefit maximum. This can be explained by the need for qualified owners to take RMDs, which are typically at a lower withdrawal rate.

- On the other hand, some qualified owners aged 75 or older are taking withdrawals in the range of 110 to 149 percent of the maximum benefit rate allowed in the contracts. They are apparently using higher RMD withdrawal rates applicable in these older ages, often without jeopardizing their benefit bases in the contract, as most insurance companies allow qualified owners to adhere to the RMD rules.

The majority of GLWB owners are taking withdrawals within the rider limits. Eighty-six percent of owners who took withdrawals in 2016 took less than 110 percent of the benefit maximum allowed in their contracts.

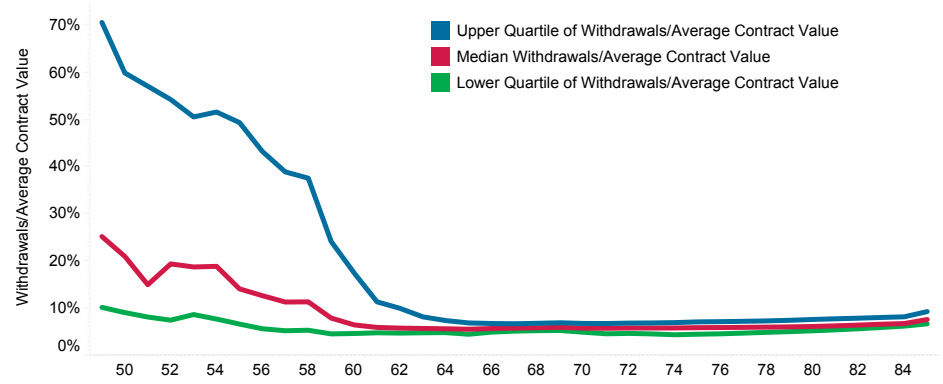


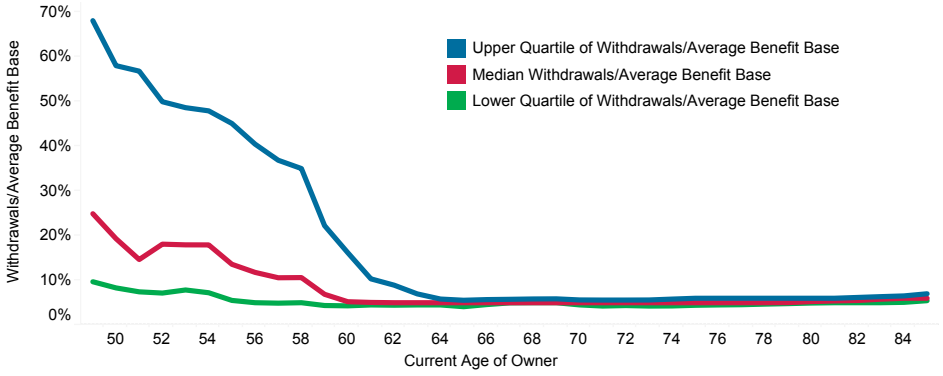
Ratio of Withdrawals to Average Contract Value & Average Benefit Base

Market Type
- (●) All
- ( ) Qualified
- ( ) Non-qualified

In-the-Moneyness
All

ITM definition= Benefit Base/Contract Value so larger ratios indicate a greater degree of in-the-moneyness





Some data are suppressed for confidentiality reasons.

In order to provide some context, we assessed the withdrawal amount in relation to both contract value and the benefit base. Our figures show the median withdrawal amount for all ages and also the quartile distribution of the withdrawal amounts in 2017.

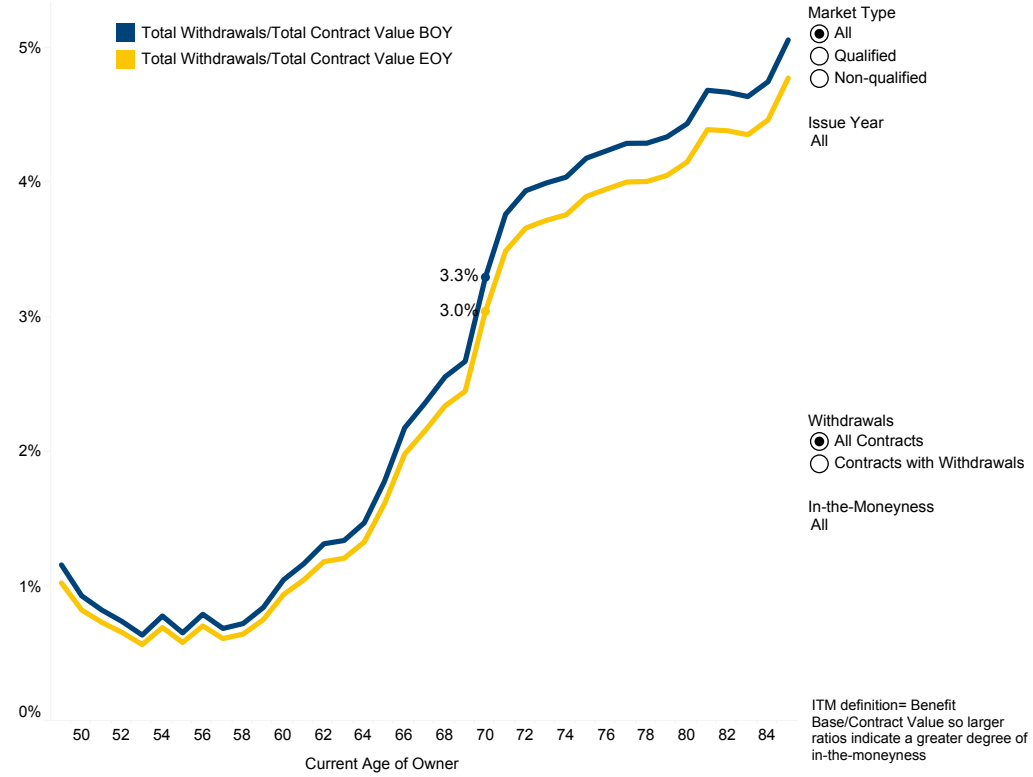
The distribution of the withdrawals as a percent of average contract value withdrawn shows that, for owners aged 65 or over, the median, the upper quartile, and the lower quartile values are almost identical. The pattern also indicates that the majority of older owners taking withdrawals do so at similar ratios from their contract values.

For owners under age 60, there is a wide difference between the median and the upper quartile values, indicating that the majority of these owners are taking more than the maximum allowed in the contracts. Only a small number of owners under age 60 — mostly below the lower quartile line — are withdrawing a sustainable rate without impairing the benefit base.

The distribution of withdrawal amount to the average benefit base ratio supports the same conclusion that we reached earlier: that the withdrawal amount is unduly weighted by very large withdrawals taken by a smaller number of younger owners.

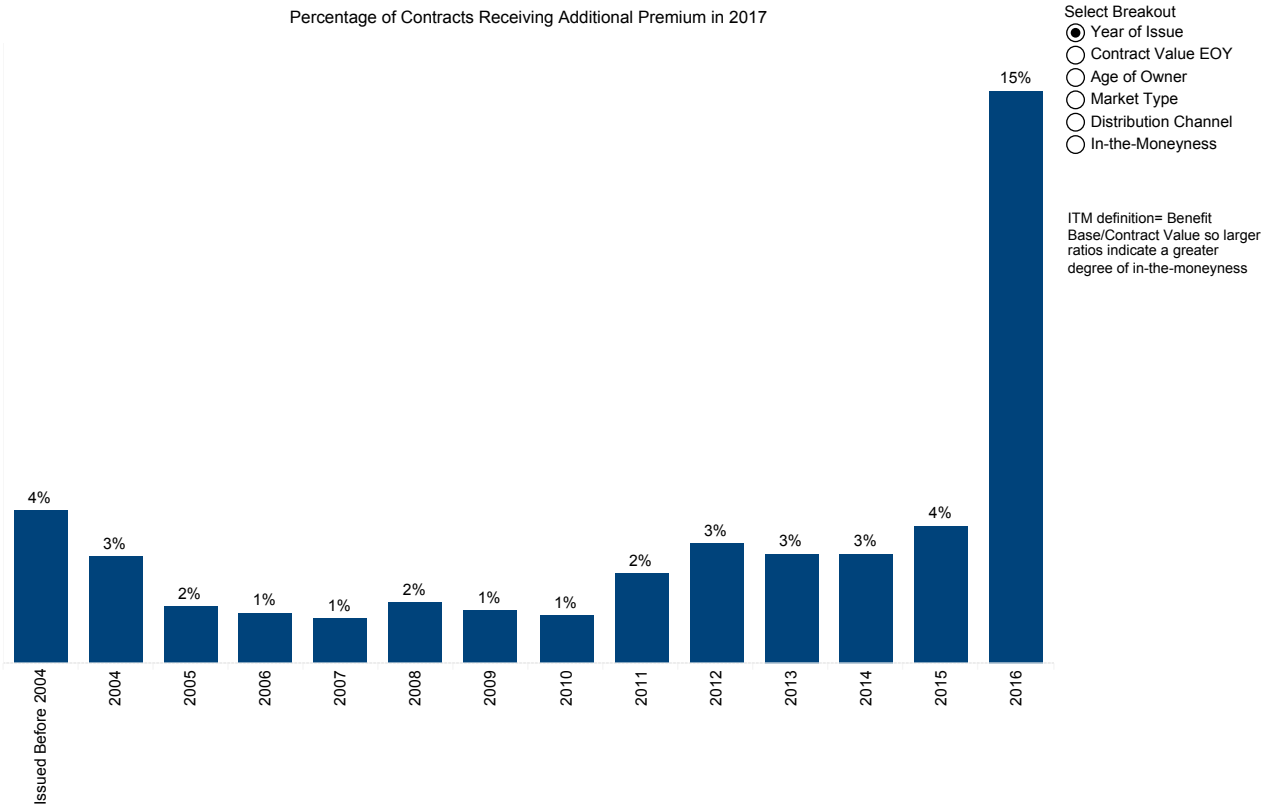
Ratio of Total Withdrawals to Total Contract Value

By comparing the ratio of total withdrawal amount to contract values at BOY and the ratio of total withdrawal amount to EOY contract values, we can ascertain another measure of GLWB risk originating in customer behavior. We calculate this measure at two levels. First, total withdrawals during the observation year can be divided by total contract values at BOY and EOY, for all contracts in-force. Second, the same ratio can be computed for only the subset of contracts that experienced withdrawals in the observation year. The first measure provides a view of risk from withdrawals in terms of the total book of business, while the second provides an estimation of risk from withdrawals among the contracts that are in withdrawal mode.



Additional Premium

Many retail VAs allow owners to add premium after issue, though in practice most contracts do not receive ongoing deposits. For most GLWBs, the calculation of the benefit base incorporates premium received within a certain time period after contract issue.

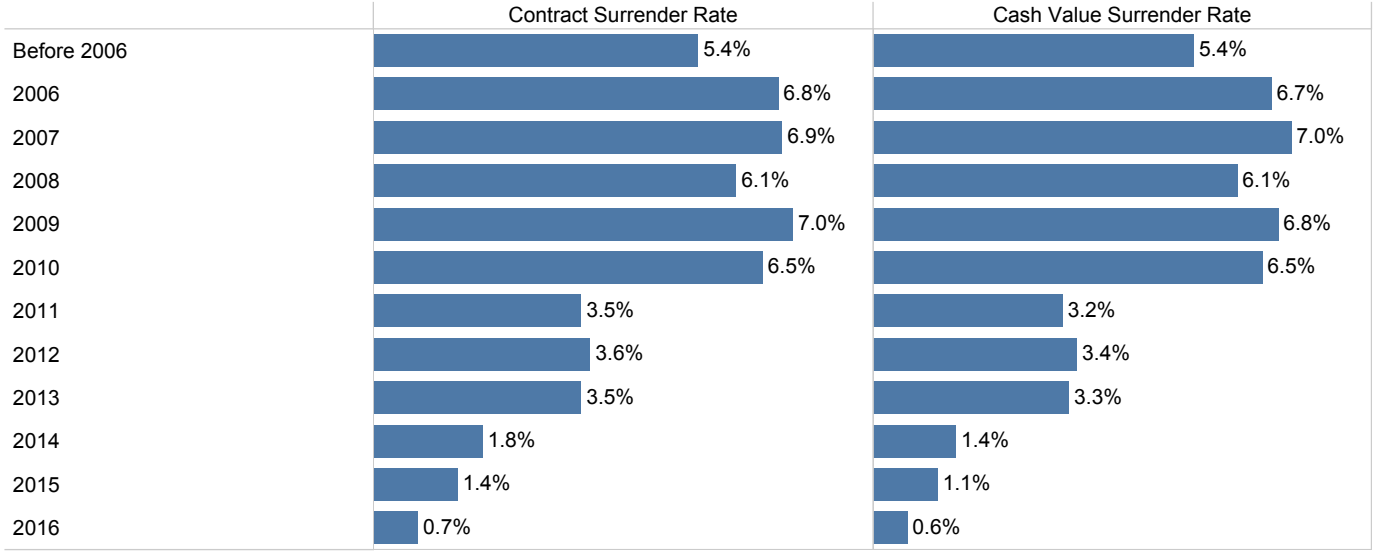


Net Flows

		Total Contract Value	Contract Count	Avg. Contract Value
	In-Force BOY	$355.3B	2,619,929	$135,630
Premium Received	Existing Contracts	$4.2B	2,637,546	
	Newly Issued Contracts	$10.7B	58,026	$184,750
Benefits Paid	Annuitizations	$0.1B	769	$149,041
	Death/Disability	$2.2B	18,111	$122,955
	Full Surrenders	$12.6B	100,973	$124,903
	Partial Withdrawals	$9.4B		
	Investment Growth	$28.2B		
	In-Force EOY	$386.1B	2,575,709	$149,906

Surrender Rates by Selected Owner and Product Characteristics

Select Breakout
- (•) Year of Issue
- ( ) Age of Owner
- ( ) Contract Value BOY
- ( ) Gender
- ( ) Market Type
- ( ) Distribution Channel
- ( ) Cost Structure



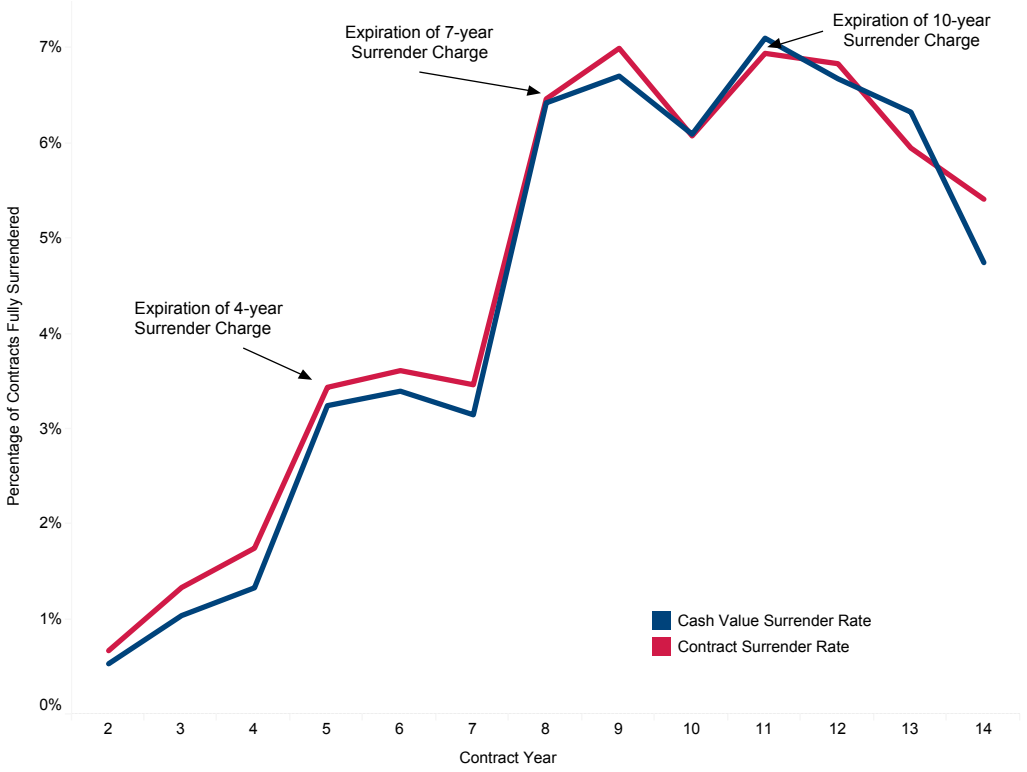
Contracts issued in more recent years generally have lower rates of surrender than those issued four or more years ago.

Cash value surrender rates are lower than contract surrender rates for all years of issue - implying that smaller contracts are more likely to surrender than larger ones.

Surrender Rates by Contract Year

Surrender activity for VAs with GLWBs is a critical factor in measuring liability. If persistency is very high among contracts with benefit base amounts that are larger than the contract value, or in contracts where the owners take withdrawals regularly, then insurers may have payouts that are larger or for longer durations than anticipated. The presence of living benefits on VAs may lead owners to keep their contracts beyond the surrender penalty period.

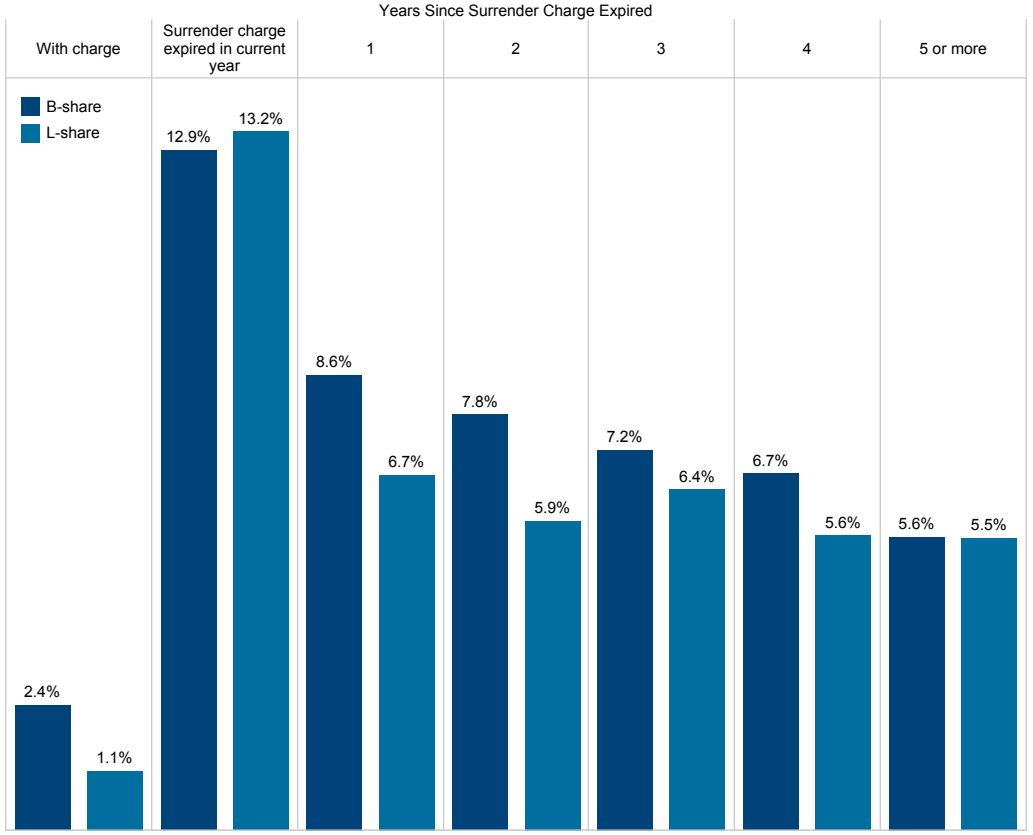
Surrender rates for VAs with GLWBs in 2017 were relatively low, even among contracts issued five years earlier. There was a noticeable increase in surrender rates at the expiration of the L-share and B-share surrender charge. Cash value surrender rates were lower than contract surrender rates for all contract years, suggesting that smaller size contracts were more likely to be surrendered.



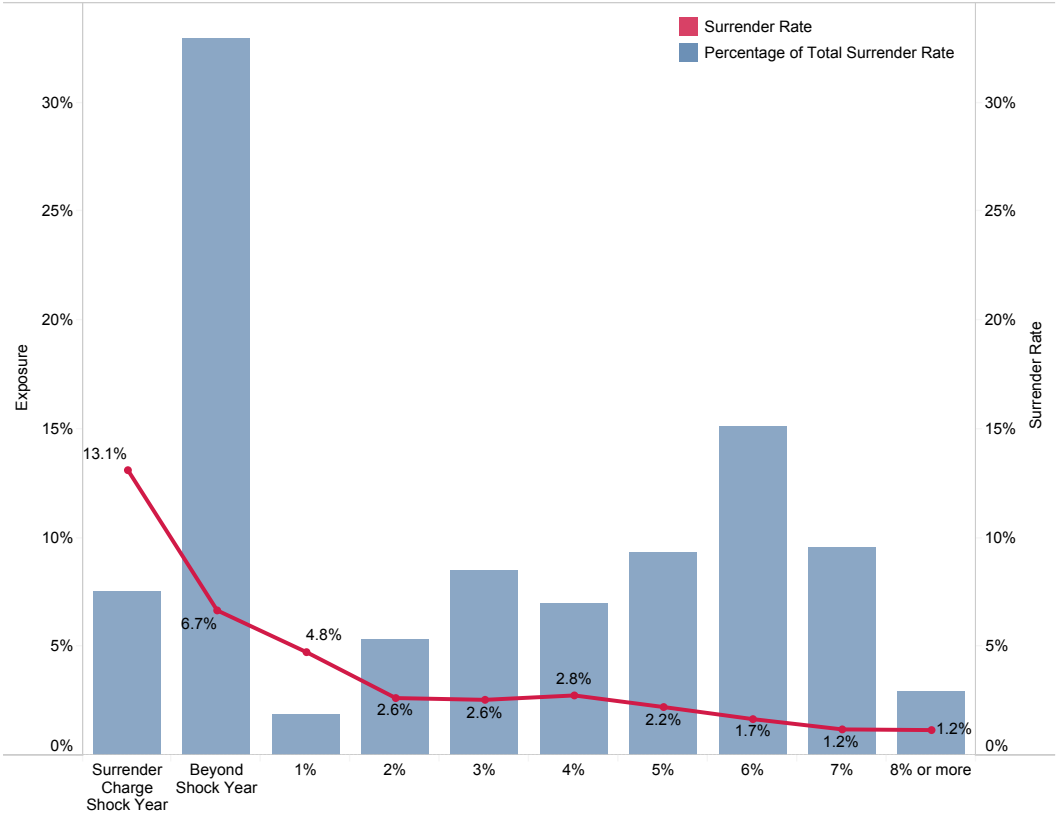
Some data are suppressed for confidentiality reasons.

Surrender Rates by Share Class

Looking at the surrender rates by the presence of surrender charges shows that persistency among contracts with surrender charges was higher than for contracts without surrender charges. A majority of B-share and L-share contracts were within the surrender charge periods in 2017.



Surrender Rates by Surrender Charge Level



Surrender Type
- (●) Contract Surrender Rate
- ( ) Cash Value Surrender Rate

Market Type
- (●) All
- ( ) Qualified
- ( ) Non-qualified

Withdrawal Methods
- [✓] No Withdrawals
- [✓] Non-systematic Withdrawals
- [✓] Systematic Withdrawals

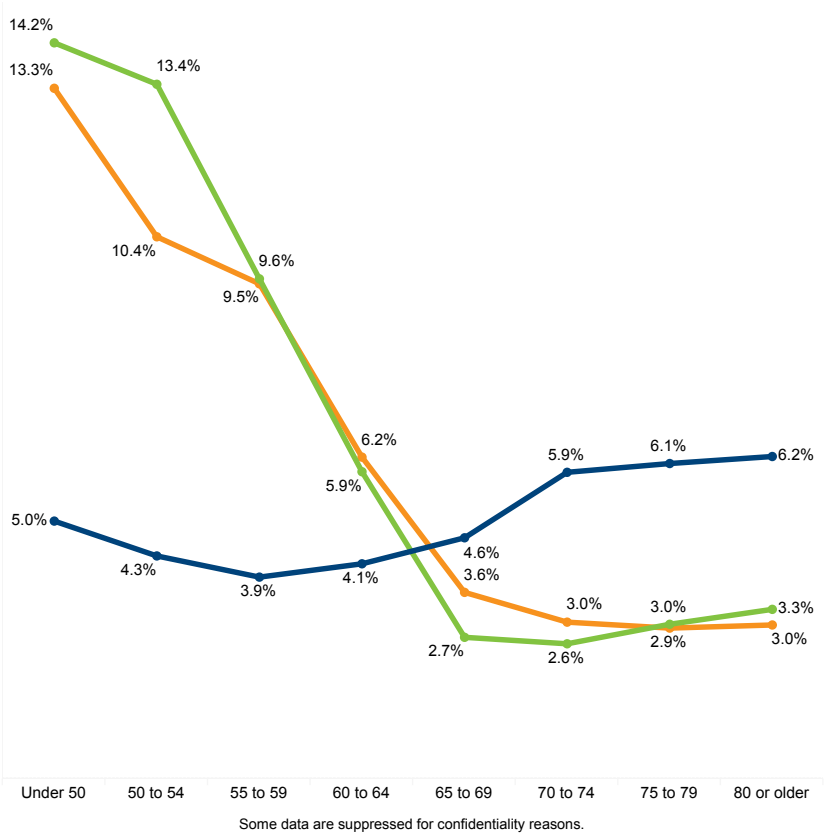
The surrender rates of GLWB contracts are also influenced by surrender charge level in the contract. Naturally, contracts with high surrender charges have low surrender rates and vice versa. At the end of the observation year, just over half of the contracts had surrender charges of 4 percent or more, while just under one-third of the contracts were free of surrender charges.

Surrender Rates by Timing of Withdrawals

Surrender Type
- (●) Contract Surrender Rate
- ( ) Cash Value Surrender Rate

Market Type
- (●) All
- ( ) Qualified
- ( ) Non-qualified

Withdrawal Status
- Never Took Withdrawals
- Took First Withdrawals in 2017
- Took Withdrawals in the Past



Some data are suppressed for confidentiality reasons.

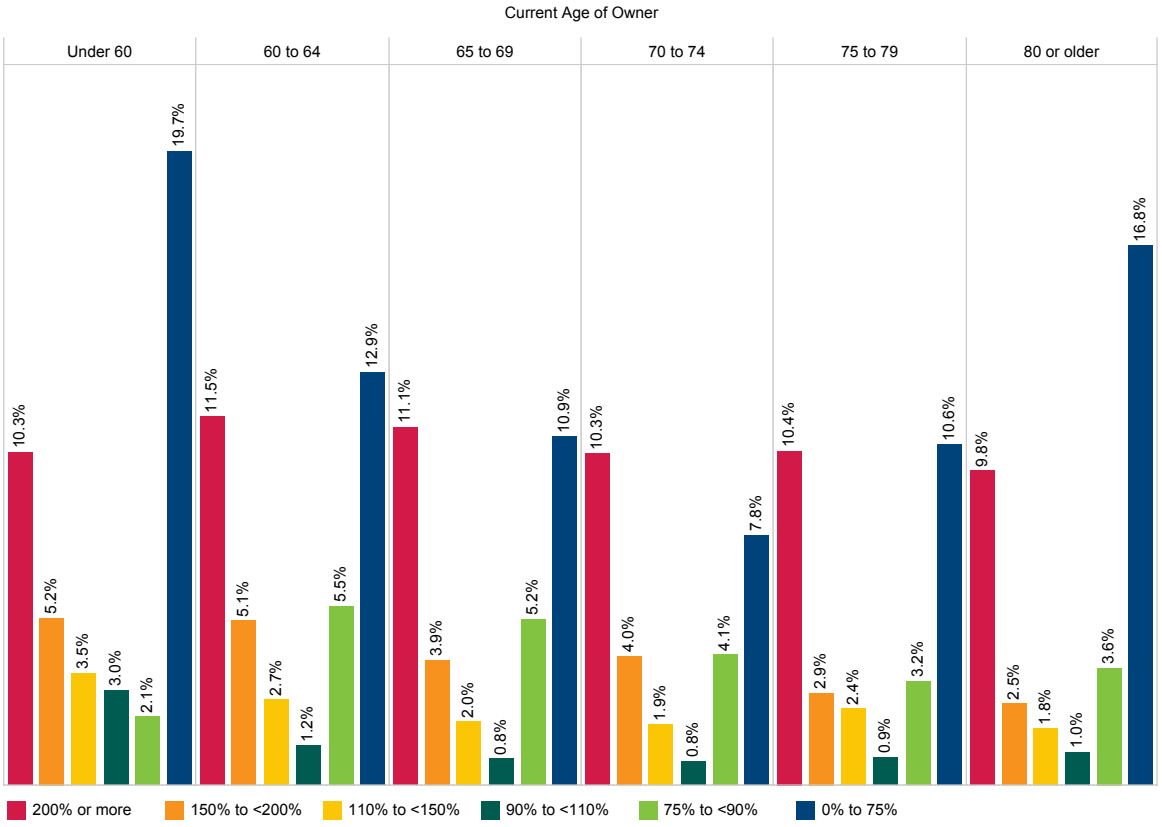
Owner surrender behavior is closely connected with withdrawal behavior. Insurance companies assume more risk when the business left has more contracts where the benefit base amounts are greater than the contract values, and these contracts have lower surrender rates. They need to fulfill their commitments on withdrawal guarantees if owners decide to start or continue withdrawals.

Younger owners have higher surrender rates, particularly those under age 60 who took withdrawals before or in the observation year. We have already shown that even though younger owners own a significant portion of GLWB contracts, most of them are not likely to take withdrawals. When some of these younger owners take withdrawals, they typically do so through occasional withdrawals. Moreover, their average withdrawal amount is much higher, and not likely to be supported by the guaranteed benefit base in their contracts. It is likely that these younger owners are really taking partial surrenders. Younger owners who took withdrawals in the oberservation year were also more likely to fully surrender their contract.

Some of these younger owners may have had emergency needs while others may have decided they no longer need their contracts. Past withdrawals can also indicate whether younger owners are more likely to fully surrender contracts in the future.

As we have seen, younger owners are the most likely to take withdrawals that exceed the benefit maximum. We believe that this activity represents an increased likelihood that their contract will surrender. There was an increased likelihood of surrender for contracts where owners under the age of 60 took withdrawals, either in current or past years. However, this increased surrender activity did not occur for owners over age 60 who took withdrawals. For them, a withdrawal in one year did not necessarily signal a higher likelihood of surrender in the next year. Understanding this behavior is important since withdrawal activity, particularly withdrawals that exceed the benefit maximum, can be an early indicator of increased surrender activity for a book of business

Surrender Rates by Percentage of Annual Benefit Maximum Withdrawn



Our analysis shows the contract and cash value surrender rates for owners who took withdrawals in the observation year based on the percentage of annual benefit maximum withdrawn. Contract surrender rates for owners who under-utilized or significantly exceeded the benefit maximum, are quite high.

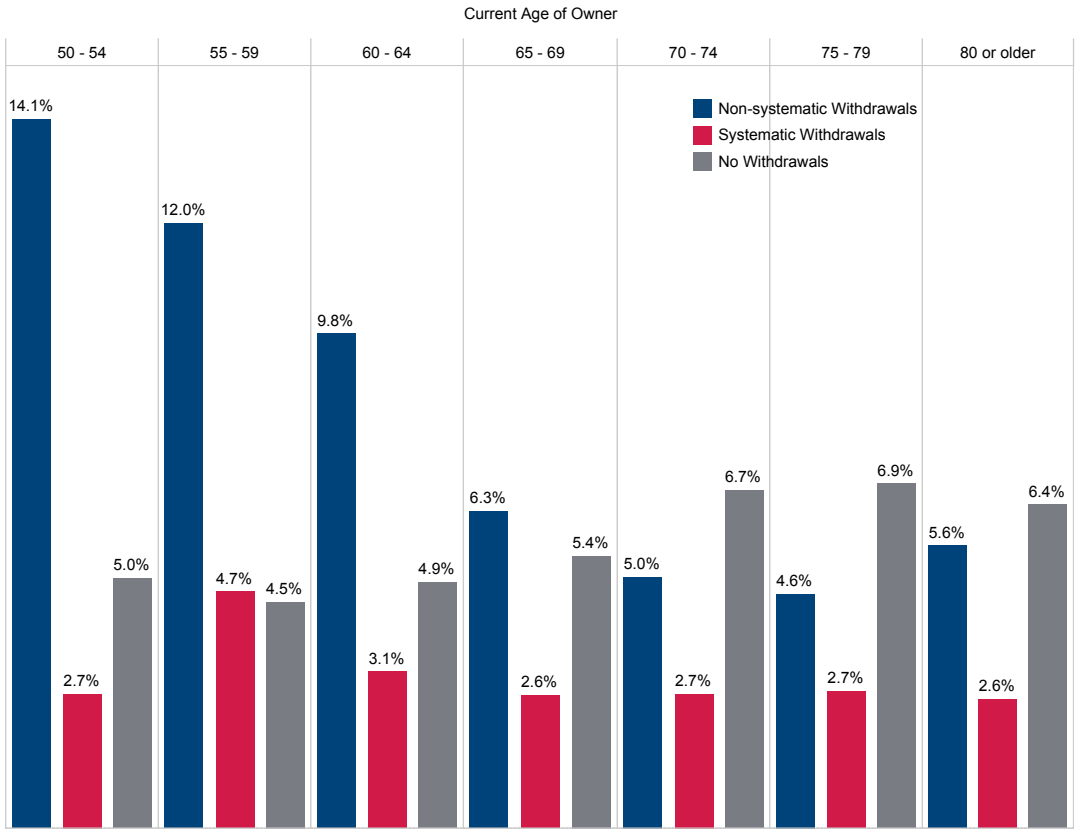
The surrender rates show a U-shaped relationship to percent of benefit maximum withdrawn - those with very low and very high ratios of withdrawals to maximum allowed have higher surrender rates than those in the middle categories.

Surrender Type
- (•) Contract Surrender Rate
- ( ) Cash Value Surrender Rate

Market Type
- (•) All
- ( ) Qualified
- ( ) Non-qualified

Contract Size
- [x] Under $25,000
- [x] $25,000 to $49,999
- [x] $50,000 to $99,999
- [x] $100,000 to $249,999
- [x] $250,000 to $499,999
- [x] $500,000 or higher

Surrender Rates by Withdrawal Method



Another strong indicator of whether owners are likely to surrender their contracts is the type of withdrawal method they use — systematic or non-systematic.

Overall, the contract surrender rate among owners who took non-systematic or occasional withdrawals in the observation year was 5.2 percent; while the surrender rate among owners who withdrew systematically was a very low 2.0 percent. Non-systematic or occasional withdrawals do not always maximize their benefit withdrawals.

Owners taking non-systematic withdrawals accounted for just under a quarter of all owners taking withdrawals; but they account for just under half of all surrendered contracts and almost half of cash surrender values in the observation year. Surrender rates among older owners who take non-systematic withdrawals are more than double the surrender rates of older owners who take systematic withdrawals. Owners who take systematic withdrawals are less likely to take more than the benefit maximum.

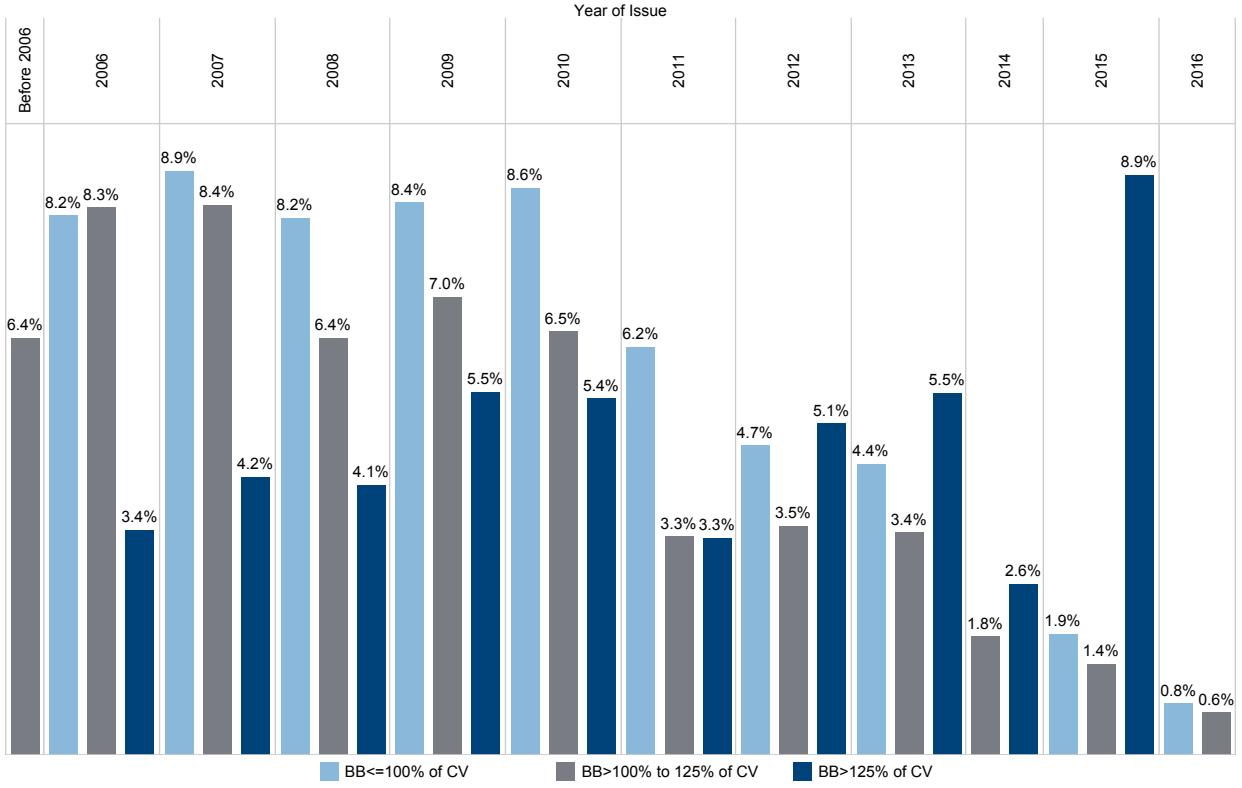
Surrender Type
- (●) Contract Surrender Rate
- ( ) Cash Value Surrender Rate

Market Type
- (●) All
- ( ) Qualified
- ( ) Non-qualified

Contract Size
- [✓] Under $25,000
- [✓] $25,000 to $49,999
- [✓] $50,000 to $99,999
- [✓] $100,000 to $249,999
- [✓] $250,000 to $499,999
- [✓] $500,000 or higher

Presence of Surrender Charge
All

Surrender Rates by Amount Benefit Base Exceeds Contract Value



Some data are suppressed for confidentiality reasons.

Another important analysis of surrender rates involves whether the benefit base is greater than the contract value. Surrender rates for most issue years are lower when the benefit base is greater than the contract value.

GLWB owners appear to be sensitive to how much the benefit base exceeds the contract value when deciding whether to surrender their contracts.

Surrender Type
- (●) Contract Surrender Rate
- ( ) Cash Value Surrender Rate

Market Type
- (●) All
- ( ) Qualified
- ( ) Non-qualified

Age of Owner
- [✓] Age 59 & under
- [✓] 60 to 64
- [✓] 65 to 69
- [✓] 70 to 74
- [✓] 75 to 79
- [✓] 80 or older

ITM definition= Benefit Base/Contract Value so larger ratios indicate a greater degree of in-the-moneyness

Benefit Base and Contract Value Summary

	Benefit Base (BB) BOY	BB EOY	Contract Value (CV) BOY	CV EOY	CV/BB BOY	CV/BB EOY
Total	$393,543,605,037	$408,420,204,010	$340,375,697,809	$372,637,730,925	86.5%	91.2%
Average	157,459	$163,411	136,186	149,094	86.5%	91.2%
Median	108,536	$112,556	95,634	104,066	88.1%	92.5%

Percentage of contracts where benefit base was greater than contract value:

Beginning of Year 91.5%

End of Year 78.8%

Market Type
- (●) All
- ( ) Qualified
- ( ) Non-qualified

Issue Year
- [x] Before 2008
- [x] 2008
- [x] 2009
- [x] 2010
- [x] 2011
- [x] 2012
- [x] 2013
- [x] 2014
- [x] 2015
- [x] 2016

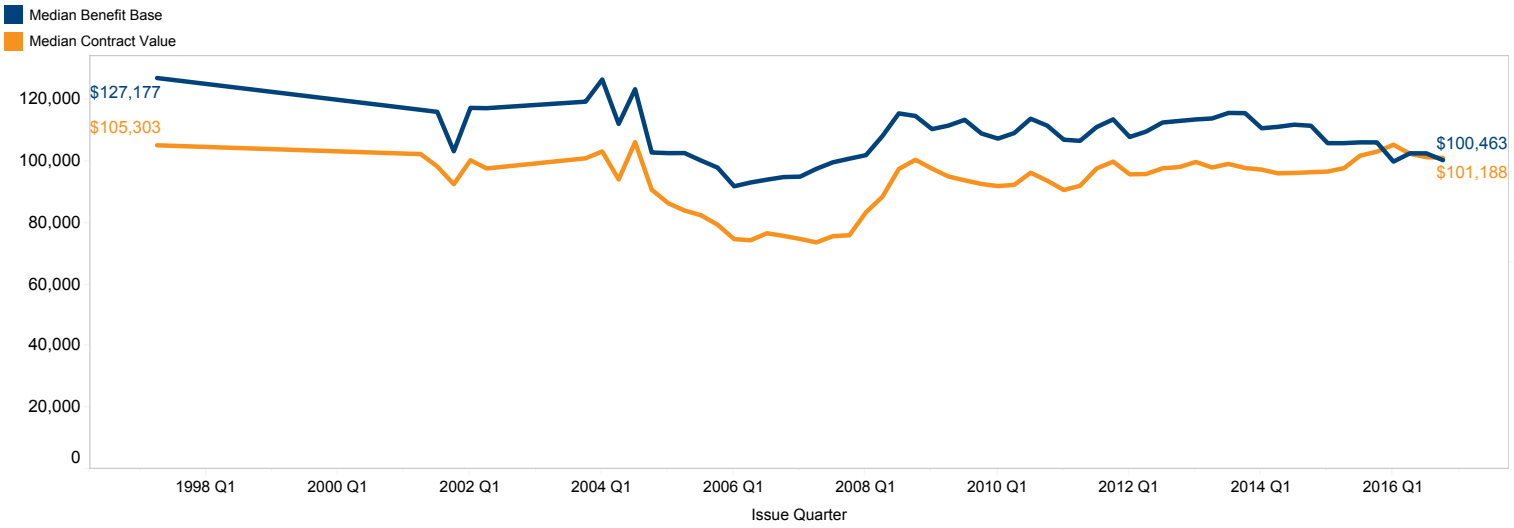
GLWBs are complex products and insurers are exposed to the risk that the underlying investments may underperform before or during the withdrawal period, and that the account balances in the contracts may be insufficient to cover the lifetime withdrawal guarantee. With a guarantee of lifetime benefit option — particularly on joint lives — insurers also are exposed to longevity risk. The performance of underlying investments may remain vulnerable to the complex mixture of risk arising from equity, interest rates, and the correlation thereof.

Over the last several years, insurance companies have worked to better manage the volatility of the subaccounts by restricting the funds into which GLWB owners can invest. This has evolved from asset allocation funds to automatic asset transfer programs to managed volatility funds.

Withdrawal Activity
All

Contract Value and Benefit Base by Issue Quarter

When a contract was issued has an impact on if — and how much — the benefit base might exceed the contract value and some contracts have experienced considerable market volatility.



Time of Year
- (●) Beginning of Year
- ( ) End of Year

Benefit Base and Contract Value Dollar Amounts or Ratios
- (●) Dollar Amounts
- ( ) Ratios

Median or Quartiles
- (●) Median
- ( ) Quartiles

Economic Data
- (●) None
- ( ) Treasury Yield data
- ( ) S&P 500

Source: Oxford Economics

Some data are suppressed for confidentiality reasons.

In-the-Money Levels by Age

Ratios of 3.75% APV to Contract Value EOY

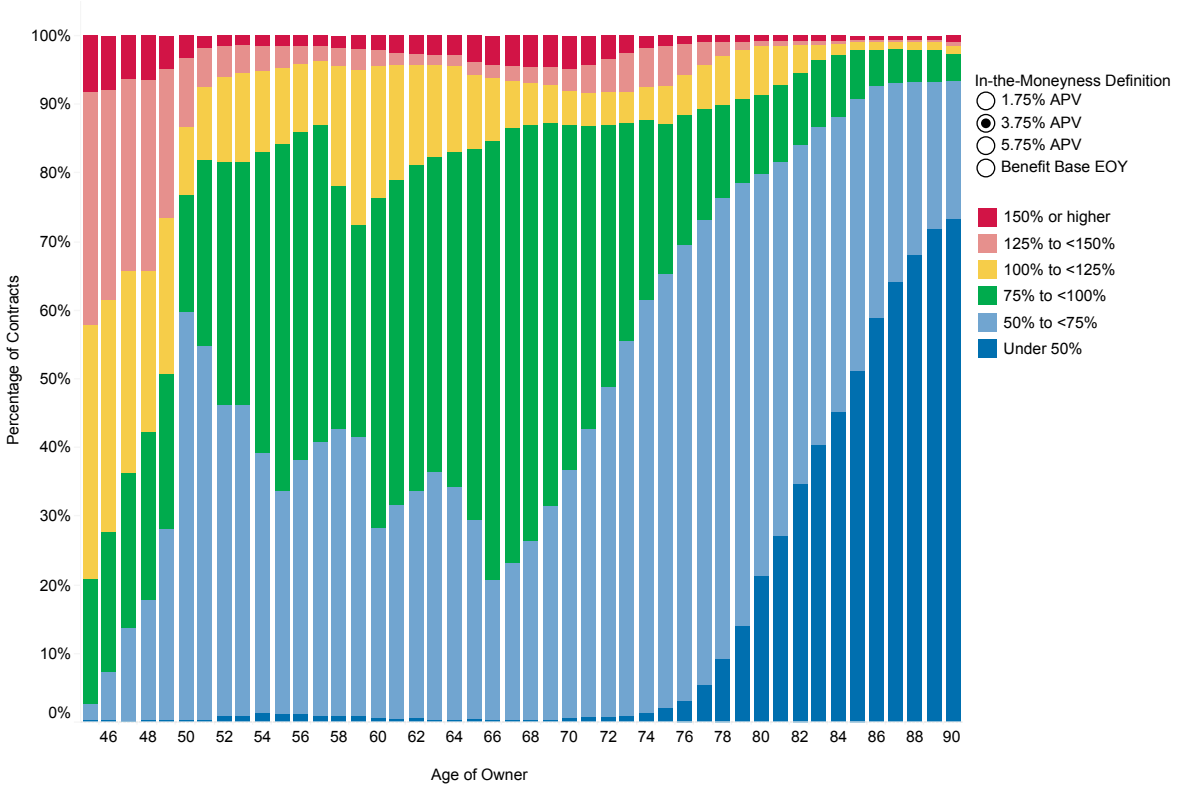
The analysis of BB/CV ratios can be expanded to include age or age cohorts to see how the withdrawal risks from a particular age or age cohort can be linked to BB/CV ratios. The BB/CV ratios are impacted by factors like the duration of contracts and the impact of market returns on the contract values, infusion of new contracts into the book by age groups, richness of in-force contract features like automatic roll-up percentages, and impact of withdrawals on the contract values and benefit bases. This analysis can allow companies to assess withdrawal risks associated with each age or age cohort in relation to the industry.

This figure shows the BB/CV ratios by age at the BOY. For in-force contracts issued before 2017, by EOY about 7.5 percent had BB/CV ratios of less than 100 percent, more than twice the percent in 2016.

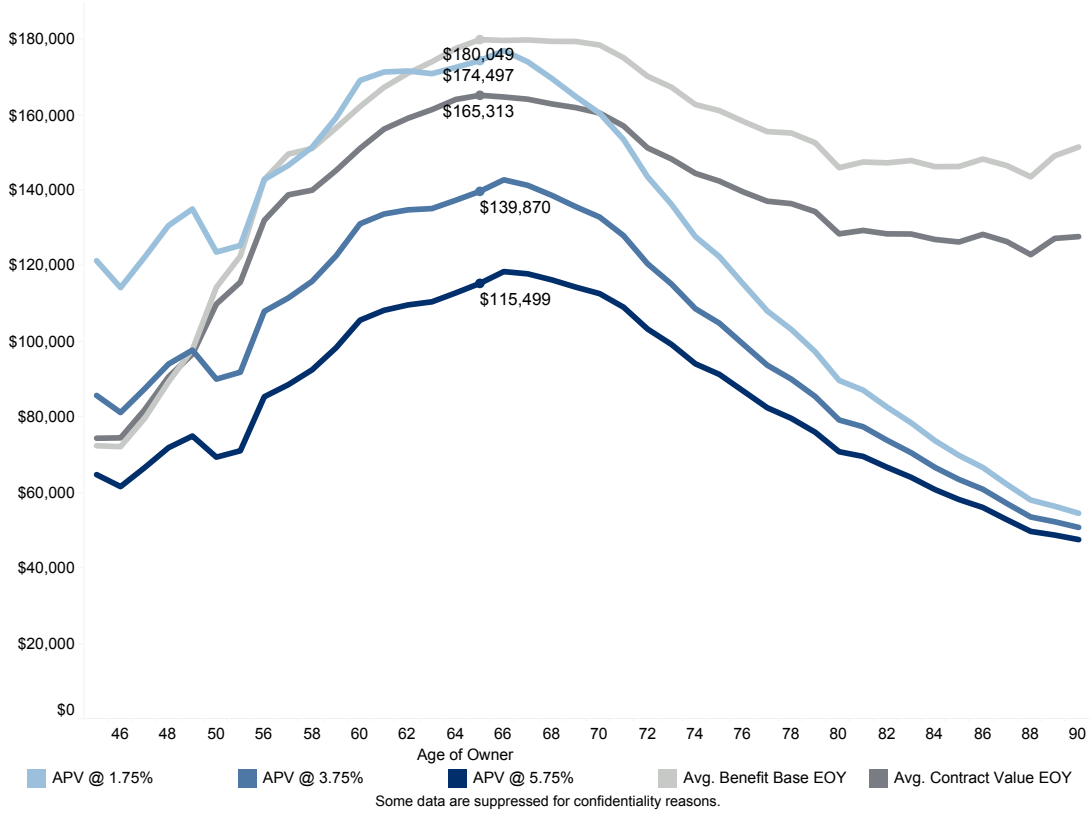
Again owners aged 70 or older had comparatively more contracts with BB/CV ratios of 125 percent or more (similar to what we have seen in past years). One in four contracts with owners aged 70 and older — had BB/CV ratios of 125 percent or more. Though owners aged 70 or older constituted only a third of all contract owners, nearly half of all contracts with BB/CV ratios of 125 percent or more were within this age cohort. Older owners hold comparatively more contracts with higher BB/CV ratios because:

- They are more likely to own contracts for a longer duration of time. So these contracts are likely to have suffered from increased market volatility.

- Older owners — particularly those aged 70 or older — are more likely to take withdrawals over a longer period of time. Also, those funded with qualified money are required to begin taking withdrawals at age 70½. If their withdrawal amounts remain within the maximum amount offered in the contract, their contract values may diminish due to the withdrawals while the benefit bases are likely to remain level and relatively high.



Average Actuarial Present Value vs. Average Contract Value by Age



Some data are suppressed for confidentiality reasons.

The graph presents an actuarial present value (APV) analysis of benefit-maximum guaranteed withdrawals for the in-force block of business by age, and compares the average APV to average contract values at the EOY.

The analysis is based on the following assumptions:

- All contract owners eligible to take withdrawals as of EOY do so under the current terms of the riders. Withdrawals are taken at the beginning of each year of analysis, and contract owners are assumed to take the maximum guaranteed annual withdrawal amount, which equals the higher of a) the BOY maximum guaranteed annual withdrawal amount as specified by companies, or b) the BOY maximum annual withdrawal percentage multiplied by each contract's benefit base on its anniversary date or, if not available, as of the EOY. If companies did not specify the BOY annual withdrawal percentage at the contract level, we determined it based on the rider specifications, with appropriate adjustment to the contract owner's age.

- Annual withdrawals or payments continue until the owner's gender- and age-specific life expectancy, using the 2012 Individual Annuitant Basic Mortality Table with projection scale G2.

- We did not consider contract surrender activity or payment of guaranteed death benefits.

- APV analysis is based on an interest rate of 3.75 percent. We used two other interest rates at ±200 basis points from this valuation rate (i.e., 1.75 and 5.75 percent) to assess the sensitivity of interest rate changes.

- We do not intend the industry to use this analysis as a measure of risk or efficiency of risk management in the industry, as we do not consider factors such as fees, lapse rates, effectiveness of hedging programs, asset allocation restrictions, and other related factors in the calculation.

Product & Benefit Characteristics

Average Charges and Number of Subaccounts by Issue Year

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Avg. Mortality and Expense Charge	1.39%	1.31%	1.30%	1.25%	1.25%	1.26%	1.23%	1.24%	1.21%	1.18%	1.16%	1.13%
Avg. Benefit Fee	0.81%	0.71%	0.96%	1.02%	0.91%	0.96%	1.02%	0.98%	1.00%	1.10%	1.08%	1.09%
Avg. Number of Subaccounts	75.99	71.72	68.80	62.97	60.36	61.76	63.88	61.47	58.68	59.15	59.06	60.58
Avg. Maximum Age at Election	83.99	84.06	84.11	84.55	84.32	84.28	84.44	84.59	82.40	83.19	83.81	84.18
Avg. Minimum Age at Onset	61.22	57.47	56.88	54.40	53.41	52.84	54.98	54.45	53.94	53.71	51.66	52.27
Avg. Maximum Age at Onset	99.00	94.28	94.50	94.95	95.00	95.00	95.00	94.91	72.72	77.97	50.42	97.06

Product Features - Distribution by Issue Year

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
No	22%	10%	4%	5%	9%	10%	8%	8%	9%	10%
Yes	78%	90%	96%	95%	91%	90%	92%	92%	91%	90%

- (●) Product has fixed account
- ( ) Product still available as of EOY
- ( ) Rider still available as of EOY
- ( ) Cap on benefits
- ( ) Benefit fee basis
- ( ) Asset allocation restrictions
- ( ) Benefit base automatically increases if withdrawals are deferred
- ( ) Payments can continue to spouse after owner's death
- ( ) Impact on benefit base if excess withdrawal are taken

Participants

AIG
Ameritas
Brighthouse
CUNA Mutual
Equitable Financial
Lincoln National
MetLife
Nassau Re
Nationwide
New York Life
Pacific Life
Principal Financial
Protective
Prudential
RiverSource Annuities
Securian/Minnesota Life
Security Benefit
Transamerica