

# Variable Annuity Guaranteed Living Benefits Utilization

2012 EXPERIENCE

A Joint Study  
Sponsored by the  
Society of Actuaries  
and LIMRA





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## About the Study

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

**LIMRA Variable Annuity  
Guaranteed Living Benefit  
Utilization Study (VAGLBUS) —  
2012 Data** is an annual update of  
earlier investigations,  
conducted since 2006.

The study examines the GLB utilization of over 4.6 million contracts that were either issued during or in force as of 2012. Twenty-two insurance companies participated in this study. These 22 companies make up 71 percent of all GLB elected sales in 2012 and 75 percent of GLB assets at year end, and thus provide a substantial representation of this business.

Guaranteed lifetime withdrawal benefits (GLWBs), guaranteed minimum withdrawal benefits (GMWBs), guaranteed minimum income benefits (GMIBs), guaranteed minimum accumulation benefits (GMABs), and combinations of these benefits were elected for products that comprised 78 percent of new VA sales in 2012, according to LIMRA's Election Tracking Survey.<sup>1</sup> LIMRA estimates that GLB assets were \$661 billion, constituting 38 percent of total VA assets as of year-end 2012.

Research on GLBs generally focuses on sales and elections rather than on how annuity owners actually use their benefits. However, knowing more about benefit utilization — as well as the intermediate behaviors involving step-ups, cash flow, and persistency — can assist insurers with assessing and managing the long-term risks of these GLBs.

<sup>1</sup> *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2012*, LIMRA, 2013.



## Executive Summary

Based on seven years of studying VA GLB owners, we have identified some trends and key determinants that describe how VA owners with lifetime payout riders (GLWBs and GMIBs) utilize their GLB riders, which can provide important insights into how these owners may behave in the future. We have found interconnected relationships between characteristics like age, source of funding (qualified or nonqualified), and methods of withdrawals (SWPs or non SWPs). Even surrender rates are influenced by certain owner withdrawal characteristics. Combining all of these elements enables us to understand certain withdrawal risk from different segments of GLB owners – how many will start their withdrawals by age and source of funding, how many are likely to utilize withdrawal riders or provisions for life, what methods of withdrawals will they use, how many are likely to stay on the book of business for long time, and how many are likely to surrender and when. These GLWB and GMIB contracts account for 87 percent of all in-force GLBs in our study.

Withdrawal and surrender behaviors of GLWB and GMIB owners can be reviewed in four inter-connected relationships:

### Starting Withdrawals

- Source of funding (i.e., qualified or nonqualified) and age are the two most important influences on when owners start their withdrawals.
  - Before attaining age 70, there is no perceptible difference between percentages of owners taking withdrawals either from their qualified or nonqualified annuities.
  - However, a large percentage of owners with qualified annuities start taking their withdrawals at age 71 and 72 to meet their required minimum distributions (RMDs) and the percent of qualified owners taking withdrawals rises with age. Currently, around two thirds of VA contracts with lifetime payout riders are funded with qualified money.
  - In contrast, nonqualified contracts show an incremental and steady increase in the number of owners taking withdrawals. However, the percentage of owners taking withdrawals from nonqualified annuities is never as high as that of older qualified owners. For nonqualified contracts, age and contract duration are the principal drivers for withdrawals.

- The size of the contracts, deferral incentives, duration of contracts, and the channels through which the customer bought the annuity also have an impact on how customers take withdrawals, but these factors are not as significant as age and source of money.
- Contract benefits that are in-the-money had little influence on GLWB owners starting withdrawals in 2012 or in previous years.

### **Method of Withdrawals**

- A majority of owners take withdrawals through systematic withdrawal plans (SWPs). Use of SWPs can be interpreted as confirmation that these owners plan to utilize the lifetime withdrawal provisions in their riders.
- Once owners start to take withdrawals, they are likely to continue withdrawals, irrespective of their funding sources.
- As a result, these owners are less likely to surrender their contracts anytime soon.
- Older owners are more likely to take withdrawals through SWPs.

### **Percentage of Annual Benefit Maximum Withdrawn**

- When owners use SWPs, they are likely to make withdrawals within the maximum amount allowed in their contracts.
- In general, younger owners are more likely to take withdrawals greater than the maximum amount allowed, particularly for owners under age 60. Most withdrawals in excess of 125 percent of the annual benefit maximum amount come from occasional or non-systematic withdrawals. For IRA owners over age 70½, some excess withdrawals were due to RMD requirements.
- Owners of VAs with higher contract values are less likely than those with lower contract values to take withdrawals that significantly exceed the benefit maximum, particularly among younger owners.

### **Surrender Rates**

- The surrender rates among GLWB and GMIB owners, particularly among the bulk of older owners, are low. The surrender rates among owners using SWPS as methods of withdrawals are lower compared to owners who are taking occasional or non-systematic withdrawals.
- The surrender rate among owners under age 65 who have not started taking withdrawals is very low, and it appears that they will likely use the rider benefits.

- Though duration and surrender charge rates present in the contracts influence persistency, customers under age 60 who take withdrawals have an increased likelihood of surrendering their contracts.
- The surrender rates among owners aged 65 and over who are taking withdrawals are relatively low.
- For GLWB owners aged 65 and older not taking withdrawals, their surrender rates are also low; while GMIB owners aged 65 and older not taking withdrawals experienced increasing surrender rates with age.
- 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. The percentage of benefit maximum withdrawn is impacted by the owner's age and method of withdrawal (SWP vs. non-SWPs).
- Any withdrawal behavior significantly out of line with maximum annual withdrawal benefit amounts can indicate increased surrender behavior of GLWB owners.
- In general, surrender rates are lower when the contracts are in-the-money.

#### Action Steps and Issues to Consider

- **Overall, there is a strong indication that most annuity owners plan to take advantage of the lifetime guaranteed income benefit allowed in their contracts, and many are sticking to that plan.** More than two thirds of buyers have used qualified money to purchase their GLWBs. Most of these qualified annuity buyers are using a portion of their 401(k) or IRA savings to purchase a GLB rider that provides the ability to create an guaranteed income stream, safe from market risk. Many will activate the guaranteed withdrawal provisions at RMD age 70½. That appears to be one of the principal reasons why contract benefits being in-the-money over the last few years have had little influence on owner's withdrawal behavior.
- **Infusion of qualified money offers special challenges to insurers.** The increasing mix of qualified money into the insurer's book of business offers challenges to manage this risk accordingly. As more and more qualified contract owners approach age 70½, an increasing percentage of them will begin withdrawals. It is important for companies to look at their business and evaluate how their customer mix can impact risk and cash flow. There is more risk from customer withdrawal behavior on assets funded with qualified money than that from a nonqualified block of business.

- **To help manage these risks, companies should try to attract more nonqualified money.** Without the withdrawal requirements of RMDS, a majority of nonqualified annuity owners are inclined to start guaranteed lifetime withdrawals or income benefits from their annuities as a last resort, likely after their qualified savings have been depleted in retirement. As a result, the percentage of owners taking withdrawals from nonqualified annuities is remarkably lower when compared to that of owners of qualified annuities. Companies should consider how they can attract more nonqualified money to balance their mix of business. Changes in product designs including reduced cost, deferral incentives, or other product incentives can be used to attract more nonqualified money. Infusion of more nonqualified owners could substantially alleviate risks related to withdrawal behaviors.
- **Insurance companies should assess surrender rates and their strong relationship to owner withdrawal behavior when managing the risk associated with their book of business.** Understanding the withdrawal behavior of GLB owners 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. In addition, when younger owners take withdrawals, they are more likely to take occasional withdrawals. These younger owners may be taking partial surrenders. Younger owners who took withdrawals in 2012 were more likely to fully surrender their contracts.
- **Companies should evaluate how their own customers behave compared with the industry, and re-assess their assumptions as needed.** Measuring, modeling, and predicting policy and contract owner behavior emerges as a central challenge for insurers seeking to optimize their product development and management efforts. Understanding these issues will allow anyone participating in or following this market to better assess the underlying dynamics of withdrawal and surrender behavior, which will assist them in measuring and projecting the long-term risks associated with withdrawals and surrenders. Most critically, these analyses can help to gauge how many owners are using their rider to create guaranteed lifetime income in retirement. All VAs with GLBs are experiencing improved persistency in comparison to ordinary VAs; this will have an impact on the company's assets and reserves, reflecting the fact that a larger number of contract owners may ultimately receive benefits over the life of their contracts.

## Guaranteed Lifetime Withdrawal Benefits (GLWBs)

*Results based on 2,355,321 contracts issued by 20 companies*

### Owner Profile

- The average age of GLWB buyers in 2012 was 61.2 years. More than 7 out of 10 new GLWB buyers in 2012 were Baby Boomers, aged 48–66.
- Rollover dollars are a growing source for GLWB funding. Nearly three fourths of 2012 buyers under age 70 used qualified money (i.e., IRAs) to buy a GLWB annuity. This trend reflects broader industry trends that LIMRA tracks in the total annuity market, where annuities are increasingly being funded with tax-qualified money, the bulk of which likely comes from rollovers by younger investors.
- The average premium received in GLWB contracts issued in 2012 was \$114,600 — slightly more than \$110,600 received in 2011. The average contract value of GLWB contracts was \$120,600 at the end of 2012 for all in-force contracts.
- Roughly half of GLWBs are bought by males and the other half by females. However, the average premium from contracts bought by males is 20 percent higher than the average premium from contracts purchased by females.

### Benefit Base

- At the beginning of 2012, 92 percent of contracts with GLWBs issued before 2012 had benefit bases that exceeded contract values (i.e., were “in-the-money”). Most of these were still recovering from heavy market losses experienced in late 2008. Of these contracts, the average difference between the benefit base and contract value was approximately \$16,300.
- At year-end, 81 percent of contracts had benefit bases exceeding the contract values. The gap between the average contract value and the average benefit base decreased to \$13,700. The average contract value stood at \$121,100 while the average benefit base was \$134,800 at year-end.

### Withdrawal Activity

- Overall utilization rates remained level for contracts that were in force for an entire year. Twenty-one percent of contracts had at least some withdrawal activity during 2012. For 3 out of 4 contracts, these were systematic withdrawals.
- Once owners start to take withdrawals, they are likely to continue withdrawals.
- Contract benefits being in-the-money had little influence on withdrawal behavior of GLWB owners in 2012.

- The median amount withdrawn was \$5,600, representing 6.6 percent of the average beginning-of-year median contract value of \$84,800.
- Ninety-four percent of GLWB customers who purchased their contracts in 2011 and took withdrawals that year also took withdrawals in 2012.
- Two thirds of GLWB owners over age 70 took withdrawals from annuities purchased with qualified money. Nearly 45 percent of older owners take withdrawals from their nonqualified annuities.
- The withdrawal amount for just under one fifth of the owners exceeded the maximum withdrawal amount allowed in the contract by 25 percent or more. In general, younger owners are more likely to take withdrawals more than the maximum amount allowed. Some IRA owners over age 70½ took withdrawals to satisfy RMD requirements.
- Also, most withdrawals that exceed 125 percent of the annual benefit maximum amount come from non-systematic withdrawals.
- Three in 10 GLWB contracts had payouts based on joint lives. Overall, the percent of owners taking withdrawals from joint lives contracts is slightly lower than the percent of owners taking withdrawals from single life contracts.

### **Step-Up Activity**

- Just under half of GLWB owners had step-up options available during 2012. Overall, only 6 percent chose to step up their benefit bases.

### **Additional Premium and Net Flows**

- Seven percent of contracts issued in 2011 or earlier received additional premium in 2012, mostly from contracts issued in 2011. Owners rarely add premium after the second year of owning a GLWB contract.
- Younger owners were more likely to add premium than older owners.
- At the beginning of 2012, assets in GLWB contracts amounted to \$215.6 billion. Premium from newly issued and existing contracts was \$48.3 billion while investment gains hit \$18.9 billion. Outflows from partial withdrawals, full surrenders, deaths, and annuitizations amounted to \$10.6 billion. By the end of 2012, GLWB assets reached \$272.2 billion.



## Persistency

- Surrender rates are extremely low for VAs with GLWBs. Across all contracts, only 2.9 percent surrendered during 2012.
- Among the owners under age 60 who took withdrawals in 2012, the contract surrender rate was 10.2 percent. The contract surrender rate was only 2.5 percent among owners under age 60 who did not take any withdrawals in 2012.
- The contract surrender rate (2.6 percent) among owners aged 60 or older who took withdrawals in 2012 was a bit lower than the surrender rate (3.1 percent) for owners aged 60 or older who did not take withdrawals in 2012.
- The surrender rates were higher among the owners who have either taken withdrawals below 75 percent of the maximum allowed in the contracts (5.1 percent) or among owners whose withdrawal amount was 150 percent or more of the maximum allowed (9.4 percent). The surrender rate among owners who took withdrawals between 75 percent to 125 percent of the maximum withdrawal amount allowed in the contracts is the lowest, only 0.9 percent.
- GLWB contract surrender rates were 6.8 percent among owners who were taking non-systematic withdrawals compared to 1.9 percent among owners who took systematic withdrawals in 2012.
- Surrender rates were lower for contracts that were in-the-money at the beginning of year.

## Product and Benefit Characteristics

- The average buyer in 2012 paid about 230 basis points for a VA with a GLWB, as a percentage of contract value, VA subaccounts, or benefit base values.
- On average, owners who purchased contracts in 2012 can take lifetime benefits as early as age 52 and can elect the GLWB until they reach age 84. However, some contracts allow lifetime withdrawal benefits to begin as early as age 50 or as late as age 99.
- In 3 out of 4 contracts issued in 2012, benefit bases are reduced in proportion to the amount of the excess withdrawal (i.e., the ratio of the excess withdrawal to the contract value before the excess is withdrawn). One in four reduced the benefit bases on a dollar-for-dollar basis (usually up to the annual growth of the benefit base). Almost all contracts issued in 2012 allowed excess withdrawals to satisfy RMDs.
- In 2012, half of the GLWB contracts issued had maximum payouts of 4 percent or lower.

## Guaranteed Minimum Withdrawal Benefits (GMWBs)

*Results based on 251,449 contracts issued by 13 companies*

### Owner Profile

- Almost half (45 percent) of the in-force GMWB owners are aged 70 or older.

### Benefit Base

- At the beginning of the year, 75 percent of contracts with GMWBs issued before 2012 had benefit bases that exceeded contract values. At the end of the year, 46 percent of contracts had contract values that were below the benefit base values, principally due to equity market and fixed-income fund gains in 2012.
- For GMWBs, the ratio of contract value to benefit base improved from 90 percent at the beginning of 2012 to 97 percent by year-end.
- The average contract value increased from \$102,300 at the beginning of 2012 to \$109,000 at the end of 2012. At the end of 2012, the average benefit base stood at \$112,400, with a gap of \$3,500 compared to the average account value.

### Withdrawal Activity

- Forty-four percent of GMWB contracts had at least some withdrawal activity during 2012 — the highest overall withdrawal activity for any of the GLBs. Three out of four withdrawals were through systematic withdrawal plans.
- The median withdrawal amount in GMWB contracts in 2012 was \$6,000.
- The percent of owners taking withdrawals approached 90 percent in older ages for annuities purchased with qualified money. The percent of owners taking withdrawals from their nonqualified annuities approached nearly 50 percent.
- GMWB owners aged 60 or older are more likely to take their withdrawals through SWPs; and younger owners, particularly under age 60, are more likely to take withdrawals on a lump-sum or occasional basis.
- Around 80 percent of owners that took withdrawals in 2012 withdrew within 110 percent of the maximum annual withdrawal amount allowed in the contract.
- Once owners start to take withdrawals, they are likely to continue withdrawals.
- A contract benefit being in-the-money appeared to have no influence on withdrawal behavior of GMWB owners in 2012.

## Step-Up Activity

- Forty-two percent of owners had step-up options available during 2012. Overall, only 13 percent chose to step up their benefit bases.

## Additional Premium and Net Flows

- Among contracts issued in 2012 or earlier, only 3 percent received additional premium in 2012.
- At the beginning of 2012, assets in GMWB contracts amounted to \$25.2 billion. Gains due to premium received (\$0.6 billion) and equity market growth (\$2.5 billion) were offset by outflows from partial withdrawals, full surrenders, deaths, and annuitizations (\$3.1 billion). End-of-year 2012 GMWB assets remained relatively flat at \$25.1 billion.

## Persistency

- The surrender rate of GMWB contracts was 7.7 percent in 2012 while the cash value surrender rate was 7.4 percent.
- High surrender rates are associated with older owners not taking withdrawals in 2012 and younger owners, particularly those under age 60, who took withdrawals before in 2012.
- Contract surrender rates for GMWB contracts that were under surrender charges were low, 4.6 percent for B-share and 2.5 percent for L-share contracts, respectively. Where the surrender charges have expired in current or previous years, the surrender rate was 14.6 percent and 9.9 percent for B-share and L-share, respectively.
- Surrender rates among owners who took withdrawals in 2012 of between 75 percent to less than 150 percent of the maximum withdrawal amount allowed in the contracts were under 2 percent.
- GMWB contract surrender rates were 6.6 percent among owners who take non-systematic withdrawals vs. 3.9 percent among owners who take systematic withdrawals in 2012.
- GMWB owners appear to be sensitive to the degree of in-the-moneyness when deciding whether to surrender their contracts.

## Product and Benefit Characteristics

- The total charge for GMWB contracts (including M&E charges and rider fees) was around 2.08 percent of contract value for contracts issued in 2012.
- Unlike GLWB contracts, most GMWB contracts do not offer an automatic increase in benefit base in case the withdrawals are not taken immediately. Also, most GMWB contracts do not have caps on benefit bases.
- All offered annual step-up options.

## Guaranteed Minimum Income Benefits (GMIBs)

*Results based on 1,661,177 contracts issued by 16 companies*

### Owner Profile

- The average age of GMIB owners was 62, as of year-end 2012. Just over one quarter were aged 70 or older.
- Two thirds of the GMIB contracts were funded from qualified sources of money.
- The average contract value for contracts in force at the end of 2012 was \$109,200.

### Benefit Base

- At the beginning of the year, 9 out of 10 GMIB contracts issued before 2012 had benefit bases that exceeded contract values and this was unchanged at the end of 2012.
- On average, the ratio of contract value to benefit base improved slightly from 80 percent at the beginning of 2012 to 81 percent by year-end.
- The average contract value increased from \$100,700 at the beginning of 2012 to \$109,300 at the end of 2012. At the end of 2012, the average benefit base stood at \$135,000, about \$25,700 higher than the average contract value.
- Almost all GMIB contracts that were issued before 2012 had GMIB benefits that were based on the roll-up or higher of ratchet or roll-up calculation methods; 85 percent of the roll-up rates ranged from 5 percent to less than 7 percent of the benefit base per year; only 13 percent were 7 percent or higher.

### In-the-Moneyness

- A measure of in-the-moneyness was developed, based on a comparison of a) the hypothetical payout from GMIBs, applying rider-specific actuarial present value factors to the year-end benefit bases, with b) immediate annuity payouts available in the market at year-end (applying contract values). On average, GMIB payouts exceeded immediate annuity payouts by 24 percent.
- Average GMIB-payout to immediate-annuity-payout ratios exceeded 1.0 across gender, age, and payout type (life-only or life with 10-year period certain). Ratios were highest for contracts owned by older individuals.

## Annuitization

- Of those contracts that reached their benefit maturities in 2012 and were in force as of the beginning of 2012, approximately 2.2 percent annuitized their contracts in 2012. The overall 2012 annuitization rate for all in-force contracts at the beginning of 2012 was only 0.3 percent.
- Older owner ages, larger contract sizes, and higher benefit base to contract value ratios were associated with higher rates of annuitization.

## Withdrawal Activity

- One out of four GMIB contracts had at least some withdrawal activity during 2012.
- Three-fourths of all GMIB withdrawal activity was in the form of systematic withdrawals.
- As observed for other GLB types, withdrawal activity was much more common among IRA contracts owned by customers aged 70 or older. The percent of owners with withdrawals approached 80 percent in older ages for IRA annuities purchased with qualified money. Withdrawal activity among nonqualified contracts is very low, reaching just over 30 percent for owners around age 80.
- The median withdrawal amount in 2012 was \$6,000.

## Additional Premium and Net Flows

- Among contracts issued in 2011 or earlier, 6 percent received additional premium in 2012.
- Younger owners were more likely to add premium than older owners.
- Premiums received for newly issued and existing contracts exceeded outflows associated with withdrawals, surrenders, deaths, and annuitizations — \$17.3 billion and \$9.6 billion, respectively. The total number of GMIB in-force contracts grew by 3 percent during 2012. At end-of-year 2012, GMIB assets were \$173.3 billion, 14 percent higher than the \$152.3 billion at beginning-of-year 2012.

## Persistency

- Among all GMIB contracts issued before 2012, 3.8 percent were surrendered in 2012.
- For B-share contracts that still had a surrender charge in 2012, the surrender rate was 2.4 percent. For B-share contracts where the surrender charges expired in 2012, the contract surrender rate was 8.1 percent. The surrender rate was 7.3 percent for contracts where surrender charges expired in previous years.

- The contract surrender rate among owners under age 60 who took withdrawals in 2012 was 7.4 percent, compared to only 3.5 percent among owners under age 60 who did not take any withdrawals. The surrender rate for owners aged 60 or older who took withdrawals was 2.8 percent, slightly lower than those who did not take withdrawals (4.5 percent).
- Contract surrender rates among owners who took withdrawals below 90 percent of the maximum allowed in the contracts and the owners who took 110 percent or more of the maximum allowed are higher than those closer to the annual maximum withdrawal amount.
- The contract surrender rate among owners who took non-systematic withdrawals in 2012 was 6.4 percent while the surrender rate among owners who withdrew systematically was a very low 2.1 percent.
- Controlling for withdrawal activity, higher in-the-moneyness is linked to lower surrender activity.

## Guaranteed Minimum Accumulation Benefits (GMABs)

*Results based on 334,954 contracts issued by 14 companies*

### Owner Profile

- GMAB buyers are typically younger than any other GLB buyers. In 2012, their average age was 53.2 years; one third of GMAB buyers were under age 50.
- Three fourths of the GMAB contracts issued in 2012 were funded from qualified sources of money.
- The average premium for contracts issued in 2012 was \$89,800.

### Benefit Base

- At the beginning of the year, 39 percent of GMAB contracts issued before 2012 had benefit bases that exceeded contract values. At the end of 2012, 17 percent of contracts had contract values lower than the benefit bases.
- For average GMABs, the ratio of contract value to benefit base improved from 104 percent at the beginning of 2012 to 112 percent by year-end.
- The average contract value increased from \$80,100 at the beginning of 2012 to \$85,200 at the end of 2012. At the end of 2012, the average benefit base stood at \$75,900, about \$9,300 lower than the average contract value.

- Nearly all (90 percent) of the GMABs have benefit bases that are determined based on total premiums received.

### **Benefit Maturity**

- Most GMAB contracts issued before 2012 in the study (81 percent) have maturity dates in 2014 or later. Nearly half of in-force GMAB contracts will mature between 2013 and 2017.

### **Withdrawal Activity**

- Seventeen percent of GMAB contracts had at least some withdrawal activity during 2012.
- Withdrawal activity was much more common among qualified contracts owned by customers aged 70 or older. The percent of owners with withdrawals approached 80 percent in older ages for annuities purchased with qualified money.
- The percent of owners using systematic withdrawals (45 percent) is much lower in the case of GMAB owners compared with owners using systematic withdrawals in other GLB products.
- The median withdrawal amount in 2012 was \$6,600.

### **Step-Up Activity**

- Forty percent of owners had step-up options available during 2012. Overall, only 3 percent chose to step up their benefit bases.

### **Additional Premium and Net Flows**

- At the beginning of 2012, assets in GMAB contracts amounted to \$25.6 billion. Year-end assets reached \$25.9 billion.

### **Persistency**

- With an overall surrender rate of 9.9 percent, GMABs have the highest surrender rate of all GLBs.
- Surrender rates of 15.3 percent were also quite high for GMAB contracts issued in 2005 or before, as the contracts came out of surrender charges and reached benefit maturity.
- For contracts where surrender charges expired in 2012, the surrender rate was 23 percent. The surrender rate was 14 percent for contracts where surrender charges expired in previous years. For contracts still under surrender charges, the surrender rate was 7 percent.
- There appears to be no significant impact of in-the-moneyness on surrender activity.

### **Product and Benefit Characteristics**

- Among GMAB contracts issued in 2012, the average total charge (M&E and rider fee) was 2.22 percent.
- Almost all GMAB contracts issued in 2012 guaranteed 100 percent of premium at benefit maturity.
- Ten-year (74 percent) and 12-year (22 percent) accumulation guarantees were the most common guarantee periods.



# Chapter One

2012 EXPERIENCE

## Guaranteed Lifetime Withdrawal Benefits



## Chapter One: Guaranteed Lifetime Withdrawal Benefits

Guaranteed lifetime withdrawal benefits (GLWBs) continue to be the most popular type of guaranteed living benefit (GLB) in the variable annuity (VA) market since their introduction in 2004. With the purchase of a GLWB, owners can take lifetime withdrawals, guaranteed up to a maximum percent of the benefit base every year regardless of the market performance of funds in their annuity. Typically the GLWB owners have flexibility in deciding when to start their withdrawals, can retain control over their assets; and, unlike guaranteed minimum income benefit (GMIB) riders, are not obligated to annuitize their contracts to receive guaranteed lifetime income payments. In some contracts, the buyers may also select — at the time of purchase — whether the lifetime withdrawals are based on a single life or should cover joint lives of the owner/annuitant and his or her spouse.

The benefit base for older GLWBs was typically the sum of premium payments. Many later versions enhanced the benefit base to include investment growth or bonuses prior to withdrawals, or optional step-ups to include investment growth after withdrawals have commenced. Owners can usually take withdrawals immediately after purchasing their contracts, but may wait for several years — or even skip years — to benefit from guaranteed growth in the benefit base that determines a higher amount of guaranteed withdrawals. Such flexibility and varying withdrawal options can make VAs more attractive than other equity-based investment options that do not offer lifetime guarantees on future withdrawal values.

In 2012, new GLWB sales reached \$61.1 billion, accounting for three quarters of all GLB sales premiums. In 2012, sales of GLWBs declined \$4.5 billion or 7 percent compared to 2011, as annuity manufacturers continued de-risking the riders and closely managing their VA business. GLWBs posted the highest election rates of any GLB type, and when any GLB was available. GLWB election rates ranged from 62 percent (fourth quarter) to 66 percent (second and third quarters) in 2012.<sup>2</sup> Assets in VAs with GLWBs grew 20 percent from \$323 billion at end-of-year (EOY) 2011 to \$389 billion at EOY 2012.

This chapter provides important insights about GLWB buyers in 2012 and the behavior of existing owners who bought their GLWBs before 2012. LIMRA's GLWB database contains a comprehensive and representative sample of GLWB contracts. The 2012 study is based on 2,355,321 GLWB contracts issued by 20 companies. Of these contracts, 1,907,517 were issued before 2012 and remained in force at EOY 2012, while 377,936 contracts were issued in 2012 and remained in force at EOY 2012. The assets of in-force contracts in the study totaled \$276 billion at EOY 2012, representing 71 percent of total industry GLWB assets from a total of 187 GLWB riders.

<sup>2</sup> *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2012*, LIMRA, 2013.

## Buyer and Owner Profiles

In 2012, the average age of GLWB buyers was 61.2 years, slightly above the average age of 61.0 years in 2011. In 2010 and 2009, the average age of GLWB buyers was 60.4 years and 60.0 years respectively (Table 1-1). Although the average age in the lower and upper quartile range shifted downward from 2007 to 2009, that trend changed in 2010. By 2012, the average lower quartile age increased back to age 56 and the average upper quartile age was age 66. GLWBs remain popular with the leading edge of the Baby Boomers (aged 57 to 66) who purchased nearly half of the contracts (47 percent) in 2012 (Figure 1-1).

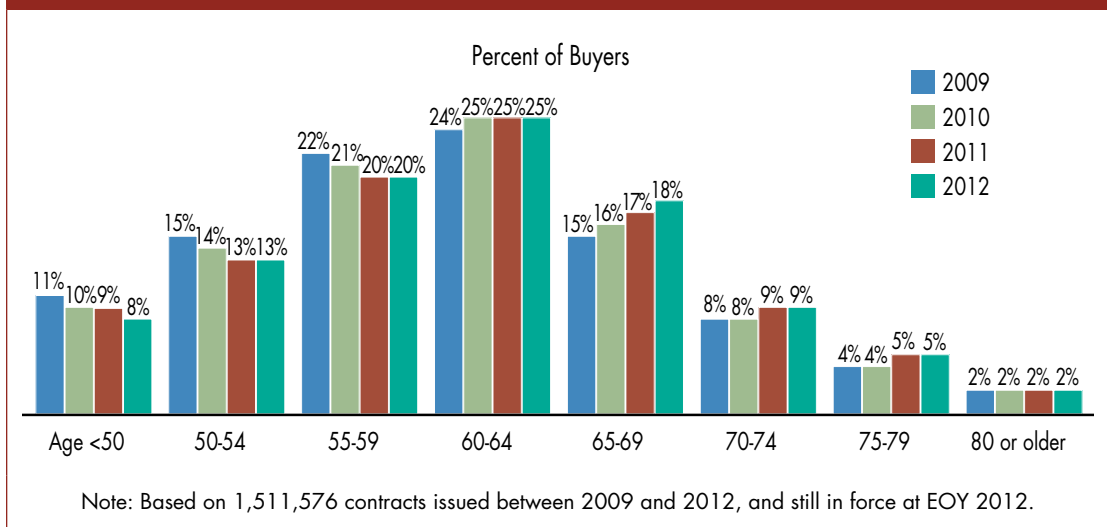
The average age of GLWB buyers in 2012 was **61.2** years.

**Table 1-1: GLWB Average Age of Buyers**

Contract Year Issued	Mean Age	Average Age in Lower Quartile	Median Age	Average Age in Upper Quartile
2007	61.3	56.0	61.0	67.0
2008	60.8	55.0	61.0	66.0
2009	60.0	54.0	60.0	65.0
2010	60.4	55.0	60.0	66.0
2011	61.0	55.0	61.0	66.0
2012	61.2	56.0	61.0	66.0

Note: Based on 2,069,437 contracts issued between 2007 and 2012 and still in force at EOY 2012.

**Figure 1-1: GLWB Buyers by Age at Time of Purchase, 2009–2012**



GLWBs remain popular among pre-retirees for a couple of reasons. First, younger owners can take advantage of the deferral bonus of the non-withdrawal provision in GLWBs if they do

not need immediate income, and can grow the benefit base to maximize their retirement income. Insurance companies have focused on marketing messages that highlight these benefits, and how GLWBs address the need for securing guaranteed lifetime income in the future. Second, younger investors exposed to the turbulent market can get the upside market potential of the VA contract while benefiting from protection of the lifetime income guarantee as a floor.

Attracting younger GLWB buyers could benefit insurance companies, as more Baby Boomers — particularly the leading edge of the Boomers who were in or very near retirement in 2012 — become interested in annuities that can guarantee a part of their retirement income. This demand will continue to increase as more Baby Boomers enter retirement without employer-sponsored pension plans. In addition, pre-retirees are increasingly concerned about the uncertainty of Social Security and health care benefits like Medicare. Insurance companies have been successful in marketing guaranteed lifetime withdrawal or income benefit features, as more retirees and pre-retirees have been forced to take personal responsibility for ensuring stable retirement income from their savings/investments.

Some insurance companies are carefully managing new GLWB sales. Many of these companies are trying to diversify their VA sales as well as make sure that their VA business represents an acceptable proportion of their overall insurance business.

Insurance companies are carefully managing their mix of new and existing VA business to control their overall risk exposure.

Increasingly, advisors consider protecting against longevity risk to be one of their most valuable services. More advisors recognize that annuities are one of the few retirement products that provide a guaranteed lifetime income stream to mitigate part or all of this risk for their clients. In addition, GLWBs provide built-in flexibility so that clients can begin receiving income at any point — now or in the future. Despite changes and the shifting focus on these riders, GLWBs continue to play an important role in clients' retirement portfolios.

However, companies should carefully examine:

- Whether their customer mix deviates from that of the industry.
- How they manage the risks associated with providing a guarantee to younger buyers — both short- and long-term. A particular company's risk in providing guarantees may stem from issues such as potential growth in benefit bases, depending on customers' actual deferral periods before taking withdrawals; the source of funds used to purchase the annuity; what percentage of customers begin to take withdrawals due to the required minimum distribution (RMD) rule; and, the persistency of their contracts.

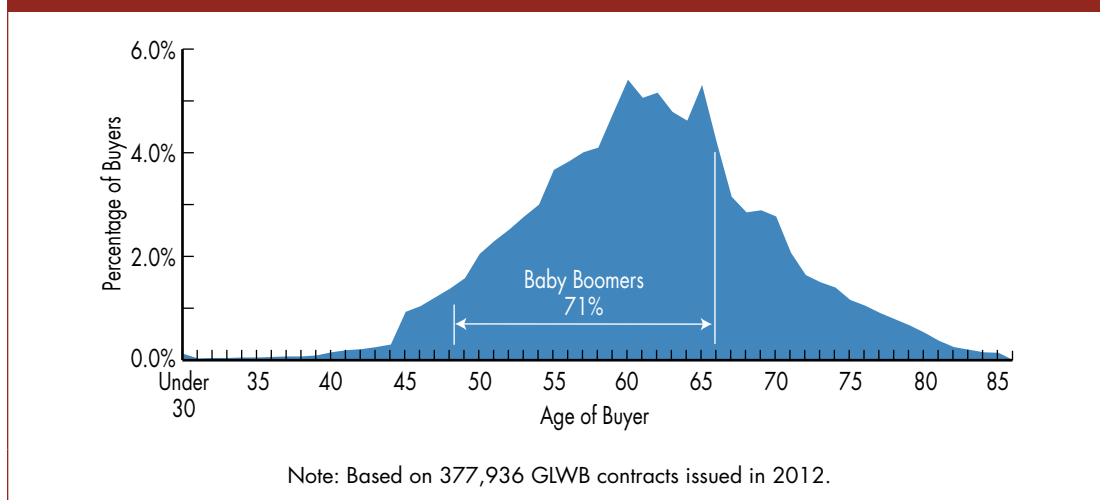
- If the contract is ‘in-the-money’— where the account value in the contract has been impacted by market volatility as well as influenced by asset allocation models offered.
- The competitiveness of the payout rates that are typically set by age bands.

Each year, customer behavior adds another layer of uncertainty that may change the dynamics of a company’s in-force book of business. They may have different withdrawal patterns based on their age, sources of funding, and enhanced longevity risk. These factors have an impact on the pricing of the riders, long-term profitability, and asset management, as well as the overall risk management.

### Buyers by Age

The percent of new GLWB buyers in 2012 perceptibly increases starting at age 45 and reaches its highest points at age 60 — an important life-stage retirement inflection point for many retirees and pre-retirees (Figure 1-2). The percent of new buyers starts to diminish after age 65, with each increase in year of age. Seven in ten (71 percent) of GLWB buyers in 2012 were Baby Boomers (aged 48–66). Nearly half (47 percent) of the buyers were from the leading-edge Boomers (aged 57–66). Only 16 percent were ages 70 or above.

Figure 1-2: New GLWB Buyers in 2012 by Age



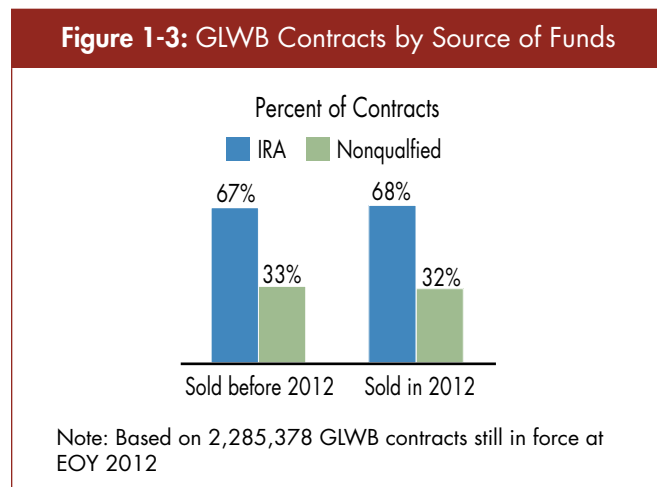
**71%** of GLWB buyers in 2012 were Baby Boomers.

If a company has a different mix of buyers than the industry, it should assess if this is what it planned for, and examine a number of issues. First, is the company attracting buyers from its target market segments? The company may consider changing its features, pricing, and marketing message to attract prospects from segments where there is growth and

opportunity. Second, companies must study their own customer mix to assess potential customer behavior with issues like withdrawals and surrenders. They should also assess the longevity of customer portfolios (if they are in withdrawal mode, or potentially could be in withdrawal mode), the impact of market volatility, the efficiency of asset allocation models, the payout rates, and the influence of rider features like step-ups — in order to evaluate risk and pricing impact on their books of business, including capital reserve requirements. It is encouraging that younger customers are buying GLWBs, but these demographics drive behavior, and companies will need to manage their evolving risks.

## Source of Funds

In 2012, 68 percent of contracts were funded from qualified sources of money, part of a trend where a greater share of GLWB contracts are funded from qualified sources rather than nonqualified sources (Figure 1-3). This trend reflects broader industry developments that LIMRA has tracked in the total VA market, where VAs are increasingly being funded with tax-qualified money, the bulk of which is from rollovers.



The significance of more rollover dollars is important for insurance companies in two ways. First, LIMRA studies show that rollover dollars are a growing source for VA funding.<sup>3</sup> As Boomers start to retire or plan for retirement income, their use of qualified savings will play an increasingly important role.

Boomers are using a portion of their savings from employer-sponsored plans or individual retirement accounts to purchase products that can provide a guarantee on a portion of income in retirement, if needed. The use of qualified savings for annuity purchases may be influenced by the recognition that these savings must be withdrawn as the buyers reach the RMD age of 70½. The distinction is important for multiple reasons:

- The use of qualified funds for GLWB purchase by younger buyers fits with similar behavior of younger buyers of immediate income annuities. A 2010 LIMRA study of immediate income annuity buyers demonstrates that buyers under age 70 are more likely to use qualified

<sup>3</sup> *Retirement Income Reference Book 2012*, LIMRA, 2012.

**68%** of GLWB sales in 2012 were from IRAs. GLWBs are attracting more rollover dollars, allowing companies capturing these funds to organically grow their business.

money to purchase an income annuity.<sup>4</sup> There are other similarities. One third of immediate annuity buyers who funded their income annuity with qualified savings were at ages 62, 65–67, and 70–71 — important age-based retirement decision points. We see a similar trend among GLWB buyers where there are peaks at ages 60 and 65. To benefit from this trend, companies should direct

their marketing and advertising messages to the Baby Boomers, highlight the GLWB's ability to create guaranteed lifetime income with upside potential from the underlying VA contract, and emphasize the fact that pre-retirees and retirees can rollover qualified savings into plans and IRA accounts that can ensure that a part of their income is guaranteed in retirement.

- Advisors also need to understand that these annuity buyers are more comfortable investing their qualified savings than their nonqualified savings. It appears that consumers intend to use their nonqualified savings for other investment or planning needs. Advisors and sales representatives should contact prospective buyers before they reach these key retirement decision ages to assess their income needs.
- The inclination of buyers to use qualified savings provides an incentive for advisors to ask about rollover assets as well as to offer comprehensive retirement income planning that may result in the purchase of a variety of retirement income products, thereby garnering greater wallet share. LIMRA research suggests that a recommendation from a financial planner or advisors influences rollover decisions. When a financial planner or an advisor has influence over the decisions, a majority of retirees and pre-retirees roll their money out from the plan.

A second reason rollover dollars hold such significance for companies — according to LIMRA research — is that as companies attract more rollover dollars, they will experience higher withdrawal rates from qualified funds by owners aged 70½ and over since they are required to withdraw funds subject to IRS RMDs. This will have an impact on how companies manage their assets and the associated GLWB risks. Insurance companies will also need to address increased administrative issues and higher transaction costs pertaining to these withdrawals.

Table 1-2 shows the mean, median and quartile age of 2012 GLWB buyers by demographic and contract characteristics. The data show variations in average purchase age by contract features such as nonqualified buyers who were three years older than IRA buyers. Joint lives contracts are more appealing to slightly older investors. The average buyer age increases with larger premium contracts. In comparison to other distribution channels, buyers at Full-service National Broker-Dealers (B-Ds) and in banks are a bit older.

<sup>4</sup> *Guaranteed Income Annuities*, LIMRA, 2010.



**Table 1-2: GLWB Buyers Average Age Analysis by Characteristics**

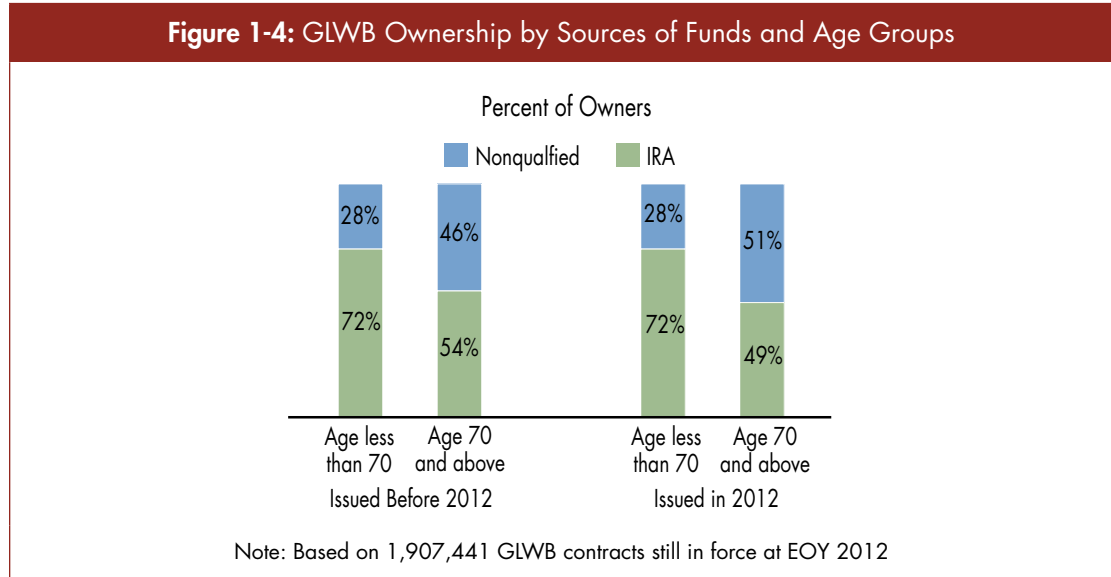
	Average Age			
	Mean	For Lower Quartile	Median	For Upper Quartile
<b>Gender</b>				
Male	61.2	56.0	61.0	66.0
Female	61.2	56.0	61.0	66.0
<b>Market type</b>				
IRA	60.3	55.0	61.0	65.0
Nonqualified	63.2	57.0	63.0	70.0
<b>Share class</b>				
B-share	60.5	55.0	61.0	66.0
L-share	62.0	56.0	62.0	67.0
O-share	63.8	59.0	63.0	68.0
<b>Single-joint</b>				
Single	60.9	55.0	61.0	66.0
Joint	61.3	56.0	61.0	66.0
<b>Asset allocation restrictions</b>				
Forced assets allocations	61.9	56.0	62.0	67.0
Other restrictions	63.7	59.0	64.0	69.0
May restrict allocations	62.6	58.0	63.0	68.0
Managed volatility/dynamic asset allocations	60.7	55.0	61.0	66.0
<b>Average premium size</b>				
Under \$25,000	58.0	52.0	58.0	64.0
\$25,000 to \$49,999	60.6	55.0	61.0	66.0
\$50,000 to \$99,999	61.6	56.0	62.0	67.0
\$100,000 to \$249,999	62.1	57.0	62.0	67.0
\$250,000 to \$499,999	62.3	58.0	62.0	67.0
500,000 or higher	62.0	57.0	62.0	67.0
<b>Distribution channel</b>				
Career agent	60.6	55.0	61.0	66.0
Independent agent/ independent B-D	61.0	55.0	61.0	66.0
Full Service National B-D	62.1	57.0	62.0	67.0
Bank	61.9	56.0	62.0	67.0

Note: Based on 377,936 GLWB contracts issued in 2012 and still in force at EOY 2012.

We have not shown some measures to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

## Ownership of Qualified and Nonqualified Annuities

There is a distinct shift taking place in ownership of GLWB annuities (Figure 1-4). As younger investors purchase VAs with qualified funds, there is a gradual but significant change in the mix of GLWB ownership.



Individuals under age 70 using qualified savings emerge as the primary market segment for GLWBs. In 2012, 72 percent of owners under age 70 funded their annuities with qualified money. In contrast, just under half of owners aged 70 or older funded contracts with qualified sources in 2012, yet there was a higher use of qualified savings for contracts issued before 2012. However, qualified investments for owners over age 70 may not be as suitable an investment in many GLWB riders as RMD withdrawals may not allow guaranteed roll-ups of benefit bases or certain growth of guaranteed income.

As we will see later, the source of funds used to purchase the VA and the age of the VA owner are perhaps the most important factors in determining what percent of owners will take withdrawals from their GLWB contracts. The shift toward qualified annuity ownership will have a major impact on how many customers will withdraw from their VAs in the future, and when they will start their withdrawals. Such withdrawal activity will influence the cash flow required to meet withdrawal requests as well as capital reserve requirements, depending on the performance of underlying investments.

## GLWB Owner and Contract Characteristics

Table 1-3 provides a summary of GLWB owner and contract characteristics at EOY 2012.

<b>Table 1-3: GLWB Owner and Contract Characteristics</b>				
	<b>Issued before 2012</b>	<b>Issued in 2012</b>	<b>All Contracts in Force</b>	<b>Average Premium (for Contracts Issued in 2012)</b>
<b>Age of Owner</b>				
Age 59 & under	30%	41%	32%	\$102,643
60 to 64	23%	25%	23%	\$124,635
65 to 69	21%	18%	21%	\$122,699
70 to 74	13%	9%	13%	\$119,406
75 to 79	7%	5%	7%	\$119,069
80 or older	5%	2%	4%	\$129,158
<b>Average age</b>	64 years	61 years	63 years	
<b>Gender</b>				
Male	50%	50%	50%	\$125,129
Female	50%	50%	50%	\$103,980
<b>Market type</b>				
IRA	67%	68%	67%	\$111,309
Nonqualified	33%	32%	33%	\$121,783
<b>IRA by age</b>				
Age 59 & under	22%	30%	24%	\$96,288
60 to 64	16%	18%	17%	\$124,948
65 to 69	15%	12%	15%	\$123,718
70 to 74	8%	5%	8%	\$119,647
75 to 79	4%	2%	3%	\$113,269
80 or older	2%	1%	1%	\$111,066
<b>Nonqualified by age</b>				
Age 59 & under	8%	11%	9%	\$120,187
60 to 64	6%	7%	6%	\$123,781
65 to 69	7%	6%	6%	\$120,570
70 to 74	5%	4%	5%	\$119,106
75 to 79	4%	3%	3%	\$123,280
80 or older	3%	1%	3%	\$137,915

Table 1-3: GLWB Owner and Contract Characteristics (continued)

	Issued Before 2012	Issued in 2012	All Contracts in Force	Average Premium (for Contracts Issued in 2012)
<b>Distribution channel</b>				
Career agent	19%	21%	19%	\$107,416
Independent agent/ independent B-D	48%	49%	48%	\$112,479
Full Service National B-D	17%	15%	17%	\$133,954
Bank	16%	15%	16%	\$112,973
<b>Cost structure</b>				
B-share	56%	56%	56%	\$112,764
L-share	30%	24%	29%	\$128,521
O-share	1%	11%	3%	\$96,640
<b>Contract value, EOY 2012 as percent of contracts issued</b>				
Under \$25,000	14%	12%	14%	N/A
\$25,000 to \$49,999	17%	17%	17%	N/A
\$50,000 to \$99,999	27%	27%	27%	N/A
\$100,000 to \$249,999	31%	33%	32%	N/A
\$250,000 to \$499,999	8%	8%	8%	N/A
\$500,000 or higher	2%	2%	2%	N/A
<b>Contract value, EOY 2012 as percent of contract value</b>				
Under \$25,000	2%	2%	2%	N/A
\$25,000 to \$49,999	5%	5%	5%	N/A
\$50,000 to \$99,999	16%	16%	16%	N/A
\$100,000 to \$249,999	39%	42%	39%	N/A
\$250,000 to \$499,999	23%	23%	23%	N/A
\$500,000 or higher	15%	13%	14%	N/A
<b>Average contract value, EOY 2012</b>	\$121,161	\$117,960	\$120,631	N/A
<b>Median contract value, EOY 2012</b>	\$81,301	\$82,815	\$81,534	N/A
<b>Average premium received in 2012</b>	N/A	\$114,610	N/A	\$114,610
<p>Note: Percentages are based on number of contracts unless stated otherwise. Based on contracts still in force at EOY 2012. "Issued before 2012" based on 1,907,516 GLWB contracts, "Issued in 2012" based on 377,936 GLWB contracts, and "All contracts in force" based on 2,285,452 GLWB contracts.</p> <p>We have not shown some measures related to channels and share classes to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.</p>				

## Key Findings

- B-share contracts are the most common cost structures (56 percent) while L-share contracts made up 24 percent of new issues in 2012.
- In general, the composition of 2012 GLWB contracts by channel resembles VA sales market share by channel in 2012. The exceptions are the career agent channel, which is under-represented within GLWB contract premium relative to the overall VA industry, and the direct channel which is not represented in GLWB contracts.
- By EOY 2012, 1 in 4 in-force contracts with GLWBs had account values between \$50,000 and \$99,999, one third between \$100,000 and \$249,999, and 1 in 10 had account values of \$250,000 or more. Although 42 percent of the contracts issued in 2012 had contract values of \$100,000 or more, these contracts constituted 77 percent of GLWB account values at EOY.
- The average contract value for all GLWB contracts remained very attractive — \$120,631 at EOY 2012. The average GLWB contract value at EOY for contracts issued in 2012 was \$117,960. The average premium for 2012 issues was \$114,610.
- The average premium from contracts bought by males was 20 percent larger than from contracts purchased by females. The largest contracts were for older males who purchased nonqualified contracts through the Full Service National B-D channel.
- The average nonqualified GLWB premium was \$121,783, almost 10-percent higher than qualified GLWB contracts, largely due to higher premium received from older buyers who tend to buy more nonqualified contracts.

**\$114,610** was the average premium for GLWB contracts issued in 2012. The median premium was **\$80,000.**

## Benefit Base

In 2012, the equity markets started off strong, despite many uncertainties such as the continued Eurozone debt crisis, U.S. political gridlock, and the U.S. presidential election. However, in the second quarter the market gave back all of its early gains as fears of a slowing economy were driven by weak employment numbers. Unlike 2011, the equity markets rebounded nicely in the second half of 2012, fueled by two stimulus announcements — one by the U.S. Federal Reserve and another from the European Central Bank. The optimism that central banks worldwide would act to spur growth — combined with solid corporate earnings — more than offset worries of the looming “fiscal cliff” and the pending spending cuts and tax increases for the United States. Thus, the S&P 500 index increased 13 percent in 2012 (Figure 1-5), closing the year out at 1,426. Even with all of the uncertainty in 2012, market volatility was noticeably lower than in 2011.

**Figure 1-5: S&P 500 Index, January – December 2012**



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 a complex mixture of risk arising from equity, interest rates, and the correlation thereof.

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

Understanding the details behind the equity market growth and volatility of 2012 is important when analyzing the benefit bases of GLWBs, as is understanding the withdrawal behavior of GLWB owners in that economic environment. The benefit bases in many GLWB riders are guaranteed to roll up for owners that delay taking their first withdrawal.

**90%** was the ratio of contract value to benefit base at EOY 2012, up from **87%** at BOY 2012.

At beginning-of-year (BOY) 2012, 92 percent of contracts with GLWBs issued before 2012 were in-the-money. At BOY, the average difference between the benefit base and the contract value was approximately \$16,300 for these contracts. On average, contract values were around 87 percent of the benefit bases across all contracts (Table 1-4). The median contract value was roughly \$10,900 lower than the median benefit base.

**Table 1-4: GLWB Benefit Bases and Contract Values, at BOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$240,185,619,385	\$209,410,753,034	87.2%
Average	\$127,224	\$110,923	87.2%
Median	\$85,565	\$74,697	87.3%
Percent of contracts where benefit base was greater than contract value			92%
Note: Based on 1,887,895 GLWB contracts issued before 2012 with GLWB benefit bases as of BOY and EOY 2012. Excludes contracts for which the GLWB benefit bases could not be determined.			

With the equity market growing more than most benefit base roll-up amounts after expenses, the percentage of contracts that were in-the-money declined in 2012. At BOY, 92 percent of GLWB contracts were in-the-money, while by EOY 2012 only 81 percent of the contracts were in-the-money (Table 1-5).

**Table 1-5: GLWB Benefit Bases and Contract Values, at EOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$254,491,117,333	\$228,673,687,136	89.9%
Average	\$134,802	\$121,126	89.9%
Median	\$90,600	\$81,303	89.7%
Percent of contracts where benefit base was greater than contract value		81%	
Note: Based on 1,887,895 GLWB contracts issued before 2012 with GLWB benefit bases as of BOY and EOY 2012. Excludes contracts for which the GLWB benefit bases could not be determined.			

Overall account values were roughly 90 percent of the benefit bases at EOY 2012. This ratio of benefit base to account value was much better than at EOY 2008 after the market plunge, when the account values were 73 percent of the benefit base amounts.<sup>5</sup>

At EOY 2012, the average benefit base stood at \$134,800 for all GLWB contracts. The average difference between the benefit base and contract value was \$13,700, a decline of \$2,600 from BOY 2012. The average difference between the median benefit base and median contract value improved to \$9,300 by EOY.

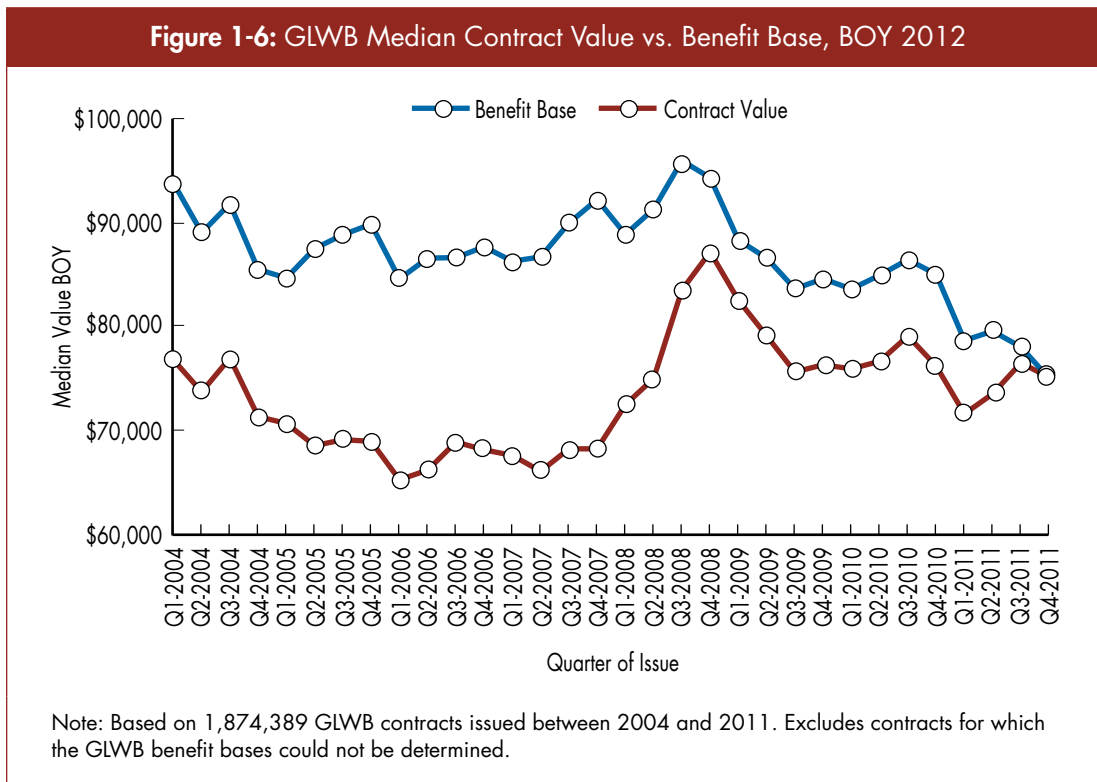
When a contract is issued will have an impact on if — and how much — a contract is in-the-money. Some contracts have experienced considerable market volatility — involving both gains in the early periods of 2005–2007, deep losses during the market crisis in 2008–2009, moderate gains in 2010, a flat return in 2011, and then improvements in 2012.

<sup>5</sup> *Guaranteed Living Benefits Utilization — 2008 Data*, LIMRA, 2009.

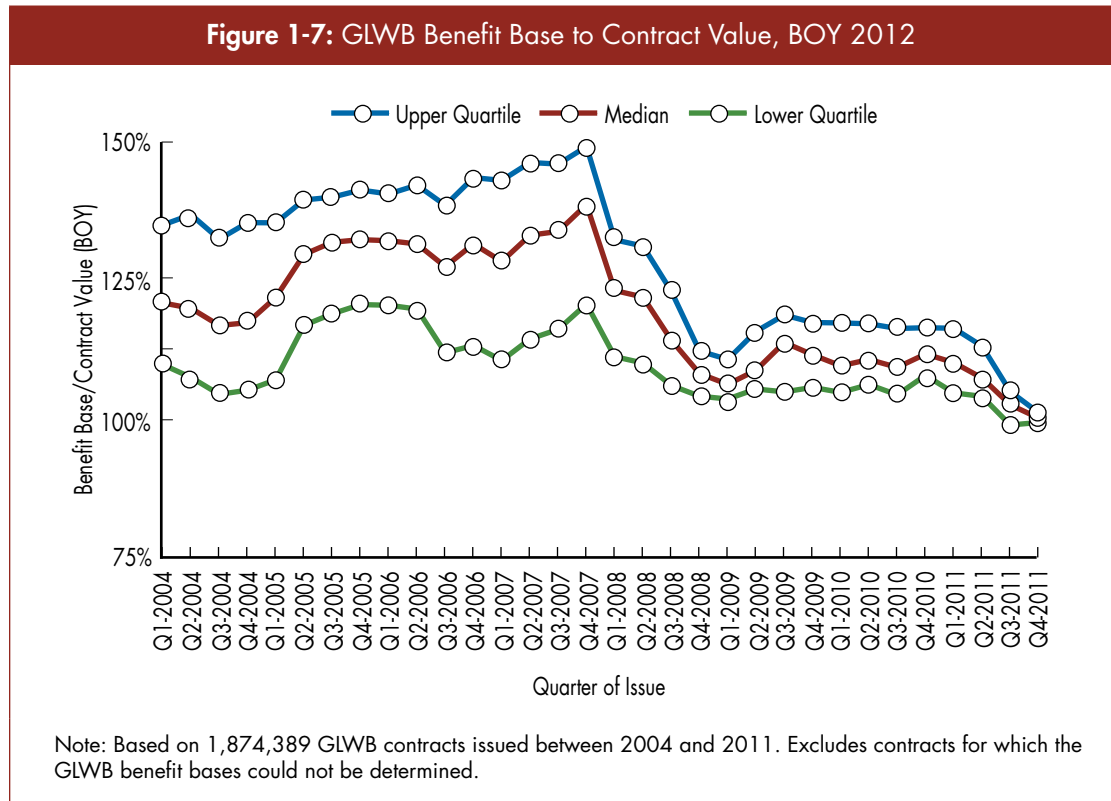


The contracts issued in 2004, for example, experienced robust market gains in 2006–2007; and, as a result had less of a setback during the market plunge in 2008 and subsequent market changes (Figure 1-6). Conversely, contracts issued between 2006 and early 2008 had less time to realize gains or suffered significant losses, making the gap between the benefit base and contract value wider as of BOY 2012. Contracts issued in the second half of 2007 were impacted the most by market losses and automatic benefit base roll-ups, resulting in a considerable gap between the contract value and benefit base. However, contracts issued in the last quarters of 2008 through early 2011 had a very similar gap between contract values and benefit bases as gains in contract values were similar to the increase due to benefit based roll-ups. For contracts issued in late 2011, the average contract value and average benefit base were similar given that they have had little time for any changes.

Figure 1-6: GLWB Median Contract Value vs. Benefit Base, BOY 2012



Looking at the quartile ranges of the benefit base to contract value ratios, contracts issued before 2008 had the largest deviation of contract value to benefit base ratios (Figure 1-7).

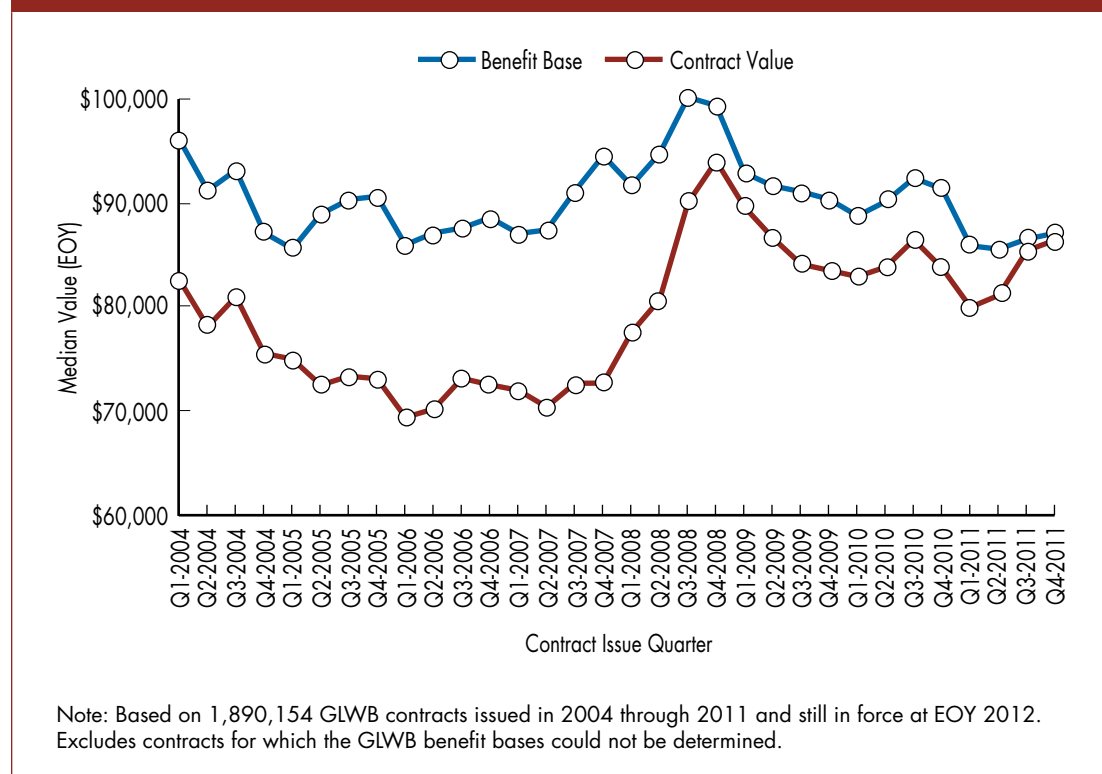


The upper and lower quartiles refer to the distribution of benefit base to contract value ratios at BOY 2012, not the distribution of contract values. The inter-quartile range gives a sense of how widely (or narrowly) the ratios are distributed. At BOY 2012 the median of contract value to benefit base ratios issued from the period Q1-2004 through Q4-2007 ranged from 117 to 138 percent.

In addition, for contracts issued between 2004 and 2007, one quarter had ratios that were 132 or more, and one quarter had ratios that were roughly 120 percent or less. As one would expect, the inter-quartile range narrows with decreasing duration (more recently-issued contracts tend to have a tighter distribution) because there has been less time for any group of contracts to pull far ahead (or fall far behind) the rest of the pack in terms of performance.

By EOY 2012, the relative relationship between benefit base and contract value improved compared to BOY (Figure 1-8). The median contract value improved from \$74,700 at BOY 2012 to \$81,300 at EOY, a gain of 8.8 percent. At the same time, the median benefit bases improved 5.8 percent from \$85,600 at BOY to \$90,600 at EOY.

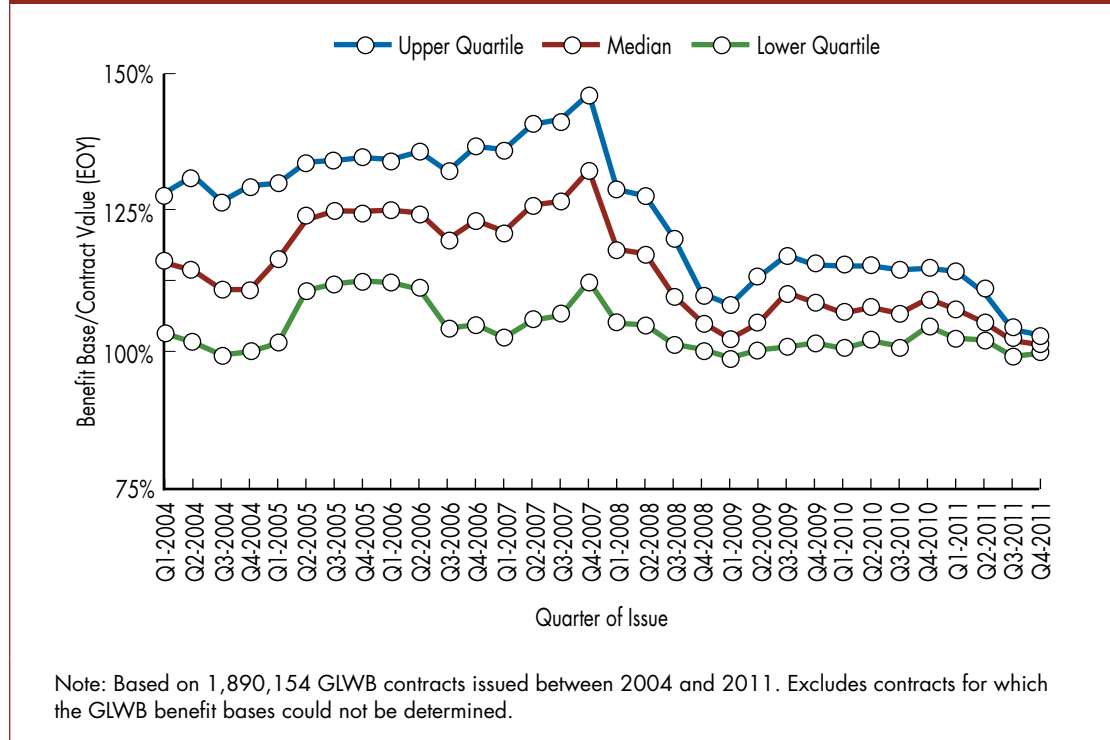
Figure 1-8: GLWB Contract Value vs. Benefit Base, EOY 2012



The gains where the account value grew more than the benefit base were more pronounced in contracts issued before late 2007. However, for contracts issued prior to Q4 2008, the gap remained quite substantial. One main reason is that contracts issued before Q4 2008 enjoyed richer benefit and roll-up features compared to contracts issued after the market crisis, where most benefits and roll-up rates were adjusted down considerably.

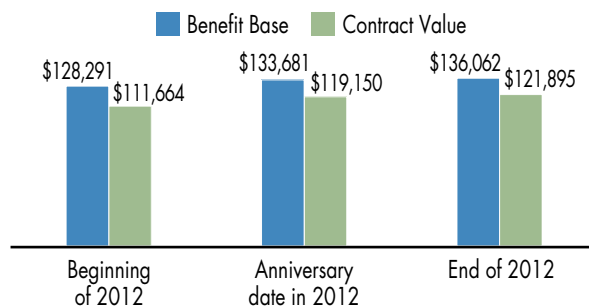
The inter-quartile analysis at EOY 2012 shows a slight decline in benefit base to contract values ratios compared to BOY (Figure 1-9). The median ratios of contract values to benefit bases in contracts issued from Q1-2004 through Q4-2007 ranged from 111 percent to 132 percent at EOY.

Figure 1-9: GLWB Benefit Base to Contract Value, EOY 2012



Comparing average contract values and benefit base amounts at BOY, on the anniversary date, and at EOY, we find that the average contract value grew from \$111,700 at BOY to \$121,900 at EOY 2012, registering a growth of 9.2 percent (Figure 1-10). During this time, the average benefit base grew 6.1 percent from \$128,300 to \$136,100. On the contract anniversary date, the benefit base registered an increase of 4.2 percent from \$128,300 at BOY to \$133,700 on the anniversary date, mainly driven by deferral bonuses for non-withdrawals. At EOY 2012, there was a difference of \$14,200 between the average contract value and average benefit base.

**Figure 1-10: GLWB Average Contract Values and Benefit Bases at BOY, on Anniversary Date, and at EOY 2012**



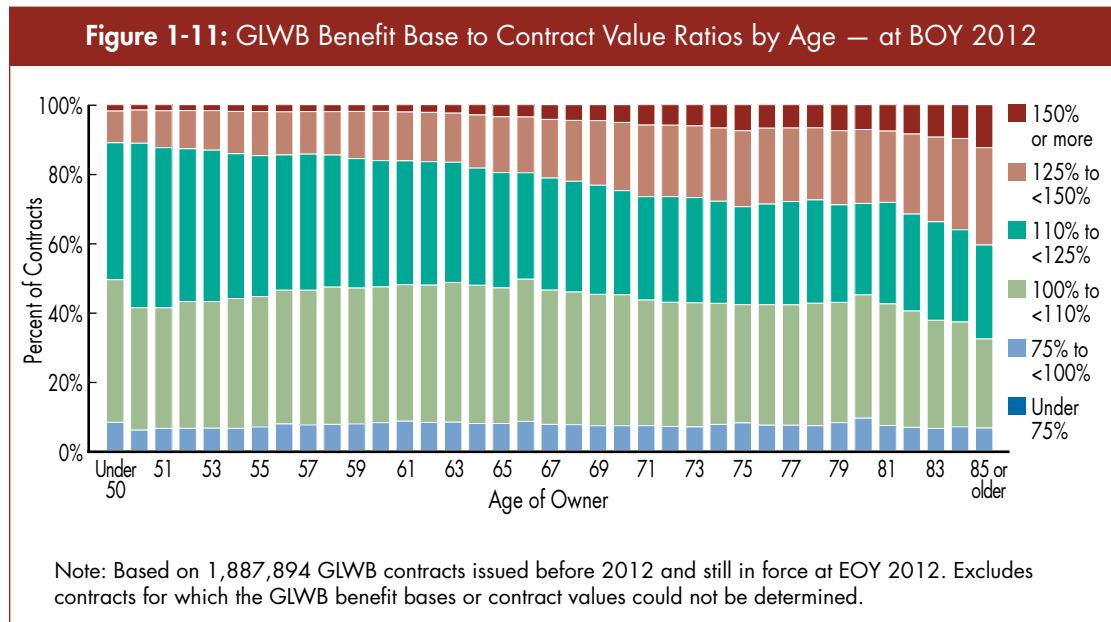
Note: Based on 1,688,335 GLWB contracts issued before 2012 and still in force at EOY 2012. Excludes contracts for which the GLWB benefit bases (as of BOY, the contract's anniversary date, or EOY) could not be determined.

Across these 1.7 million contracts, the benefit bases totaled \$229.7 billion as of EOY 2012, compared with contract values of \$205.8 billion. Almost three quarters (74 percent) of the \$23.9 billion difference between benefit bases and contract values reflects contracts with account balances of \$100,000 or more, even though they represent only 43 percent of all contracts.

### Benefit Base to Contract Value Ratios by Age

The analysis of benefit base to contract value (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 favorable or unfavorable benefit base to account value ratios. The BB/CV ratios can be favorable or unfavorable based on forces like the duration of contracts and the impact of market returns on the account values, infusion of new contracts in the book by age groups, richness of in-force contract features like automatic roll-up percentages, and impact of withdrawals on the account values and benefit base. This analysis can offer insurance companies helpful indications related to withdrawal risks associated with each age or age cohort and comparisons with the industry. Our analysis shows that the BB/CV ratios differ by age.

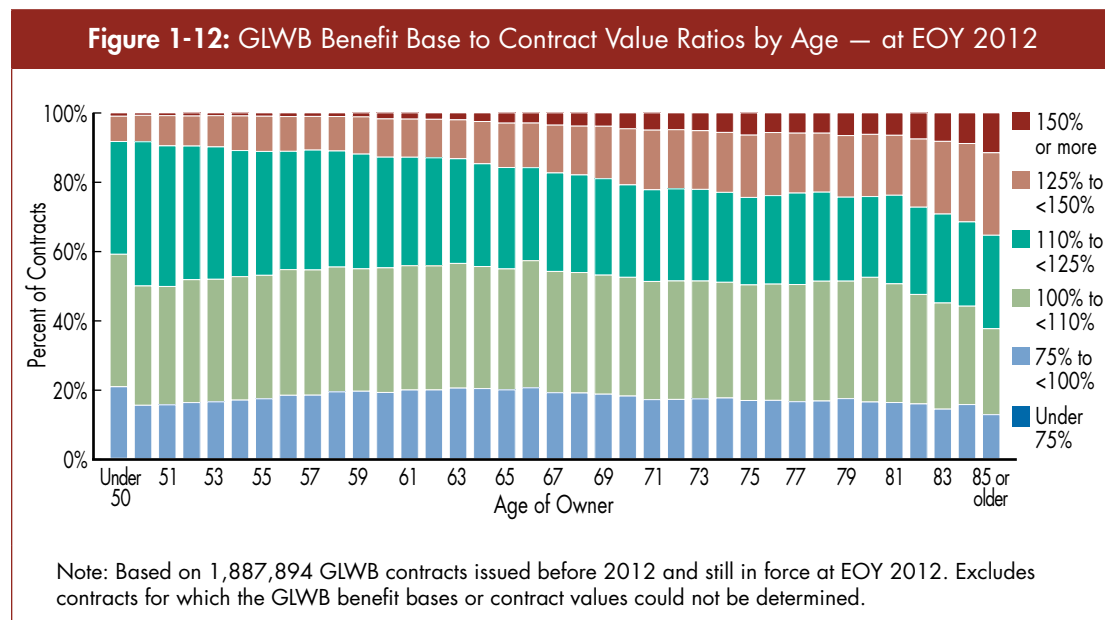
Figure 1-11 shows the BB/CV ratios by age at BOY 2012. For in-force contracts issued before 2012, at BOY only 8 percent of contracts had contract values below their benefit base amounts; 38 percent of the contracts had BB/CV ratios by 100 to less than 110 percent; and 35 percent of contracts had their benefit bases exceeding contract values by 110 to less than 125 percent. One fifth of the contracts had BB/CV ratios of 125 percent or more.



However, owners aged 70 or older had comparatively more contracts with BB/CV ratios of 125 percent or more. More than a quarter (27 percent) of contracts with owners aged 70 to 79 and 33 percent of the contracts with owners aged 80 or older had BB/CV ratios of 125 percent or more. Though owners aged 70 or older constituted only a quarter of all contract owners, nearly 40 percent of all contracts with BB/CV ratios of 125 percent or more were within this age cohort. Older owners hold comparatively more contracts with unfavorable BB/CV ratios because:

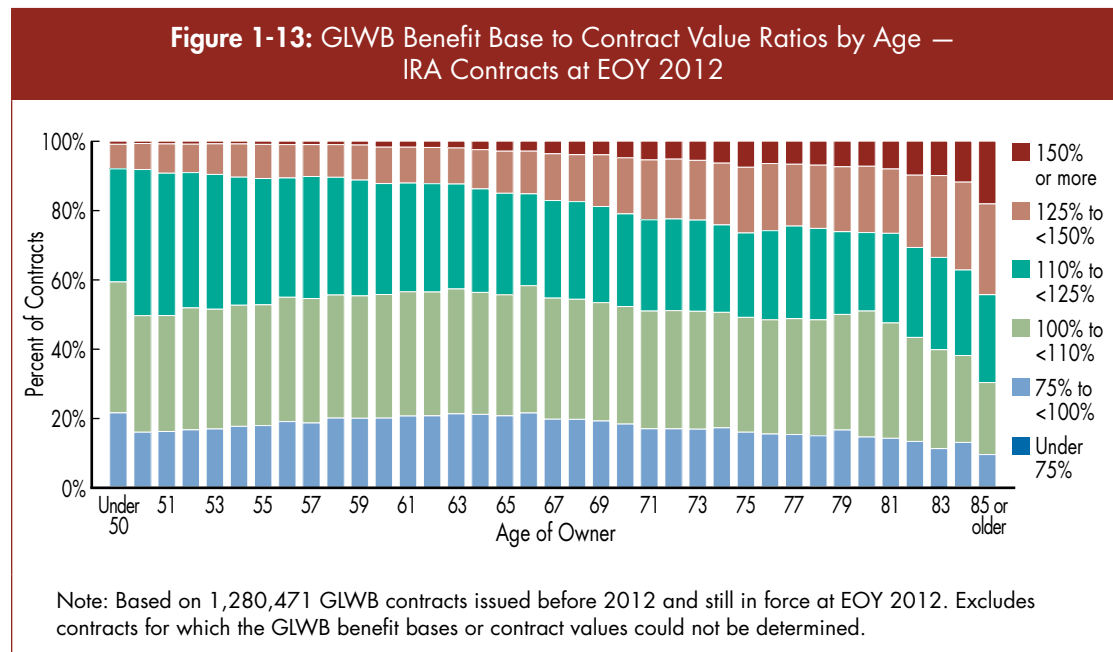
- They are more likely to own contracts for a longer duration of time. So these contracts are likely to have suffered increased ups and downs from the market volatility.
- Older owners — particularly those aged 70 or older — are more likely to take withdrawals over a longer period of time. If their withdrawal 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.
- They may also have had their contracts for more years in deferred withdrawal mode prior to withdrawals, while annual roll-up features pushed up their benefit base amounts automatically.

Figure 1-12 shows the distribution of BB/CV ratios by age at EOY 2012. The contracts with favorable BB/CV ratios (less than 100 percent) have improved from 8 percent at BOY to 19 percent by EOY.



While 54 percent of contracts held by owners aged 60 or younger had unfavorable BB/CV ratios of 110 percent or above at BOY, the percentage of such contracts had improved to 45 percent by year end. However, the improvement among owners aged 70 or above is less pronounced. At BOY, the BB/CV ratios of 57 percent of contracts held by owners aged 70–79 were at 100 percent or higher; at EOY 2012, the BB/CV ratios of 49 percent of their contracts remained at that high level. For owners aged 80 or older, the percentage of contracts with BB/CV ratios of 110 percent or higher was 61 percent at BOY, and decreased to 54 percent by EOY.

Additional analysis of BB/CV ratios by age and sources of money allows more insights into how insurance companies can evaluate their own of book of business relative to the mix of qualified-nonqualified business. Figures 1-13 and 1-14 show the distribution of BB/CV ratios by age for qualified and nonqualified contracts respectively at EOY 2012. Comparison of the BB/CV ratios related to IRA and nonqualified contracts at EOY shows that IRA contracts held by owners aged 70 or older have a greater concentration of unfavorable BB/CV ratio contracts than nonqualified contracts in the same age cohorts.



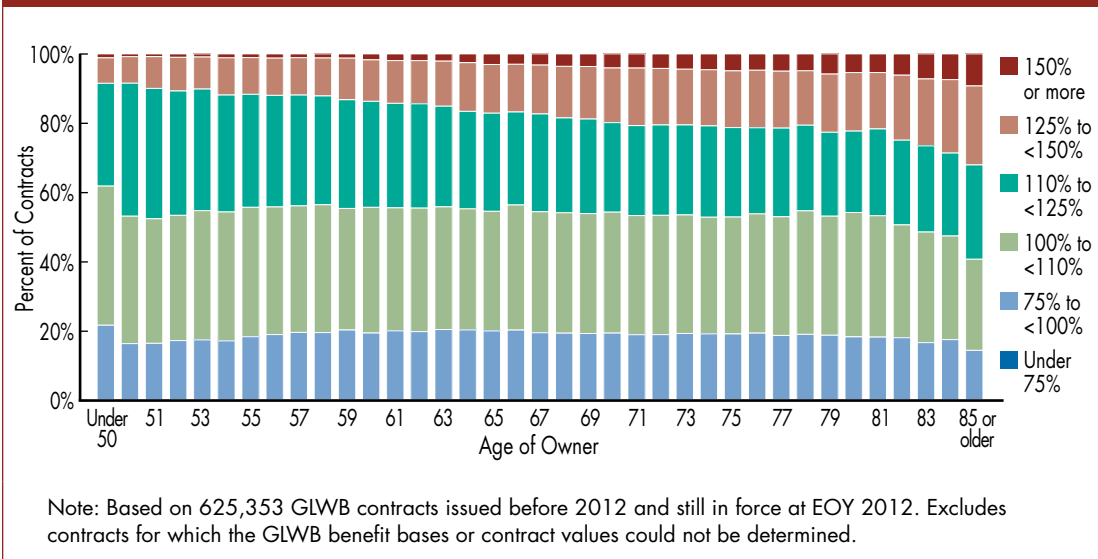
- While around 30 percent of IRA contracts held by owners aged 70 and older had BB/CV ratios below 100 percent, 36 percent of nonqualified contracts owned by the same age group were in the favorable range, with benefit bases below the contract values.



- The benefit base amounts of 55 percent of the IRA contracts owned by owners aged 70 or above exceeded the contract values by 125 percent or more of the account values. With nonqualified owners in the same age group, 47 percent of the contracts had benefit bases above contract values by 125 percent or more.

At year-end, nearly one third of the IRA contracts held by owners aged 80 or older had BB/CV ratios above 125 percent; in contrast around one fourth of nonqualified contracts had such unfavorable ratios.

**Figure 1-14: GLWB Benefit Base to Contract Value Ratios by Age — Nonqualified Contracts at EOY 2012**



- Nearly one third of the IRA contracts held by owners aged 80 or older had BB/CV ratios above 125 percent; in contrast around one fourth of nonqualified contracts had such unfavorable ratios.

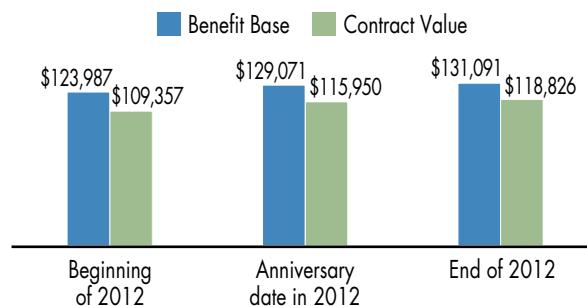
Such high incidences of unfavorable BB/CV ratios in IRA contracts are mainly caused by the need to take RMDs in qualified contracts. Historically nonqualified owners are less likely to take withdrawals from annuities and, with all else equal, nonqualified contracts offer less risk for the insurance companies offering guarantees.

### Benefit Base for Contracts With Withdrawals vs. Without Withdrawals

When the benefit base remains close to the account value — at least when owners start taking withdrawals — companies run very little risk in managing their business, providing the owners are not very young. They have a long lifetime of withdrawals, and the risk of sequence of returns could have an impact on them. Our benefit base analysis can be further expanded to look at those contracts that had withdrawals compared to those that did not have withdrawals in 2012. When withdrawals are made from GLWB riders, in most cases, the benefit base remains unaffected, while account values are reduced by the withdrawal amounts. One risk that exists with the contracts that utilize guaranteed withdrawal riders is that the account values in these contracts will decline — absent any market growth. In these cases, the contract may eventually run out of money. This could be expedited if negative returns happen early in the withdrawal phase, due to the impact of the sequence of returns.

For in-force contracts issued before 2012 that did not have withdrawals in 2012, the benefit base rose steadily from \$124,000 to \$129,100 on the contract anniversary date to \$131,100 by year end, registering a 5.7 percent increase (Figure 1-15). This increase can be attributed mainly to auto-increases of benefit bases for contracts with non-withdrawals. The average contract value of these contracts was \$109,400 at BOY 2012 which increased to \$118,800 by EOY, a gain of 8.7 percent for the year. The difference between the benefit base and account value at BOY was \$14,600, but declined to \$12,300 by EOY, representing 10 percent of the EOY contract value.

**Figure 1-15: GLWB Average Contract Values and Benefit Bases for Contracts Without Withdrawals**

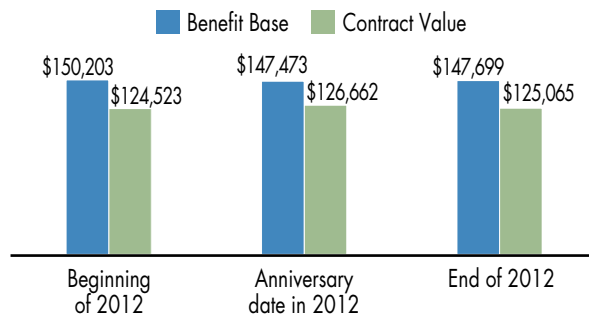


Note: Based on 1,233,083 GLWB contracts issued before 2012 and still in force at EOY 2012 where there were no withdrawals made or current-year premium received. Excludes contracts for which the GLWB benefit bases or contract values could not be determined.

The difference between the benefit base and account values was more prominent among contracts that incurred withdrawals in 2012 (Figure 1-16). However, the average benefit base amount declined in 2012, driven in part by younger owners taking excess withdrawals. The average benefit base fell 1.7 percent from \$150,200 at BOY to \$147,700 at EOY. The market gains were enough to offset the amount withdrawn, on average leading to a slight increase in the contract value. The average contract value increased 0.4 percent from \$124,500 at BOY to \$125,100 by EOY. The difference between the benefit base and the account value at BOY was \$25,700 but dropped during 2012. By EOY 2012, the gap had shrunk to \$22,600 or 18 percent of the ending contract value.

At year end, the difference between the average benefit base and average account value for contracts without withdrawals was **10%**.  
The difference between the average benefit base and average account value for contracts with withdrawals was **18%**.

**Figure 1-16: GLWB Average Contract Value and Average Benefit Base for Contracts With Withdrawals in 2012**



Note: Based on 341,623 GLWB contracts issued before 2012 and still in force at EOY 2012 where there were withdrawals made, but no current-year premium received. Excludes contracts for which the GLWB benefit bases or contract values could not be determined.

## Withdrawal Benefit Utilization

### Utilization

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 the contract owner will continue to take withdrawals up to the maximum allowed under the terms of the benefit, or whether benefits will be taken for life, is less obvious.

Owners are effectively utilizing the GLWB benefits if they take withdrawals on a continuous basis through SWPs, and withdrawal amounts remain within the maximum allowed.

However, owners’ inclinations to take lifetime withdrawals are more obvious when they take withdrawals from a systematic withdrawal plan (SWP).

Because the present study is based on a single calendar year, we could not track withdrawal activity over time. To try and assess overall withdrawal behavior, we asked companies to provide cumulative total withdrawals prior to 2012 (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 GMWBs and 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 will 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 are they taking their first withdrawals? 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?

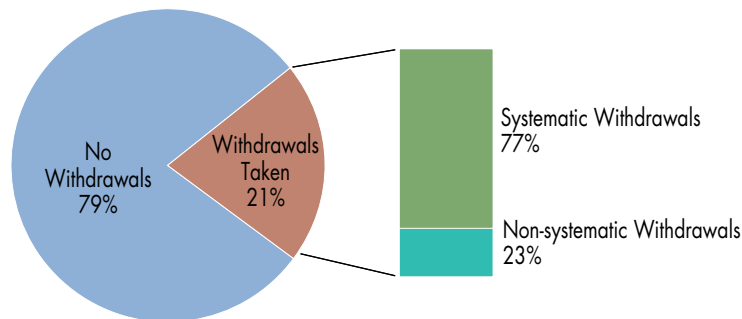
If customers take withdrawals on a continuous basis through SWPs, and withdrawal amounts remain within the maximum allowed, it is very likely they are utilizing the GLWB in their contracts. Our findings suggest that most are.

## Overall Utilization for Contracts Issued Before 2012

For 1,908,000 VA contracts with GLWBs issued before 2012 and still in force at EOY 2012, only 21 percent had some withdrawal activity during 2012 (Figure 1-17). Three out of 4 of those were systematic withdrawals.

**21%** of all contracts had some withdrawal activity during 2011; 3 out of 4 used systematic withdrawals.

**Figure 1-17: GLWB Overall Utilization of Withdrawals**



Note: Based on 1,907,517 GLWB contracts issued before 2012 and still in force at EOY 2012.

For contracts issued before 2012 and with withdrawals in 2012:

- The total withdrawal amount from GLWBs was \$4.1 billion, or 1.9 percent of assets in force at BOY.
- Among contracts with partial withdrawals, the median amount withdrawn was \$5,578, representing 6.6 percent of the median BOY contract value of \$84,776 in contracts that had withdrawals.
- The average withdrawal amount for contracts issued before 2012 that incurred withdrawals in 2012 was \$9,990. The average withdrawal rate was 8.0 percent based on the average BOY contract value of \$124,543. This average is impacted by younger owners that withdraw amounts that significantly exceed their withdrawal benefit maximum. A larger than normal percentage of these owners are taking partial surrenders and may eventually surrender their contracts.
- Withdrawal activity in two consecutive years is a more reliable indicator of a contract owner's intention to make ongoing withdrawals. For contracts issued in 2011 with withdrawal activity in that year, 94 percent continued withdrawals in 2012. Our previous annual

**\$5,600** was the median GLWB withdrawal amount in 2012.

Overall utilization rates remained level for contracts that were in force for an entire year.

studies also found a high percent of owners starting withdrawals and continuing in the following year, which strongly indicates that owners who commence withdrawals are likely to continue withdrawing for their lifetimes.

- The median systematic withdrawal amount was \$5,400 and amounted to 6.1 percent based on BOY account value of \$88,571.

Based on a constant group of 11 companies that provided data in the previous year's VAGLB Utilization Study, overall utilization rates have remained level for contracts that were in force for an entire year. Utilization rates in 2007 were 22 percent for contracts issued before 2007 and remaining in force that year; utilization rates in 2008 were 21 percent for contracts issued before 2008 and remaining in force that year; utilization rates in 2009 were 19 percent for contracts issued before 2009 and remaining in force in 2009. The GLWB utilization rates in 2010 and 2011 were 20 percent. The GLWB utilization rates in 2012 were 21 percent for contracts issued before 2012 and remaining in force at EOY 2012. In 2009, the overall utilization rate was slightly lower because of relaxation of RMD rules in that year for economic hardship.

**94%** of GLWB customers who purchased their contracts in 2011 and took withdrawals in 2011 also made withdrawals in 2012. Owners who have commenced withdrawals are likely to continue withdrawing for their lifetime.

However, we found that the source of funds and age of owners are the two main influences on withdrawal activity in GLWB riders. The size of the contracts, deferral incentives, duration of contracts, and the channels through which the customer bought the annuity also have an impact on how customers take withdrawals, but these factors are not as significant as age and source of money. Understanding how these factors influence withdrawals will help companies to measure their own risk compared with the industry.

We also need to emphasize that GLWBs are the most popular annuity products for younger individuals who want to guarantee a portion of their future income. Identifying who is making the withdrawals and when is important in understanding the withdrawal behavior of GLWB owners.

To address the need for guaranteed lifetime income, insurance companies have focused on two areas — products that provide income in the future when the client may need it, depending upon the buyer preferences; and guaranteed income for immediate use. In other words, is the individual looking for 'income later' or 'income now'? Both product types help the customer to achieve the same goal — securing a guaranteed lifetime income in retirement.

A GLWB or a GMIB rider addresses the need for income later, and is suitable for younger investors and pre-retirees. In addition to offering a guaranteed lifetime income, these riders also provide built-in flexibilities that owners can trigger to receive income at any point in the future. As we showed earlier, a majority of GLWB buyers are under age 60, and are at or near retirement. The traditional immediate income annuity typically attracts older investors (with an average age of 73 years) who are focused on maximizing guaranteed income that starts immediately.<sup>6</sup>

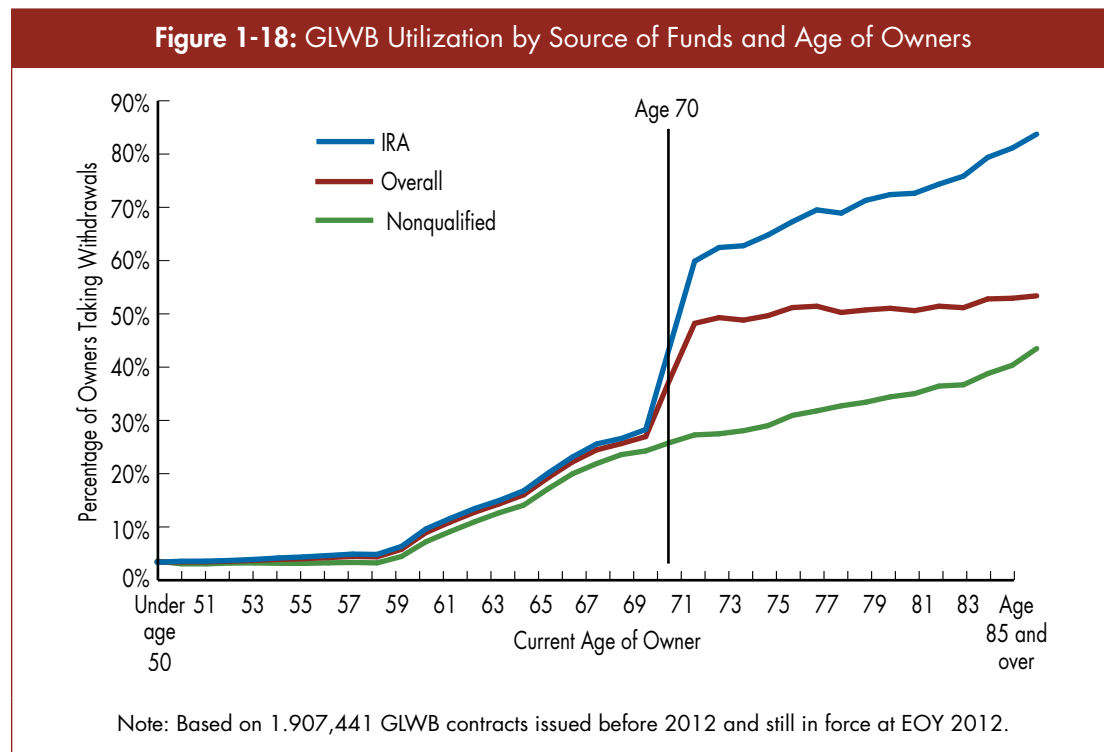
The overall utilization rate for GLWB contracts over the past few years has remained around 20 percent. However, this is only one of several measures and this statement alone without the context of the other factors we have mentioned is misleading. The next few pages will address some of the other factors that have an impact on GLWB owner withdrawal behavior.

### Withdrawal Activity by Source of Funds

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 the 2012 GLWB utilization rate is quite high for older customer segments (Figure 1-18).

**2 out of 3** VA GLWB owners over age 70 are taking withdrawals from their qualified annuities.



<sup>6</sup> *Guaranteed Income Annuities* — LIMRA, 2010.

The withdrawal behavior of GLWB owners can be categorized into three life stages: pre-retirement phase, entering-in-retirement phase, and the RMD phase. Up to age 60, when most of the owners are not retired, withdrawal rates for customers who use either qualified or non-qualified money to buy their contracts remains low, under 6 percent. 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 nonqualified owners. In many GLWBs, owners become eligible to withdraw starting at age 60. However, between the ages of 60 and 70 — sometimes termed as the transition ages in retirement — few customers are fully utilizing the withdrawal benefits.

After age 70½, qualified annuities force owners to take RMD withdrawals. As a result, the percent of customers with withdrawals quickly jumps to 62 percent by age 72 and slowly rises to over 80 percent after age 85. Sixty-six percent of VA GLWB owners over age 70 take withdrawals from their qualified annuities.

Owners are more likely to refrain from using lifetime withdrawal benefits if they bought the annuity with nonqualified money. Nonetheless, there is a steady increase in the proportion of owners who make withdrawals as they advance in age. Over 40 percent of these customers take withdrawals after age 85.

The overall percent of older owners taking withdrawals is closer to the percent of customers withdrawing from nonqualified annuities, since more customers aged 70 or over own a nonqualified annuity (and the 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 (Figure 1-19). While 72 percent of contracts issued before 2012 that are owned by individuals under age 70 were funded with qualified money, we see that almost half (46

percent) of the contracts owned by customers age 70 or above are nonqualified.

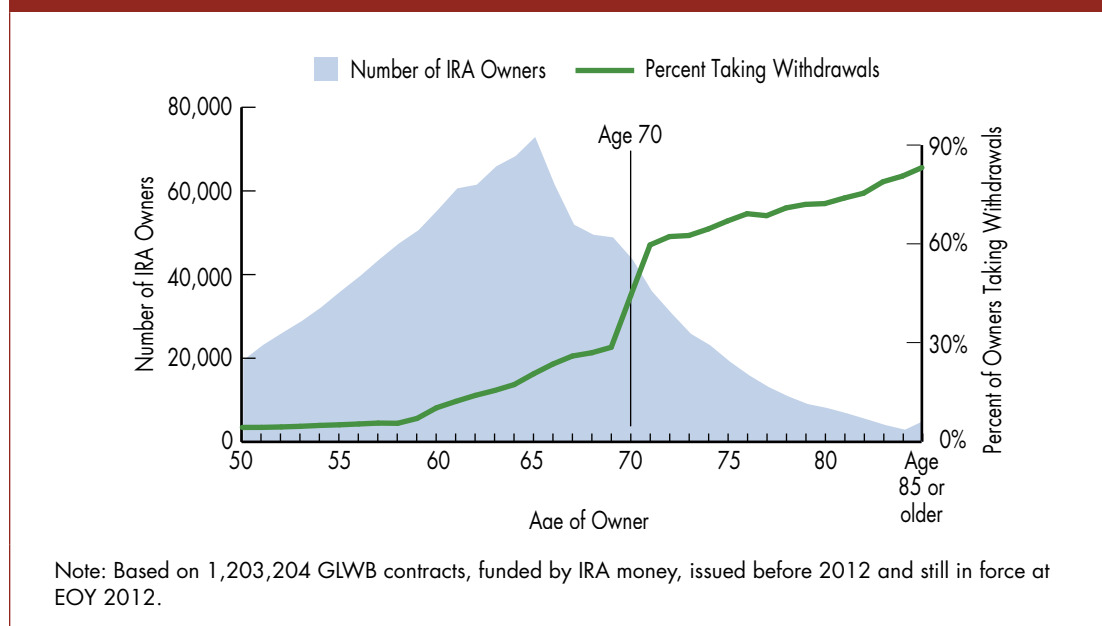
A shift will take place as owners (aged 65–69 today) with qualified annuities will start taking withdrawals in the next few years due to RMDs.

Insurance companies managing GLWB riders should distinguish and evaluate this risk based on the sources of funding. The distinction between qualified and nonqualified 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.

**Figure 1-19: GLWB Utilization by IRA Owners**



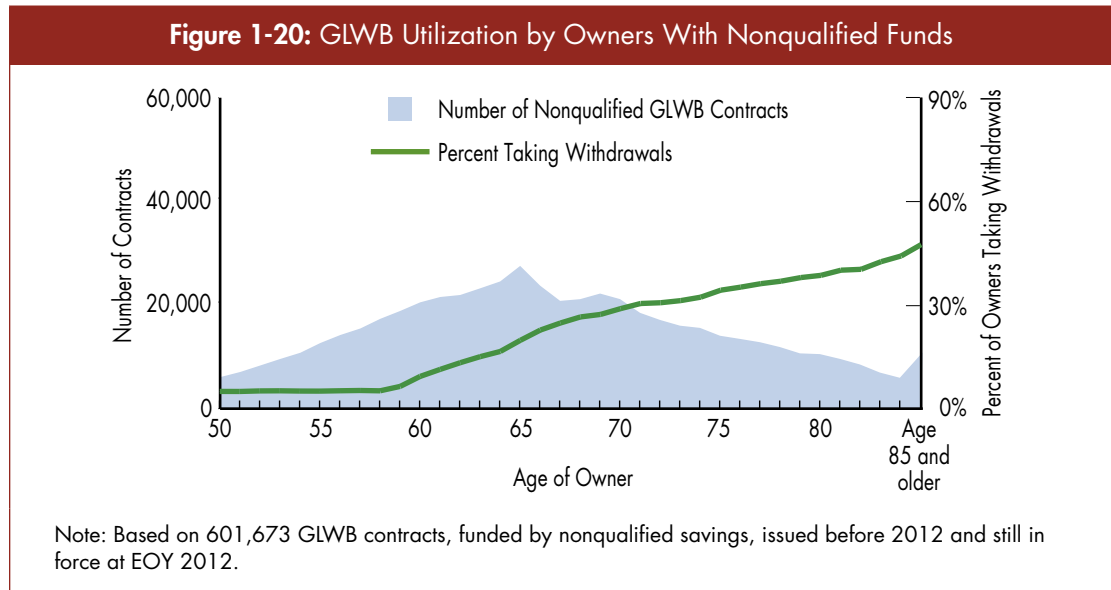
- In the 2012 study, only 260,000 GLWB owners aged 70 or over funded their contracts with qualified money. They represent only 22 percent of all GLWB owners who funded their annuities with qualified savings. In the next 5 years, another 24 percent of owners (more than 285,000) currently between ages 65 and 69 will reach age 70 and a majority of them will take withdrawals from their contracts to meet RMDs.

In 2012, only **22%** of current qualified owners were aged 70 or above and almost two thirds of them took withdrawals.

In the next 5 years, another **24%** will reach RMD age.

- In 2012, almost two thirds (63 percent) of owners over age 70, who funded their GLWB contracts with qualified savings, took withdrawals. In comparison, only 24 percent of IRA owners aged 65–69 took withdrawals in 2012. The need to take RMDs will essentially drive the withdrawal behavior for the 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, 37 percent of nonqualified annuity owners were aged 70 or above. The percent of nonqualified owners taking withdrawals in this age group was 32 percent in 2012, half of the percentage of owners withdrawing from their qualified annuity (Figure 1-20).



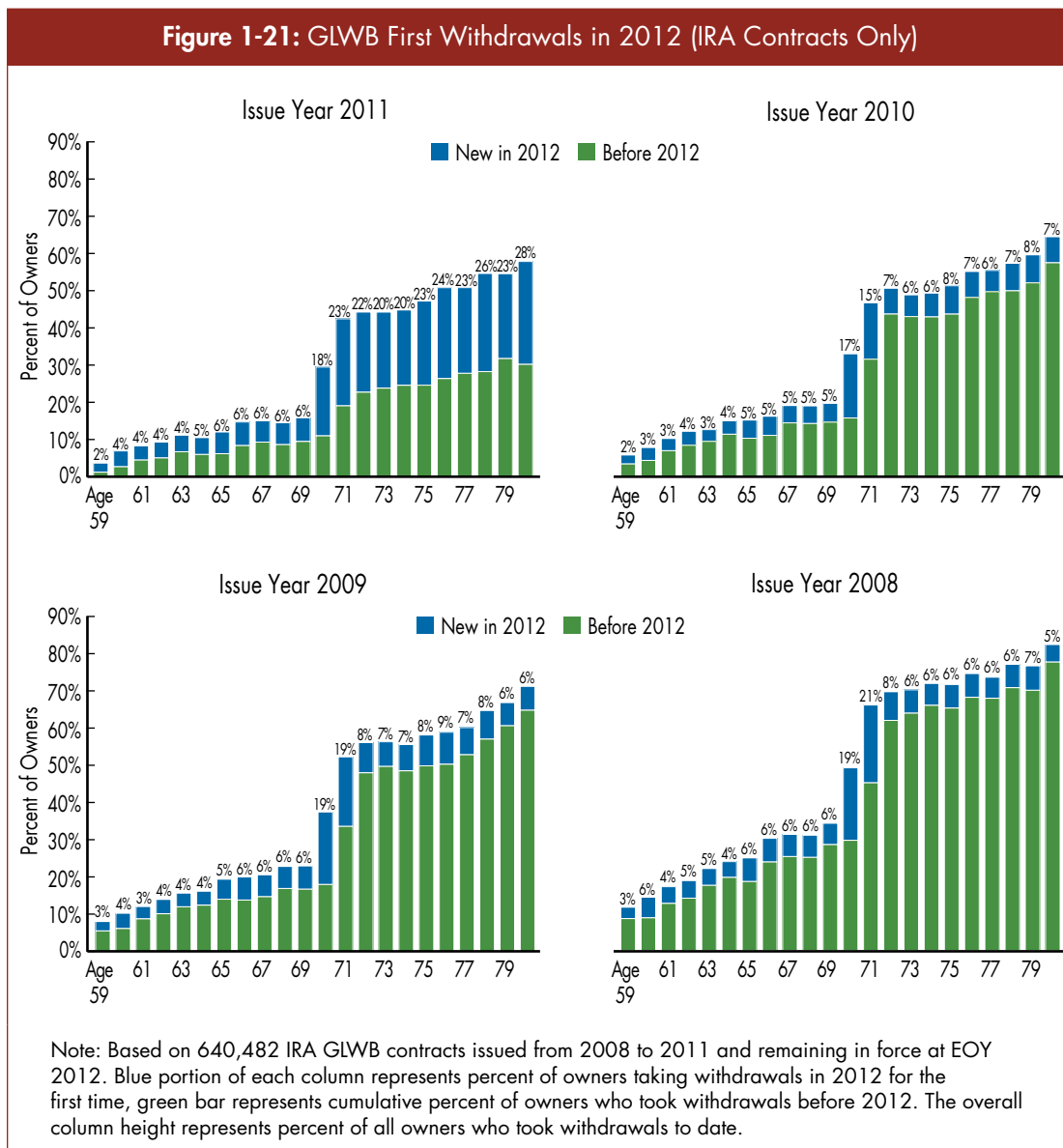
It is important for companies to look at their own in-force business and evaluate how their customer mix can impact risk and cash-flow. For insurance companies, qualified annuities could cost more to administer than nonqualified contracts as more customers begin taking withdrawals at age 70½, even though companies may receive fees on GLWB bases for lifetime withdrawal guarantees. As more younger investors buy annuities with qualified sources of funds, the disparity between the cost of offering qualified annuities and nonqualified annuities will continue to increase.

Today, a sizeable proportion of retirees also have access to defined benefit pension plans and may not need to use the guaranteed withdrawal benefits from their annuities. However, in the future, withdrawal activity will likely increase considerably — particularly among the Baby Boomers — since fewer will have defined benefit pensions as a source of guaranteed income.

Appendix B shows the percent of owners taking withdrawals in 2012 from their IRA and nonqualified annuities and their observed and predicted statistical relationships.

## Taking First Withdrawal From IRA Annuity in 2012

There is a distinct pattern of withdrawal behavior from IRA-funded GLWB annuities, principally driven by age and the need to take RMDs. Figure 1-21 shows the percent of owners taking their first withdrawals in 2012 by each of the last four issue years from 2008 to 2011.



The upper left corner of the chart shows withdrawal activity in contracts issued in 2011. The Y-axis shows the percent of customers who took withdrawals before 2012 and in 2012, combined. The green bar for each age shows the cumulative percent of customers who took their withdrawals before 2012 and the blue bar shows the percent of owners taking their first withdrawals from the contracts in 2012.

The percent of qualified owners turning ages 70 or 71 taking withdrawals is around 19 percent,  $\pm 4$  percent, no matter when they bought their contracts.

For many of the 2011 buyers, 2012 was the first complete year they owned their annuities and also the first year of their withdrawals. Only a small percent of the 2011 buyers under age 70 took their first withdrawals in 2012. The percent of owners taking withdrawals rose slightly with each increment in age; it remained within a range of 2 percent to 6 percent. However, one fifth (18 percent) of these owners who turned age 70 in 2012

took their first withdrawals. Another 23 percent of owners who turned ages 71, and 22 percent of owners who turned age 72 in 2012 also took a withdrawal in that year. Nearly one fifth or more of owners aged 73 or over took withdrawals in 2012. The reason more owners over age 70 took withdrawals in 2012 is that many IRA annuity owners deferred their RMD withdrawals in 2011, because they may have already taken RMD withdrawals before purchasing the contracts or funded RMDs from other qualified investments. The first distribution for RMDs must be made no later than April 1 in the year following when an owner turns age 70½. Each year after that, the RMD must be taken no later than December 31.

However, owners who bought their annuities in 2010 had at least two full years to take withdrawals — 2011 and 2012. For owners under age 70, we see almost identical behavior as for 2011 buyers — marginal increments ranging from 2 to 5 percent who took withdrawals for the first time in 2012. Similar to 2011 buyers, 17 percent of the 2010 buyers who turned age 70 in 2012 took withdrawals. For owners who turned age 71, 15 percent took their first withdrawals in 2012 while for owners aged 72 or older, 6–8 percent of 2010 buyers in each age took their first withdrawals in 2012.

Owners who bought their annuities in 2009 had at least three years to take withdrawals. The marginal increases in the percentage of owners taking their first withdrawals followed a very consistent pattern for owners who are aged 70 or under — within a range of 3 to 6 percent — rising with age. However, similar to contracts issued in other years, 19 percent of owners who reached ages 70 and 71 respectively in 2012 took first withdrawals from their contracts in 2012. Eight percent of owners who turned age 72 in 2012 took withdrawals. Afterwards, only 6 to 8 percent of 2009 buyers aged 73 or over took their first withdrawals in 2012. We witnessed an almost identical trend in owner withdrawal behavior for IRA annuity contracts issued in 2008.

Many insurance companies provide tools to encourage GLWB buyers to take withdrawals, particularly to satisfy RMDs on or before a particular date when they turn age 70½, so that RMDs are not treated as excess withdrawals. If the annual RMD amount exceeds the annual guaranteed income amount, most companies will not treat it as an excess withdrawal. Also, nearly all companies administer programs to calculate RMD amounts and offer SWPs to receive RMDs.

To summarize: for IRA contracts, age and the need to take RMDs are the principal drivers for withdrawals (Table 1-6). The overall average percent of customers turning ages 70, 71, or 72 taking withdrawals are 19, 20, and 11 percent respectively. Before age 70, the percent of customers taking their first withdrawals ranges from 2 to 6 percent, consistent across different years of issue.

**Table 1-6: GLWB Percent of Owners Taking First Withdrawal in 2012 (IRA)**

Turning to Age	Contracts Issued in 2008	Contracts Issued in 2009	Contracts Issued in 2010	Contracts Issued in 2011
Duration	4 – 4.9 years	3 – 3.9 years	2 – 2.9 years	1 – 1.9 year
Age 59–69	3% – 6%	3% – 6%	2% – 5%	2% – 6%
Age 70	19%	19%	17%	18%
Age 71	21%	19%	15%	23%
Age 72	8%	8%	7%	22%
Age 73 and over	5% – 7%	6% – 9%	6% – 8%	20% – 28%

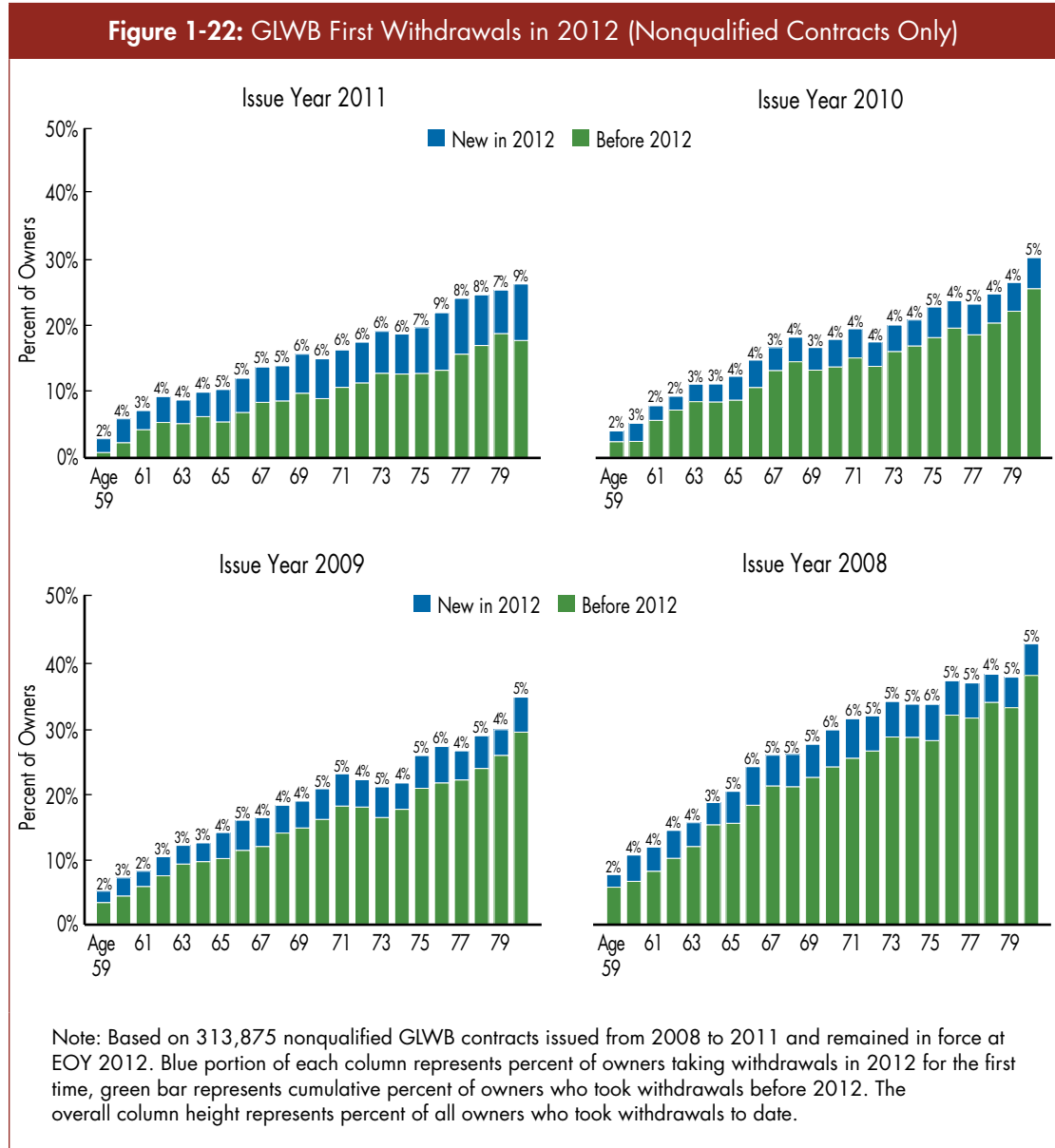
Note: Based on 640,482 IRA GLWB contracts issued from 2008 to 2011 and remaining in force at EOY 2012.

- The percent of owners under age 70 taking their first withdrawals in 2012 for contracts issued in each of the last four years show identical ranges: 2 percent to 6 percent.
- Roughly 19 percent ( $\pm 4$  percent) of owners at ages 70 and 71 took their first withdrawals in 2012.
- Contracts in their first full year of ownership (1–1.99 years) experienced 20 to 28 percent of owners taking their first withdrawals to satisfy RMDs.
- For older contracts, 7 to 8 percent of owners took withdrawals at age 72. For owners aged 73 and older, 5 to 9 percent took first withdrawals in 2012.

When we did the same analysis in 2011, the percent of owners taking their first withdrawals at each age was uncannily similar, particularly for older contracts.

## Taking First Withdrawal From Nonqualified Annuity in 2012

The percent of nonqualified annuity owners taking their first withdrawals in 2012 reflects a more streamlined withdrawal behavior. Figure 1-22 shows the percent of nonqualified owners taking withdrawals in 2012 by individual issue years from 2008 to 2011.



Because there is no need to take RMDs, the percent of nonqualified owners taking first withdrawals increases slowly with age, in a linear way. Only a small percent of owners aged 70 or under took their first withdrawals in 2012. The percent of owners taking withdrawals rises slightly with each increment in age; however, it remains within a range of 2 to 6 percent, similar to the behavior we saw with IRA owners. However, there was slight uptick at age 60 and 65 where many riders provide higher step-up payout rates. The percent of customers aged 70 and over who take their first withdrawals increases very slightly.

The rate of increase of the percent of customers taking their first withdrawals from nonqualified annuities is somewhat lower for contracts issued before 2011. The percent of 2011 buyers who have completed at least one full year of annuity ownership, took their first withdrawals in a range of 2 to 6 percent, rising slowly from age 59 to age 80 (Table 1-7). Many of these owners may already have decided to take withdrawals when they purchased the contracts. The percent of 2010, 2009, and 2008 buyers who took their first withdrawals ranges from 2 to 6 percent.

Only 20 percent of 2012 buyers aged 75 took any withdrawals from their nonqualified annuity, while a cumulative 23 percent of 2010 owners aged 75 took withdrawals. Among the 2009 buyers, 26 percent of owners aged 75 have withdrawn since the contracts were issued. Thirty-three percent of 2008 buyers aged 75 took withdrawals during the duration of their contracts.

**Table 1-7: GLWB Percent of Owners Taking First Withdrawal in 2012 (Nonqualified)**

Turning to Age	Contracts Issued in 2008	Contracts Issued in 2009	Contracts Issued in 2010	Contracts Issued in 2011
Duration	4 – 4.9 years	3 – 3.9 years	2 – 2.9 years	1 – 1.9 year
Age 59–69	2% – 6%	2% – 5%	2% – 4%	2% – 6%
Age 70 and over	4% – 6%	4% – 6%	4% – 5%	6% – 9%

Note: Based on 313,875 nonqualified GLWB contracts issued from 2008 to 2011 and remained in force at EOY 2012.

To summarize: for nonqualified contracts, age and contract duration are the principal drivers for withdrawals. A small percent of customers, in the single digits, take their first withdrawals every year.

### Withdrawal Activity for IRA Contracts Issued in 2007

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. Table 1-8 shows the withdrawal behavior of 2007 IRA buyers aged 57 to 75 during 2007 to 2012 (6 years of withdrawal history), and what percent of those buyers began taking their first withdrawals from 2007 to 2012.

Withdrawals started at	Age at Purchase																		
	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57	3%																		
Age 58	3%	2%																	
Age 59	3%	4%	5%																
Age 60	6%	7%	6%	7%															
Age 61	5%	5%	5%	6%	8%														
Age 62	5%	5%	5%	6%	6%	11%													
Age 63		5%	5%	5%	5%	7%	9%												
Age 64			4%	5%	5%	5%	7%	10%											
Age 65				8%	8%	9%	7%	8%	12%										
Age 66					8%	7%	9%	8%	9%	15%									
Age 67						7%	7%	8%	7%	8%	13%								
Age 68							6%	6%	7%	6%	7%	15%							
Age 69								6%	6%	8%	7%	8%	17%						
Age 70									19%	20%	23%	9%	26%	27%					
Age 71										18%	20%	32%	9%	33%	33%				
Age 72											6%	9%	20%	5%	28%	35%			
Age 73												5%	6%	8%	4%	28%	33%		
Age 74													4%	6%	8%	4%	26%	39%	
Age 75														4%	5%	8%	5%	25%	35%
Age 76															5%	5%	9%	4%	28%
Age 77																4%	5%	8%	5%
Age 78																	5%	5%	8%
Age 79																		5%	6%
Age 80																			3%
Cumulative	26%	28%	31%	37%	39%	46%	45%	61%	75%	77%	78%	81%	83%	84%	82%	84%	85%	86%	
Percent of owners taking withdrawals in all subsequent years	70%	73%	75%	75%	79%	83%	82%	84%	84%	88%	90%	91%	83%	76%	74%	77%	75%	76%	74%

Note: Based on a constant group of 85,443 IRA contracts issued in 2007 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2011, and withdrawals continued every year through 2012.



**First Year — 2007**

- Only 2 to 5 percent of owners aged 57–59 took withdrawals during their first year of purchase. For owners aged 60–69, the percent ranged from 7 to 17 percent, changing by 1 to 3 percent with each age increment.
- Over a quarter (27 percent) of owners aged 70 in 2007 took withdrawals in the first year. A third of owners aged 71 in 2007 took withdrawals in the same year the purchase was made, to satisfy their RMDs.
- More than one third of owners, between ages 72 and 75, also took withdrawals in their first contract year.

**Second Year — 2008**

- In their second year of holding a GLWB annuity, the percent of owners aged 60–69 in 2008 taking their first withdrawals from their annuity was lower than the percent of owners who took withdrawals in the first year.
- However, a quarter of owners who turned age 70 took their first withdrawals in 2008, their second year of holding. Interestingly, 27 percent of owners aged 70 in 2007 took withdrawals that year. One third of owners aged 70 at purchase, and 71 in their second year, took their first withdrawals in 2008. The same percentage of owners aged 71 took withdrawals in 2007.
- More than a quarter of owners aged 72 and over took withdrawals in their second year, in addition to more than one third of owners who started their withdrawals in year one.

**Third Year — 2009**

- In 2009 the RMD rules were eased and the percent of owners who took their first withdrawals was much lower across all ages.

**Fourth Year — 2010**

- In their fourth year of ownership, we see a similar pattern for owners taking their first withdrawals. Owners who turned ages 60–69 in 2010 and took their first withdrawals remained within a range of 5 to 9 percent, very close to the behavior that we saw in 2008.
- Almost the same percentage of owners who turned ages 70 and 71 in 2010 took first withdrawals, 23 percent and 32 percent respectively. Twenty percent of owners who turned 72 (at purchase they were 69) took their first withdrawals in 2010. From age 73 and over, 8 to 9 percent of owners took their first withdrawals, at an almost uniform rate, in their fourth year of ownership.

### ***Fifth Year — 2011***

- In their fifth year of ownership, 20 percent of owners who turned ages 70 and 71 in 2011 took their first withdrawals.
- Nine percent of owners who turned age 72 took their first withdrawals in their fifth year, and after that around 5 percent to 6 percent of 2007 owners started their first withdrawals in 2011.

### ***Sixth Year — 2012***

- In their six year of ownership, we found that 19 and 18 percent of owners who turned ages 70 and 71, respectively, in 2012 took their first withdrawals.
- Six percent of owners who turned age 72 in their sixth year took their first withdrawals. Afterwards, only 4 percent to 5 percent of 2007 owners started their first withdrawals in 2012. The pool of IRA owners who have not yet taken their RMD withdrawals is shrinking. The percent of owners taking their first withdrawals among the older owners is expected to go down in future years.

If we avoid the anomaly in 2009, there is a consistent owner withdrawal behavior, defined by their age and the need to take RMDs. We have already established that withdrawals from IRA annuities are significantly driven by the need to take RMDs.

The last row of Table 1-8 provides the percent of owners taking withdrawals in all subsequent years based on contracts where the first withdrawal occurred between 2007 and 2011, with withdrawals continuing every year through 2012.

For example, 91 percent of 68-year-old owners who purchased their IRA annuities in 2007 took their first withdrawals between 2007 and 2011, and continued to take withdrawals every year through 2012. Overall, once the owners begin to take withdrawals, they are more likely to utilize the lifetime withdrawal benefit provided they do not surrender their contracts in later years.

### **Withdrawal Activity for Nonqualified Contracts Issued in 2007**

For nonqualified annuity owners, aged 57 to 69, we see a similar first-year withdrawal pattern (Table 1-9). For ages 70 or 71, we do not see a spike in withdrawals.

**Table 1-9: GLWB First Withdrawals for 2007 Buyers (Nonqualified)**

Withdrawals started at	Age at Purchase																		
	Age 57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57	2%																		
Age 58	2%	2%																	
Age 59	3%	2%	3%																
Age 60	5%	5%	5%	6%															
Age 61	4%	4%	4%	4%	6%														
Age 62	5%	4%	4%	5%	5%	7%													
Age 63		5%	4%	4%	4%	5%	8%												
Age 64			4%	4%	4%	4%	5%	7%											
Age 65				7%	7%	7%	6%	8%	10%										
Age 66					7%	6%	7%	6%	8%	12%									
Age 67						5%	5%	6%	6%	7%	12%								
Age 68							5%	6%	6%	6%	8%	12%							
Age 69								5%	5%	6%	6%	7%	14%						
Age 70									5%	6%	6%	6%	7%	14%					
Age 71										5%	5%	6%	6%	8%	14%				
Age 72											5%	5%	7%	6%	8%	16%			
Age 73												5%	5%	6%	6%	8%	16%		
Age 74													5%	5%	5%	6%	8%	18%	
Age 75														4%	4%	5%	5%	7%	17%
Age 76															5%	6%	6%	6%	9%
Age 77																4%	5%	6%	7%
Age 78																	4%	5%	4%
Age 79																		4%	4%
Age 80																			4%
<b>Cumulative</b>	<b>19%</b>	<b>22%</b>	<b>24%</b>	<b>29%</b>	<b>32%</b>	<b>35%</b>	<b>36%</b>	<b>38%</b>	<b>40%</b>	<b>42%</b>	<b>42%</b>	<b>41%</b>	<b>44%</b>	<b>43%</b>	<b>42%</b>	<b>45%</b>	<b>44%</b>	<b>47%</b>	<b>46%</b>
<b>Percent of owners taking withdrawals in all subsequent years</b>	<b>68%</b>	<b>73%</b>	<b>74%</b>	<b>78%</b>	<b>78%</b>	<b>81%</b>	<b>80%</b>	<b>82%</b>	<b>82%</b>	<b>83%</b>	<b>82%</b>	<b>82%</b>	<b>85%</b>	<b>84%</b>	<b>83%</b>	<b>82%</b>	<b>83%</b>	<b>79%</b>	<b>78%</b>

Note: Based on a constant group of 51,576 nonqualified contracts issued in 2007 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2011, and withdrawals continued every year through 2012.

After the first year, approximately 4 to 8 percent of owners aged 60 and older took their first withdrawals in each year. The percent of owners taking first withdrawals does not vary significantly, and 2009 was not an anomaly for nonqualified owners. As a result, we see virtually the same withdrawal pattern of 2008 repeated in 2009, 2010, 2011, and 2012. In 2012, across all ages, the percent of owners taking withdrawals remained within a band of 4 percent to 7 percent, as the pool of owners who have not taken withdrawals so far shrinks. Obviously, we expect the percent of owners taking their first withdrawals in the following years to be

lower, as more and more owners start taking lifetime withdrawals. Note that most of these owners used SWPs to receive their regular withdrawals.

Tables 1-10 and 1-11 show the history of first withdrawals of 2008 buyers over the last five years. These tables essentially confirm the conclusions we reached with 2007 buyers, and illustrate how source of funds and age are the two most important drivers of GLWB owner withdrawal behavior.

**Table 1-10: GLWB First Withdrawals for 2008 Buyers (IRA)**

Withdrawals started at	Age at Purchase																		
	Age 57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57	2%																		
Age 58	2%	2%																	
Age 59	3%	3%	4%																
Age 60	6%	5%	5%	5%															
Age 61	5%	4%	4%	5%	5%														
Age 62		5%	5%	4%	5%	8%													
Age 63			5%	5%	4%	5%	8%												
Age 64				4%	4%	5%	5%	7%											
Age 65					7%	6%	6%	6%	11%										
Age 66						7%	7%	6%	7%	12%									
Age 67							6%	6%	5%	7%	11%								
Age 68								6%	6%	5%	7%	12%							
Age 69									6%	7%	5%	7%	15%						
Age 70										20%	22%	21%	9%	24%					
Age 71											21%	22%	29%	12%	29%				
Age 72												8%	11%	21%	11%	33%			
Age 73													7%	9%	17%	12%	30%		
Age 74														6%	9%	15%	13%	35%	
Age 75															6%	9%	16%	12%	33%
Age 76																6%	9%	17%	13%
Age 77																	6%	8%	17%
Age 78																		6%	7%
Age 79																			6%
<b>Cumulative</b>	<b>18%</b>	<b>19%</b>	<b>22%</b>	<b>24%</b>	<b>25%</b>	<b>31%</b>	<b>32%</b>	<b>31%</b>	<b>36%</b>	<b>50%</b>	<b>66%</b>	<b>69%</b>	<b>70%</b>	<b>72%</b>	<b>72%</b>	<b>75%</b>	<b>74%</b>	<b>78%</b>	<b>76%</b>
<b>Percent of owners taking withdrawals in all subsequent years</b>	<b>67%</b>	<b>69%</b>	<b>70%</b>	<b>76%</b>	<b>76%</b>	<b>80%</b>	<b>79%</b>	<b>81%</b>	<b>85%</b>	<b>84%</b>	<b>91%</b>	<b>91%</b>	<b>91%</b>	<b>86%</b>	<b>82%</b>	<b>84%</b>	<b>83%</b>	<b>84%</b>	<b>82%</b>

Note: Based on a constant group of 107,597 IRA contracts issued in 2008 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2011, and withdrawals continued every year through 2012.

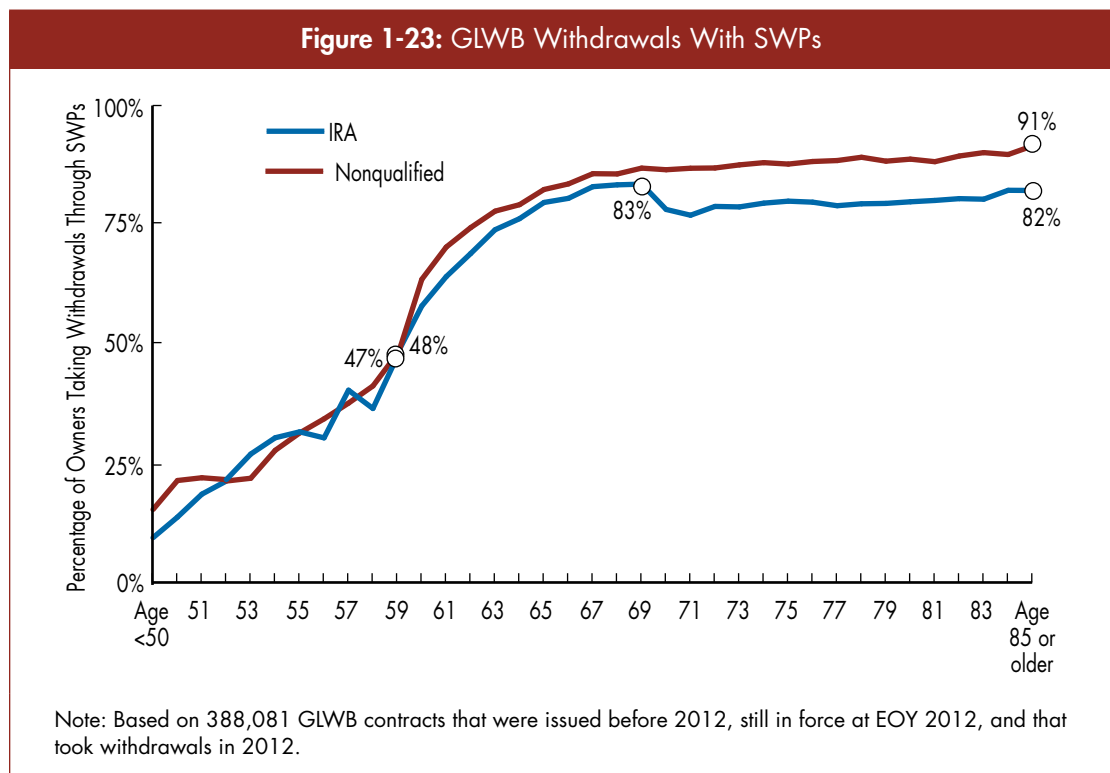
**Table 1-11: GLWB First Withdrawals for 2008 Buyers (Nonqualified)**

Withdrawals started at	Age at Purchase																		
	Age 57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57	1%																		
Age 58	1%	1%																	
Age 59	2%	2%	2%																
Age 60	4%	3%	4%	4%															
Age 61	4%	3%	3%	4%	6%														
Age 62		4%	3%	3%	4%	6%													
Age 63			4%	4%	3%	5%	7%												
Age 64				3%	3%	3%	4%	7%											
Age 65					5%	4%	4%	5%	8%										
Age 66						6%	6%	5%	6%	10%									
Age 67							5%	5%	4%	5%	11%								
Age 68								5%	5%	4%	5%	11%							
Age 69									5%	5%	5%	6%	13%						
Age 70										5%	6%	4%	7%	12%					
Age 71											6%	6%	4%	7%	13%				
Age 72												5%	5%	5%	7%	17%			
Age 73													5%	5%	5%	7%	16%		
Age 74														5%	4%	5%	6%	17%	
Age 75															5%	5%	4%	8%	17%
Age 76																5%	6%	5%	7%
Age 77																	6%	5%	5%
Age 78																		4%	5%
Age 79																			5%
<b>Cumulative</b>	<b>12%</b>	<b>14%</b>	<b>16%</b>	<b>19%</b>	<b>21%</b>	<b>25%</b>	<b>26%</b>	<b>27%</b>	<b>28%</b>	<b>30%</b>	<b>32%</b>	<b>33%</b>	<b>35%</b>	<b>34%</b>	<b>35%</b>	<b>39%</b>	<b>38%</b>	<b>39%</b>	<b>38%</b>
<b>Percent of owners taking withdrawals in all subsequent years</b>	<b>61%</b>	<b>68%</b>	<b>73%</b>	<b>73%</b>	<b>79%</b>	<b>79%</b>	<b>81%</b>	<b>82%</b>	<b>82%</b>	<b>82%</b>	<b>84%</b>	<b>81%</b>	<b>86%</b>	<b>83%</b>	<b>86%</b>	<b>84%</b>	<b>85%</b>	<b>85%</b>	<b>85%</b>
Note: Based on a constant group of 51,494 nonqualified contracts issued in 2008 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2011, and withdrawals continued every year through 2012.																			

### Systematic Withdrawal Activity

One predictor that can help determine if GLWB owners are likely to take withdrawals to generate a lifetime income stream is how regularly they take withdrawals — either through SWPs or occasional withdrawals. All insurance companies allow GLWB owners to use SWPs, and typically categorize those withdrawals as lifetime withdrawals under the benefit. In general, withdrawals through SWPs are a customer’s affirmation to take withdrawals on a continuous basis, and strongly indicate that customers are utilizing the GLWB in their contracts.

Overall, 77 percent of owners took withdrawals using an SWP (Figure 1-23). Seventy-five percent of IRA owners, and 83 percent of nonqualified owners who took withdrawals in 2012, used an SWP. At age 50, only 13 percent of IRA owners and 21 percent of nonqualified owners who took withdrawals in 2012 used SWPs. The rest of the owners took occasional withdrawals.



Older owners are more likely to take withdrawals through SWPs and younger owners — particularly those under age 60 — are more likely to take occasional withdrawals.

- Roughly one third of owners under age 60 who took withdrawals, either from qualified or nonqualified GLWBs, used an SWP. Almost half of the owners aged 59 used SWPs.
- From ages 60 to 69, 77 percent of qualified owners and 81 percent of nonqualified owners used SWPs for withdrawals in 2012.
- After age 69, the owners were very likely to use SWPs — 79 percent of qualified owners and 88 percent of nonqualified annuity owners. The percent of nonqualified owners using SWPs reached more than 90 percent for owners in their mid-80s.

**\$5,197** was the median withdrawal amount in an SWP — **\$6,725** when taken on non-systematic basis.

The median withdrawal amount for those taking just an SWP in 2012 was \$5,197 and the average was \$7,872. Table 1-12 shows the average and median withdrawal amount for owners who took only SWP withdrawals in 2012 for both qualified and nonqualified contracts. Though the average withdrawal amount should vary by the benefit base amount and the age when withdrawals are first taken, it appears that average withdrawal amounts for age 70 or older owners most likely remain within the maximum income amount allowed. The median withdrawal amounts for both qualified and nonqualified owners aged 60 and older are within expectations, while those under age 60 were influenced by owners who were likely taking partial surrenders. This is a very small percentage of the overall contracts that had withdrawals.

**Table 1-12: GLWB Average Withdrawal Amount by SWP and by Source of Funds**

Age	Systematic Withdrawals Average Withdrawal Amount		Systematic Withdrawals Median Withdrawal Amount	
	IRA	Nonqualified	IRA	Nonqualified
Under age 60	\$11,522	\$12,882	\$7,948	\$7,376
Age 60–69	\$9,261	\$8,550	\$6,404	\$5,456
Age 70 or older	\$6,542	\$7,968	\$4,252	\$5,300
<b>Total</b>	<b>\$7,710</b>	<b>\$8,240</b>	<b>\$5,101</b>	<b>\$5,385</b>

Note: Based on 299,651 contracts issued before 2012 and still in force at EOY 2012, with withdrawals in 2012 through an SWP. Represents contracts taking only systematic withdrawals.

For those contracts that took only occasional or non-systematic withdrawals, the median amount in 2012 was \$6,725 and the average was \$15,032. For owners under age 60, particularly nonqualified taking occasional withdrawals, the median withdrawal amount was unusually high, and they are more likely to intend to partially surrender the contracts (Table 1-13).

**Table 1-13: GLWB Occasional Withdrawal Amount by Source of Funds**

Age	Occasional Withdrawals Average Withdrawal Amount		Occasional Withdrawals Median Withdrawal Amount	
	IRA	Nonqualified	IRA	Nonqualified
Under age 60	\$22,126	\$28,331	\$11,384	\$12,755
Age 60–69	\$17,278	\$19,260	\$8,963	\$8,450
Age 70 or older	\$8,332	\$16,648	\$4,504	\$7,062
<b>Total</b>	<b>\$13,766</b>	<b>\$19,724</b>	<b>\$6,337</b>	<b>\$8,434</b>

Note: Based on 88,430 contracts issued before 2012 and still in force at EOY 2012 with withdrawals in 2012 on only an occasional or nonsystematic basis.

A small percentage of owners took both SWP and occasional withdrawals. For these owners, the median withdrawal amount was \$11,300 for IRAs and \$12,200 for nonqualified contracts.

Table 1-14 provides the distribution of withdrawals for those owners taking only occasional withdrawals, only systematic withdrawals, and those who took both occasional and systematic based on the dollar amount of their withdrawals.

**Table 1-14: GLWB Withdrawal Amount as Percent of Total Withdrawal Amount**

Age	Only Occasional Withdrawals		Only Systematic Withdrawals		Both Systematic and Occasional Withdrawals	
	IRA	Nonqualified	IRA	Nonqualified	IRA	Nonqualified
Under age 60	6%	2%	1%	0	1%	0
Age 60–69	10%	3%	18%	6%	3%	1%
Age 70 or older	7%	3%	20%	12%	3%	1%
<b>Total</b>	<b>24%</b>	<b>9%</b>	<b>40%</b>	<b>19%</b>	<b>7%</b>	<b>2%</b>

Note: Based on 405,593 GLWB contracts issued before 2012 and remained in force at EOY 2012 with withdrawals in 2012.



## Percentage of Benefit Maximum Withdrawn

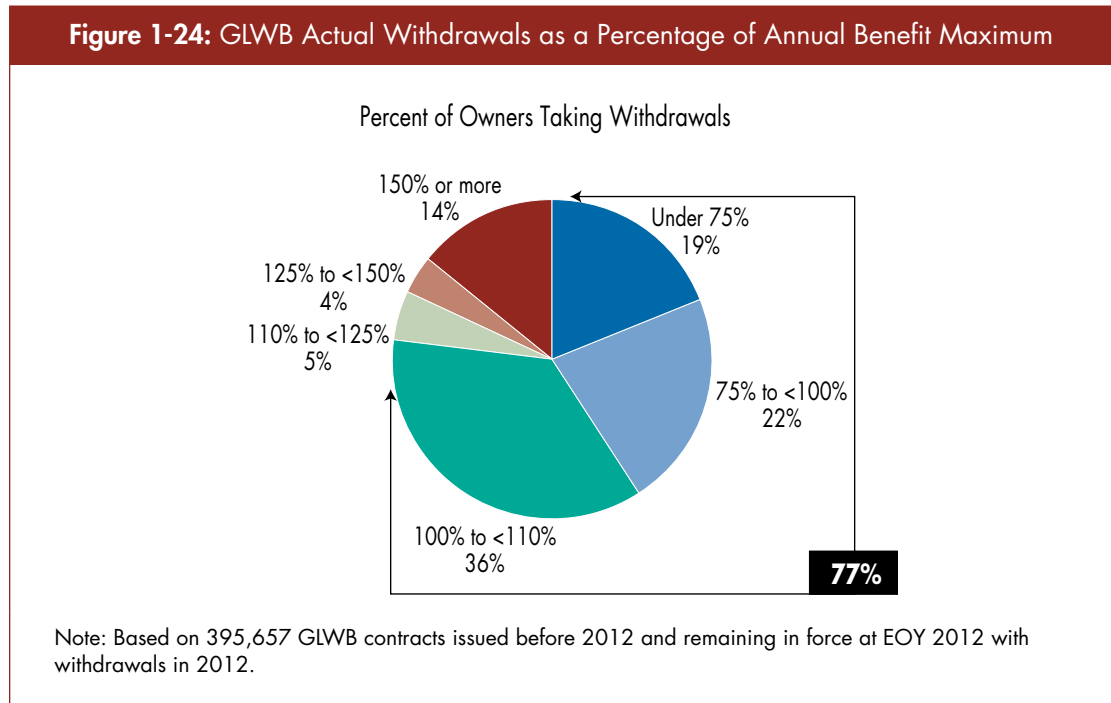
GLWBs provide a specified maximum withdrawal amount annually for life, through periodic withdrawals from annuity contracts, thus ensuring protection against adverse market performance. However, if the owner withdraws more than the maximum allowed withdrawal amount in a contract year, they are considered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

We asked participating companies to provide this allowed maximum amount as of BOY 2012. 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 company provided BOY maximum withdrawal amount, then it equals partial withdrawals divided by this amount.
- If 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 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).

For percentage of benefit maximum withdrawn, we looked at the relationship of customers' actual withdrawal amounts in calendar-year 2012 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.

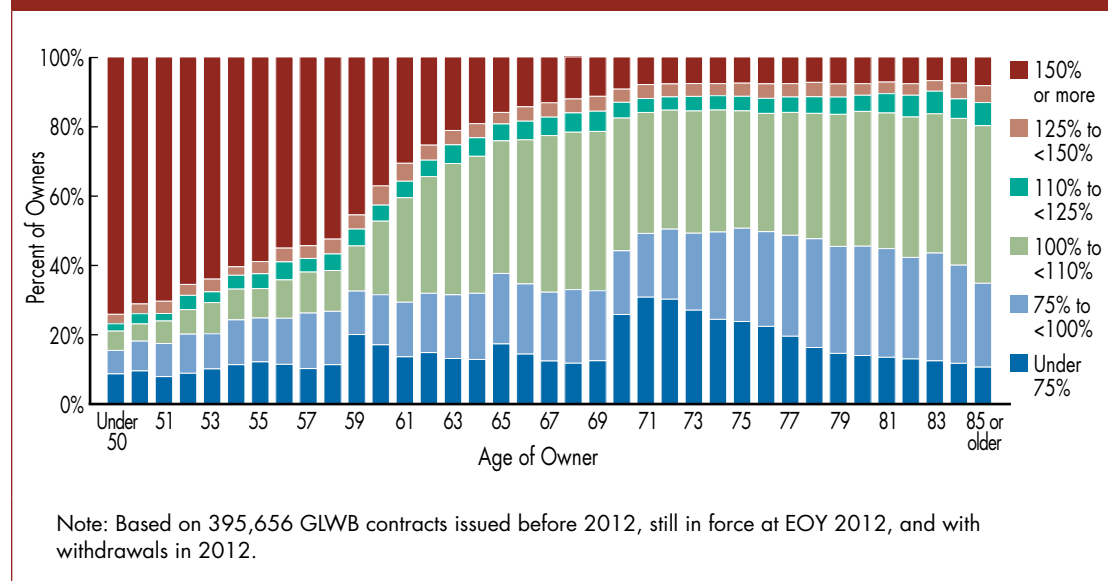
Figure 1-24 shows the degree to which withdrawals were higher or lower than maximum withdrawal amounts allowed in the contract.



Roughly 77 percent of owners who took withdrawals in 2012 withdrew income that was below or close to the maximum amount calculated — up to 110 percent. Five percent of owners withdrew 110 to less than 125 percent of the maximum amount allowed. Some of these customers, if older, may have remained within the withdrawal limit allowed because of higher RMDs from their IRA annuities. However, 18 percent of the owners took withdrawals that exceeded the maximum withdrawal amount by 25 percent or more.

When we look at the age of owners and their withdrawal amount in relation to maximum amounts allowed, we see that younger owners are more likely to take 125 percent or more of the maximum amount allowed (top two bars of Figure 1-25).

**Figure 1-25: GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age**



Only **1 in 6** owners aged 60 or over took withdrawals of 125 percent or more of the maximum amount allowed; some possibly due to RMDs.

Withdrawal amounts of 63 percent of owners who took withdrawals in 2012 remained within 75 to 125 percent of the benefit maximum allowed in their contracts (Table 1-15). One fifth (19 percent) and 14 percent of owners' withdrawal amounts were either below 75 percent or exceeded 150 percent or more of the benefit maximum allowed in the contracts respectively. Only 4 percent of owners' withdrawals fall within 125 to less than 150 percent of the maximum withdrawals allowed.

Six in 10 owners under age 60 and taking withdrawals exceeded 125 percent or more of the benefit maximum, most of them taking 150 percent or more. It's likely that many of these individuals are partially surrendering their contracts as opposed to taking regular withdrawals under the terms of the GLWB. On the other hand, only 16 percent of owners age 60 or over and taking withdrawals exceeded 125 percent or more of the benefit maximum. In addition, many benefits will not penalize IRA annuity owners over age 70½ for taking excess withdrawals if they are doing so to satisfy IRS RMDs.

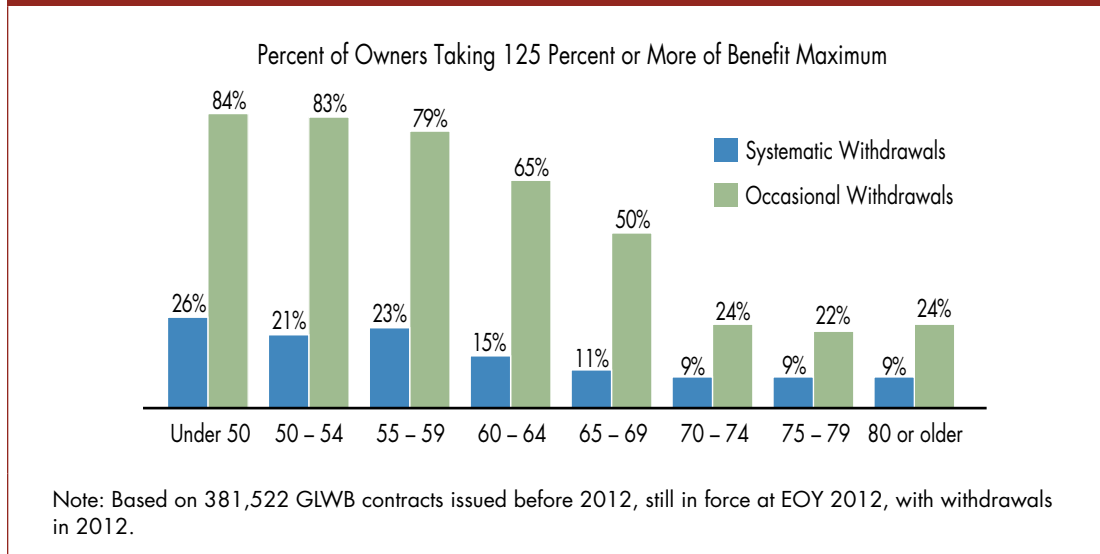
**Table 1-15: Percent of GLWB Owners Taking Withdrawals as Percent of Benefit Maximum**

Age	Withdrawal Amount as Percent of Benefit Maximum Allowed in the Contract					
	Less than 75%	75% to <100%	100% to <110%	110% to <125%	125% to <150%	150% or more
Under 50	9%	7%	6%	2%	3%	74%
50 to 54	10%	11%	8%	3%	3%	66%
55 to 59	14%	14%	12%	5%	4%	52%
60 to 64	14%	17%	34%	5%	5%	25%
65 to 69	14%	20%	43%	5%	4%	13%
70 to 74	28%	21%	36%	4%	4%	8%
75 to 79	20%	29%	35%	5%	4%	8%
80 to 84	13%	31%	40%	6%	3%	7%
85 or older	10%	24%	45%	7%	5%	8%
<b>All ages</b>	<b>19%</b>	<b>22%</b>	<b>37%</b>	<b>5%</b>	<b>4%</b>	<b>14%</b>

Note: Based on 395,656 GLWB contracts issued before 2012 with withdrawals in 2012.

A strong indicator of whether owners are likely to exceed the benefit maximum is the method they use for withdrawals — systematic or occasional. Most excess withdrawals that exceed 125 percent of the annual benefit maximum amount come from occasional withdrawals (Figure 1-26).

**Figure 1-26: GLWB Withdrawals to Annual Benefit Maximum Amount by Age**



Fifty-five percent of contracts with excess withdrawals (125 percent or more of the benefit maximum) came from occasional withdrawals. Nearly half of all occasional withdrawals (45 percent) exceed 125 percent or more allowed in the contract. On the other hand, only 11 percent of contracts using SWPs exceed 125 percent or more of the maximum annual income allowed in the contract. Owners using SWPs remaining at or below the benefit maximum are quite consistent across all age groups. Even if we consider withdrawals between 110 to less than 125 percent of benefit maximum, this accounts for only another 5 percent of SWP users. Almost 3 in 4 owners take withdrawals through an SWP; and, when most of them withdraw amounts within the benefit maximum, they no doubt are utilizing the GLWB rider.

There is no difference between male and female contract owners, or between IRA and non-qualified owners, in their likelihood to take excess withdrawals.

We also examined how the proportion of the benefit maximum withdrawn varies by contract size. We might expect larger contract sizes to be linked to wealthier and more sophisticated owners who are more likely to work with financial advisors and less inclined to exceed the GLWB benefit maximum, which could result in a reduction of the annual benefit maximum in future years. They might also be less likely to take out an amount well below the maximum, thereby passing up a potential opportunity to maximize the value of the benefit. Taking out more or less than the benefit maximum could represent an “inefficient” (or sub-optimal) utilization of the guarantee. Figures 1-27, 1-28, and 1-29 illustrate the proportion of owners taking withdrawals by age and contract size.

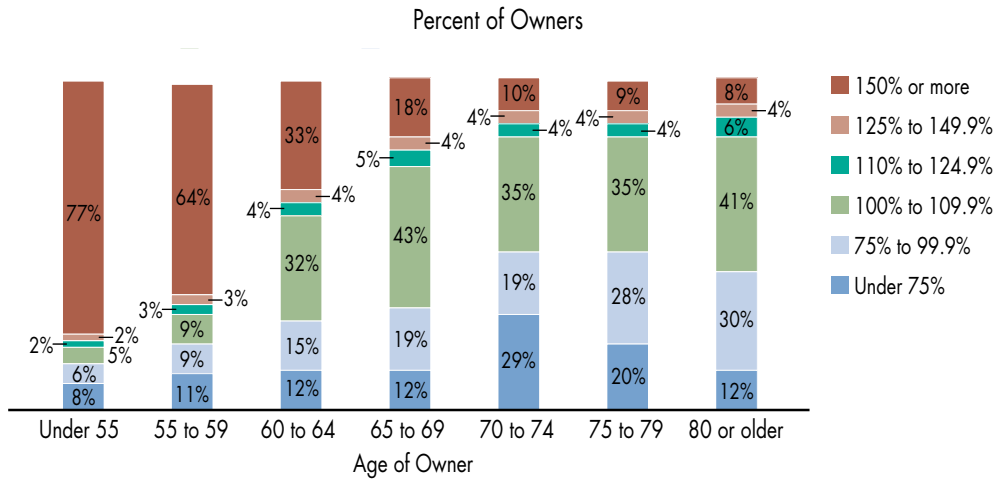
Owners under age 60 with contract sizes under \$100,00 at BOY 2012 were not as likely to take withdrawals that were less than 100 percent of the maximum annual amount. For example, for owners aged 55-59 with contract sizes below \$100,000 who took withdrawals, 9 percent took between 75-99 percent of their maximum allowed amount, compared with 18 percent and 23 percent for those with contract values of \$100,000 — \$250,000 and \$250,000 or more , respectively.

However, we see the opposite when looking at those taking withdrawals of 150 percent or more. Two thirds of owners aged 55–59 with contract sizes below \$100,000 took withdrawals of 150 percent or more of their maximum amount compared with 42 percent and 30 percent of owners aged 55–59 with contract values of \$100,000 – \$249,999 and \$250,000 or more, respectively.

Owners of VAs with higher contract values are less likely than those with lower contract values to significantly exceed the benefit maximum, particularly among younger owners.

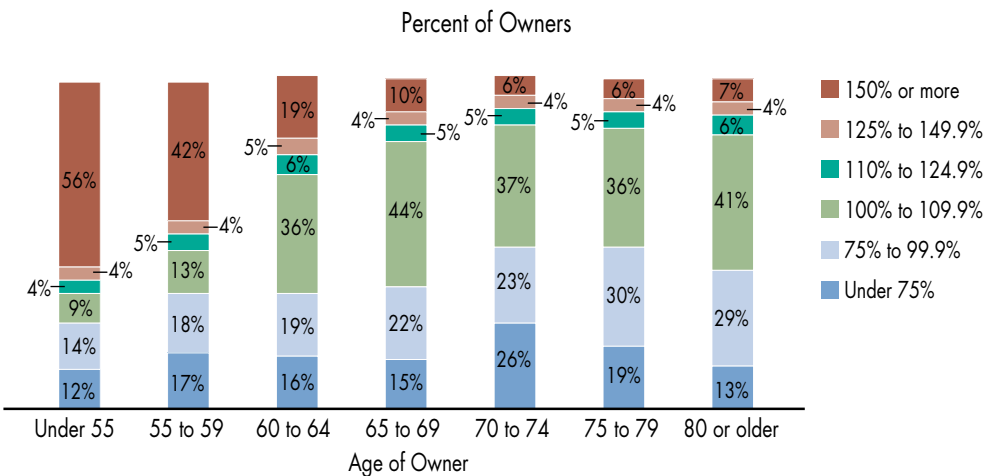
As noted earlier, the relationship between efficiency and contract size is limited to the youngest owners under age 60; and even among this group, the greatest difference across contract sizes is not the increasing proportion taking amounts close to the benefit maximum, but rather the proportion of owners with contract sizes below \$100,000 taking amounts well above the benefit maximum. In short, owners of VAs with higher contract values are less likely than those with lower contract values to significantly exceed the benefit maximum, particularly among younger owners.

**Figure 1-27: GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes Under \$100,000**



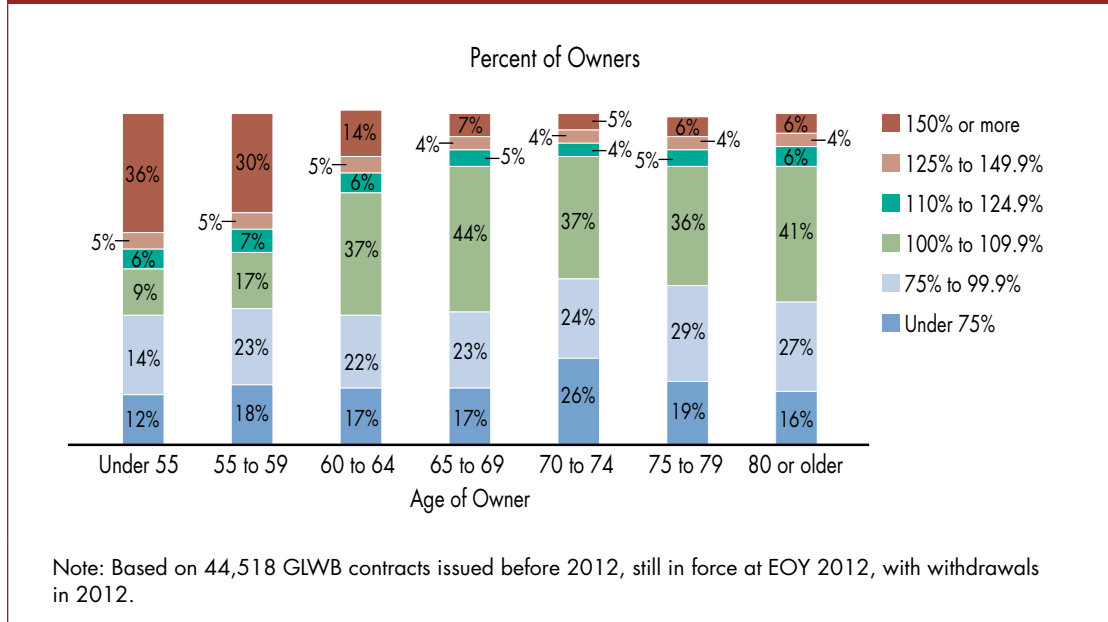
Note: Based on 229,090 GLWB contracts issued before 2012, still in force at EOY 2012, with withdrawals in 2012.

**Figure 1-28: GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes \$100,000 to \$249,999**



Note: Based on 122,048 GLWB contracts issued before 2012, still in force at EOY 2012, with withdrawals in 2012.

**Figure 1-29: GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes \$250,000 or More**

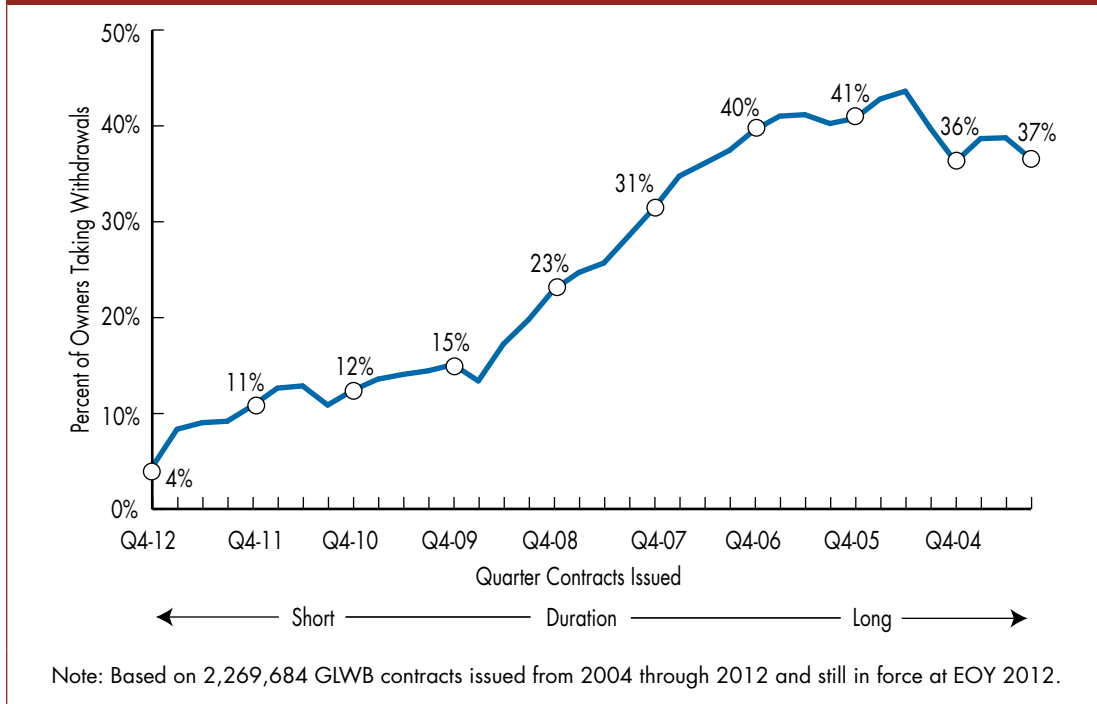


### Withdrawal Activity by Duration

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. Companies can also use contract duration to gauge their company’s marketing effectiveness, to set expectations with customers (e.g., when and how they should start withdrawals), and to train and educate customers and the sales force. 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 make 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.



**Figure 1-30: GLWB Overall Utilization Rates by Contract Duration**



Owners who bought their GLWB annuity in Q4 2012 had only 3 months maximum to set up withdrawals and receive payments. Only 4 percent of these owners took withdrawals from their annuities (Figure 1-30). As the contract duration increases, withdrawal activity increases, reaching nearly 11 percent among customers who owned the contract for one full year (as of EOY 2012). The overall utilization rate on a full-year basis rises to 14 percent for 2-year-old contracts, 16 percent for 3-year-old contracts and more than 25 percent for 5- to 6-year-old contracts (Table 1-16).

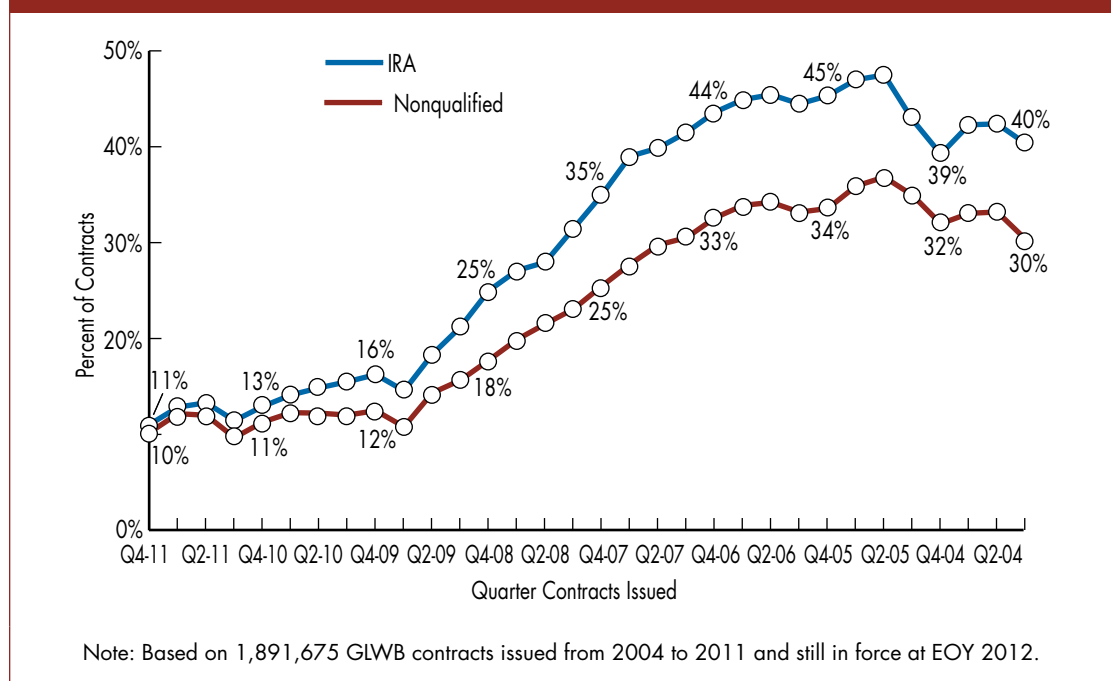
**Table 1-16: GLWB Overall Percent of Contracts Taking Withdrawals by Year of Issue**

Year of Issue	Overall Percent of Contracts Taking Withdrawals in 2012
2004	37.5%
2005	41.7%
2006	40.4%
2007	34.6%
2008	25.4%
2009	16.1%
2010	13.5%
2011	11.7%
2012	7.8%

Note: Based on 2,269,684 GLWB contracts issued in 2004 through 2012 and remaining in force at EOY 2012.

How do the overall utilization rates by contract duration periods differ between qualified and nonqualified contracts? A consistent pattern of withdrawal activity emerges: as contracts age, more owners decide to withdraw, regardless of whether the annuity was funded with qualified or nonqualified sources, though the percent of owners taking withdrawals from IRA annuities is higher than that from nonqualified annuities (Figure 1-31).

**Figure 1-31: GLWB Overall Utilization Rates by Contract Duration and Source of Funds**

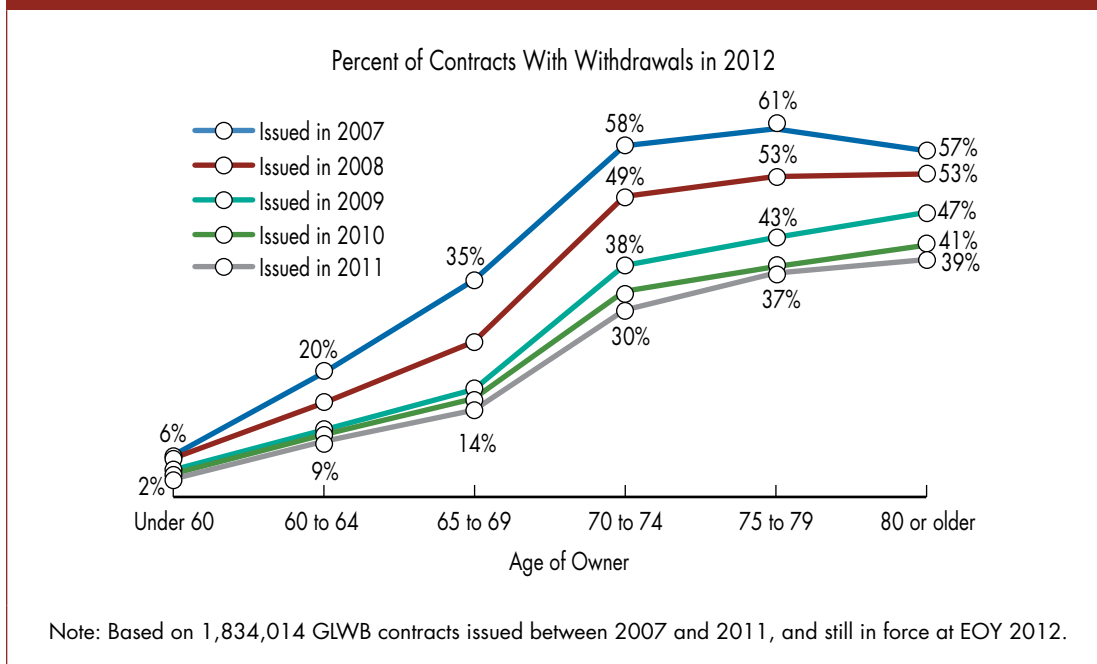


The growth in the percent of customers taking withdrawals is similar to the rates displayed in Figure 1-30. In general, around 10 percent of customers take withdrawals in their first year of ownership. After that, the rate of owners commencing their withdrawals grows incrementally at 5 to 10 percent per year until it levels off with contracts issued in 2006 and earlier. However, this generalization assumes that most customers will maintain their withdrawal behavior, and applies to the short-run estimation only. In the long run, the changing customer mix, as well as the need to satisfy RMDs, will significantly influence the slope of the withdrawal rates by duration.

## Withdrawal Activity by Duration and Age

We also analyzed withdrawal activity by contract duration and owner age (Figure 1-32). For contracts purchased by individuals under age 60, the overall utilization rate is fairly stable across different issue years. Withdrawals among these younger age groups are uncommon.

**Figure 1-32: GLWB Overall Utilization Rates by Contract Duration and Current Owner Age**



From age 60 and up, withdrawal activity increases, as owners begin to retire or need to make withdrawals to satisfy RMDs. For example, among contracts issued in 2011 that were in force for at least a year, the overall withdrawal rate among owners between ages 65 and 69 was 14 percent. However, among contracts issued in 2007 that were owned for at least five years, the overall withdrawal rate among owners between ages 65 and 69 rose to 35 percent.

Mapping the duration of contracts with age group can improve understanding of GLWB customer withdrawal behavior.

For older age groups (70–74 and 75–79), the marginal increase in withdrawal utilization by contract duration is smaller. However, the source of funds used to purchase the annuity remains the underlying force for these incremental increases. Therefore, mapping the duration of contracts by age groups can result in a better understanding of a company’s GLWB customer withdrawal behavior.

### **Withdrawals in Contracts With Non-Withdrawal Incentives**

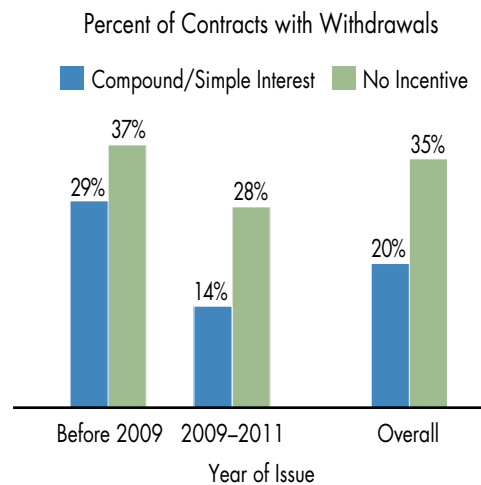
Withdrawal activity can vary depending on whether a contract offers incentives for owners to defer withdrawals. To attract younger investors, many GLWB offerings include “roll-ups,” or deferral bonuses, that increase the benefit base by a certain percent — typically 5 percent or more a year for a certain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

For example, a generous roll-up of 7 percent per year, growing on a compound basis, may ensure that a 55-year-old customer investing \$100,000 in 2012 would have a guaranteed benefit base of almost \$200,000 in 2022, on the condition that he or she took no withdrawals during the period. At the end of 10 years, the owner would be entitled to an income of say, 5 percent of the benefit base each year, or approximately \$10,000. Under GLWBs, the benefit base amounts are always protected from market declines.

Many companies offer a step-up or deferral bonus at a compound or a simple interest rate, if the owner does not take withdrawals for a certain period after purchase. The non-withdrawal bonus or incentive can attract younger customers who may be looking for a guaranteed larger benefit base to withdraw more income in later years, regardless of market volatility.

When we examined more than 1,095,000 contracts from 11 companies 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 had incentives for non-withdrawals (Figure 1-33). Even among longer-duration contracts, a larger percent of owners take withdrawals when no incentive is present. On an aggregate basis, when benefit bases grow at a compound or simple interest rate, the percent of contracts with withdrawals in 2012 was 0 percent. Among contracts with no incentives, the percent of owners taking withdrawals in 2012 was 35 percent.

**Figure 1-33: GLWB Withdrawal Activity in Contracts With/Without Non-Withdrawal Incentives**



Source: Based on 1,094,716 GLWB contracts issued by 11 insurance companies which offer both types — bonus for non-withdrawals or no bonus. All contracts were issued before 2012 and still in force at EOY 2012.

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.

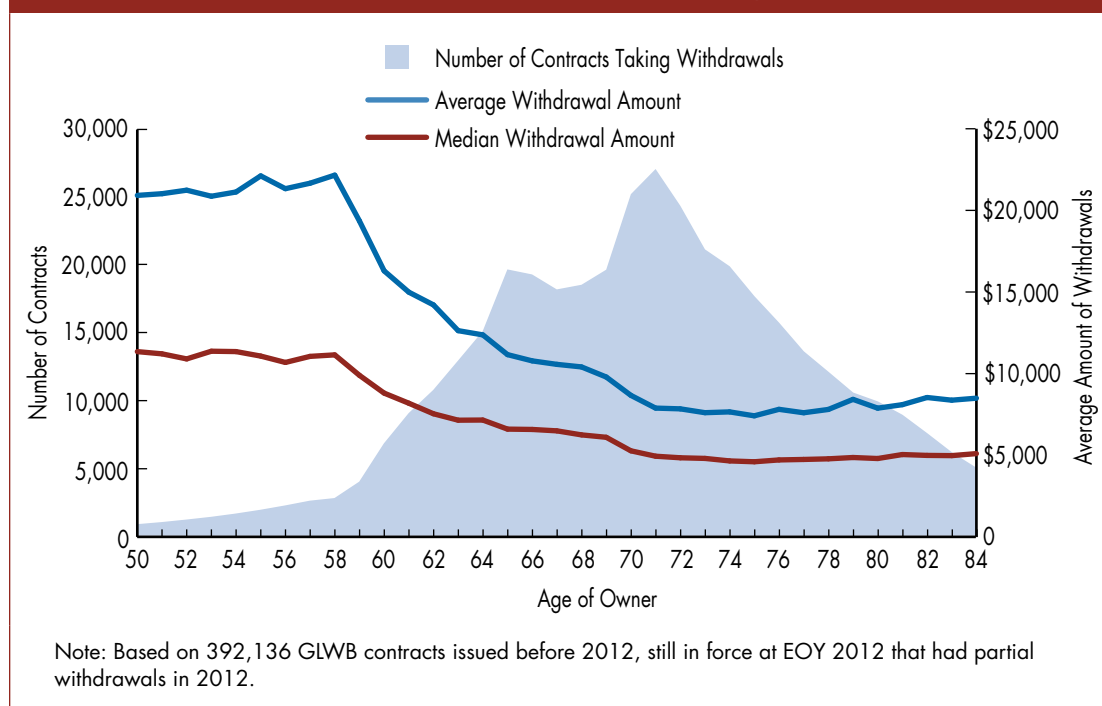
**20%** of owners took withdrawals when deferral incentives were available — much lower than the **35%** of owners taking withdrawals when no incentives were available.

## Average Withdrawal Amounts

The median withdrawal amount was \$5,578 in 2012 for contracts issued before 2012 that were in force at EOY 2012.

Owners aged 60 and under took median withdrawals ranging from \$8,700 to \$11,000 while the average withdrawals ranged from \$19,300 to \$22,100 (Figure 1-34). However, these owners constituted only 6 percent of all contracts with withdrawals in 2012. Given the high average withdrawal amounts, it is likely that these contracts were partially surrendered.

**Figure 1-34: GLWB Amount of Average Withdrawals by Current Owner Age**

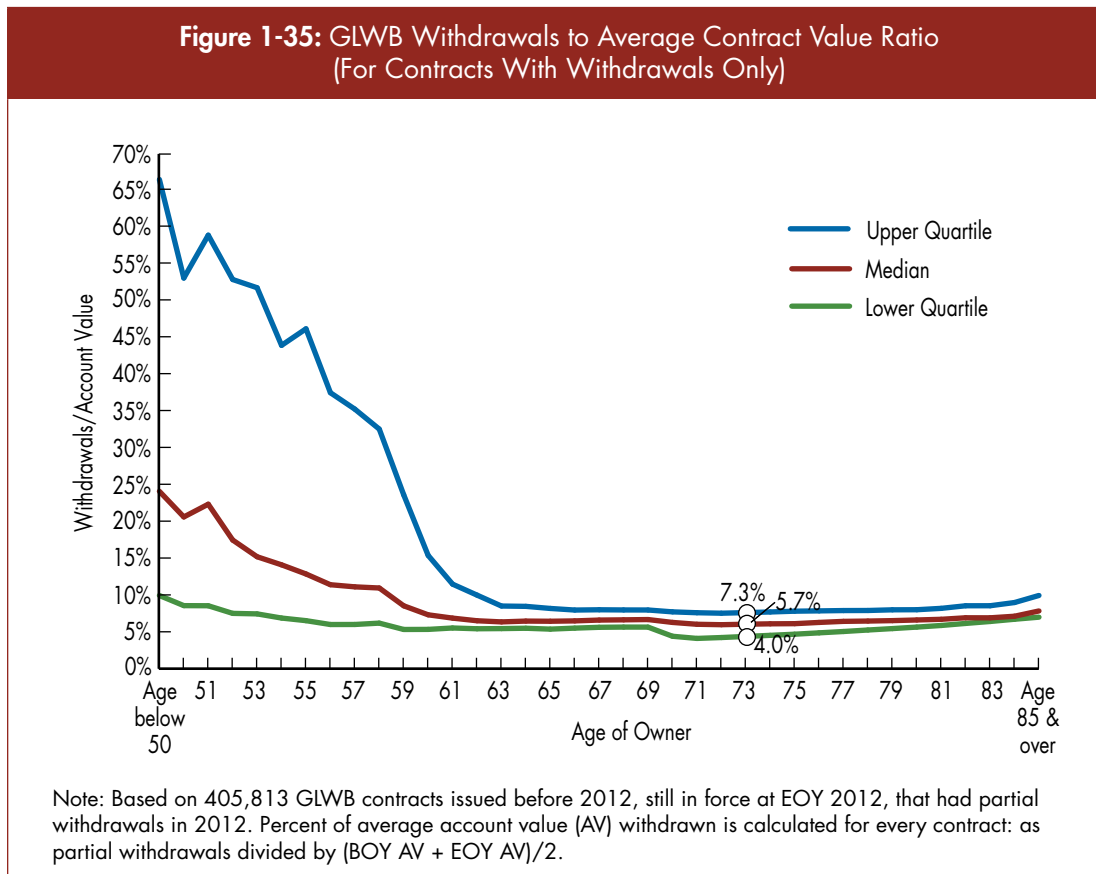


**\$5,578** was the median withdrawal amount for contracts that with withdrawals in 2012.

However, for owners over age 60, an increasing number took withdrawals, and a more sustainable withdrawal pattern and amount exist. The median withdrawal amount at various ages ranges from \$4,500 to \$8,100 and the average withdrawal amount ranges from \$7,300 to \$14,900 per contract. As owners start to retire, the volume of withdrawals rises considerably. Average withdrawal amounts for owners over age 70 are commensurate with the maximum withdrawal amount typically supported by the GLWB benefit base and guaranteed withdrawal rates offered to respective age bands.

## Withdrawals as a Percentage of Contract Value and Benefit Base

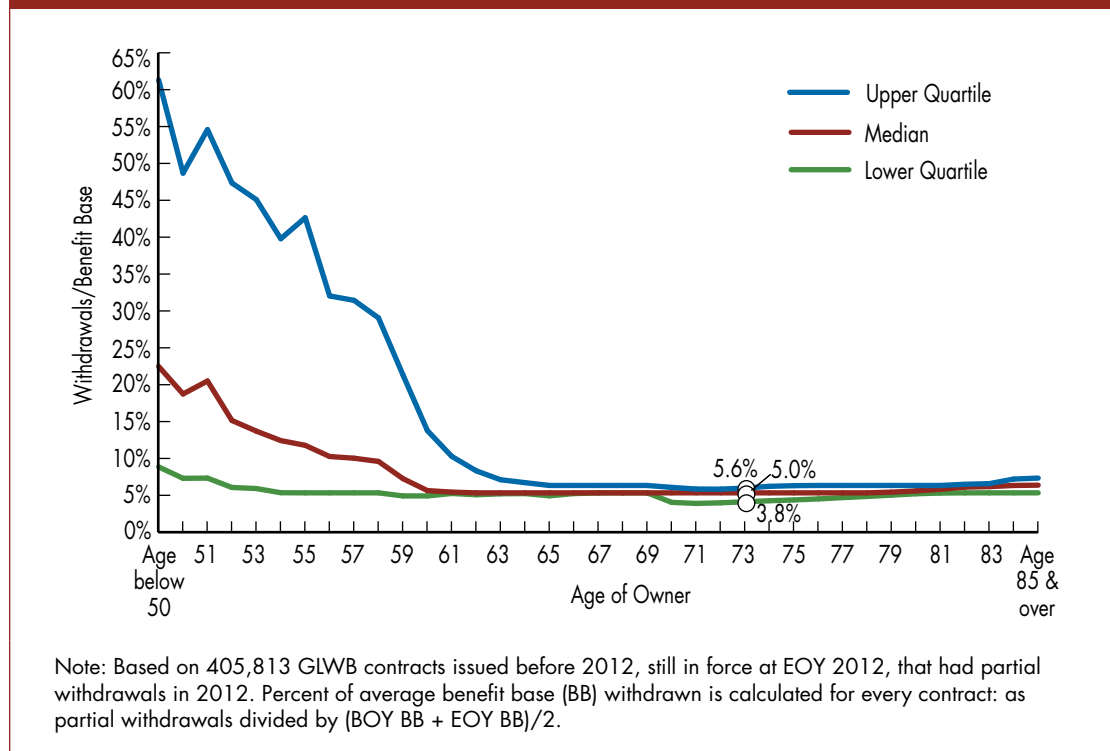
In order to provide some context, we assessed the withdrawal amount in relation to both contract value and the benefit base. Figure 1-35 shows the median withdrawal amount for all ages and also the quartile distribution of the withdrawal amounts in 2012.



The distribution of the withdrawals as a percent of average account 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 are doing so at similar ratios from their account values, for example, for owners at age 73, around 6 percent. For owners under age 60, the median of the ratios is higher than that of older owners, ranging between 8 to 24 percent, and gets higher with younger owners. Also 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 few younger owners (Figure 1-36). The distribution of ratios of withdrawal amount to benefit base shows that the median, the upper quartile, and the lower quartile values are almost identical for owners aged 65 or over. The ratios also indicate that the majority of older owners taking withdrawals are doing so at a rate of around 5 percent of their benefit base values — a typical GLWB maximum payout rate for this age.

**Figure 1-36: GLWB Withdrawals to Average Benefit Base Ratio**  
(For Contracts With Withdrawals Only)

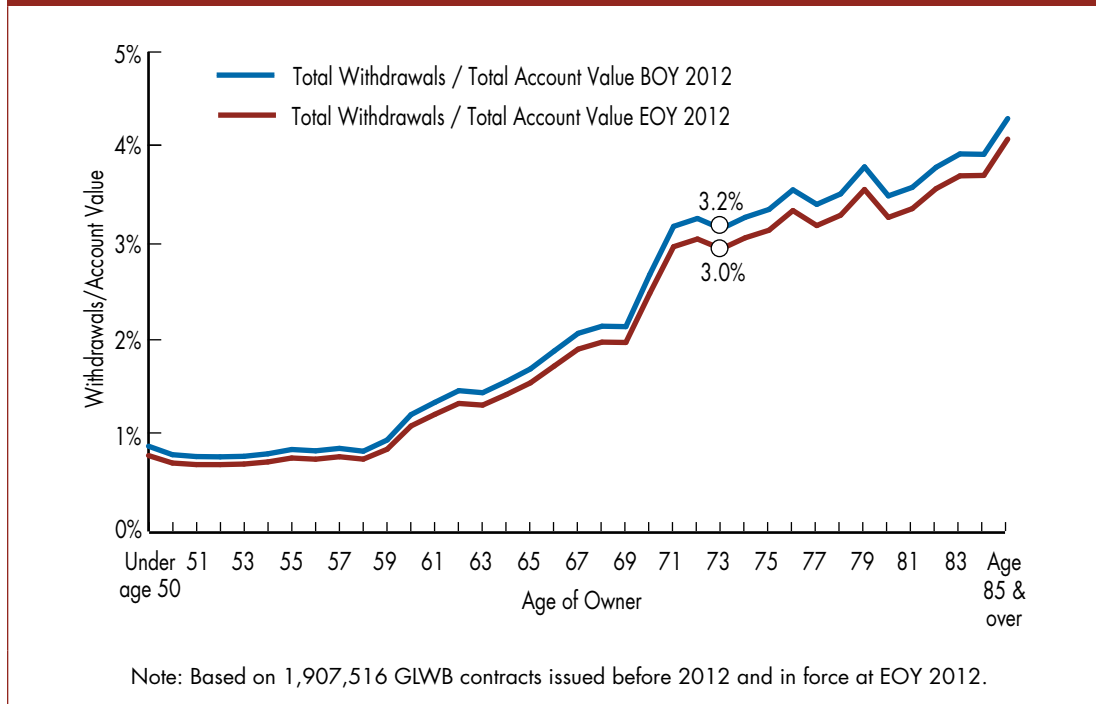




## Total Withdrawal Amount vs. Total Contract Value

Another measure of GLWB risk originating in customer behavior can be ascertained by comparing the ratio of total withdrawal amount to contract values at BOY and the ratio of total withdrawal amount to EOY contract values. This measure can be calculated at two levels. First, total withdrawals during 2012 can be divided by total contract values at BOY and EOY, for all contracts in force. Second, the same ratio can be computed only for the subset of contracts that experienced withdrawals in 2012. The first measure provides a view of risk from total 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.

**Figure 1-37: GLWB Total Withdrawals to Total Contract Value (All Contracts)**



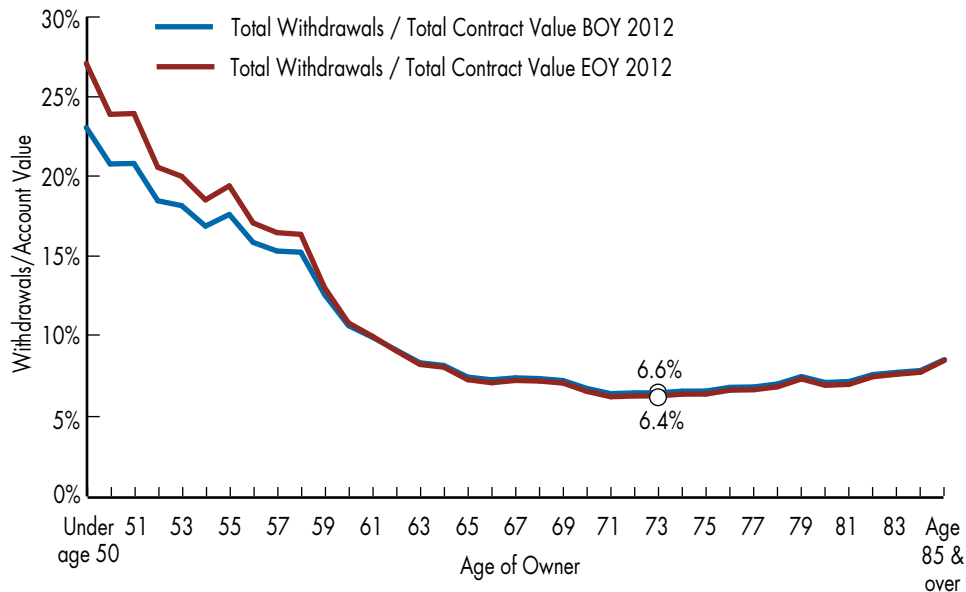
In 2012, for all contracts in force, the ratio of total withdrawals to BOY contract values was 1.92 percent, (in other words, the outflow from beginning assets was at a rate of 1.92 percent). However, the ratio declined to 1.75 percent when total withdrawals were compared to total assets at EOY. The improving ratio was due to the growing equity market and gains in fixed-income funds in 2012. The ratio at BOY was higher than the corresponding ratio for EOY contract values across all ages (Figure 1-37). When the ratio of total withdrawal amounts to account values at EOY is lower than the ratio calculated at BOY, it means that the total contract values have improved sufficiently due to investment gains despite reductions due to withdrawals. The lower ratio during the year reduces some of the risk exposure for the companies, insofar as withdrawal provisions in the GLWB rider are concerned.

With improving equity markets and gains in fixed-income funds in 2012, the ratio of total withdrawals to total contract values fell during the year, thus reducing the overall risk.

For example, customers aged 73 held \$4.9 billion in 43,200 contracts at BOY. The total withdrawal amount taken by these customers during 2012 was \$157.8 million, and the ratio of total withdrawals to contract values at the BOY was 3.2 percent. However, during the year the contract values rose to \$5.3 billion, after the withdrawals that had occurred. The ratio of withdrawal amounts to contract values for 73-year-old owners thereby improved from 3.2 percent at BOY to 3.0 percent at EOY.

Insurance companies should also examine the risks associated with the subset of contracts with withdrawals in 2012. Given the growing equity market and gains in fixed-income funds in 2012 and the withdrawal effect, the ratio of withdrawals to contract value improved for most contracts with withdrawals (Figure 1-38). For example, among owners aged 73 who made withdrawals in 2012, the ratio went from 6.6 percent of the contract value at BOY to 6.4 percent at EOY. For all the contracts that had withdrawals in 2012, there was an increase of 2 percent in the aggregate account values, after withdrawals.

**Figure 1-38: GLWB Total Withdrawals to Total Contract Value (For Contracts With Withdrawals Only)**



Note: Based on 400,276 GLWB contracts issued before 2012, in force at EOY 2012, with partial withdrawals in 2012.

## Withdrawal Activity in Single- and Joint-Lives Contracts

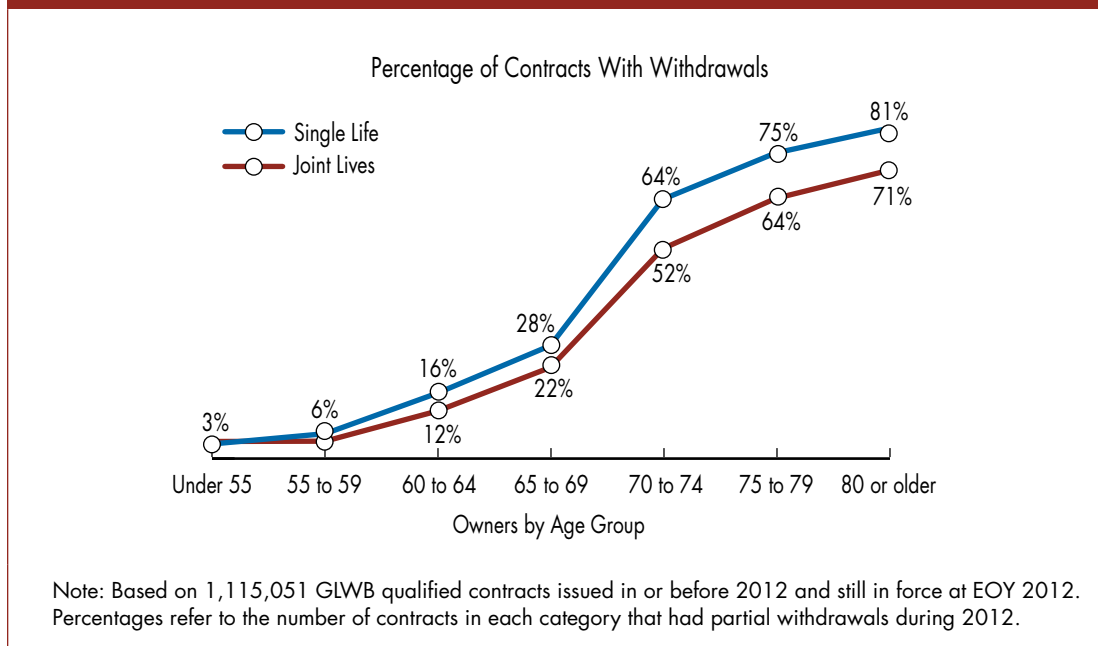
Some GLWB contracts offer guaranteed lifetime withdrawals on joint lives, allowing the withdrawals to continue as long as one of the annuitants is alive. Typically, the payout or guaranteed withdrawal rates for joint-lives contracts are lower than single-life-only contracts. Companies report that 3 in 10 GLWB contracts had payouts based on joint lives.

**30%** of GLWB contracts had payouts based on joint lives.

Overall, 24 percent of single-life contract owners took withdrawals in 2012 compared with 20 percent of joint-lives contract owners. The percent of IRA owners taking withdrawals from joint-lives contracts (22 percent) is slightly lower than the percent of owners taking withdrawals from single-life contracts (25 percent). This could be due to the fact that most joint-lives payouts are newer features in the contracts, and that joint-lives payout rates are typically lower.

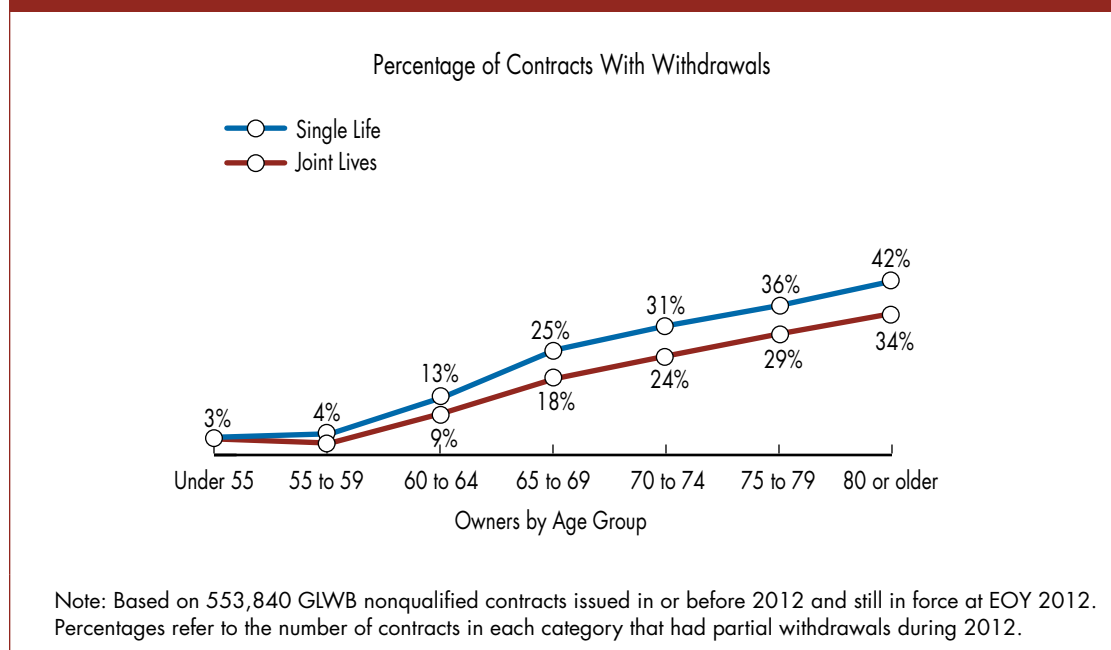
For GLWB contracts funded with qualified savings, issued before 2012 and still in force at EOY 2012, the percent of owners taking withdrawals was higher for single-life contracts with owners aged 70 or over (Figure 1-39).

**Figure 1-39: GLWB Withdrawal Rates for Single- and Joint-Lives Contracts (IRA)**



In nonqualified GLWB contracts, for almost all age groups, the percent of owners taking withdrawals is lower in joint-lives contracts than in single-life contracts (Figure 1-40).

**Figure 1-40: GLWB Withdrawal Rates for Single- and Joint-Lives Contracts (Nonqualified)**



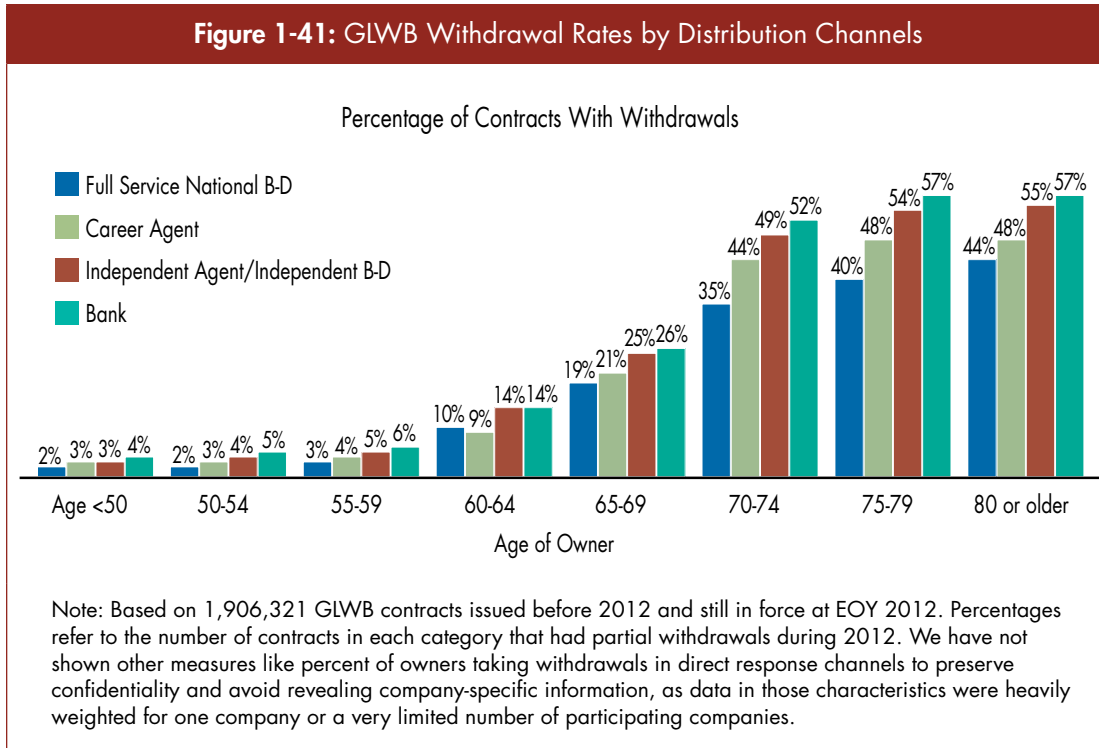
Lower payout rates in joint-lives contracts, lack of consumer knowledge regarding the risk of outliving a spouse/partner, and newer designs may be reasons why owners are taking fewer withdrawals from joint-lives contracts than from single-life contracts.

### Withdrawal Activity by Channel

The percent of GLWB owners aged 65 or over taking withdrawals in 2012 was highest in the bank channel.

If we look at distribution channels, we find that more bank GLWB owners took withdrawals in 2012 than in any other channel (Figure 1-41). Overall, 25 percent of bank channel owners took withdrawals, 3 percent higher than the independent BD channel (22 percent). Full-service national BD channel and career agents both had 18 percent of owners taking withdrawals.

**Figure 1-41: GLWB Withdrawal Rates by Distribution Channels**



Withdrawal behavior by individual age and distribution channel shows the same pattern that we have already seen — the percent of owners taking withdrawals remains modest up to age 69; then at age 70 and over the percent increases, once again due to RMDs.

### Withdrawal Activity for Contracts In-the-Money or Not-in-the-Money

The equity market meltdown from 2008–2009 and the financial uncertainties of a weak economy that persisted through 2012 could have encouraged more GLWB owners to start their lifetime withdrawals from their contracts. This incentive to exercise their option to receive guaranteed lifetime withdrawals from their contracts was particularly compelling when the majority of GLWB contracts were in-the-money (defined as the benefit base being greater than account value at the beginning of year).

Contract benefits being in-the-money had little influence on withdrawal behavior of GLWB owners in 2012.

From the perspective of in-the-money analysis, the GLWBs are, in essence, the owners’ options of receiving a series of lifetime income. Naturally as the value of the contract declines with market losses, the value of the guarantee increases. However, as the GLWB owners are not professional investors, and as their annuity purchase decisions are the result of many factors, and given the role their annuities play in their future retirement plans, we should not expect that all annuity owners will act to optimize the value of the guarantees ( their put-options) in isolation.

In order to understand the impact of contracts’ in-the-moneyness on withdrawal activities, proper consideration needs to be given to the severity and spread of in-the moneyness among owners by age and by duration of contracts. Many other factors, like market performance, investor confidence in the market, market volatility, the state of the economy, and confidence in the financial strength of financial service providers, must also be considered. In order to conclude that the contracts being in-the-money influence the owners withdrawal activities, we expect to see *increased withdrawal activities irrespective of owners’ age when contracts are in-the-money*. If the benefit base being in-the-money is a compelling reason for turning on the lifetime withdrawal rider, heightened withdrawal activities should be observed equally among owners of all ages. Arguably, activity should be even higher among younger owners as they are likely to optimize rider benefits with more years to receive income.

After the market crisis of 2008-2009, a majority of GLWB contracts remained in-the-money for most of last few years. Previous LIMRA studies<sup>7</sup> are helpful in understanding the context of the association between benefits being in-the-money and owners’ withdrawal activities (Table 17).

<b>Table 1-17: GLWB Historical Trends of Benefit Base vs. Contract Value at BOY</b>				
<b>Calendar Year:</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Percent of Contracts where Benefit Bases > Contract Values at BOY	93%	73%	62%	92%
Number of Contracts Issued before Calendar Year	.89 million	1.25 million	1.45 million	1.89 million

Examining the GLWB contracts issued before 2012, it is also evident that:

- Older duration contracts are more likely to be in-the-money (Figure 1-6). The older duration contracts are also more likely to have a higher representation of older owners than newer duration contracts.

<sup>7</sup> *Guaranteed Living Benefits Utilization – 2009 Data*, LIMRA, 2011, *Guaranteed Living Benefits Utilization – 2010 Data*, LIMRA, 2012 and *Variable Annuity Guaranteed Living Benefits Utilization – 2011 Experience*, LIMRA-SOA, 2013

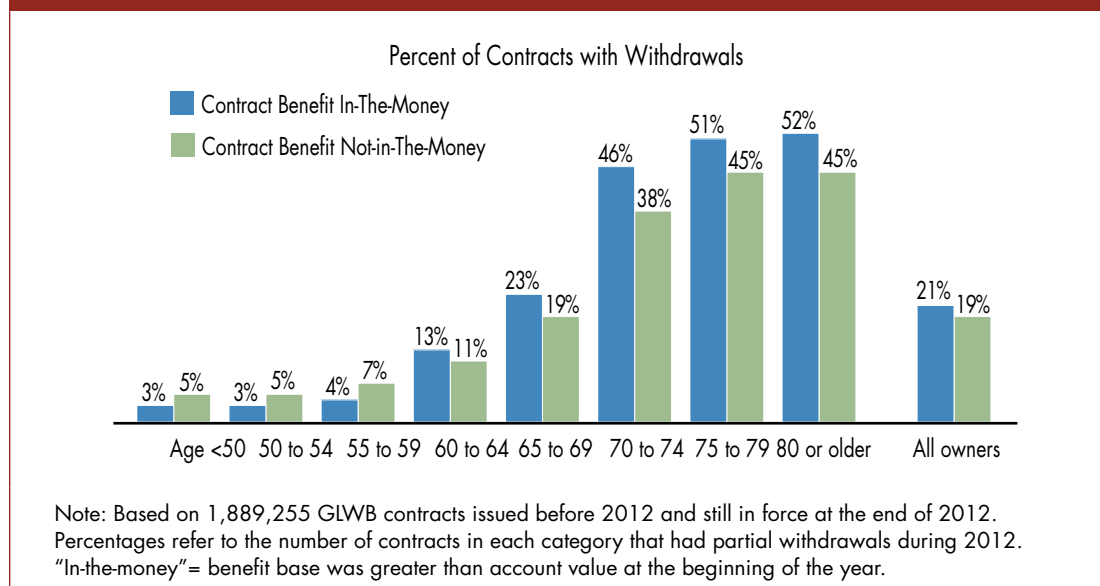
- At the beginning of 2012, benefit bases in-the-money were widely spread across all age groups, though contracts owned by investors aged 70 or older are slightly more likely to be deeper in-the-money than younger owners. This is because of the fact that a large numbers of older owners had been taking withdrawals from their contracts. (Figure 1-11).
- At the beginning of 2012, in-the-money contracts were distributed widely among both qualified and nonqualified contracts for contracts, particularly those owned by individuals under age 70 (Figures 1-13 and 1-14).

Our findings indicate that, despite the ups and downs in equity-market returns over the last few years, and increased market volatility experienced in later part of 2011 that resulted in 9 out of 10 contracts being in-the-money at the beginning of 2012, these events did not appreciably alter age-specific withdrawal behavior in 2012 (Figure 1-42).

Among contracts that were not in-the-money, a slightly higher percentage of owners under age 60 took withdrawals in 2012 compared to owners in the same age group whose contracts were in-the-money. It must be noted that the number of contracts held by owners aged under 60 represents 30 percent of all in-force GLWB contracts issued before 2012. Many of the contracts that were not-in-the-money held in this age group were likely to have been issued in recent years.

The overall utilization rate for contracts with benefits that were in-the-money at the BOY was only slightly higher at **21%** compared to **19%** for contracts with benefits that were not-in-the-money.

**Figure 1-42: GLWB Withdrawal Rates for Contracts In-the-Money vs. Not In-the-Money**



However, among owners aged 60 or older, the percent of owners taking withdrawals are higher among contracts that were in-the-money in contrast to contracts that were not in-the-money. Also the gap between percentage of owners taking withdrawals who were in-the-money and were not-in-the-money increases with higher age groups. For example, the percentage of owners taking withdrawals in 2012 among the owners in age group 60 to 64 who were in-the-money was slightly higher at 13 percent compared to 11 percent among owners who were not-in-the-money. Among owners aged 80 or older, 52 percent of owners who were in-the-money took withdrawals compared to 45 percent of owners who were not-in-the-money.

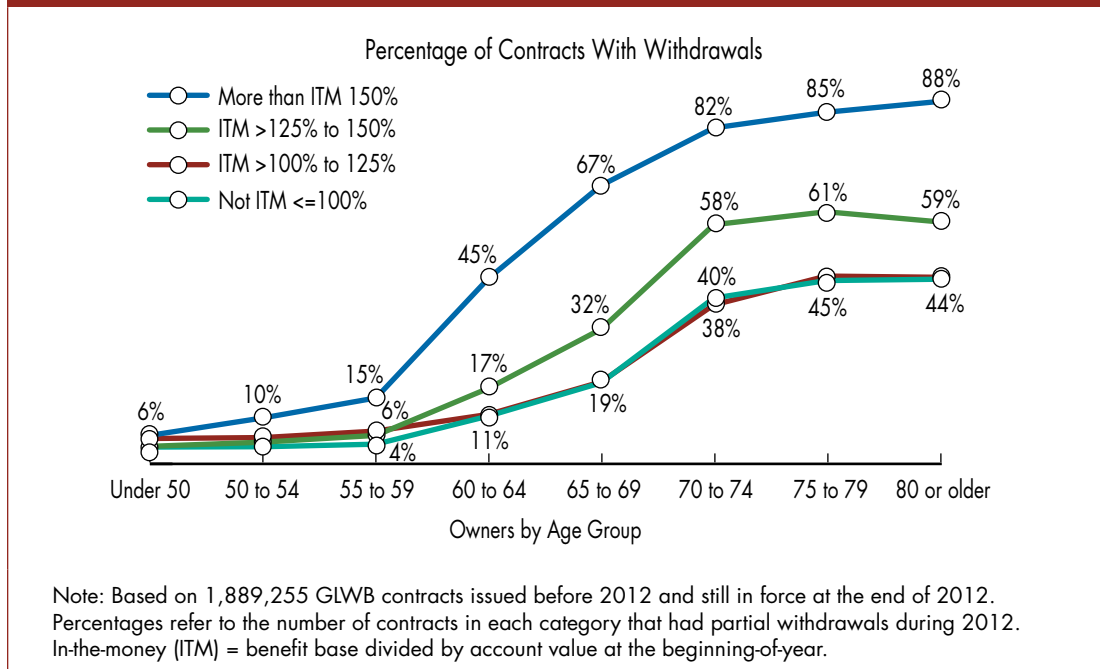
As shown earlier in this chapter, the percentage of owners taking withdrawals is linked closely with owners reaching age 70½ and the need for taking withdrawals from qualified contracts to meet RMDs. So the overall increased withdrawal activities among owners aged 70 or older were mostly due to their taking withdrawals from contracts that had longer durations and so are most likely be in-the-money. If in-the-moneyness was a forceful reason for taking withdrawals, owners aged 60 to 69 should have been more active in taking their withdrawals and we should have seen a wider gap between the percentages of owners taking withdrawals who were in-the-money and those not-in-the-money, or sudden jump in withdrawal activities compared to previous years. In particular, there should have been a substantial increase in withdrawal activity in 2012 compared with 2011, considering that 92 percent of contracts were in-the-money at the start of 2012, a steep rise from 62 percent of contracts being in-the-money in the beginning of 2011. However, the overall utilization rate for contracts with benefits that were in-the-money at the beginning of the year was only two percentage points higher, 21 percent compared to 19 percent for contracts with benefits that were not in-the-money.

Overall utilization among contracts in-the-money and not-in-the-money have remained almost unchanged from the overall utilization rates that we calculated for owners' behavior in 2010 and 2011. The overall utilization did not change when more contracts were in-the-money during the year after heightened market volatility and negative or no market returns in 2011.



However, looking at contracts being in-the-money by its magnitude and age, in isolation, may not provide a complete picture. Figure 1-43 shows increased levels of withdrawal activity with increasing levels of in-the-moneyness; for example, for contracts with benefit bases more than 150 percent of the contract value, a higher percentage of owners took withdrawals in 2012 compared with contracts where the benefit base was between more than 100% and 125% of the contract value. Interestingly, there is apparently no difference between percentages of owners taking withdrawals who were not-in-the money and owners who were in-the-money with benefit bases >100 percent to 125 percent of their contract values.

**Figure 1-43: GLWB Withdrawal Rates for Contracts by Degree of In-the-Money vs. Not In-the-Money**



Also, Figure 1-43 shows that the percentage of owners taking withdrawals among groups of owners below age 60 where benefits were in-the-money to a considerable extent (e.g., above 125 percent of the contract values) were not that much higher from contracts where benefit values stayed close to or below their contract values.

While 84 percent of owners aged 70 or above took withdrawals in 2012 from their contracts where the benefit base was more than 150 percent of the contract values, only 59 percent of owners aged 60-69, and 12 percent of owners aged below 60, took withdrawals, despite the apparent enticement to utilize their in-the-money withdrawal riders.

Table 1-18 illustrates that principally age, not benefits of being in-the-money, drives the withdrawal behavior of owners, though there may be a small in-the-moneyness effect, mainly driven by withdrawals among younger owners. Though in-the-moneyness, particularly where benefit base exceeded contract values by more than 150 percent, appears to impact withdrawals among owners aged 60 to 69, the effect is not substantial where in-the-moneyness ranged between >100 percent to 150 percent. The effect is almost negligible among contract owners under age 60.

**Table 1-18: GLWB Percentage of Owners Taking Withdrawals by Degree of In-the-Money (ITM)**

Degree of In-the-Moneyness	Below Age 60	Age 60-69	Age 70 or Older
ITM <=100%	6%	15%	41%
ITM >100% to 110%	4%	14%	39%
ITM >110% to 125%	3%	15%	45%
ITM >125% to 150%	5%	25%	59%
ITM >150%	12%	59%	84%

Note: Based on 1,889,255 GLWB contracts issued before 2012 and still in force at the end of 2012. Percentages refer to the number of contracts in each category that had partial withdrawals during 2012.

In a separate analysis<sup>8</sup> of withdrawals by degree of moneyness, that controlled for year of issue we find the following:

- More owners took withdrawals from older duration contracts. As owners reach age 70½, more owners need to take withdrawals from their qualified contracts to satisfy their RMD needs. The analysis shows that the percentage of owners taking withdrawals decreases, irrespective of age and degree of in-the-moneyness, among shorter duration of contracts. For example, an analysis of contracts issued in 2007-2008 shows the percentages of owners taking withdrawals differ widely by levels of in-the-moneyness, thus showing a distinctive wide gap between owners taking withdrawals from contracts more than 150 percent in-the-money and that of owners with lower degrees of in-the-moneyness. Otherwise, there is no

<sup>8</sup> In a separate analysis, we controlled for year of issue and assessed the impact on the in-the-moneyness result. Some of these results based on age groups are based on small samples where a single company dominates the age-specific result and thus were unreportable; however, it is clear that year of issue (and indirectly, age) accounts for much of the “in-the-moneyness effect,” though it can be argued that a relatively small effect may remain.

discernable difference among the different degrees of in-the-moneyness. Moreover, among contracts issued in 2009-2010, there is no such pattern between the percentage of owners taking withdrawals and degree of in-the-moneyness. In fact, the percentages of owners not-in-the-money taking withdrawals were higher across all age groups compared to percentages of owners taking withdrawals with contracts that were in-the-money.

- The fact that the vast majority of owners who started their withdrawals are likely to continue their withdrawals in subsequent years also influences the trend shown in the figure. As they continue their withdrawals, it is also likely these contracts remained in-the-money without the help from robust positive market performances in the last few years, as contract values decrease and benefit bases remain level. This is evident in the fact that owners aged 70 or older own nearly half (47 percent) of the contracts where benefits were in-the-money by more than 150 percent above their contract values, though they constitute only a quarter of the all in-force contracts.
- There is a small portion of owners aged below 70 who start their withdrawals immediately or short time after their annuity purchase. Once they take their first withdrawals and continue to take withdrawals in subsequent years, many of these contracts are likely to remain in-the-money. It is simply that once owners start their withdrawals, they are likely to continue withdrawals irrespective of the degree of in-the-moneyness.

As we have mentioned before, more than 9 out of 10 GLWB contracts were in-the-money at the beginning of year. If in-the-moneyness were a compelling reason to take withdrawals, we should see a bump in the percentages of owners taking their first withdrawals based on the degree of in-the-moneyness and we did not see this occur.

The percentage of owners taking their first withdrawals from contracts in 2012 was almost identical for owners under age 75. The contracts owned by individuals aged 75 or older that had contract value to benefit base ratios that were less than or equal to 110 percent were about 50 percent more likely to take their first withdrawals in 2012 than those with in-the-money ratios that were above 110 percent. For contracts owned by younger individuals, there was no clear difference across in-the-money groups. The contracts where in-the-money was equal to or less than 110 percent were likely qualified or issued recently. Many of these owners needed to take withdrawals to satisfy RMD from their qualified contracts, irrespective of whether contracts were in-the-money or not.

In fact, owners in all age groups show a slightly higher tendency to start their withdrawals when benefit bases in their contracts remained equal to or lower than 110 percent of the account values. However, the critical conclusions are that in-the-money has a very little or no impact on starting their withdrawals in 2012 and that it has negligible or no impact across age groups.

Nearly 9 out of 10 contracts that had withdrawals before 2012 continued withdrawals in 2012. However, there was only a slight difference in the percentage of owners taking withdrawals among age groups by levels of in-the-moneyness. It appears that proportion of owners taking withdrawals with higher level of in-the-moneyness are slightly lower among owners aged below 65 and slightly higher among owners aged 65 or older compared to owners with contracts where benefits were equal or less than 100 percent of their contract values. Such differences are likely caused by younger owners starting their withdrawals in recent years, and older owners taking withdrawals for longer period of time, thus increasing the probability of remaining in-the-money. However, the main conclusion remains that, even among owners who started withdrawals earlier, owners kept taking their withdrawals whether they were in-the-money or not.

In addition, over the last few years, we have seen very little support or evidence that benefits in-the-money is a principal driver for withdrawal activities:

- Our analysis of the timing of first withdrawals among contracts issued in 2007 and 2008 (Tables 1-8 through 1-11) provides further evidence that in-the-moneyness is not a strong determinant of withdrawal activity. Over a five or six-year period duration, most of these contracts were exposed to different degree of in-the-moneyness between years 2009 – 2012. Yet we did not observe any difference in the onset of withdrawal activity during these years. If in-the-moneyness was a major driver of the decision to begin taking withdrawals, we should have seen a jump in withdrawal activity in 2009, when the contracts' account values were likely to be well below their benefit bases following the major drop in contract values in 2008. The same can be said about 2012 when market volatility in late 2011 and low returns may cause many contracts to start 2012 with deep in-the-money. Instead, attained age and the need for RMDs for IRA contracts explained much of the pattern we observed.
- In 2009, the RMD restrictions were waived after the market crisis. Instead of heightened withdrawal activities, the percentage of IRA owners taking withdrawals dropped to its lowest level in all recent years.
- Interestingly, there are no significant differences in withdrawal rates by in-the-money status even when the contracts are split by funding sources (i.e., qualified or nonqualified assets).<sup>9</sup>

Thus we conclude from this analysis that contract benefits being in-the-money has little influence on withdrawal behaviors of GLWB owners in 2012.

<sup>9</sup> We did the same analysis for contracts issued before 2009 and still remaining in force at the end of 2009, when more than 90 percent of the contracts were in-the-money, with similar results.

## Withdrawal Activity for Contracts Issued in 2012

Withdrawal activity for contracts issued in 2012 (and still in force at EOY) was less common than among contracts issued before 2012 (Table 1-19). Overall, 7.9 percent of contracts issued in 2012 had some withdrawal activity; 6.6 percent had systematic withdrawals.

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. After two months (contracts issued in November), only 5 percent of contracts had begun withdrawals. After 11 months (contracts issued in February), 9 percent had withdrawal activity.

**Table 1-19: GLWB Utilization by Month of Issue, Contracts Issued in 2012**

Month Issued	Percent With Partial Withdrawal	Percent of Premium Withdrawn	Median Amount Withdrawn	Median Amount Withdrawn, Annualized*
January	10%	5.8%	\$4,858	\$4,858
February	9%	5.4%	\$4,308	\$4,700
March	9%	4.9%	\$4,039	\$4,846
April	9%	4.3%	\$3,505	\$4,673
May	9%	3.7%	\$3,099	\$4,649
June	9%	3.3%	\$2,795	\$4,791
July	9%	2.8%	\$2,321	\$4,641
August	8%	2.4%	\$1,996	\$4,789
September	9%	1.7%	\$1,665	\$4,994
October	7%	1.5%	\$1,042	\$4,166
November	5%	1.1%	\$661	\$3,966
December	1%	2.2%	\$651	\$7,812
<b>Total</b>	<b>8%</b>	<b>3.5%</b>	<b>\$2,727</b>	<b>\$4,675</b>

Note: Based on 29,452 contracts out of 377,936 contracts issued in 2012 that had partial withdrawals.

\*Withdrawal amounts were annualized by multiplying them by 12 / (13 – months since BOY). Percent of premium withdrawn based on contracts issued in 2012 with withdrawal activity.

The median amount withdrawn during 2012 was \$2,727; withdrawal amounts were highest among contracts issued earlier in the year. When the amounts withdrawn are annualized, the median values are generally between \$4,000 and \$5,000, which represent about 4 percent of current-year premium.

## Utilization by Selected Characteristics

Utilization of GLWBs varies substantially across a variety of owner, contract, and benefit characteristics for contracts issued before 2012 (Table 1-20). These patterns are consistent across utilization measurements, such as the percent of contracts with systematic withdrawals or the withdrawal rate weighted by contract value.<sup>10</sup>

**Table 1-20: GLWB Utilization by Selected Characteristics**

	Unweighted		Weighted by BOY 2012 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
<b>Age of owner</b>				
Under 50	3%	0	4%	1%
50 to 54	3%	1%	4%	2%
55 to 59	4%	2%	6%	3%
60 to 64	13%	9%	16%	12%
65 to 69	23%	19%	26%	22%
70 to 74	46%	37%	46%	37%
75 to 79	51%	41%	50%	40%
80 or older	52%	44%	49%	41%
<b>Market type</b>				
IRA	23%	17%	26%	20%
Nonqualified	18%	15%	20%	17%
<b>Gender</b>				
Male	21%	16%	24%	19%
Female	22%	17%	24%	19%
<b>Distribution channel</b>				
Career agent	18%	12%	21%	15%
Independent agent/ independent B-D	22%	18%	26%	21%
Full Service National B-D	18%	14%	19%	16%
Bank	25%	19%	27%	22%
<b>Contract value, EOY 2012</b>				
Under \$25,000	18%	11%	25%	14%
\$25,000 to \$49,999	21%	16%	24%	17%
\$50,000 to \$99,999	22%	17%	24%	19%
\$100,000 to \$249,999	21%	17%	23%	18%
\$250,000 to \$499,999	24%	20%	25%	21%
\$500,000 or higher	22%	18%	23%	19%

<sup>10</sup> This measure of utilization should not be equated with the percentage of contract value withdrawn.

**Table 1-20: GLWB Utilization by Selected Characteristics (continued)**

	Unweighted		Weighted by BOY 2012 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
<b>Asset allocation restrictions</b>				
Forced asset allocation model	23%	NA	25%	20%
Limitations on fund selection & other restrictions	26%	21%	30%	24%
May restrict asset allocations	21%	15%	21%	16%
No restrictions	44%	36%	53%	44%

Note: Based on 1,907,516 GLWB contracts issued before 2012 and still in force at EOY 2012. Percentages refer to the number of contracts in each category that had partial (or systematic) withdrawals during the year. Systematic withdrawals represent a subset of all partial withdrawals. We have not shown some measures related to channels to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

- Older owners are much more likely to take withdrawals, especially systematic withdrawals, than are younger owners. In part, this activity reflects RMDs from IRAs after age 70½. Overall utilization is only slightly higher among VA owners in IRAs (23 percent) than nonqualified VA owners (18 percent).
- Differences across channels in part reflect the age profiles of their customer bases. For example, a larger proportion of bank-issued contracts than independent BD issued contracts are owned by individuals aged 70 or older, 25 percent vs. 22 percent, respectively.
- Owners with larger VA contract values are slightly more apt to take withdrawals than are owners with smaller contract values.

## Step-Up Activity

All GLWB contracts allow owners to step up the value of their benefit bases one or more times if their contract values, through positive market performance, increase above the level of the benefit bases. Sometimes the use of these features results in an increase in fees. In general, these step-up options are time-bound; the owner most often needs to choose to step up during specified contract anniversaries, or sometimes must wait several years before the first step-up opportunity while others offer automatic step-ups. Therefore, not all contracts were able to step up the values of their benefit bases during 2012.

- Forty-six percent of owners had step-up options available during 2012. Only 15 percent of these contracts stepped up their benefit bases (Figure 1-44). Seven out of ten step-ups occurred in contracts where the benefit base was at least 100 percent but less than 110 percent of the benefit based amount at BOY.
- Owners who chose to step up their benefit bases increased their benefit base on average by 6.6 percent (median 6.0 percent). However if the step-up was available, but the owner chose not to step up, their benefit base grew on average 1.9 percent until the anniversary date. This analysis was based on a limited number of contracts that received no premium and took no withdrawals (in order to determine actual investment performance).

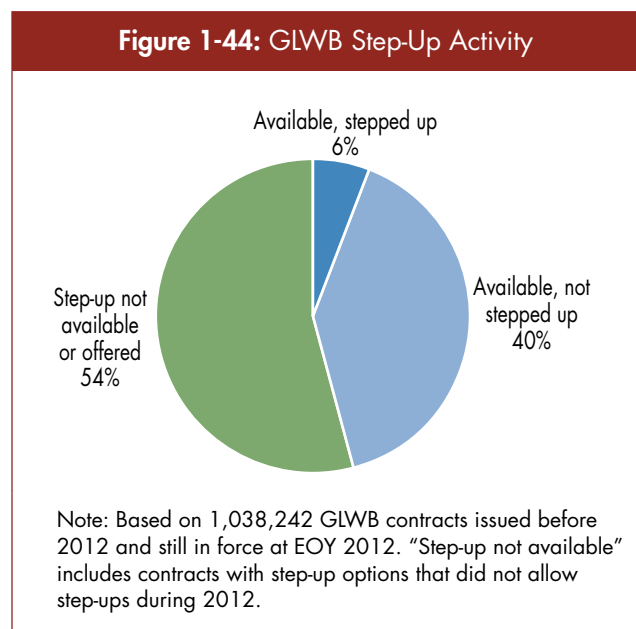




Table 1-21 shows that step-ups in contracts were taken mostly by younger owners, as well as from contracts issued in 2009. Contracts purchased in 2007 at the market peak, are least likely to step up because the contract values have improved the least relative to benefit bases while contracts purchased in 2009 at the market nadir are most likely to step up because the contract values have improved the most relative to the benefit bases.

**Table 1-21: GLWB Step-Ups by Selected Characteristics**

	Percent of Contracts			
	Available, Stepped Up	Available, Not Stepped Up	Not Available During the Year	Step Up Not Offered
<b>Age of owner</b>				
Under 50	10%	54%	31%	5%
50 to 54	11%	41%	40%	8%
55 to 59	8%	38%	46%	8%
60 to 64	6%	37%	49%	8%
65 to 69	5%	38%	48%	9%
70 to 74	4%	39%	48%	9%
75 to 79	4%	40%	47%	9%
80 or older	3%	46%	46%	5%
<b>Contract value, BOY 2012</b>				
Under \$25,000	7%	51%	33%	9%
\$25,000 to \$49,999	6%	40%	46%	8%
\$50,000 to \$99,999	5%	37%	50%	8%
\$100,000 to \$249,999	6%	37%	49%	8%
\$250,000 to \$499,999	6%	38%	48%	8%
\$500,000 or higher	8%	36%	49%	7%
<b>Issue year of contracts</b>				
2005	2%	80%	18%	0
2006	1%	66%	23%	10%
2007	1%	50%	38%	11%
2008	5%	45%	39%	11%
2009	12%	30%	55%	3%
2010	6%	28%	59%	7%
2011	7%	30%	54%	9%

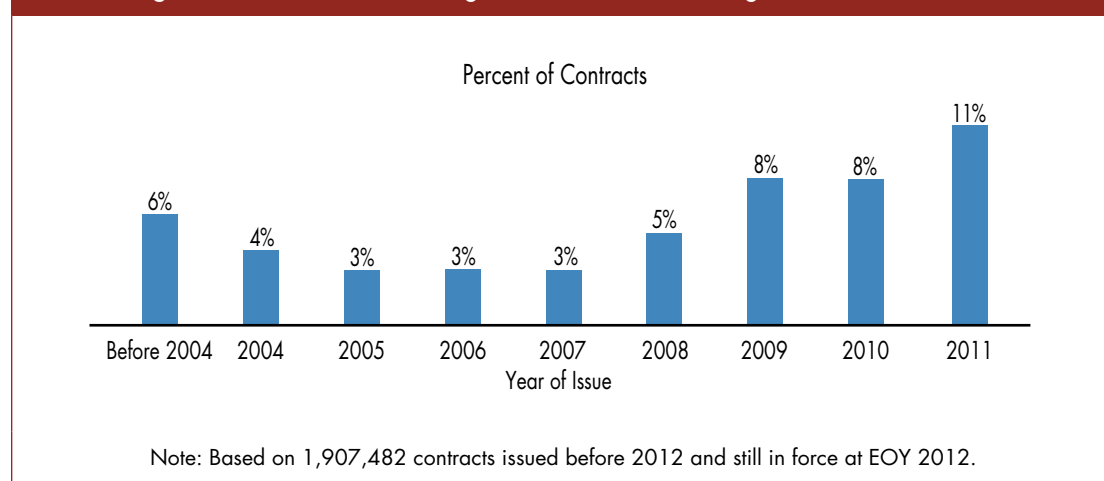
Note: Based on 1,038,243 GLWB contracts issued before 2012 and still in force at EOY 2012.

## Additional Premium and Net Flows

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. Among contracts issued before 2012:

- Nearly \$4.9 billion in additional premium was received in 2012.
- Seven percent received additional premium in 2012. Contracts issued in 2011 were more likely than contracts issued in earlier years to have additional premium (11 percent) (Figure 1-45).
- Younger owners are more likely to add premium than older owners. For example, 12 percent of owners under age 50 added premium, compared with 3 percent of owners aged 70 or older. Ten percent and 7 percent of owners aged 50–59 and aged 60–64 respectively added additional premium to their contracts in 2012.
- More contracts (7.4 percent) with GLWBs whose benefit bases incorporate premium in all years received additional premium in contrast to contracts where the flexibility to add premium is constrained by a certain time limit (4.3 percent).

**Figure 1-45: GLWB Percentage of Contracts Receiving Additional Premium**



Nearly 1 in 6 (16 percent) contracts that had BOY contract values under \$5,000 received additional premiums (Figure 1-46). The average additional premium received in 2011 was \$38,122 (median of \$10,000).

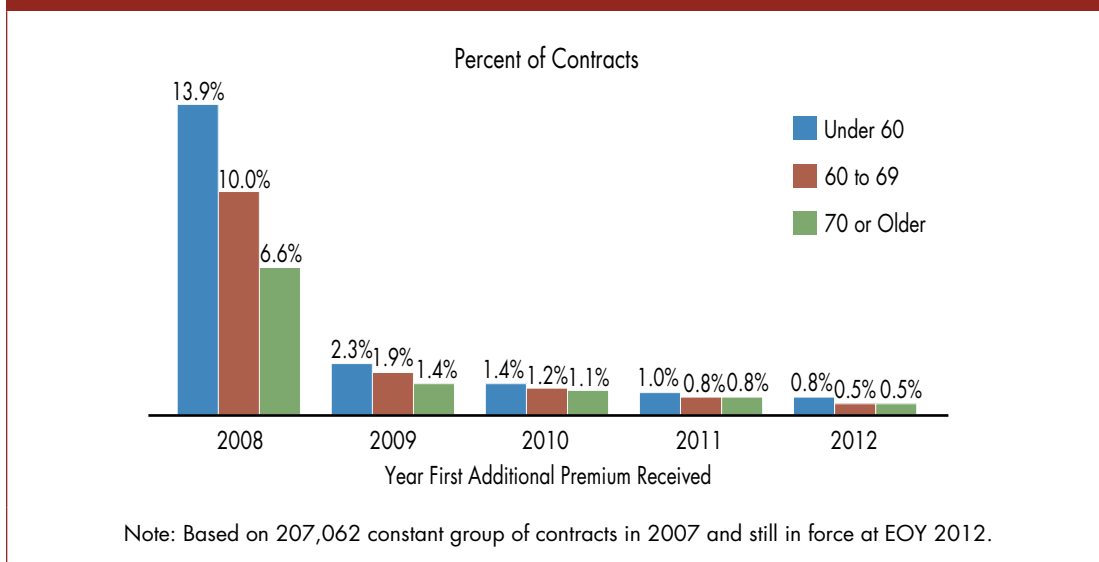
**Figure 1-46: GLWB Percent of Contracts Receiving Additional Premium by Size of Contract**



Owners rarely add premium after the second year of owning a GLWB contract (Figure 1-47). Eleven percent of a constant group of contracts issued in 2007 added premium in one of the calendar years after issue and only 4.5 percent added premium two or more years after the year of issue. In addition, younger owners are more likely to put additional premiums into their contracts. In the first year, owners under age 60 were more than two times as likely to put additional money into their contracts as owners aged 70 or older. In the second and future years, owners under age 60 were only slightly more likely to contribute additional premiums than older owners. We found a very similar pattern for a constant group of contracts issued in 2008.

Owners rarely add premium after the second year of owning a GLWB contract.

**Figure 1-47: Additional Premium for Contracts Issued in 2007**



Premiums received for newly-issued and existing contracts far exceed outflows associated with withdrawals, surrenders, deaths, and annuitizations — \$48.3 billion and \$10.6 billion, respectively (Table 1-22). The total number of GLWB contracts in force grew by over 16 percent during 2012. At year-end, GLWB assets were \$272.2 billion, 26 percent higher than \$215.6 billion at BOY 2012.

**Table 1-22: GLWB Net Flows**

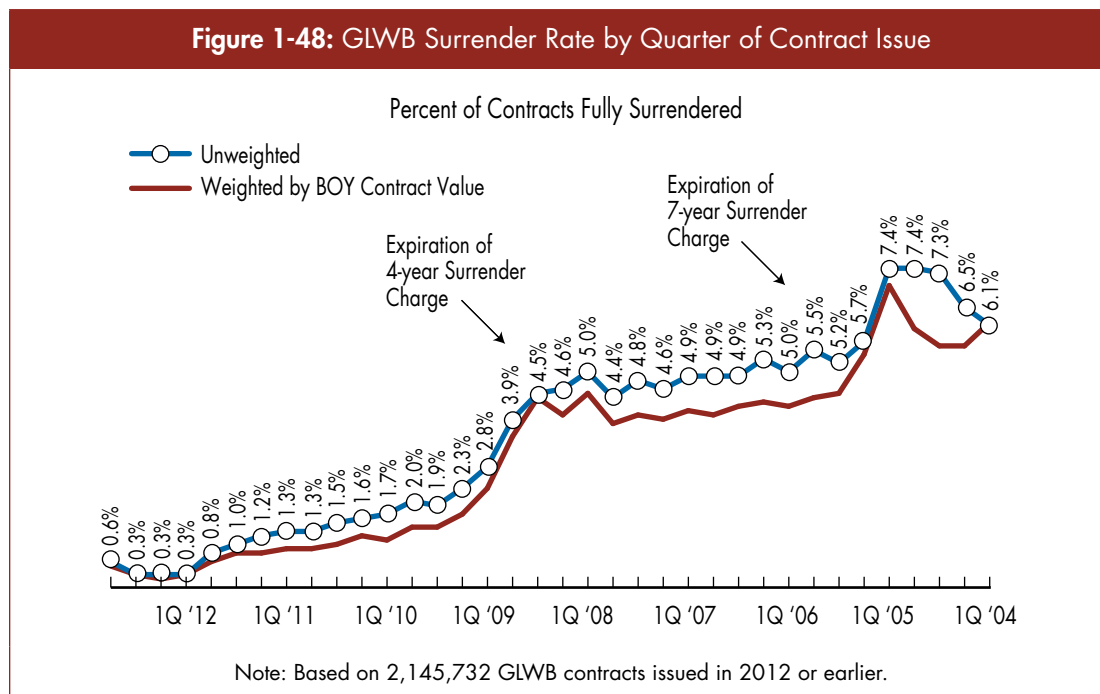
	Dollars (Billions)	Contracts	Average Contract Size
<b>In-force, BOY 2012</b>	<b>\$215.6</b>	<b>1,976,505</b>	<b>\$109,074</b>
<b>Premium received</b>			
Newly issued contracts	\$43.4	378,813	\$114,593
Existing contracts	\$4.9	N/A	N/A
<b>Benefits paid</b>			
Partial withdrawals	\$4.5	N/A	N/A
Full surrenders	\$4.8	57,539	\$83,063
Annuitizations	\$<0.1	713	\$126,612
Death/Disability	\$1.2	11,587	106,501
<b>Investment growth</b>	<b>\$18.9</b>	<b>N/A</b>	<b>N/A</b>
<b>In-force, EOY 2012</b>	<b>\$272.2</b>	<b>2,285,452</b>	<b>\$119,114</b>

Note: Based on 2,355,318 GLWB contracts in the study. Dollar values for contracts issued before 2012 that terminated during the year were set equal to either the BOY contract value (if termination occurred before contract anniversary date) or the anniversary contract value (if termination occurred on or after the contract anniversary date). Dollar values for contracts issued in 2012 that terminated during the year were set equal to the current-year premium.

## Persistency

Surrender activity among VAs with GLWBs is a critical factor in measuring liability. If persistency is very high among contracts with benefits that are in-the-money, or in contracts where the owners take withdrawals regularly, then insurers may have payouts that are larger or for a longer duration than anticipated. On the other hand, the presence of living benefits on VAs may lead owners to keep their contracts beyond the surrender penalty period, thereby keeping more of an insurer’s fee-generating assets under management. This tendency could occur even when benefits are not currently in-the-money, because the benefit provides the owner with a hedge against future losses.

2012 GLWB contract surrender rates were **2.9%**.



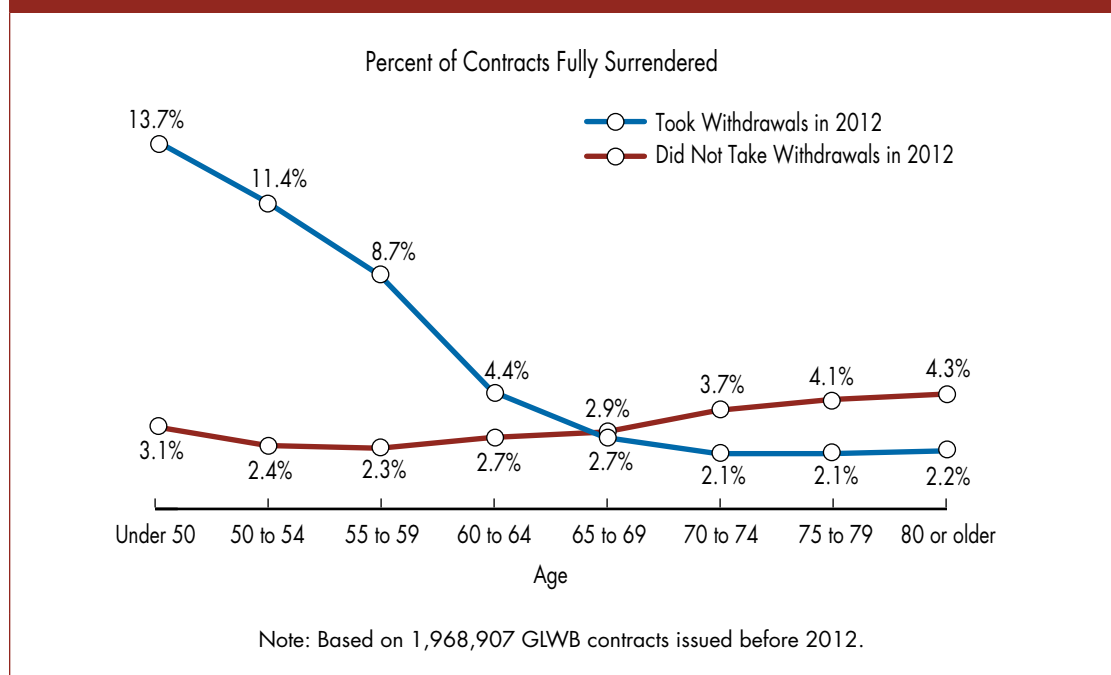
Surrender rates for VAs with GLWBs in 2012 were relatively low, even among contracts issued 5 years earlier (Figure 1-48). Across all contracts issued before 2012, 2.9 percent surrendered during 2012, almost unchanged from the surrender rates experienced in 2010 and 2011. The contract surrender rates in 2012 were a bit higher than the 1.8 percent experienced in 2009. There is a noticeable increase in surrender rates at the expiration of the L-share and B-share surrender charge. For business issued before 2012, cash value surrender rates were 2.5 percent, suggesting that smaller size contracts were more likely to be surrendered. By comparison, the cash value surrender rate for all retail VA contracts still within the surrender charge period (i.e., including contracts without GLBs) was approximately 3.3 percent in 2012.<sup>11</sup>

<sup>11</sup> Based on analysis of LIMRA’s U.S. Annuity Persistency Survey data.

### Surrender Activity of Owners Taking Withdrawals

Higher surrender rates are associated with younger owners, particularly those under age 60 who took withdrawals before or in 2012. 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 with occasional withdrawals. Moreover, their average withdrawal amount is much higher, and not likely supported by the guaranteed benefit base in their contracts. It is likely that these younger owners are really taking partial surrenders. These younger owners who took withdrawals in 2012 were also very likely to fully surrender their contracts (Figure 1-49).

**Figure 1-49: GLWB Contract Surrender Rate by Owners Taking Withdrawals in 2012**



Fourteen percent of owners under age 50, 11 percent of owners between ages 50 and 54, and 9 percent of owners between ages 55 and 59 who took withdrawals during 2012 subsequently surrendered their contracts by EOY. This group’s average withdrawal amount was \$26,800. Some of these younger owners might have emergency needs, others might have become dissatisfied with their contracts or they were influenced by their advisors to surrender the contracts.

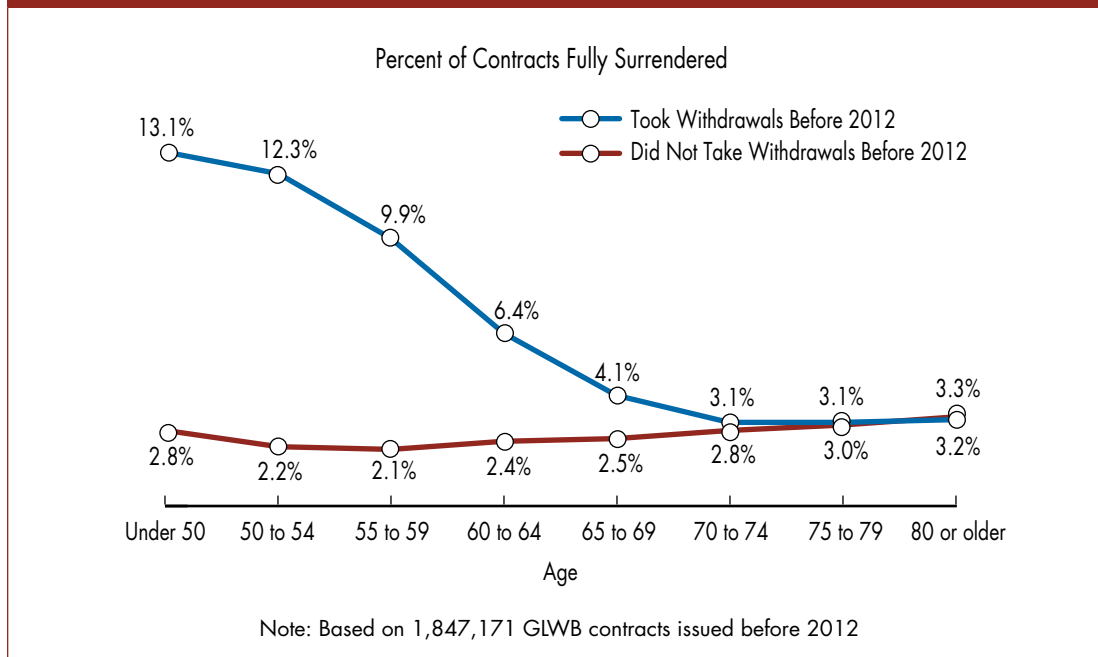
The contract surrender rate among owners under age 60 who took withdrawals in 2012 was 10.2 percent. On the other hand, the surrender rate was only 2.5 percent among owners under age 60 who did not take any withdrawals in 2012. The surrender rate for owners aged 60 or older who took withdrawals in 2012 (2.6 percent) was slightly lower than those who did not take withdrawals (3.1 percent).

**10.2%** is the contract surrender rate among owners under age 60 who took withdrawals in 2012.

**2.5%** is the contract surrender rate among owners under age 60 who did not take any withdrawals in 2012.

Past withdrawals can also indicate whether younger owners will fully surrender contracts in future. Figure 1-50 shows the surrender rate for owners who took withdrawals before 2012.

**Figure 1-50: GLWB Contract Surrender Rate by Owners Taking Withdrawals Before 2012**



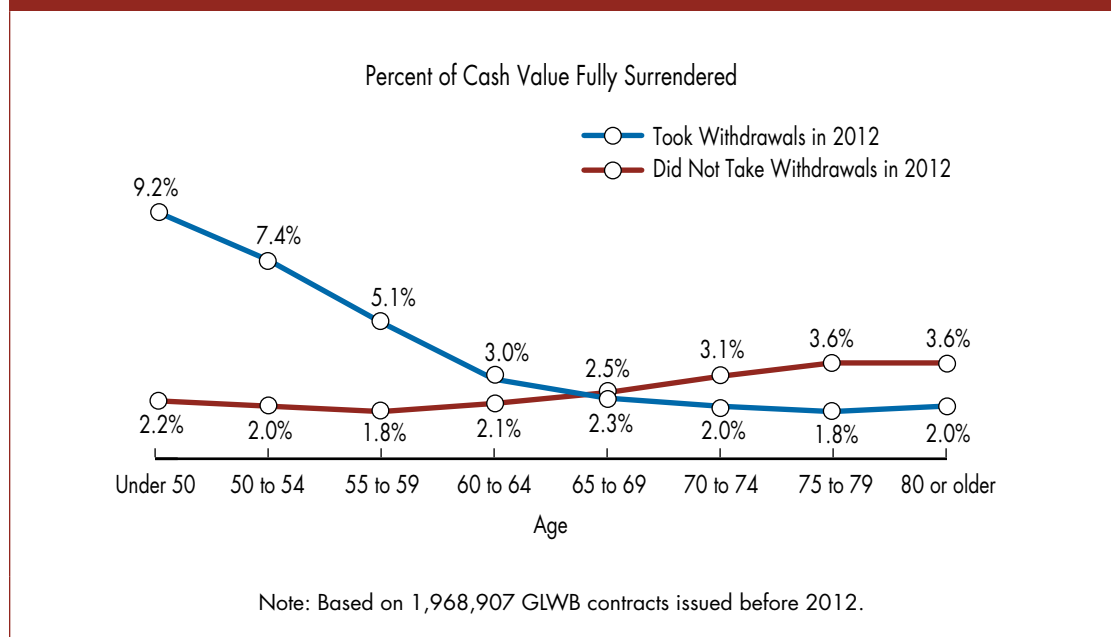
As we have seen, younger owners are the most likely to take withdrawals that exceed the benefit maximum. We believe that this activity represents an increased likelihood that their contracts will surrender. For contracts where owners under age 60 took withdrawals, either in the current year or in past years, there was an increased likelihood they would surrender their contracts.

In general, GLWB surrender rates are very low for those who are not taking withdrawals, regardless of age.

However, this increased surrender activity did not occur for owners over age 60 taking withdrawals. For them, a withdrawal in one year did not necessarily signal a higher likelihood of surrender in the next year. In general, those who are not taking withdrawals are not likely to surrender. 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.

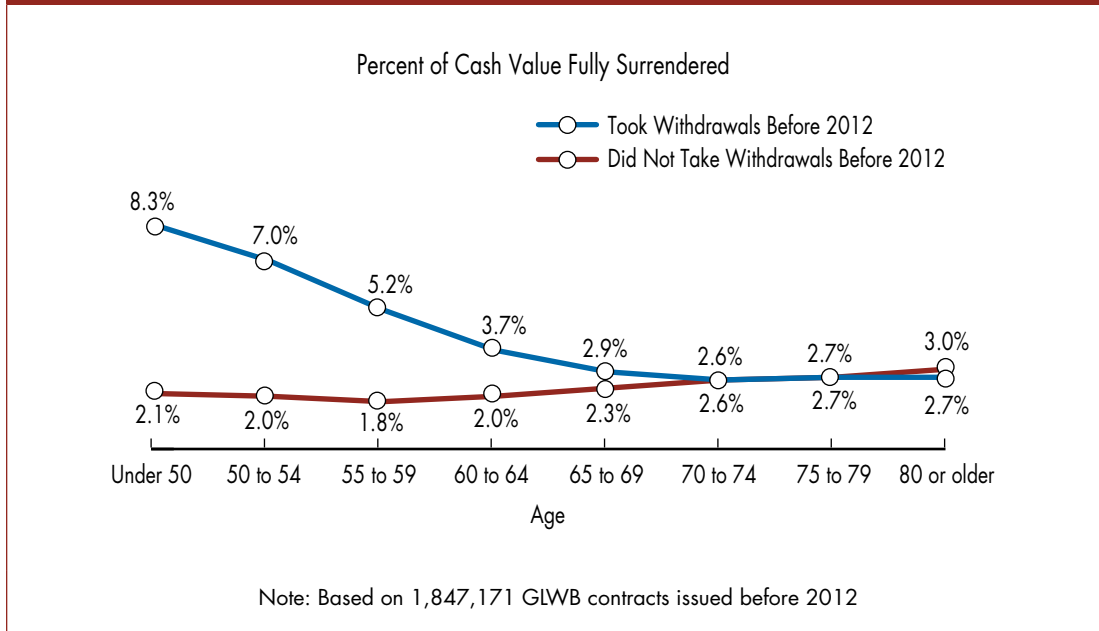
We also looked at the cash value surrender rates of contracts taking withdrawals in 2012. The cash value surrender rates follow a similar pattern as the contract surrender rates except the cash value surrender rates are slightly lower, particularly for younger owners under age 70 taking withdrawals (Figures 1-51 and 1-52).

**Figure 1-51: GLWB Cash Value Surrender Rate by Owners Taking Withdrawals in 2012**





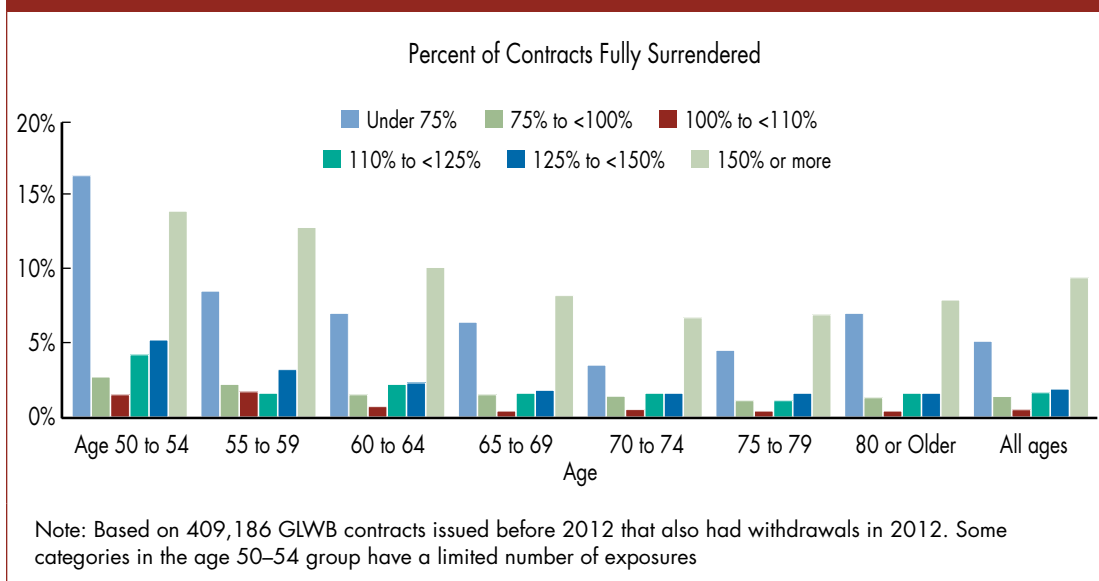
**Figure 1-52: GLWB Cash Value Surrender Rate by Owners Taking Withdrawals Before 2012**



## Surrender Activity by Percentage of Annual Benefit Maximum Withdrawn

Figure 1-53 shows the contract surrender rates among owners who took withdrawals in 2012 by the percentage of annual benefit maximum withdrawn. Contract surrender rates among the owners who took withdrawals below 75 percent of the maximum allowed in the contracts and the owners who took 150 percent or more of the maximum allowed in the contracts are quite high.

**Figure 1-53: GLWB Contract Surrender Rates by Owners Taking 2012 Withdrawals in Relation to Annual Benefit Maximum Allowed**



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 rates among the owners who took withdrawals in 2012 of between 75 percent to less than 150 percent of the maximum withdrawal amount allowed in the contracts are quite low. This is true across all age groups.
  - This group of owners constituted more than 62 percent of all owners who took withdrawals in 2012.
  - As a group, the surrender rate among these owners is very low, only 0.9 percent.
  - Surrender rate is the lowest (0.5 percent) among owners who were taking between 100 percent to <110 percent of the maximum benefit allowed.

The owners who withdrew between 125 percent to <150 percent of the maximum withdrawal amount are few, only 4 percent and the surrender rate for them is also low at 1.9 percent.

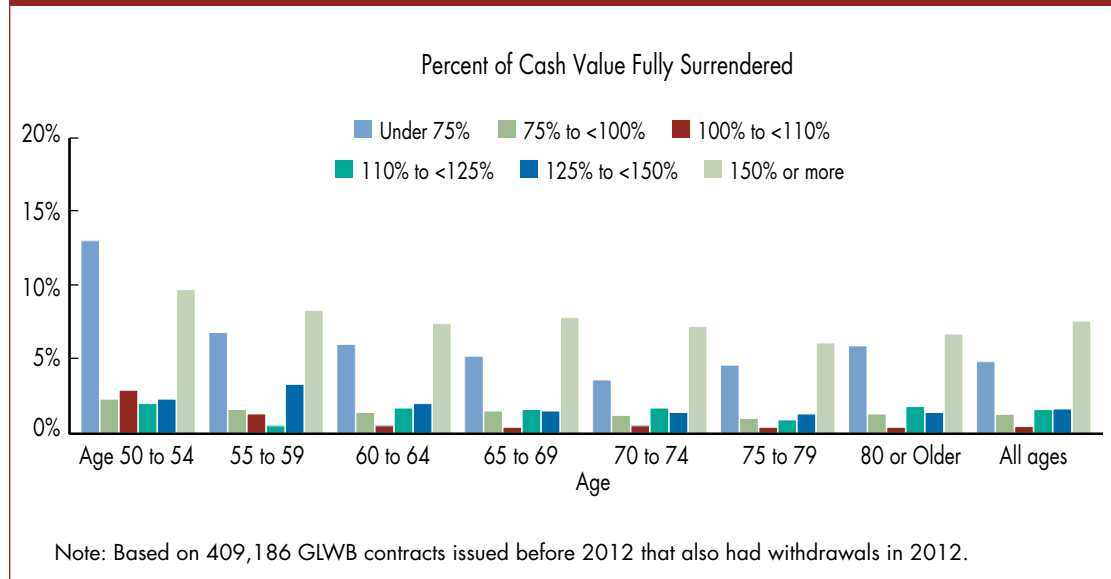
- However, one fifth of all owners who took withdrawals in 2012 took less than 75 percent of the maximum withdrawal amount allowed in the contract. Surrender rate for this group is relatively high at 5.1 percent and noticeably higher for these contract owners across all age groups. These contract owners may not be utilizing the maximum allowed guaranteed withdrawal benefit, as they are not taking advantage of the maximum withdrawal amount allowed in the contract. Though these owners represent only one-fifth of all owners taking withdrawals, they accounted for 38 percent of the value of cash surrenders in 2012.
- Fifteen percent of GLWB owners took withdrawals of 150 percent or more of the maximum withdrawal amount allowed in their contracts. Surrender rates among these contracts are the highest across almost all age groups. Their withdrawals were likely partial surrenders of their contracts and most of them surrendered fully before the end of the year. These owners are responsible for almost half (47 percent) of all GLWB contracts surrendered in 2012 and 37 percent of the cash surrender values in 2012.

**79%** of all contracts surrendered in 2012 came from owners who withdrew either under 75 percent or 150 percent or more of the maximum withdrawal amount allowed in their contracts.

In summary, the GLWB owners in two extremes — those taking less than 75 percent or 150 percent or more of the maximum withdrawal amount allowed in their contracts accounted for one third of all owners who took withdrawals in 2012. But they were responsible for 79 percent of contracts surrendered and 75 percent of cash surrender values in 2012. Any withdrawal behavior not in line with maximum withdrawal amount is a reliable indicator of surrender behavior of GLWB owners.

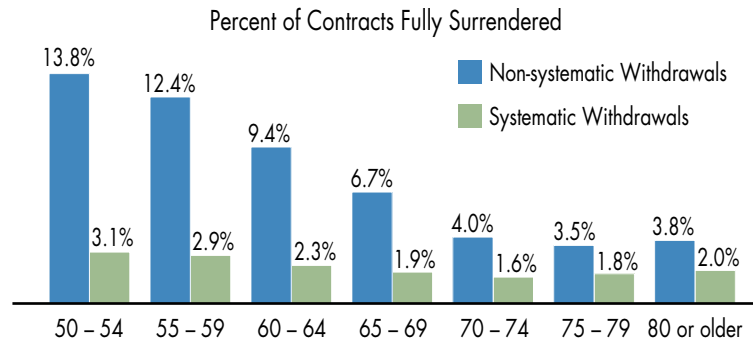
The cash value surrender rates among owners who have taken withdrawals in 2012 by the percentage of benefit maximum withdrawn follow a very similar pattern to the contract surrender rates except the cash value surrender rates are typically slightly lower, particularly for younger owners under age 60 taking withdrawals that are under 75 percent or 110 percent or more than the benefit maximum (Figure 1-54).

**Figure 1-54: GLWB Cash Value Surrender Rates by Owners Taking 2012 Withdrawals in Relation to Annual Benefit Maximum Allowed**



### Surrender Activity by Owners Taking Systematic Withdrawals

Another strong indicator of whether owners are likely to surrender their contracts is the type of method they use to take their withdrawals — systematic or non-systematic (Figure 1-55). As we have seen, owners who use systematic withdrawals are less likely to take more than the benefit maximum and most excess withdrawals are being made by younger owners.

**Figure 1-55: GLWB Contract Surrender Rates by Withdrawal Methods**

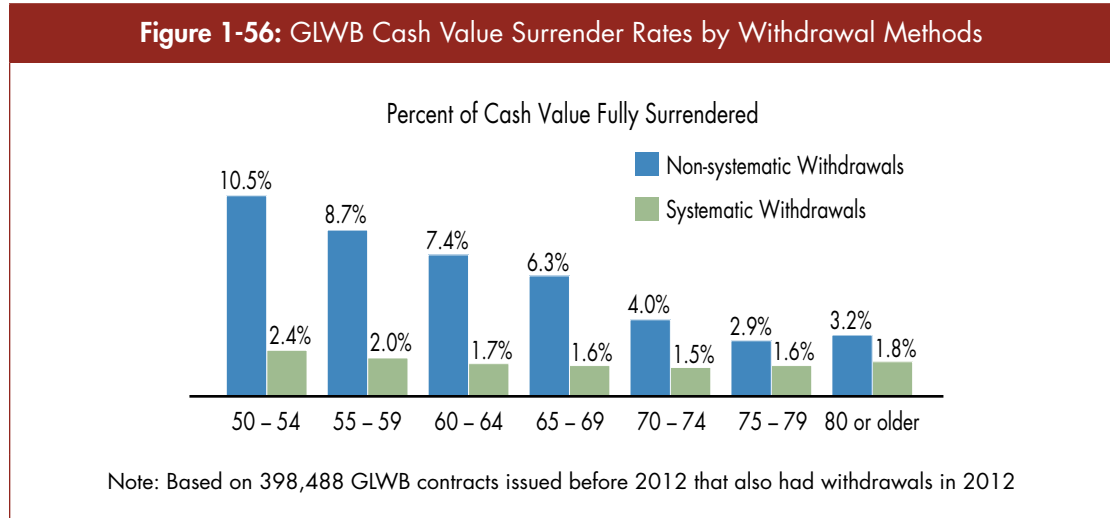
Note: Based on 398,488 GLWB contracts issued before 2012 that also had withdrawals in 2012.

Overall, the contract surrender rate among owners who took non-systematic withdrawals in 2012 was 6.8 percent while the surrender rate among owners who withdrew systematically was a very low 1.9 percent. Non-systematic withdrawals do not always maximize their benefit withdrawals; and, when linked to younger owners, it is highly indicative of higher surrender rates.

Owners using a non-systematic withdrawal method accounted for a quarter of all owners taking withdrawals, but they account for just over half of all surrendered contracts and almost half of cash surrender values in 2012. Surrender rates among older owners who take non-systematic withdrawals are nearly double the surrender rates of older owners who take systematic withdrawals.

GLWB contract surrender rates are **6.8%** among owners who take non-systematic withdrawals compared with **1.9%** among owners who took systematic withdrawals in 2012.

The cash value surrender rates by withdrawal methods follow a very similar pattern as the contract surrender rates except the cash value surrender rates are slightly lower, particularly for owners under age 65 taking non-systematic withdrawals (Figure 1-56).

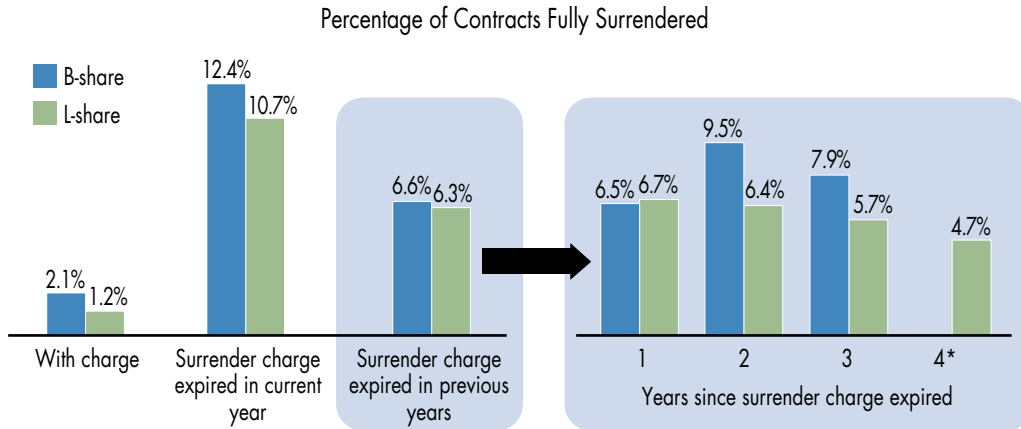


### Surrender Activity by Share Class

Looking at the surrender rates by the presence of surrender charges shows that persistency among contracts with surrender charges is higher than in contracts without surrender charges. Almost all (97 percent) of B-share contracts and 6 out of 10 (59 percent) of the L-share contracts were within the surrender charge periods in 2012. Figure 1-57 shows the contract surrender rates and Figure 1-58 shows the cash value surrender rates for contracts by share classes.

- With B- and L-share combined, 83 percent of these GLWB contracts were under surrender penalty.
- The contract surrender rates for B-share and L-share contracts with a surrender charge are 2.1 percent and 1.2 percent respectively.
- The overall contract surrender rate for B-share and L-share contracts that did not have surrender charges or came out of the surrender charge period was 8.0 percent compared with 1.9 percent for contracts that had surrender charges.

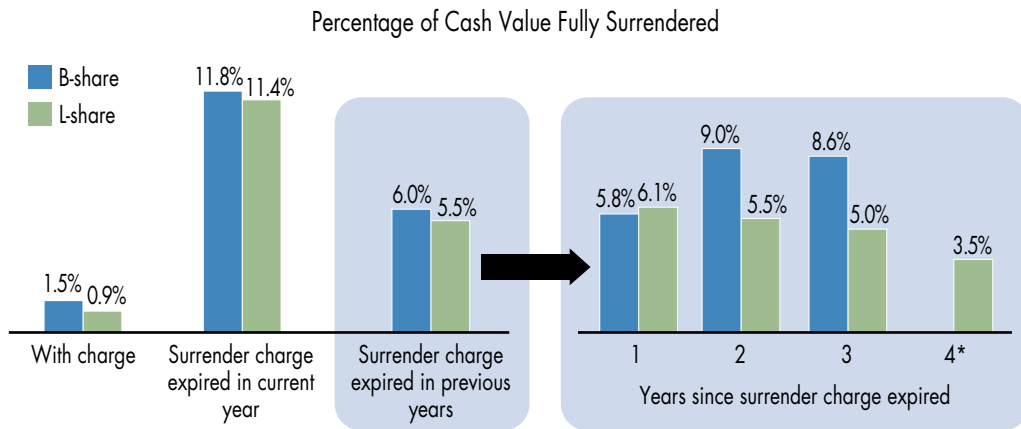
**Figure 1-57: GLWB Contract Surrender Rates in 2012 by Share Classes**



Note: Based on 1,701,434 B-share and L-share GLWB contracts issued before 2012.

\*We have not shown some measures related to other share classes to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

**Figure 1-58: GLWB Cash Value Surrender Rates in 2012 by Share Classes**

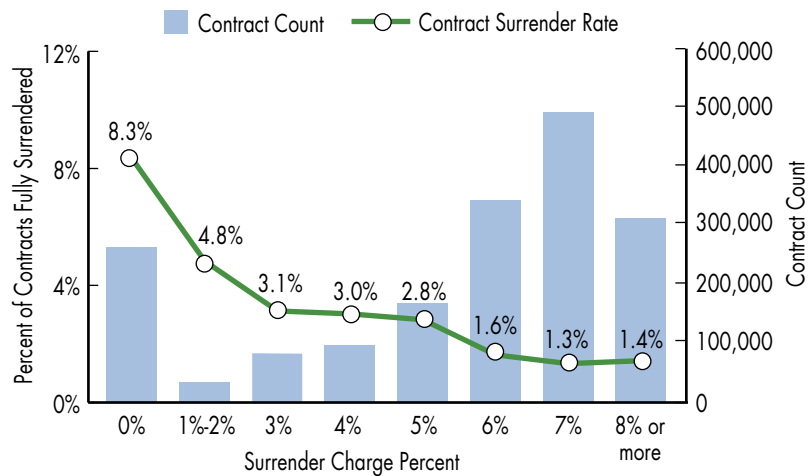


Note: Based on 1,701,434 B-share and L-share GLWB contracts issued before 2012.

\*We have not shown some measures related to other share classes to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

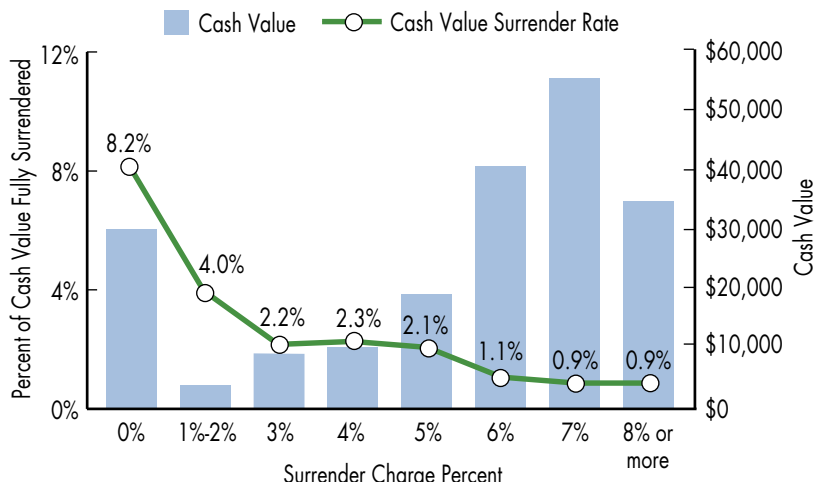
The surrender rates of GLWB contracts are also influenced by the surrender charge present in the contract. Naturally, contracts with high surrender charges have low surrender rates and vice versa (Figures 1-59 and 1-60). At EOY 2012, 79 percent of the contracts (nearly 1.4 million contracts) had surrender charges of 4 percent or more. Only 15 percent of the contracts (around 267,000 contracts) were free of surrender charges.

**Figure 1-59: GLWB Contract Surrender Rate by Surrender Charge Percentage**



Note: Based on 1,807,893 GLWB contracts issued before 2012. This analysis excludes C-share and other types of contracts that did not have any surrender charge schedule.

**Figure 1-60: GLWB Cash Value Surrender Rate by Surrender Charge Percentage**



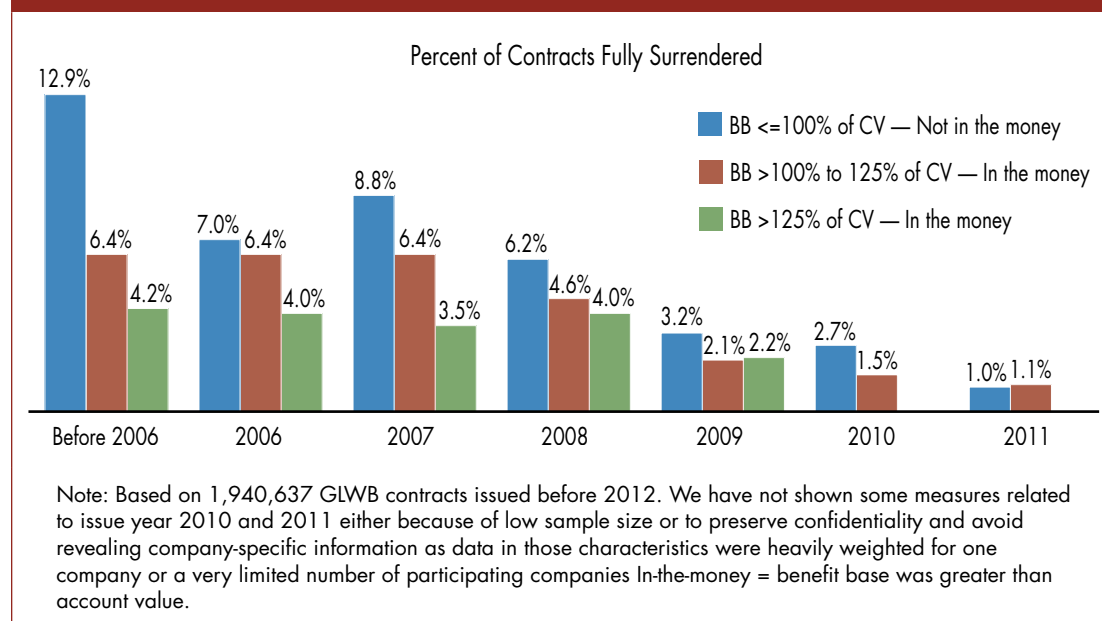
Note: Based on 1,807,893 GLWB contracts issued before 2012. This analysis excludes C-share and other types of contracts that did not have any surrender charge schedule.



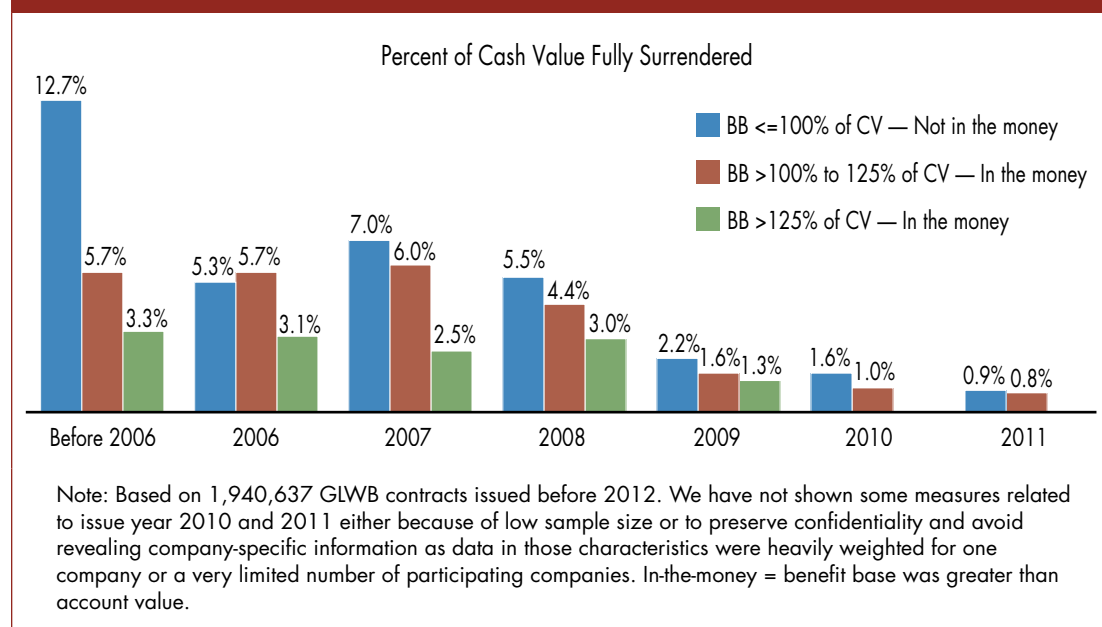
### Surrender Activity by Degree of in-the-Money

Another important analysis of the surrender rates involves whether or not the contracts are in-the-money. Surrender rates for almost all issue years are lower when the contracts are in-the-money (Figures 1-61 and 1-62).

**Figure 1-61: GLWB Contract Surrender Rate by Degree of in-the-Money**



**Figure 1-62: GLWB Cash Value Surrender Rate by Degree of in-the-Money**



GLWB owners appear to be sensitive to the degree of ITM-ness when deciding whether to surrender their contracts. We completed additional analyses, controlling for withdrawals before 2012, and found a similar pattern as Figure 1-61. Actuaries need to account for this sensitivity when setting assumptions for lapse behavior.

However, looking at the surrender rates based only the degree of in-the-moneyness may not completely address all issues when trying to understand the persistency risk. We have also seen that owner surrender behavior is closely connected with withdrawal behavior. Insurance companies assume more risk when the business left has more contracts that are in-the-money and surrender less. They need to fulfill their commitments on withdrawal guarantees if owners decide to start or continue withdrawals.

Insurance companies should consider surrender rates and their strong relationship to owner withdrawal behavior, to allow for better risk management of their book of business. There are some clear conclusions that may have an impact on how companies manage expectations and long-term profitability:

- The overall surrender rates for GLWB contracts are very low.
- Though duration and surrender charge rates present in the contracts influence persistency, it is customers under age 60, who take withdrawals, who contribute toward high surrender rates.
- Owners who take too little or too big a withdrawal amount compared with the benefit maximums allowed in the contract are likely to fully surrender the contract subsequently.
- The surrender rate among owners under age 65 who have not started taking withdrawals is very low, and it may be expected that they will use the rider benefits.
- Owners who are taking withdrawals through an SWP are likely to remain within benefit maximums and are less likely to surrender their contracts.
- The surrender rates among owners over age 65 who are either taking or not taking withdrawals are very likely to remain low. Some of them, particularly owners of nonqualified annuities, may delay withdrawals but hold the contracts for the income assurance in retirement.
- Surrender rates in contracts where the benefits are in-the-money are low.
- Although older owners are about as likely to surrender their contracts as younger owners, their contract values tend to be higher (Table 1-23). This situation results in relatively higher contract-value-weighted surrender rates for older age groups.
- Owners with contract values under \$25,000 have the highest surrender rates across the different bands of contract sizes (at BOY 2012).

- GLWBs issued through banks have the highest surrender rates by distribution channel.
- Nearly all contracts issued during 2012 remained in force at the end of that year (99.7 percent).

**Table 1-23: GLWB Surrender Rates**

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>All contracts issued before 2012</b>	2.9%	2.5%
<b>Year of issue</b>		
Before 2004	4.0%	3.5%
2004	6.9%	5.8%
2005	5.7%	4.9%
2006	5.0%	4.2%
2007	4.7%	3.9%
2008	4.5%	4.1%
2009	2.2%	1.7%
2010	1.5%	1.1%
2011	1.1%	0.8%
<b>Age of owner</b>		
Under 50	3.5%	2.5%
50 to 54	2.7%	2.2%
55 to 59	2.6%	2.0%
60 to 64	2.9%	2.3%
65 to 69	2.9%	2.5%
70 to 74	3.0%	2.6%
75 to 79	3.1%	2.7%
80 or older	3.2%	2.8%
<b>Contract value, BOY 2012</b>		
Under \$25,000	5.0%	4.4%
\$25,000 to \$49,999	3.1%	3.0%
\$50,000 to \$99,999	2.5%	2.5%
\$100,000 to \$249,999	2.1%	2.1%
\$250,000 to \$499,999	2.3%	2.3%
\$500,000 or higher	2.4%	2.5%
<b>Gender</b>		
Male	2.9%	2.4%
Female	2.8%	2.3%
<b>Market type</b>		
IRA	2.7%	2.2%
Nonqualified	3.2%	2.8%

Table 1-23: GLWB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>Distribution channel</b>		
Career agent	2.1%	1.6%
Independent agent/independent B-D	3.1%	2.6%
Full Service National B-D	2.5%	2.3 %
Bank	3.7%	3.0%
<b>Cost structure</b>		
B-share	2.3%	1.7%
L-share	3.9%	3.5%
*Includes products with level-load structures.		
Note: Based on 1,968,908 contracts issued before 2012. Percent of contracts surrendered = number of contracts fully surrendered / total number of contracts in force. Percent of contract value surrendered = sum of values of fully surrendered contracts / total contract value in force.		

We have not shown some measures related to channels, asset allocation restrictions and share classes to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

## Product and Benefit Characteristics

Living benefits tend to have complex designs, which limit the ability to categorize and make comparisons across products and carriers. Nonetheless, these benefits can be grouped based on some of their basic features, including cost, age restrictions, and step-up options, as well as specific benefit features. For GLWBs, the key features are spousal payouts, increased benefit bases when withdrawals are delayed, and maximum annual withdrawal rates (Table 1-24).

**Table 1-24: GLWB Product and Benefit Characteristics**

	Issued in 2006 or earlier	Issued in 2007	Issued in 2008	Issued in 2009	Issued in 2010	Issued in 2011	Issued in 2012
<b>Number of contracts:</b>	230,006	261,725	327,508	365,673	383,231	408,365	378,813
<b>Avg. mortality and expense charge</b>	1.44%	1.38%	1.39%	1.37%	1.30%	1.28%	1.26%
<b>Average benefit fee</b>	0.63%	0.65%	0.80%	0.96%	1.00%	1.05%	1.04%
<b>Average number of subaccounts</b>	67	64	63	71	61	57	56
<b>Product has fixed account</b>							
Yes	75%	81%	84%	94%	98%	97%	95%
No	25%	19%	16%	6%	2%	3%	5%
<b>Product still available as of 12-31-12</b>							
Yes	32%	36%	36%	37%	74%	93%	98%
No	68%	64%	64%	63%	26%	7%	2%
<b>Rider still available as of 12-31-12</b>							
Yes	15%	22%	26%	48%	54%	53%	75%
No	85%	78%	74%	52%	46%	47%	25%
<b>Cap on benefits</b>							
Yes	23%	40%	37%	33%	34%	37%	41%
No	77%	60%	63%	67%	66%	63%	59%
<b>Benefit fee basis</b>							
Account value	32%	17%	4%	3%	3%	5%	11%
Benefit base	40%	71%	92%	95%	96%	66%	49%
VA subaccounts	26%	11%	4%	1%	1%	29%	39%
Other	2%	1%	0	0	0	0	1%
<b>Average maximum age at election</b>	88	85	85	88	90	86	84
<b>Average minimum age at onset of lifetime benefits</b>	56	58	58	53	52	52	52
<b>Average maximum age at onset of lifetime benefits</b>	98	98	98	96	96	96	95

Table 1-24: GLWB Product and Benefit Characteristics (continued)

	Issued in 2006 or earlier	Issued in 2007	Issued in 2008	Issued in 2009	Issued in 2010	Issued in 2011	Issued in 2012
<b>Asset allocation restrictions</b>							
Forced asset allocation model	33%	24%	21%	16%	14%	18%	14%
Limitations on fund selection	11%	12%	13%	14%	15%	18%	13%
Other restrictions	10%	19%	26%	8%	4%	5%	8%
None/may restrict allocations	7%	8%	9%	11%	12%	10%	5%
Dynamic asset allocation	39%	36%	30%	50%	54%	48%	47%
Managed Volatility funds	1%	1%	1%	1%	1%	1%	13%
<b>Step-up availability*</b>							
Quarterly or more frequently	6%	12%	20%	3%	0	0	0
Annually	92%	86%	79%	97%	100%	100%	100%
Every 3 years	1%	1%	0	0	0	0	0
Every 5 years	1%	1%	1%	0	0	0	0
<b>Benefit base automatically increases if withdrawals are deferred</b>							
Yes, based on simple interest	34%	27%	26%	20%	25%	32%	23%
Yes, based on compound interest	41%	39%	58%	69%	69%	64%	72%
No	25%	34%	16%	11%	6%	4%	5%
<b>Payments can continue to spouse after owner's death</b>							
Yes	31%	52%	63%	60%	62%	66%	59%
No	69%	48%	37%	40%	38%	34%	41%
<b>Maximum annual withdrawal percent</b>							
3% or under	0	0	0	0	2%	13%	17%
>3% to 4%	3%	2%	2%	23%	35%	32%	33%
>4% to 5%	56%	59%	66%	56%	48%	41%	44%
>5% to 6%	13%	25%	24%	19%	14%	14%	6%
>6% to 7%	28%	13%	7%	2%	1%	1%	0%
>7%	0	0	0	0	0	0	0
<b>Impact on benefit base if excess withdrawals are taken</b>							
Pro rata	89%	82%	88%	89%	89%	80%	77%
Dollar-for-dollar	12%	18%	11%	14%	16%	28%	24%
None if RMDs from IRA	89%	88%	90%	89%	89%	97%	99%
Other	21%	33%	35%	29%	30%	37%	46%
<b>Among contracts with maximum charge info provided</b>							
Standard rider charge	0.63%	0.66%	0.80%	0.96%	1.01%	1.08%	1.05%
Maximum rider charge	1.36%	1.45%	1.52%	1.51%	1.60%	1.68%	1.72%
*If the benefit fee was based on the higher of contract or account value, then the basis categorization was determined for each individual contract.							
**Among contracts that allowed multiple step-ups							
Note: Based on 2,355,321 GLWB contracts issued in 2012 or before.							

## Key Findings

- The average buyer in 2012 paid about 230 basis points for a VA with a GLWB, as a percentage of contract value, VA subaccounts, or benefit base values.
- Half of the 2012 contracts base the benefit fee on the value of the benefit base. A growing proportion of contracts base benefit fees on the higher of contract or benefit base values.
- Three out of four riders were still available as of EOY 2012 compared to only half one year earlier.
- On average, owners who bought contracts in 2012 can take lifetime benefits as early as age 52 and can elect the GLWB until they reach age 84. However, some allow lifetime benefits to begin as early as age 50 or as late as age 99.
- Options to step up the GLWB benefit base were once typically offered annually. More than 1 in 5 contracts issued in 2008 allowed quarterly step-up options, allowing owners to lock in market gains through more frequent step-ups. However, beginning in 2009, more contracts went back to a conservative annual step-up option.
- Six in ten contracts with GLWBs have spousal lifetime withdrawal privileges.
- Seven in 10 GLWB contract designs offer compound-interest growth of the benefit base if withdrawals are not taken.
- While 9 of 10 VAs with GLWB issued before 2009 allowed annual withdrawal maximums of more than 4 percent, companies began issuing a larger percentage of contracts with lower payout rates in 2009. By 2012, half of the contracts issued had maximum payouts of 4 percent or lower.
- Withdrawals that exceed annual benefit maximums lead to reductions in benefit bases or loss of lifetime guarantees. Up until 2010, for roughly 9 in 10 contracts, benefit bases were reduced in proportion to the amount of the excess withdrawal (i.e., the ratio of the excess withdrawal to the contract value before the excess is withdrawn). By 2012, it had dropped to around 3 in 4. Almost all contracts issued in 2012 allowed excess withdrawals if these satisfy RMDs.





# Chapter Two

2012 EXPERIENCE

## Guaranteed Minimum Withdrawal Benefits



## Chapter Two: Guaranteed Minimum Withdrawal Benefits

Guaranteed minimum withdrawal benefits (GMWBs) were introduced in the early 2000s. Early GMWBs permitted annual withdrawals of a certain percentage of the benefit base until the guaranteed payments were exhausted, even if the contract value itself had already fallen to zero. The benefit base was usually the sum of premium payments and there was no lifetime guarantee. Later versions enhanced the benefit base to include step-ups or bonuses prior to withdrawals or optional step-ups to reflect investment growth after withdrawals have commenced.

Although GMWBs do not guarantee income for life, investors can use GMWBs effectively to provide period-certain payments, while keeping control of their assets and remaining invested in the market. Also, the maximum annual withdrawal amount (as a percentage of the benefit base) for a GMWB is generally higher than that of a GLWB.

During the last few years, there has been little innovation with GMWB riders. New sales for GMWB riders remain at low levels. New sales of GMWBs in 2012 dropped to \$1.4 billion, down from \$2.3 billion in 2011. GMWB election rates, when any GLB was available, remained low, around 1 to 2 percent.<sup>12</sup> In 2007, GMWBs enjoyed an election rate ranging from 7 to 9 percent. With lifetime withdrawal guarantees becoming more popular, the period-certain withdrawal guarantee has become almost nonexistent.

This chapter is based on \$25.1 billion of annuity assets from 251,449 GMWB contracts issued by 13 companies. Of these contracts, 226,048 were issued before 2012 and were in force as of December 31, 2012. LIMRA estimates that industry GMWB assets totaled \$38 billion at end-of-year (EOY) 2012. This study represents two thirds of industry GMWB assets from a total of 28 GMWB riders (or hybrid with GMWB features) introduced between 2000 and 2012.

<sup>12</sup> *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2012*, LIMRA, 2013.

## GMWB Owner and Contract Characteristics

Table 2-1 provides a summary of GMWB owner and contract characteristics at EOY 2012.

<b>Table 2-1: GMWB Owner and Contract Characteristics</b>	
	<b>All Contracts In Force</b>
<b>Age of owner</b>	
Age 59 and under	20%
60 to 64	15%
65 to 69	20%
70 to 74	18%
75 to 79	13%
80 or older	14%
<b>Average Age</b>	68
<b>Gender</b>	
Male	48%
Female	52%
<b>Market type</b>	
IRA	60%
Nonqualified	40%
<b>Distribution channel</b>	
Career agent	28%
Independent agent/independent B-D	37%
Full-service National B-D	18%
Bank	17%
<b>Cost structure</b>	
B-share	61%
L-share	29%
Other	10%
<b>Contract value, EOY 2012 as percent of contracts issued</b>	
Under \$25,000	17%
\$25,000 to \$49,999	20%
\$50,000 to \$99,999	27%
\$100,000 to \$249,999	27%
\$250,000 to \$499,999	7%
\$500,000 or higher	2%

**Table 2-1: GMWB Owner and Contract Characteristics (continued)**

	All Contracts In Force
<b>Contract value, EOY 2012 as percent of contract value</b>	
Under \$25,000	2%
\$25,000 to \$49,999	7%
\$50,000 to \$99,999	18%
\$100,000 to \$249,999	38%
\$250,000 to \$499,999	22%
\$500,000 or higher	13%
<b>Average contract value, EOY 2012</b>	\$109,414
<b>Median contract value, EOY 2012</b>	\$69,809
<p>Note: Percentages are based on number of contracts unless stated otherwise. Based on 229,771 contracts still in force at EOY 2012. We have not shown some measures related to channels and share classes to preserve confidentiality and avoid revealing company-specific information as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.</p>	

## Key Findings

- Almost half (45 percent) of the in-force GMWB owners are age 70 or older.
- Two thirds of the contracts were issued by career agents or independent agent/independent broker-dealers (BDs).
- By EOY 2012, 1 in 4 in-force contracts with GMWBs had account values between \$50,000 and \$99,999 as well as \$100,000 and \$249,999.
- Although 36 percent of the in-force contracts had values of \$100,000 or more, these contracts constituted 73 percent of GMWB account values at EOY.

## Benefit Base

At BOY 2012, 75 percent of contracts with GMWBs issued before 2012 had benefit bases that exceeded contract values (i.e., were ‘in-the-money’). Of these contracts, the average difference between the benefit base and contract value was approximately \$11,700. On average, contract values were around 90 percent of the benefit bases (Table 2-2).

**Table 2-2: GMWB Benefit Bases and Contract Values, at BOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$24,699,183,602	\$22,154,706,446	90%
Average	\$114,052	\$102,302	90%
Median	\$71,987	\$65,589	91%
Percent of contracts where benefit base > contract value			75%
Note: Based on 216,561 contracts issued before 2012. Excludes contracts for which the GMWB benefit bases could not be determined or did not have EOY benefit base amount.			

**Less than half (46%)**  
of contracts were  
in-the-money at  
EOY 2012.

In 2012, the S&P 500 index grew 13 percent. As a result, less than half of the GMWB contracts had a benefit base amount greater than the contract value (46 percent) (Table 2-3). The average difference between the benefit base and contract value improved to \$3,500 by EOY. On average, contract values were around 97 percent of the benefit bases, a significant improvement from the BOY. At EOY 2011, the average benefit base and contract value stood at \$112,400 and \$109,000 respectively for all GMWB contracts.

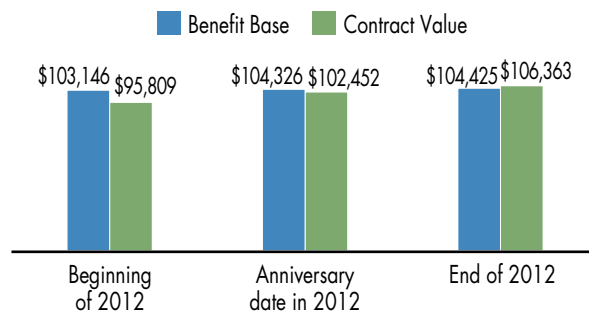
**Table 2-3: GMWB Benefit Bases and Contract Values, at EOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$24,348,130,387	\$23,597,213,008	97%
Average	\$112,431	\$108,963	97%
Median	\$70,324	\$69,405	99%
Percent of contracts where benefit base > contract value			46%
Note: Based on 216,561 contracts issued before 2012. Excludes contracts for which the GMWB benefit bases could not be determined or did not have EOY benefit base amount.			

## Benefit Base for Contracts With Withdrawals vs. Without Withdrawals

For in-force contracts issued before 2012 that did not have withdrawals in 2012, the benefit base rose slightly from \$103,100 to \$104,400 by EOY, up 1 percent (Figure 2-1). Such a minor increase in the benefit base is primarily because few GMWB riders offered an automatic increase of benefit bases in case of non-withdrawals. The fact is evident in the anniversary values of these contracts which remained static at BOY levels. On the other hand, the contract values, given the gains in the equity market and fixed-income funds in 2012, grew 11 percent by EOY.

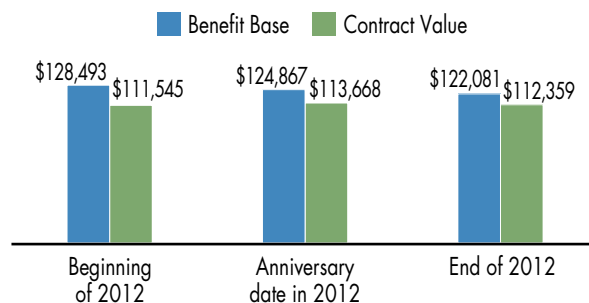
**Figure 2-1: GMWB Contract Value and Benefit Base for Contracts Without Withdrawals**



Note: Based on 101,117 contracts issued before 2012 and still in force at EOY 2012 where there were no withdrawals made or current year premium received. Excludes contracts for which the GMWB benefit bases or contract values on anniversary days could not be determined.

For GMWB contracts that incurred withdrawals in 2012, the average benefit base dropped 5 percent from \$128,500 at BOY to \$122,100 at EOY. The average contract value increased 1 percent during the year, yet still lagged the benefit base by almost \$10,000 (Figure 2-2).

**Figure 2-2: GMWB Contract Value and Benefit Base for Contracts With Withdrawals**

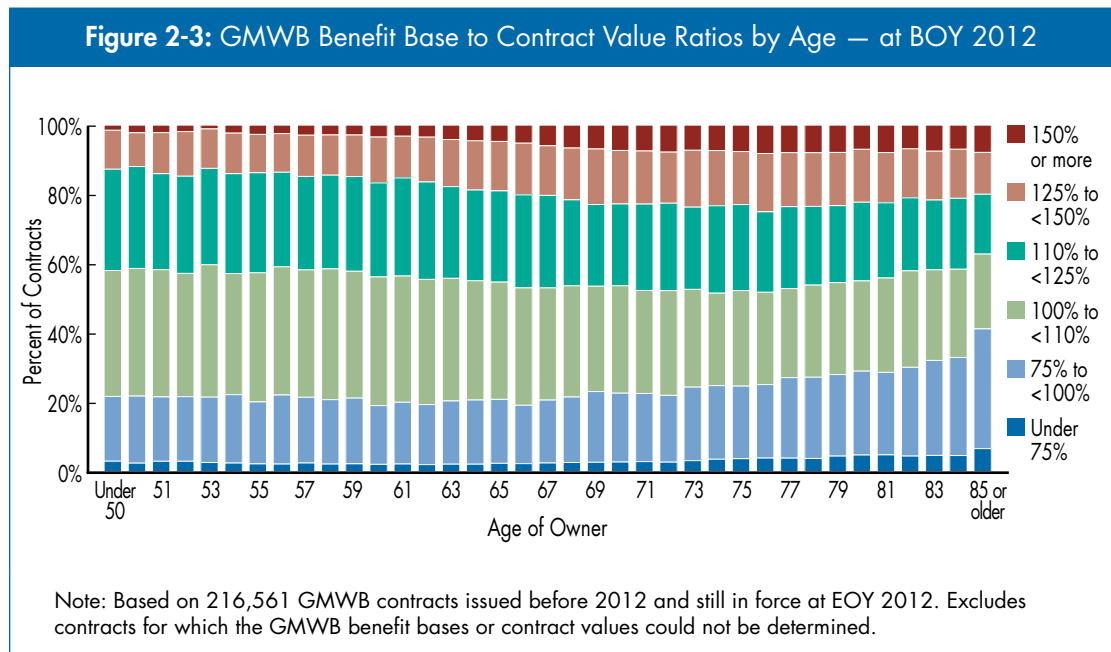


Note: Based on 91,279 contracts issued before 2012 and still in force at EOY 2012 where there were withdrawals made, but no current-year premium received. Excludes contracts for which the GMWB benefit bases or contract values on anniversary dates could not be determined.

### Benefit Base to Contract Value Ratios by Age

We have expanded the analysis of benefit base to contract value (BB/CV) ratios to drill down on age or age cohorts to see if withdrawal risks can be linked to favorable or unfavorable benefit base to account value ratios. This analysis shows that the BB/CV ratios differ by age, and provides insights related to withdrawal risks associated with each age or age cohort as well as comparisons with the GMWB industry.

Figure 2-3 shows the BB/CV ratios by age at BOY. For in-force contracts issued before 2012, at BOY, 1 in 4 contracts had benefit base amounts below their contract values; 31 percent had BB/CV ratios between 100 and less than 110 percent; another 1 in 4 contracts had their benefit bases exceeding contract values by 110 to less than 125 percent. One fifth of the contracts had BB/CV ratios of 125 percent or more.

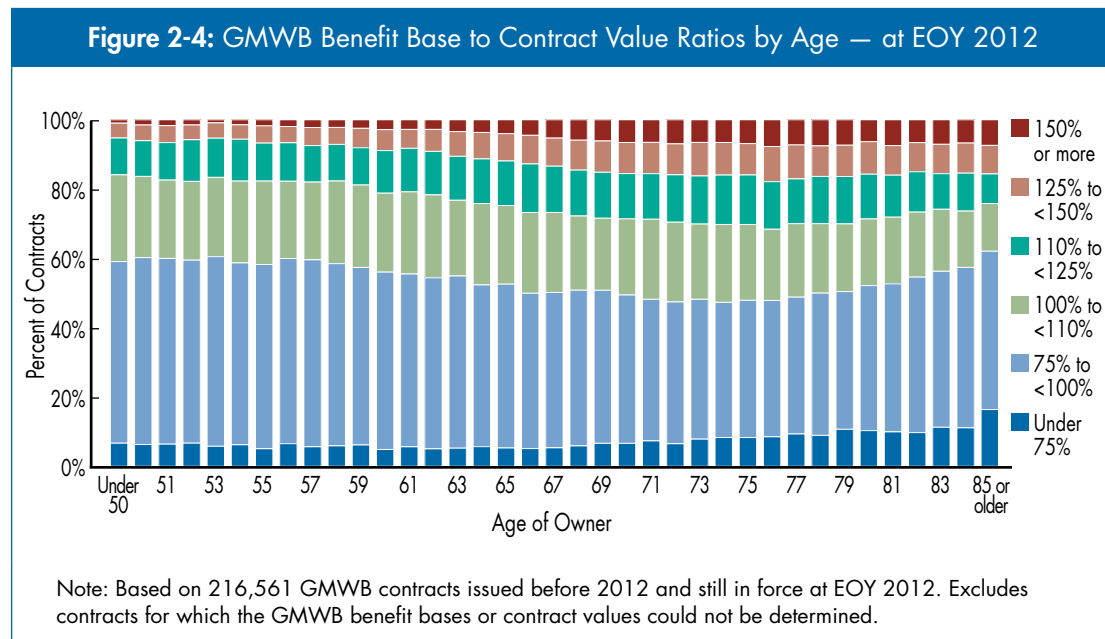




However, owners aged 70 or older have comparatively more contracts with BB/CV ratios either below 100 percent or at 125 percent or more. One quarter of contracts with owners aged 70 to 79 and one third (34 percent) of the contracts with owners aged 80 or older had BB/CV ratios below 100 percent. One quarter (23 percent) of contracts with owners aged 70 to 79 and one fifth (21 percent) of the contracts with owners aged 80 or older had BB/CV ratios of 125 percent or more.

Figure 2-4 shows the distribution of BB/CV ratios by age at EOY 2012. The contracts with favorable BB/CV ratios (less than 100 percent) improved from 1 in 4 at the BOY to just over one half (53 percent) by EOY.

The contracts with BB/CV ratios less than 100 percent improved from 1 in 4 at the BOY to just over one half by EOY.



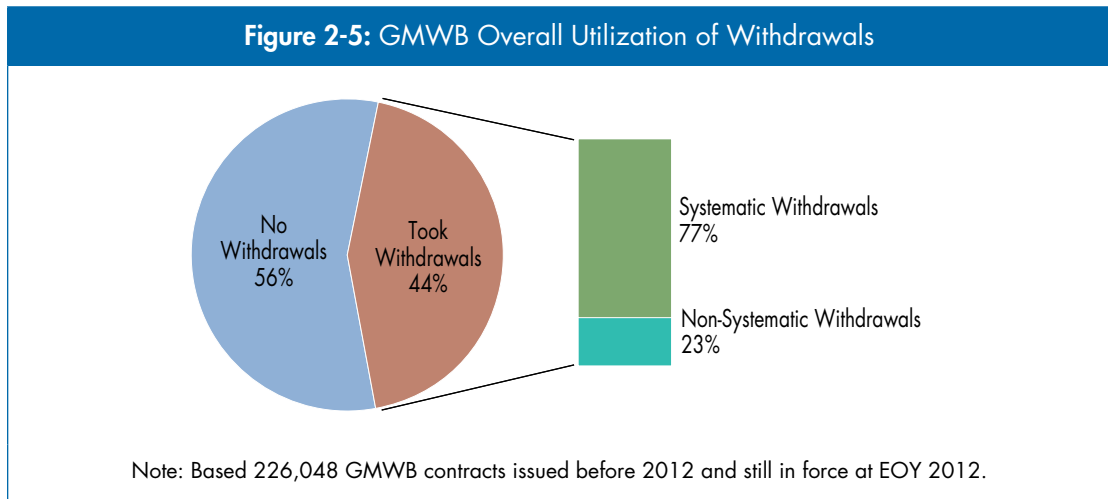
## Withdrawal Activity

### Overall Utilization for Contracts Issued Before 2012

**44%** of GMWB contracts had at least some withdrawal activity during 2012.

For contracts with GMWB riders issued before 2012 and still in force at EOY, 44 percent had at least some withdrawal activity during 2011 (Figure 2-5). Seventy-seven percent of these contracts had systematic withdrawals.

**Figure 2-5: GMWB Overall Utilization of Withdrawals**



Based on 100,192 GMWB contracts issued before 2012 and remaining in force at EOY 2012, with withdrawals in 2012:

- Total withdrawals amounted to nearly \$1.1 billion.
- The median withdrawal amount was \$6,000 or around 8.2 percent of the median contract value of \$73,100 at BOY. The average withdrawal amount was \$10,632 or 9.5 percent based on the average BOY contract value of \$111,800.

**\$6,000** was the median withdrawal amount from GMWB contracts in 2012.

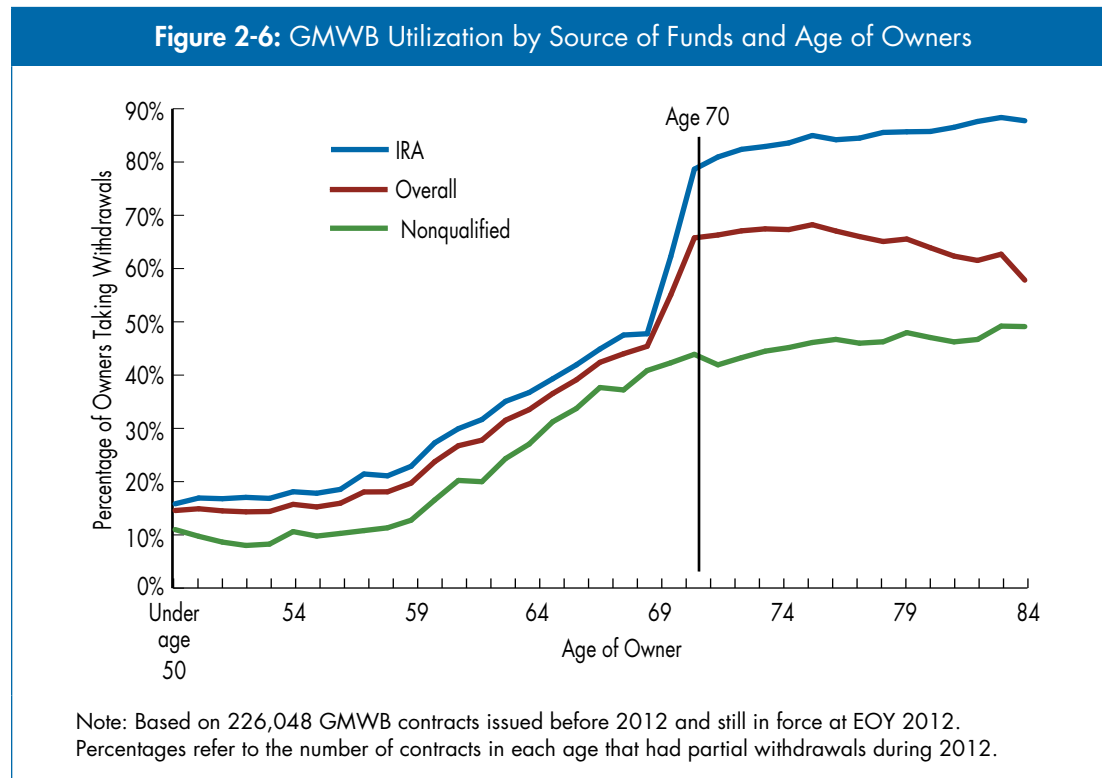
- The median systematic withdrawal amount was \$5,565. The mean was \$8,542.
- Among contracts with partial withdrawals, the median amount withdrawn was \$5,870, representing 7.7 percent of the median BOY contract value of \$72,600.

For the constant group of 11 companies that provided data in last year’s study, overall utilization rates rose in 2012 for contracts that were in force for an entire year. Utilization rates in 2010 were 37 percent for contracts sold before 2010 and remaining in force that year; utilization rates in 2011 were 39 percent for contracts sold before 2011 and remaining in force in 2011. The overall utilization rate among all GMWB owners in 2012 was 42 percent for contracts sold before 2012 and remaining in force in 2012.

### Withdrawal Activity by Source of Funds

The analysis of withdrawals by GMWB owners by the source of funds (i.e., whether the annuity was funded with qualified or nonqualified savings) gives a more accurate picture of the dynamics of withdrawal behavior among owners. Source of funds and age are the two most important factors that drive owner withdrawal behavior. The overall utilization rate in GMWB contracts was 44 percent in 2012. Examining withdrawal activity by source of funds and owner age shows that the 2012 GMWB utilization rate was in fact quite high for certain customer segments (Figure 2-6).

The percent of older GMWB owners taking withdrawals approached **90%** for annuities purchased with qualified money.



Withdrawal rates for customers under age 70 who used either qualified or nonqualified money to buy their contracts remained under 50 percent. After age 70, the need for required minimum distributions (RMDs) from qualified GMWB annuities forces owners to take withdrawals and the withdrawal rate quickly jumps to near 80 percent by ages 71–72. The percent of these customers withdrawing then slowly rises to 88 percent by age 85.

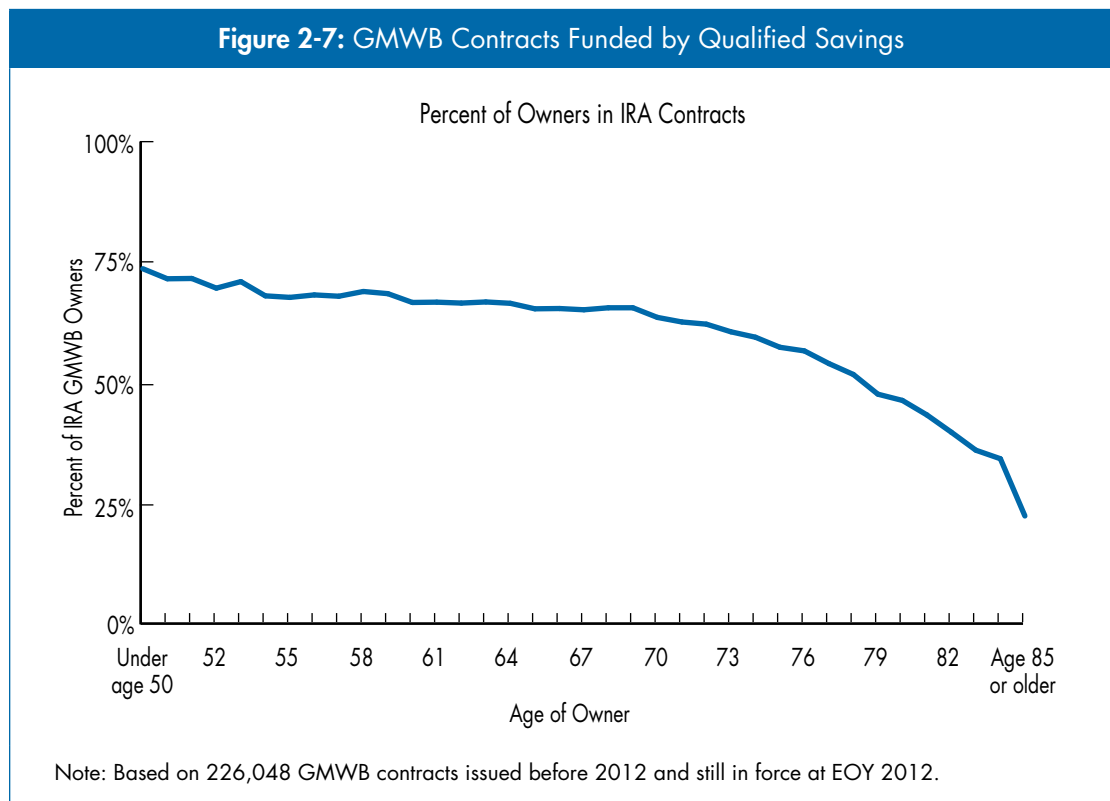
**60%** of all GMWB contracts were qualified by EOY 2012.

GMWB owners are less likely to take withdrawals if they use nonqualified money. Nonetheless, there is a steady increase in the proportion of owners who take withdrawals as they age. The percent of customers withdrawing at age 85 approached nearly 50 percent.

However, it helps to assess the withdrawal behavior in the context of the proportion of GMWB contracts that are qualified or nonqualified, by owner age. This analysis provides us with a withdrawal trend for future years, as the owners age.

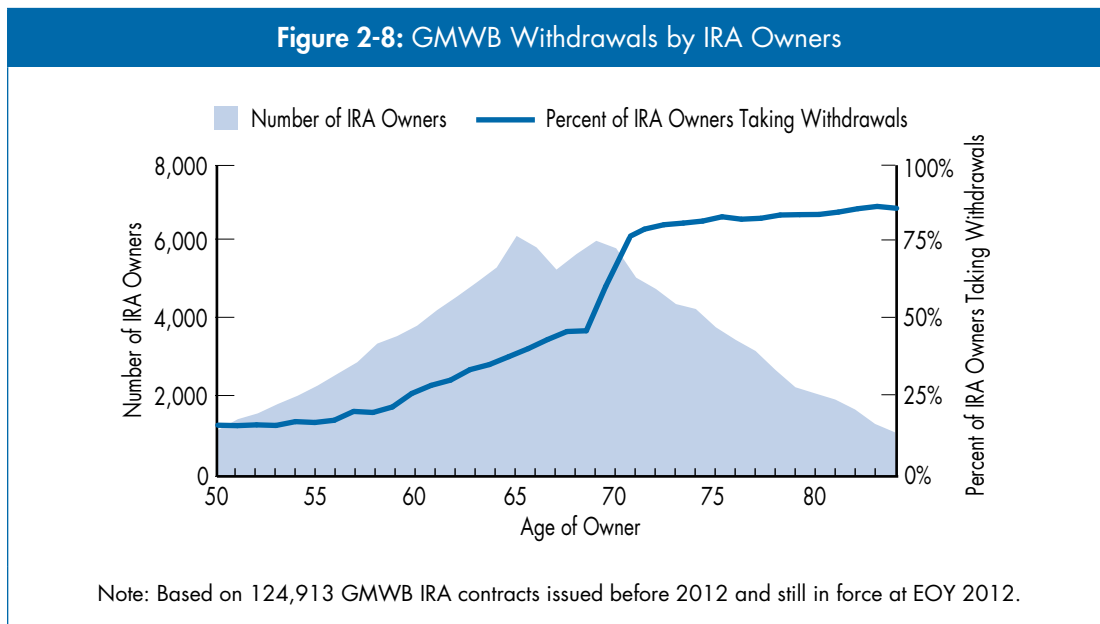
By EOY 2012, qualified GMWB contracts constituted 60 percent of all GMWB contracts while 40 percent of GMWB contracts were sourced from nonqualified savings. Qualified contracts are more likely to have owners under age 70 (Figure 2-7).

**Figure 2-7: GMWB Contracts Funded by Qualified Savings**



This reflects broader industry developments, with annuities increasingly being funded with qualified money — by younger owners using rollovers from retirement plans. Three quarters (74 percent) of owners under age 50 have funded their GMWB annuities with qualified money. Nearly two thirds of GMWB contracts (68 percent) are sourced by qualified funds, for owners aged 70 or younger. At EOY 2012, half of the GMWB owners over age 70 (one third of the total IRA owners) funded their contracts with qualified money. Nearly half (52 percent) of all nonqualified GMWB owners were over age 70.

IRA owner withdrawal patterns can be clearly discerned into two stages — before age 70 and after age 70 (Figure 2-8). While the percent of IRA owners aged 50 taking withdrawals was only 17 percent, that number increases to 48 percent by age 69. The need to take RMDs drives the percent of owners taking withdrawals at age 70 and 71, hitting 62 percent and 78 percent respectively. After that, the percent of owners taking withdrawals increased slowly to 88 percent by age 85.



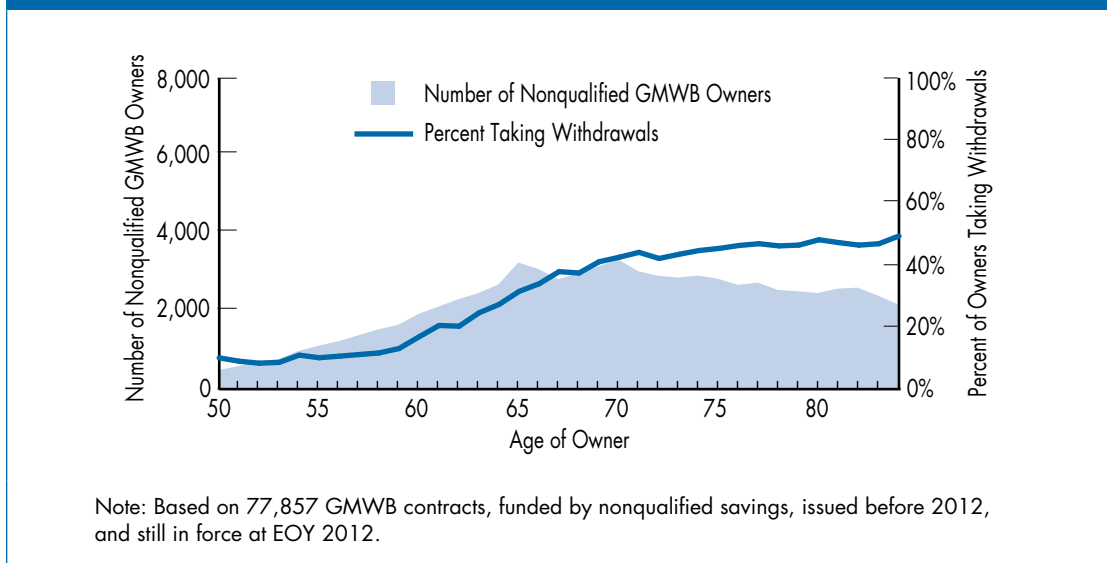
The need to take RMDs from qualified GMWB contracts will continue to drive the withdrawal behavior for these contract owners in the next few years. At EOY 2012, 39 percent of qualified GMWB owners were between ages 60 and 69. Many of these GMWB owners will be forced to take withdrawals in the next few years; and, as new sales in GMWB riders will likely remain very low, the overall utilization rate will increase in the absence of new contracts.

Need to take RMDs drives the percent of owners taking withdrawals at ages 70 and 71 to **62%** and **78%** respectively.

**52%** of nonqualified GMWB owners were over age 70 in 2012.

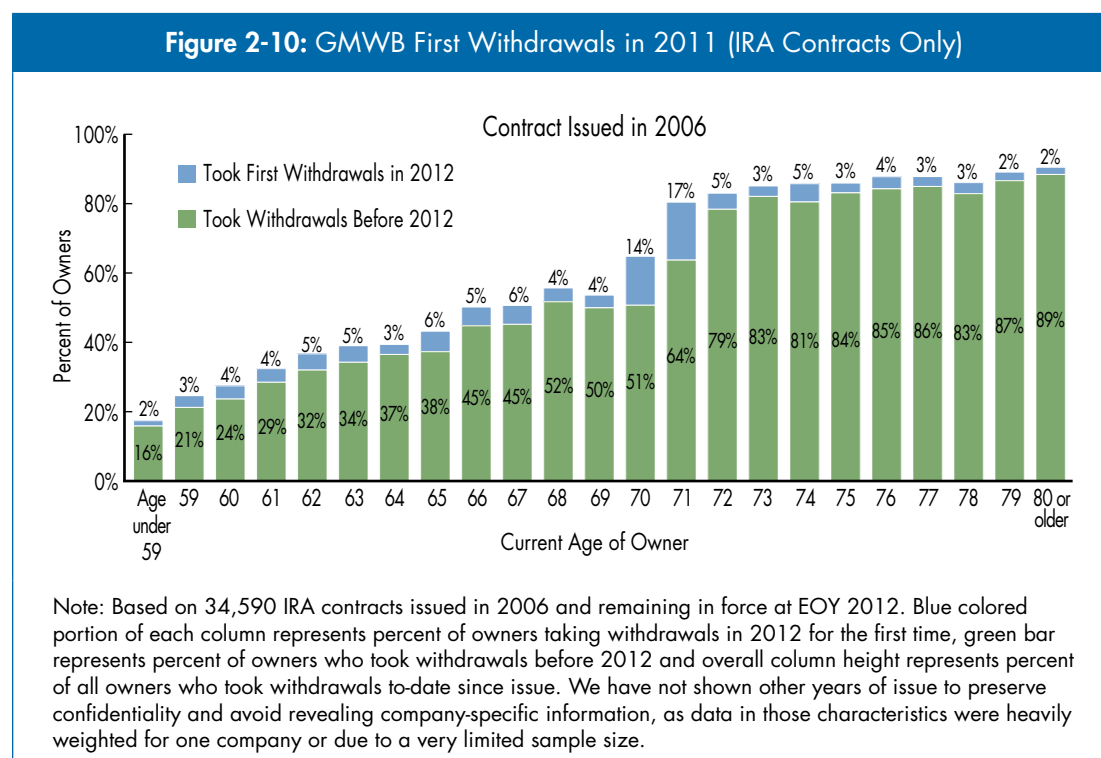
In comparison to the one third of IRA GMWB owners over aged 70, 52 percent of nonqualified GMWB annuity owners were over age 70. The percent of nonqualified owners taking withdrawals in this age group was 46 percent in 2012, significantly below the 5 out of 6 owners withdrawing from their qualified annuity (Figure 2-9). Three in ten nonqualified GMWB owners were aged 60–69 and 30 percent of these owners took withdrawals during the year.

Figure 2-9: GMWB Withdrawals by Nonqualified Owners



## Taking First Withdrawal From IRA Annuity in 2012

There is a distinct pattern of withdrawal behavior from IRA-funded GMWB annuities, principally driven by age and the need to take RMDs. Figure 2-10 shows the percent of owners taking their first withdrawals in 2012 for GMWB contracts issued in 2006.<sup>13</sup>



The Y-axis shows the cumulative percent of GMWB owners who took their withdrawals before 2012 and for the first time in 2012. The green bar represents percent of owners who took withdrawals before 2012 and the blue bars at the top for each age shows the percent of customers who took first withdrawals from their contracts in 2012.

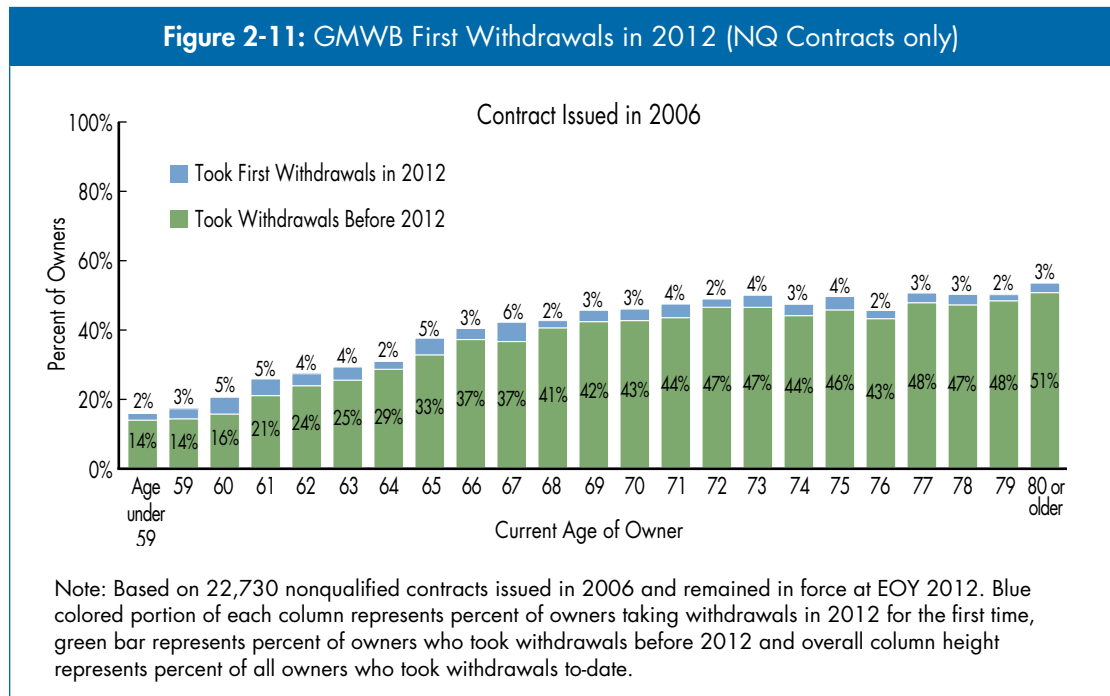
This analysis — based on owners who bought their GMWB annuities in 2006 — gives us a much clearer picture of IRA owner withdrawal behavior. Owners who bought their annuities in 2006 had six to seven years to take withdrawals. The marginal increases in the percentage of owners taking their first withdrawals remain almost uniform for owners between ages 60 and 69 — within a close range of 3 to 6 percent — with the cumulative percent rising with age. In 2012, 14 percent of owners that turned age 70, and 17 percent of owners that turned age 71, took their first withdrawals. After age 71, the percent of owners taking their first withdrawals drops quickly to 5 percent at age 72 and then settles around 2–3 percent for owners aged 77 and older.

<sup>13</sup> Due to constraints with sample sizes for contracts issued in years 2007 to 2011 in each individual age, the analysis represents contracts issued in 2006.

Many insurance companies encourage annuity buyers to take withdrawals, particularly to satisfy RMDs as they turn age 70½. Most companies do not treat RMDs as excess withdrawals, even if they exceed the annual guaranteed income amount. Also, all companies administer easy-to-use tools to compute the RMD amount for the annuity, and manage RMDs through systematic withdrawal plans.

### Taking First Withdrawal From Nonqualified Annuity in 2012

The percent of nonqualified annuity owners taking their first withdrawals in 2012 reflects more streamlined behavior. Figure 2-11 shows the percent of nonqualified owners taking their first withdrawals in 2012 for contracts issued in 2006.<sup>14</sup>



The Y-axis shows the percent of customers who took withdrawals before 2012 and who took withdrawals for the first time in 2012 combined. The bar at the top for each age shows the percent of customers who took their first withdrawals from the contracts in 2012.

Because there are no RMDs, in general the percent of nonqualified owners taking their first withdrawals remained within a tight range — 2 percent to 6 percent — irrespective of age.

<sup>14</sup> Due to constraints with sample sizes for contracts issued in years 2007 to 2011 in each individual age, the analysis represents contracts issued in 2006.



### Withdrawal Activity for Contracts Issued in 2007

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 GMWB buyers and tracked their withdrawal behaviors. Table 2-4 shows the withdrawal behavior of 2007 buyers aged 57 to 75 during 2007 to 2012 (6 years of withdrawal history), and assessed what percent of those buyers began taking their first withdrawals from 2007 to 2012. We are unable to separate the data by source of funds (IRA vs. nonqualified) due to the limited sample sizes.

**Table 2-4: GMWB First Withdrawals for 2007 Buyers**

Withdrawals started at	Age at Purchase																						
	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75				
Age 57	11%																						
Age 58	5%	10%																					
Age 59	4%	7%	15%																				
Age 60	11%	10%	15%	22%																			
Age 61	5%	8%	8%	9%	22%																		
Age 62	6%	5%	7%	8%	12%	25%																	
Age 63		4%	3%	5%	7%	11%	27%																
Age 64			5%	3%	5%	8%	10%	26%															
Age 65				5%	4%	5%	9%	13%	29%														
Age 66					5%	5%	6%	8%	12%	30%													
Age 67						4%	4%	6%	5%	10%	27%												
Age 68							4%	3%	5%	8%	12%	29%											
Age 69								4%	4%	6%	6%	11%	27%										
Age 70									10%	9%	14%	9%	22%	32%									
Age 71										10%	12%	21%	6%	23%	38%								
Age 72											3%	3%	15%	6%	21%	38%							
Age 73												2%	2%	10%	5%	19%	36%						
Age 74													3%	3%	9%	6%	16%	42%					
Age 75														1%	2%	7%	5%	15%	46%				
Age 76															3%	4%	9%	5%	14%				
Age 77																3%	3%	8%	5%				
Age 78																	2%	3%	8%				
Age 79																		2%	3%				
Age 80																			2%				
Cumulative	42%	44%	52%	51%	54%	58%	60%	60%	65%	73%	74%	75%	76%	76%	78%	77%	71%	75%	77%				
Percent of owners taking withdrawals in all subsequent years	76%	72%	72%	78%	77%	79%	75%	78%	83%	83%	85%	83%	85%	82%	83%	80%	76%	78%	78%				

Note: Based on a constant group of 13,914 contracts issued in 2007 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2011, with withdrawals continuing every year through 2012.

***First Year — 2007***

- Ten to 15 percent of owners aged 57–59 took withdrawals during their first year of purchase. For owners aged 60–69, this percent ranged from 22 to 30 percent.
- Almost one third (32 percent) of owners aged 70 in 2007 took withdrawals in the first year.
- In general, around four in ten 2007 owners over age 70 took withdrawals in their first contract year.

***Second Year — 2008***

- In their second year of holding a GMWB annuity, the percent of owners aged 60–69 in 2008 taking their first withdrawals from their annuity was much lower than the percent of owners who took withdrawals in the first year — less than half in most cases.
- However, one in five owners (22 percent) of owners who turned age 70 took their first withdrawals in 2008, their second year of holding. Almost a quarter of the owners aged 70 at purchase (23 percent), and 71 in their second year, took their first withdrawals in 2008. This was 15 percentage points lower than owners aged 71 who took withdrawals in 2007.
- Roughly 15 to 20 percent of owners aged 72 and over took their first withdrawals in their second year. This was less than half of the 2007 owners from the same age group.

***Third Year — 2009***

- In 2009, the RMD rules were eased and the percent of owners who took their first withdrawals was lower across almost all ages.

**Fourth Year — 2010**

- In their fourth year of ownership, owners who turned ages 60–69 in 2010 and took their first withdrawals remained within a range of 5 to 11 percent.
- For owners who turned ages 70 and 71 in 2010, first withdrawal percentages jump to 14 percent and 21 percent respectively. Fifteen percent of owners who turned to age 72 (at purchase they were aged 69) took their first withdrawals in 2010. From age 73 and over, 6 to 10 percent of owners took their first withdrawals, at an almost uniform rate.

**Fifth and Sixth Year — 2011 and 2012**

- The pattern for owners under age 70 who took their first withdrawals in their fifth and sixth year is similar to 2010.
- For owners who turned ages 70 and 71 in 2011, around 10 percent took first withdrawals.
- Less than 5 percent of 2007 owners aged 72 and older took first withdrawals in 2011 or 2012. The pool of GMWB owners who have not yet taken their withdrawals is shrinking.

The last row of the Table 2-4 provides the percent of owners taking withdrawals in all subsequent years, based on contracts where the first withdrawal occurred between 2007 and 2011 and with withdrawals continuing every year through 2012.

For example, 83 percent of 68-year-old owners who purchased their annuities in 2007 and took their first withdrawals between 2007 and 2011 continued to take withdrawals every year through 2012. Overall, once owners begin to take withdrawals, they are more likely to utilize the lifetime withdrawal benefit, provided they do not surrender their contracts in later years.

Table 2-5 provides the history of first withdrawals of 2008 buyers over the last five years. Similar to the 2007 owners, withdrawal rates are highest in the first year of ownership, generally dropped into the 10 to 15 percent range during the second year of ownership, and then fell into the single digits for the third and following years of ownership. The only variation was around ages 70 and 71, where we see an increase due to RMDs; and, for owners over age 71 in 2010, whose withdrawal rates were typically in the 10 to 20 percent range.

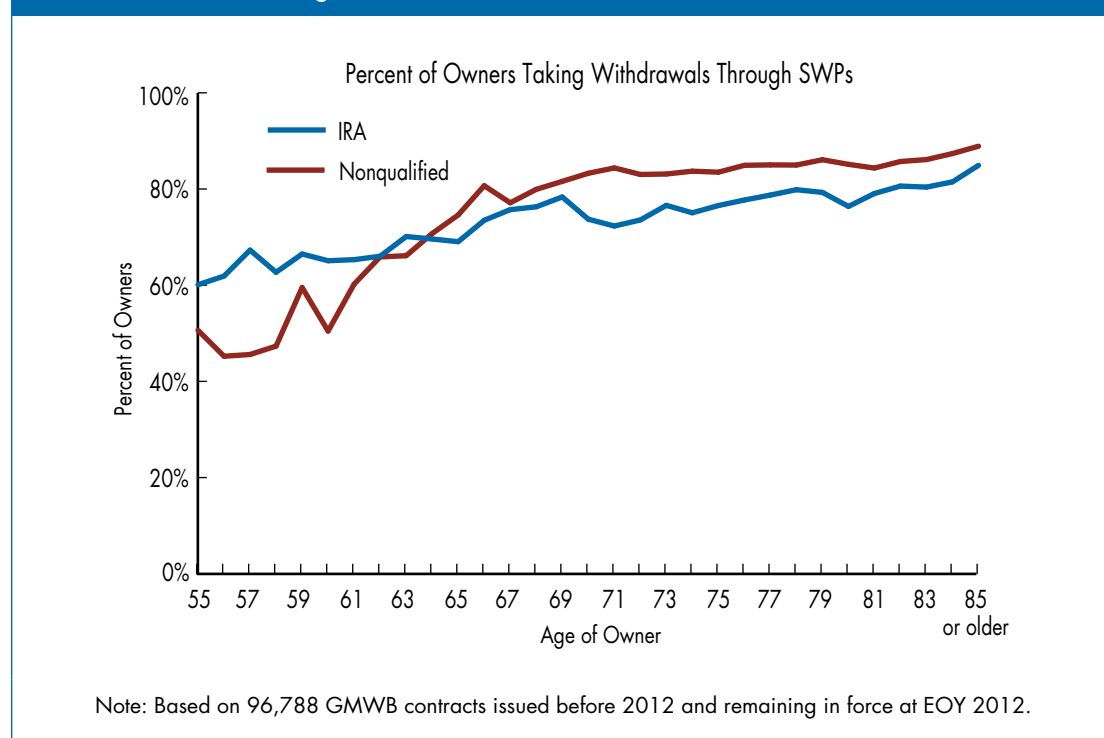
		Age at Purchase																		
Withdrawals started at	Age	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57		17%																		
Age 58		5%	14%																	
Age 59		6%	7%	13%																
Age 60		5%	10%	13%	25%															
Age 61		6%	4%	4%	10%	22%														
Age 62			4%	7%	5%	10%	24%													
Age 63				5%	5%	5%	15%	28%												
Age 64					3%	6%	6%	10%	25%											
Age 65						4%	7%	7%	12%	28%										
Age 66							4%	8%	5%	12%	33%									
Age 67								3%	6%	6%	11%	32%								
Age 68									3%	5%	4%	10%	33%							
Age 69										2%	3%	7%	6%	39%						
Age 70											13%	13%	17%	9%	43%					
Age 71												14%	17%	32%	15%	40%				
Age 72													3%	3%	17%	12%	46%			
Age 73														3%	3%	23%	15%	48%		
Age 74															2%	3%	17%	13%	48%	
Age 75																1%	4%	15%	11%	46%
Age 76																	2%	3%	17%	14%
Age 77																		1%	2%	13%
Age 78																			3%	2%
Age 79																				1%
Cumulative		39%	39%	43%	49%	47%	55%	56%	50%	53%	63%	76%	77%	85%	81%	80%	84%	80%	82%	76%
Percent of owners taking withdrawals in all subsequent years		80%	77%	83%	80%	84%	78%	78%	83%	85%	82%	88%	87%	89%	88%	86%	86%	86%	86%	85%

Note: Based on a constant group of 5,900 contracts issued in 2008 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2011, with withdrawals continuing every year through 2012.

## Systematic Withdrawal Activity

Systematic withdrawal plans or programs (SWPs) are a reliable measure of owners' intentions to continue withdrawals once they have taken their first withdrawals. It is important to compare the owners who took withdrawals through an SWP to those who took random or occasional withdrawals. All insurance companies allow GMWB owners to use SWPs to make withdrawals of the guaranteed withdrawal amount. So, withdrawals through SWPs can be viewed as customers' affirmations to take withdrawals on a continuous basis and are a strong indication that the customers are utilizing the GMWB.

**Figure 2-12: GMWB Withdrawals With SWPs**



Overall, 77 percent of GMWB owners who took withdrawals used an SWP. Nearly three fourths (74 percent) of IRA owners and 82 percent of nonqualified owners who took withdrawals used an SWP. Older GMWB owners are more likely to take withdrawals through SWPs; and younger owners — particularly nonqualified owners under age 60 — are more likely to take withdrawals on a lump-sum or occasional basis (Figure 2-12). After age 70, owners taking withdrawals from nonqualified annuities tend to use more SWPs; 89 percent of nonqualified owners aged 85 or older used SWPs.

Table 2-6 shows the median withdrawal amount for occasional and SWP withdrawals for both qualified and nonqualified contracts. Though the median withdrawal amount should vary by the benefit base amount and the number of years of guaranteed withdrawal, it appears, from looking at median withdrawal amounts, that younger nonqualified owners use shorter guaranteed withdrawal periods than do older owners.

**Table 2-6: GMWB Withdrawal Types and Median Amount by Source of Funds**

Age	Occasional Withdrawal Median Withdrawal Amount		Systematic Withdrawal Median Withdrawal Amount	
	IRA	Nonqualified	IRA	Nonqualified
Under 60	\$8,351	\$10,568	\$5,186	\$7,834
60–69	\$8,451	\$7,518	\$8,037	\$6,431
70 or more	\$5,000	\$7,444	\$4,505	\$5,400
<b>Total</b>	<b>\$6,278</b>	<b>\$7,872</b>	<b>\$5,459</b>	<b>\$5,748</b>

Note: Based on 100,173 GMWB contracts issued before 2012 and remaining in force at EOY 2012 with withdrawals in 2012. Occasional withdrawal data are based on contracts only taking occasional withdrawals, and SWP withdrawal data are based on contracts taking only systematic withdrawals.

GMWB contracts with only systematic withdrawals in 2012 totaled \$656.3 million. Contracts with only occasional withdrawals in 2012 totaled \$331.2 million and contracts with both occasional and systematic withdrawals totaled \$129.8 million in 2012. Owners aged 70 or over accounted for half of the total amount withdrawn in 2012 (Table 2-7). Owners under age 60 were responsible for only 11 percent of the total withdrawal amount. Many of these GMWB owners — particularly those who take occasional withdrawals — are partially surrendering their contracts.

**Table 2-7: GMWB Withdrawal Amounts as Percent of Total Withdrawal Amount**

Age	Occasional Withdrawal		Systematic Withdrawal		Both Occasional and Systematic Withdrawal	
	IRA	Nonqualified	IRA	Nonqualified	IRA	Nonqualified
Under 60	4%	2%	3%	1%	1%	0%
60–69	9%	3%	15%	6%	4%	1%
70 or more	8%	4%	20%	14%	3%	2%
<b>Total</b>	<b>21%</b>	<b>9%</b>	<b>38%</b>	<b>21%</b>	<b>8%</b>	<b>3%</b>

Note: Based on 100,173 GMWB contracts issued before 2012 and remaining in force at EOY 2012 with withdrawals in 2012.

## Percentage of Benefit Maximum Withdrawn

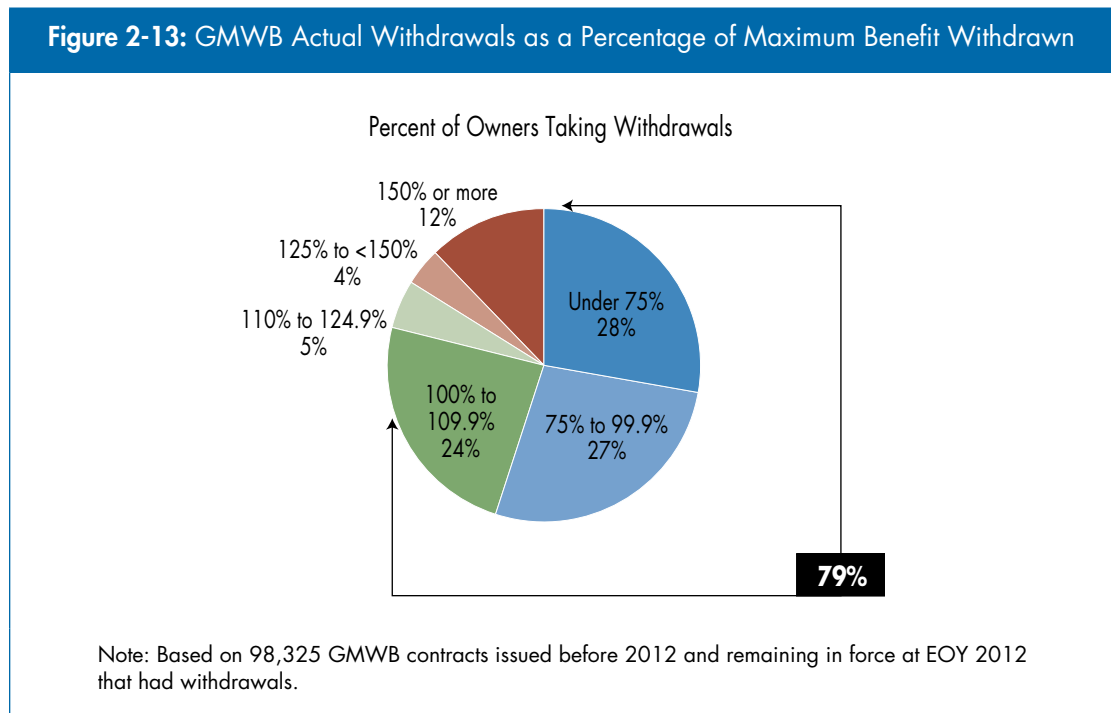
GMWB riders provide a specified annual withdrawal amount for a certain period of time, typically at a withdrawal rate of 7 to 10 percent of the benefit base. The rider ensures protection of a minimum floor of income against adverse market performance during that period. However, if the owner withdraws more than the maximum allowed withdrawal amount in a contract year, it is considered an excess withdrawal. Excess withdrawals trigger an adjustment of a benefit's guaranteed amount, which reduces the benefit base and ensuing withdrawal amount for subsequent years.

LIMRA asked participating companies to provide this maximum amount as of BOY 2012. 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 estimated the maximum amount.

In this section, we will look at the relationship of customers' actual withdrawal amounts in calendar-year 2012 to the maximum withdrawal amount allowed in the contract. However, there is some imprecision in our measurement of the maximum annual withdrawal amounts, because benefit bases can vary under certain circumstances during the year (e.g., if additional premium is received, or positive market returns step up the benefit base). As a result, we used a conservative measure of excess withdrawals: if the partial withdrawal amount during the calendar year exceeded the maximum annual withdrawal allowed in the contract as of BOY by 10 percent or more, then we considered the withdrawals to exceed the benefit maximum. We calculated the maximum withdrawal amount based on reported maximum annual withdrawal percentage multiplied by average benefit base.

For percentage of benefit maximum withdrawn, we looked at the relationship of customers' actual withdrawal amounts in calendar-year 2012 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 them to have exceeded the benefit maximum.

Figure 2-13 shows the percent of owners taking withdrawals — and their withdrawal amounts — in relation to maximum withdrawal amount allowed in the contracts.

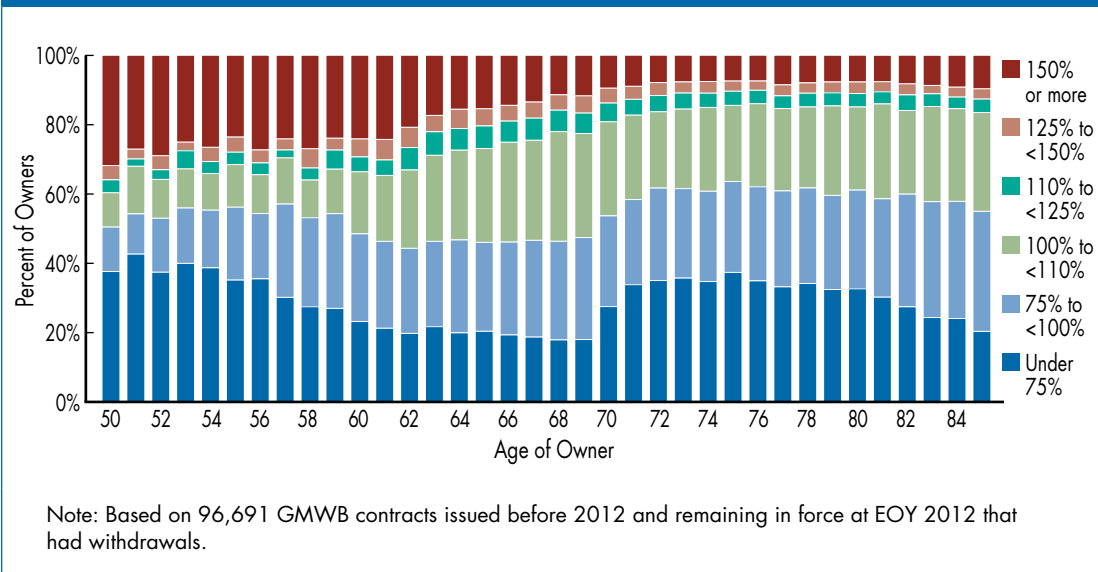


Around 80 percent of owners that took withdrawals in 2012 withdrew within 110 percent of the maximum withdrawal amount allowed in the contract. Five percent of owners withdrew 110 to less than 125 percent of the maximum amount allowed. Some of these owners, if older, may have remained within the withdrawal limits allowed because of higher RMDs from their IRA annuities. However, around 16 percent of owners taking withdrawals exceeded the maximum withdrawal amount by 25 percent or more. It is safe to assume that most of these owners took excess withdrawals that would negatively impact their withdrawal benefits in the future.

Looking at the age of owners and their withdrawal amount in relation to maximum withdrawal amount allowed, we see that most GMWB owners' withdrawal amounts are likely to remain within 125 percent or lower of the amount allowed (Figure 2-14).



**Figure 2-14: GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age**



One quarter of owners took less than 75 percent of the maximum withdrawal amount allowed in the contract. Three in 10 (29 percent) of owners taking less than 75 percent of their maximum withdrawal amount took withdrawals before age 70. However, 71 percent of these owners aged 70 and older took withdrawals.

It is notable that the percent of owners taking 150 percent or more than the maximum withdrawal amount allowed in the contracts is lowest for owners aged 71 and older — around 7 to 10 percent for each individual age (Figure 2-14).

Almost one third of GMWB owners under age 60 taking withdrawals exceeded 125 percent or more of the benefit maximum (Table 2-8). It is likely that many of these younger owners intended to partially surrender their contracts as opposed to taking regular withdrawals under the terms of the GMWB benefit.

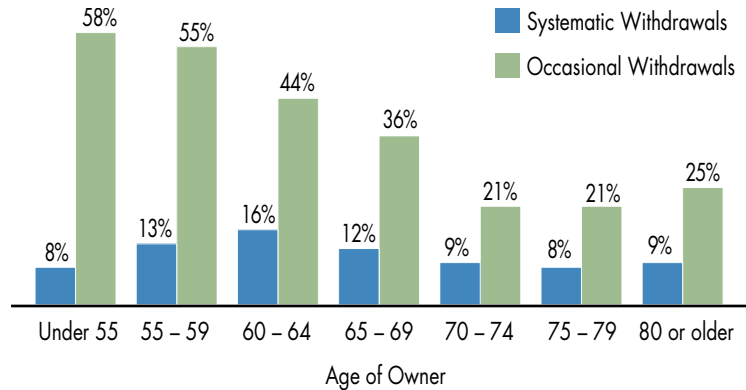
**Table 2-8: GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age Groups**

Age	Percent Taking Withdrawals to Maximum Annual Benefit Amount					
	Under 75%	75% to <100%	100% to <110%	110% to <125%	125% to <150%	150% or more
Under 60	35%	19%	12%	3%	4%	27%
60–69	20%	27%	27%	6%	5%	15%
70 or more	31%	28%	25%	4%	3%	8%
<b>All ages</b>	<b>28%</b>	<b>27%</b>	<b>24%</b>	<b>5%</b>	<b>4%</b>	<b>12%</b>

Note: Based on 98,325 GMWB contracts issued before 2012 and remaining in force at EOY 2012.

On the other hand, 1 in 5 owners between ages 60 and 69 taking withdrawals exceeded 125 percent or more of their benefit maximum. Only 1 in 10 owners aged 70 or older took withdrawals that exceeded 125 percent of the maximum withdrawal amount allowed in 2012. A portion of these owners may be taking excess withdrawals to satisfy RMDs, and many GMWBs do not penalize IRA annuity owners over age 70½ for taking excess withdrawals if they do so to satisfy IRS RMDs.

Which method owners use for withdrawals — systematic or occasional — is a strong indicator of whether owners are likely to exceed the benefit maximum allowed in their contracts. Most excess withdrawals exceeding 125 percent of the annual benefit maximum amount are occasional withdrawals by owners under age 70 (Figure 2-15).

**Figure 2-15: GMWB Withdrawals to Maximum Annual Benefit Amount by Age**

Note: Based on 98,309 GMWB contracts issued before 2012 and remaining in force at EOY 2012 that had withdrawals.

Overall, one third of owners who took occasional withdrawals had excess withdrawals of 125 percent or more of benefit maximum, while only 10 percent of owners with SWP withdrawals had similar excess withdrawals. Moreover, 63 percent of the occasional withdrawals exceeding the benefit maximums came from owners under age 70. However, this is a relatively small percentage of contracts. To put it into context, owners under age 70 who took withdrawals occasionally were just 11 percent of the total number of owners taking withdrawals in 2012. This also supports our earlier contention that many of these younger GMWB owners were very likely in the process of surrendering their contracts. We will see further evidence in the persistency of GMWB contracts later in the chapter.

We also examined how the proportion of the benefit maximum withdrawn varies by contract size. We expected that larger contract sizes would be linked to wealthier and more sophisticated owners who are more likely to work with financial advisors and less inclined to exceed the GMWB benefit maximum. They might also be less likely to take out an amount well below the maximum, thereby passing up a potential opportunity to maximize the value of the benefit. Taking out significantly more or less than the benefit maximum could represent an “inefficient” (or sub-optimal) utilization of the guarantee.

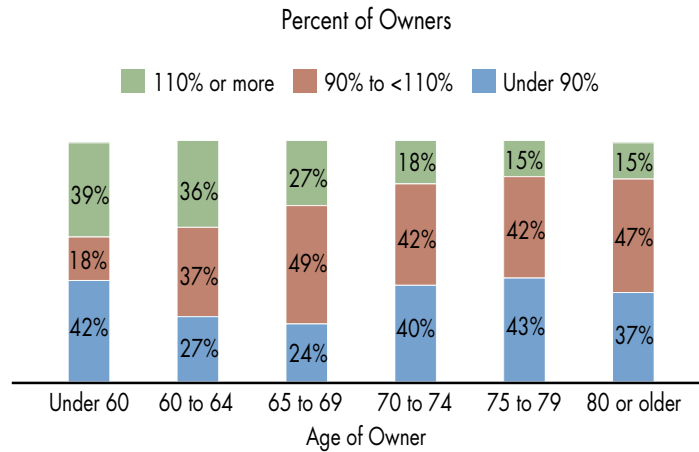
Figures 2-16 and 2-17 illustrate the proportion of owners withdrawing amounts within +/-10 percentage points of the benefit maximum, and the proportion of owners withdrawing amounts above or below this range, by age and contract size. If efficiency is positively associated with contract value, then the proportion taking 90 percent to less than 110 percent of the benefit maximum should rise as contract value rises.

- The proportion of owners under age 60 taking 90 percent to less than 110 percent of the benefit maximum increases slightly, from 18 percent of owners with contract sizes under \$100,000 to 26 percent of owners with contracts worth \$100,000 or more.
- However, owners aged 65 or older (who make up 83 percent of all individuals taking withdrawals), taking 90 percent to less than 110 percent of the benefit maximum with contracts worth \$100,000 or more, had average withdrawals rates that were 3 to 6 percent lower than owners with contract sizes under \$100,000.

As noted earlier, the relationship between efficiency and contract size is limited to the youngest owners under age 60; and even among this group, the greatest difference across contract sizes is not the increasing proportion taking amounts close to the benefit maximum, but rather the shrinking proportion taking amounts well above the benefit maximum. For example, although the proportion of owners under age 60 taking more than 110 percent of the benefit maximum drops 12 percentage points between contract sizes under \$100,000 and contract sizes of \$100,000 or more, the proportion taking 90 percent to less than 110 percent of the benefit maximum increases only 8 percentage points. There were similar increases in the percentage taking less than 90 percent of the benefit maximum across most age groups.

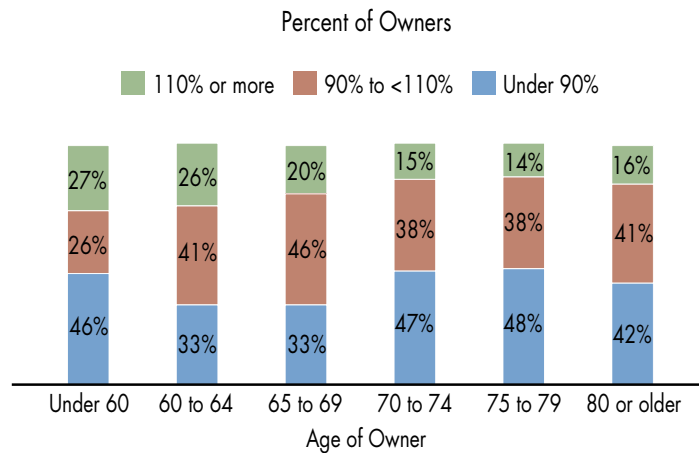
In short, owners of VAs with higher contract values not only are less likely than those with lower contract values to exceed the benefit maximum, but also do not avail themselves of the full potential withdrawal amounts the GMWB offers. For both GLWBs and GMWBs, larger contract sizes are associated with a greater tendency toward withdrawals that are less than the benefit maximum.

**Figure 2-16: GMWB Withdrawals to Maximum Annual Benefit Amount by Age, Contracts Less Than \$100,000**



Note: Based on 62,445 GMWB contracts issued before 2012, still in force at EOY 2012, with withdrawals in 2012.

**Figure 2-17: GMWB Withdrawals to Maximum Annual Benefit Amount by Age, Contracts \$100,000 or More**



Note: Based on 35,880 GMWB contracts issued before 2012, still in force at EOY 2012, with withdrawals in 2012.

We have seen some key indications for understanding the withdrawal behavior of GMWB owners:

- Overall withdrawal activity, even the composite withdrawal activity by age cohort, is not a reliable measure of actual risk. The measure is skewed downward particularly because the majority of current GMWB owners are under age 70, and most of them have not yet started withdrawals.
- Source of funding (i.e., qualified or nonqualified) is a key determinant as to when owners will start their withdrawals. A large percentage of owners with qualified annuities start taking their withdrawals at age 71 and 72 to meet their RMDs. In contrast, nonqualified contracts show an incremental and steady increase in the number of owners taking withdrawals.
- Once owners start to take withdrawals, they are likely to continue withdrawals.
- Three in 4 owners take withdrawals through SWPs. When owners use SWPs, they are also likely to make withdrawals within the maximum amount allowed in their contracts.
- Older owners are more likely to take withdrawals through SWPs.
- Younger owners are more likely to take occasional withdrawals. Many of these occasional withdrawals exceed the maximum benefit amount allowed in the contracts. Many of these occasional withdrawals point to a partial surrender of contracts. Younger owners are also more likely to take withdrawals exceeding the benefit maximum.

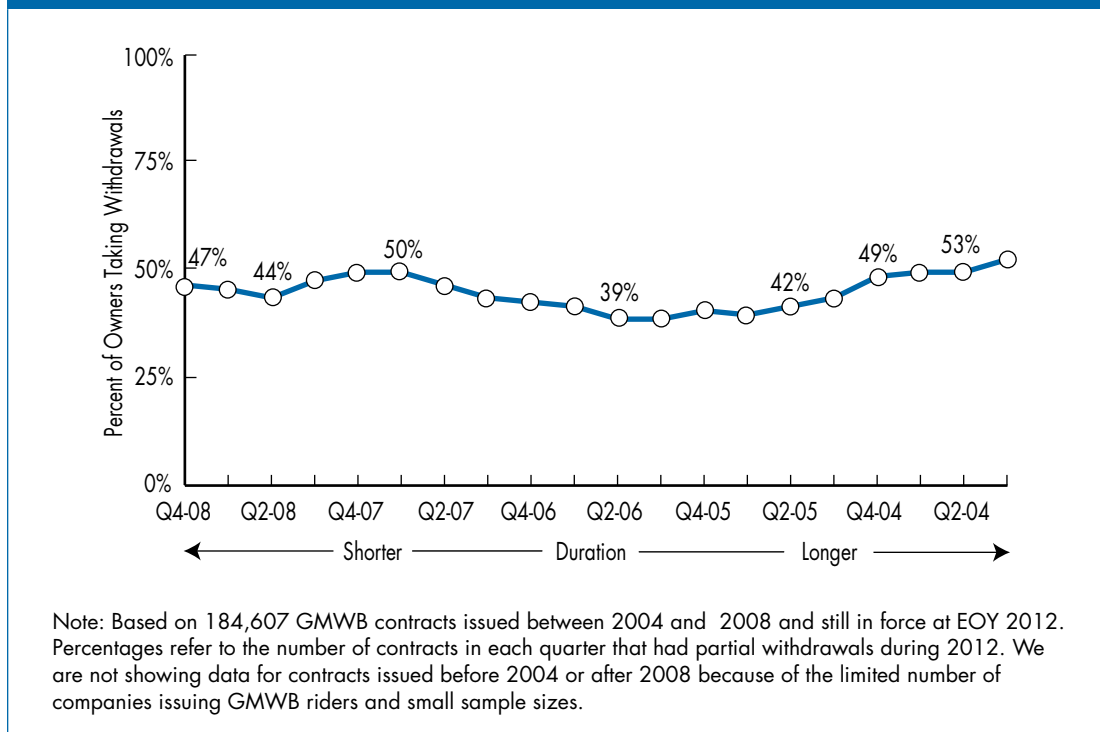
It is important for companies to look at their own business and evaluate how their customer mix can impact risk and cash flow. For insurance companies, qualified annuities could cost more to administer than nonqualified contracts as more customers begin taking withdrawals at age 70½, even though companies may receive fees on benefit bases for minimum withdrawal guarantees. Also it is clear that companies assume more risk from customer withdrawal behavior on assets funded by qualified money than they assume from a nonqualified block of business. As more investors buy and hold qualified annuities, the disparity between the risk and cost of offering qualified annuities and nonqualified annuities will continue to increase.

## Withdrawal Activity by Duration

Contract duration (i.e., how long ago the contract was purchased) is important for determining what proportion of new GMWB buyers or existing GMWB owners take withdrawals from their annuities. Companies can also use contract duration to gauge their company's marketing effectiveness, and value in setting expectations with customers. In some cases, immediate utilization of the GMWB is appropriate for certain customers, but there are also circumstances in which delayed withdrawals make 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 could also facilitate internal forecasts by estimating when and how many of the GMWB customers might take withdrawals, and the resulting cash flow needed to manage the existing book of business.

Almost half of the GMWB owners who bought their contracts in 2008 took withdrawals from their annuities in 2012 (Figure 2-18). As the contract duration increases, withdrawal activity remains within a fairly tight range, from a low of 39 percent in early 2006 to a high of 53 percent for the older contracts issued in 2004.

**Figure 2-18: GMWB Overall Utilization Rates by Contract Duration**



Companies can use incremental rates of overall utilization by contract duration to estimate future cash outflows.

More contracts issued in 2007 or later allow for higher maximum withdrawal percentages; for example, it is common to see a maximum withdrawal percentage of 7 percent in contracts issued in 2007 or later, instead of 5 percent in contracts issued before 2007. This may have influenced these owners to start their withdrawals sooner. Also, step-up provisions and bonuses are less frequent

among recently issued contracts. All of these reasons may contribute to higher withdrawal activity in more recently issued contracts.

However this incremental growth pattern in GMWB contracts differs from GLWBs (where we see a steady increase in the percent of owners taking withdrawals for longer duration contracts). It appears that a significant portion of GMWB owners taking withdrawals are likely to utilize their withdrawal benefits within one to two years of purchase. After that the incremental growth over the duration is very slow, caused by owners reaching RMD age. However, this generalization assumes that most customers maintain their withdrawal behavior, at least in the short term.

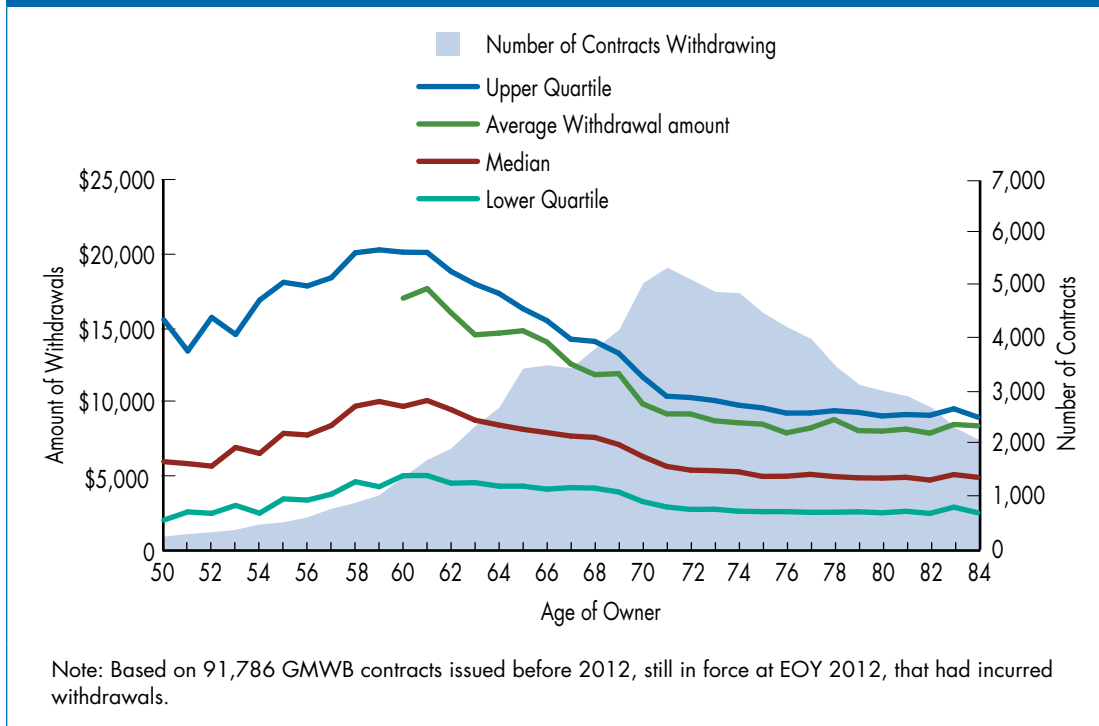
### **Average Amount of Withdrawals**

The median amount of withdrawals from GMWB contracts was \$6,000 for contracts issued before 2012 that were in force at EOY 2012. The average amount of withdrawals was \$10,632.

Some owners in their 50s took withdrawals of more than \$15,000 from their contracts (Figure 2-19). However, there were not a lot of contracts that had withdrawals from this age group so data should be interpreted accordingly. As a result, we only show average withdrawal amounts beginning at age 60. It is safe to assume that many of these withdrawals were partial surrenders of the contracts, unconnected to regular withdrawals as part of the GMWB benefit and were taken sporadically, not through an SWP. A comparison of the average amount withdrawn to the average contract value shows that the average withdrawal percentage — 10 to 20 percent — is very high for younger owners.



**Figure 2-19: GMWB Average Amount of Withdrawals by Owners' Current Age**



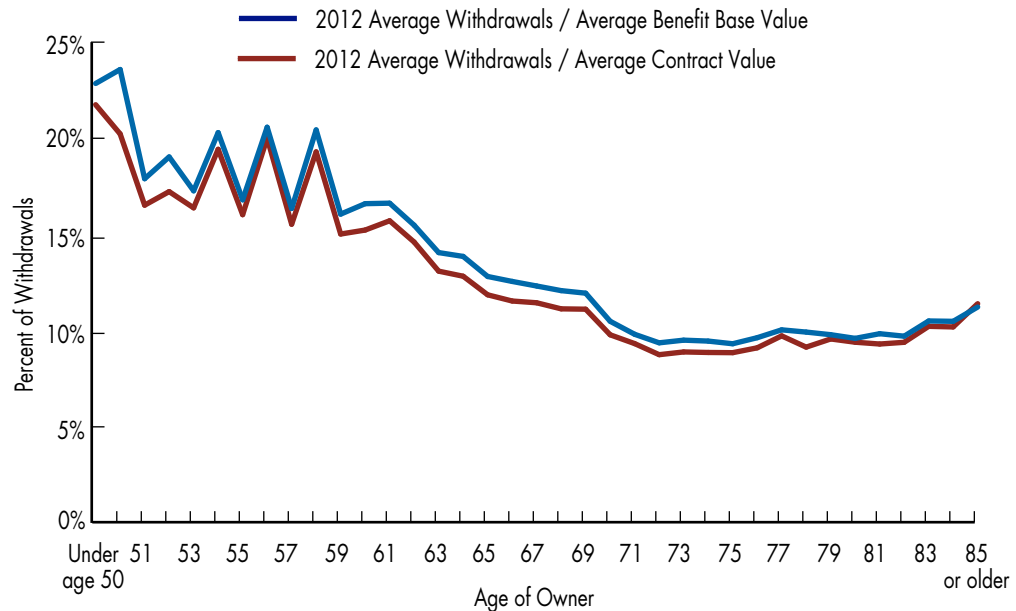
However, after age 60, as the number of GMWB owners increases, a more sustainable withdrawal pattern and average withdrawal amount emerges. The withdrawals by owners between age 60 and 69 are a mix of both occasional withdrawals and systematic withdrawals. A smooth trend appears particularly for owners over age 70 with their average withdrawal amounts around \$8,500. Average withdrawal amounts for this age group are commensurate with (or slightly above) the maximum withdrawal amount supported by the GMWB benefit base.

The median amount of withdrawals from GMWB contracts was **\$6,000** for contracts issued before 2012 that were in force at EOY 2012.

### Ratio of Withdrawal to Contract Value and Benefit Base

For most GMWB contracts, the ratio of average withdrawal amount to average benefit base is slightly higher than the ratio of withdrawal to average contract value (average of contract values at BOY and EOY) (Figure 2-20). This improvement over 2011 is the result of positive market gains in 2012. The fluctuations in the ratios for owners under age 60 are due to low sample sizes. On average, the gap between the two ratios was 1 percent or less in 2012, particularly for owners aged 67 and older.

**Figure 2-20: GMWB Withdrawal Amount to Average Contract Value and Benefit Base**



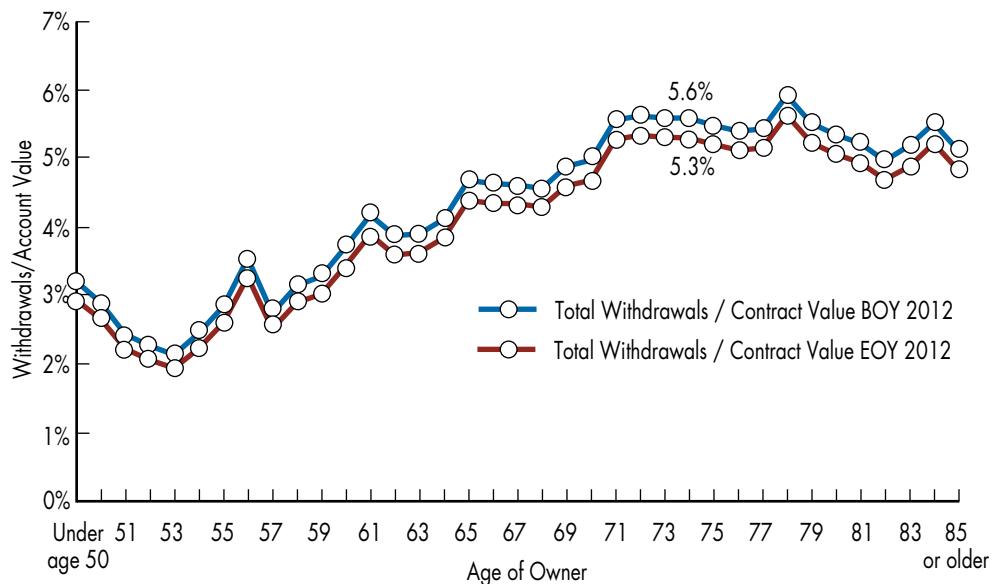
Notes: The ratio of withdrawals to average contract values is calculated as the average of withdrawal amounts divided by the average of beginning and ending contract values. The ratio of withdrawals to average benefit base is calculated as the average of withdrawal amounts divided by the average of beginning and ending benefit bases. In both cases, only the 100,192 GMWB contracts that were sold before 2012, were still in force at EOY 2012, had withdrawals in 2012, and had benefit base information were considered.

## Ratio of Withdrawal Amount to Contract Value

Another measure of GMWB risk originating in customer behavior can be ascertained by comparing the ratio of withdrawal amount to BOY contract values and the ratio of withdrawal amount to EOY contract values. This measure can be calculated at two levels. First, the risk associated with all contracts in the book can be ascertained by analyzing the ratio of total withdrawals in 2012 to total contract values at BOY and EOY, for all contracts in force. Second, the same ratios can be computed for only the subset of contracts that experienced withdrawals in 2012. The first measure provides a view of risk from total withdrawals in terms of the total book of business and how total withdrawals (cash outflow) impact the overall risk, while the second provides an estimation of risk from withdrawals among the contracts that are in the withdrawal mode.

In 2012, the ratio of total withdrawal amounts to BOY contract values for all contracts in force throughout the year was higher than the corresponding ratio for EOY contract values across all ages (Figure 2-21). Owners took \$1.1 billion in withdrawals at a rate of 4.6 percent from \$23.2 billion, based on the BOY account values of in-force contracts. Based on EOY account value, the rate of withdrawals or outflow was 4.3 percent.

**Figure 2-21: GMWB Total Withdrawals to Total Contract Value (All Contracts)**



Note: Based on 226,048 contracts sold before 2012 that were still in force at EOY 2012.

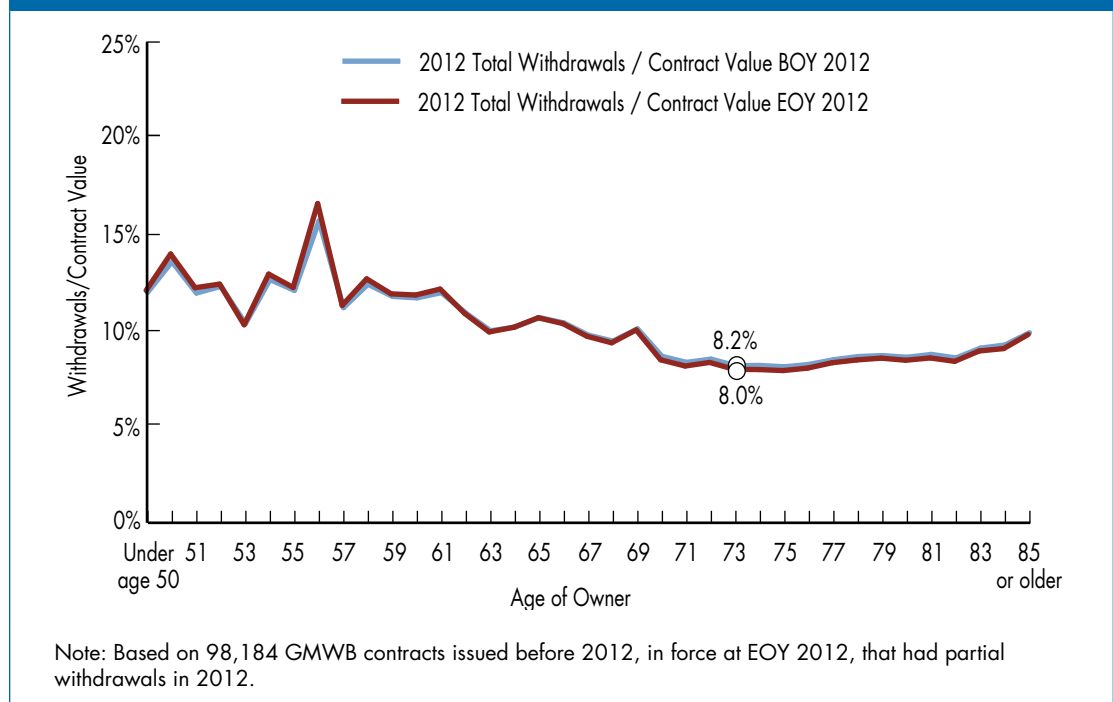
The ratio of total withdrawals to contract values declined during 2012.

As long as the ratio of withdrawal amounts to account values at EOY remains less than the ratio at BOY, it means that the total contract values improved due to investment gains despite withdrawals, and the risk related to withdrawals from contract values has improved. Throughout 2012, the difference remained at around 30 basis points.

For example, customers aged 74 held \$740 million in 7,260 GMWB contracts at BOY. The total withdrawal amount taken during 2012 was \$41.5 million. The ratio of total withdrawals to contract values at BOY was 5.6 percent. However, due to investment gains during the year, the total contract value increased to \$781 million. The ratio of withdrawal amounts to contract values for 74-year-old owners thereby improved from 5.6 percent at BOY to 5.3 percent at EOY.

Companies can also examine the risks associated with the subset of contracts that had withdrawals in 2012. With the equity market and fixed-income fund gains in 2012, the ratio of withdrawals to contract value remained relatively unchanged for contracts that had withdrawals (Figure 2-22). For example, among owners aged 73 who made withdrawals in 2012, the ratio declined from 8.2 percent of the contract value at BOY to 8.0 percent of the contract value at EOY. Overall for all contracts that had withdrawals in 2012, there was an average 1 percent growth in account values for the year.

Figure 2-22: GMWB Total Withdrawals to Total Contract Value (for Contracts With Withdrawals Only)



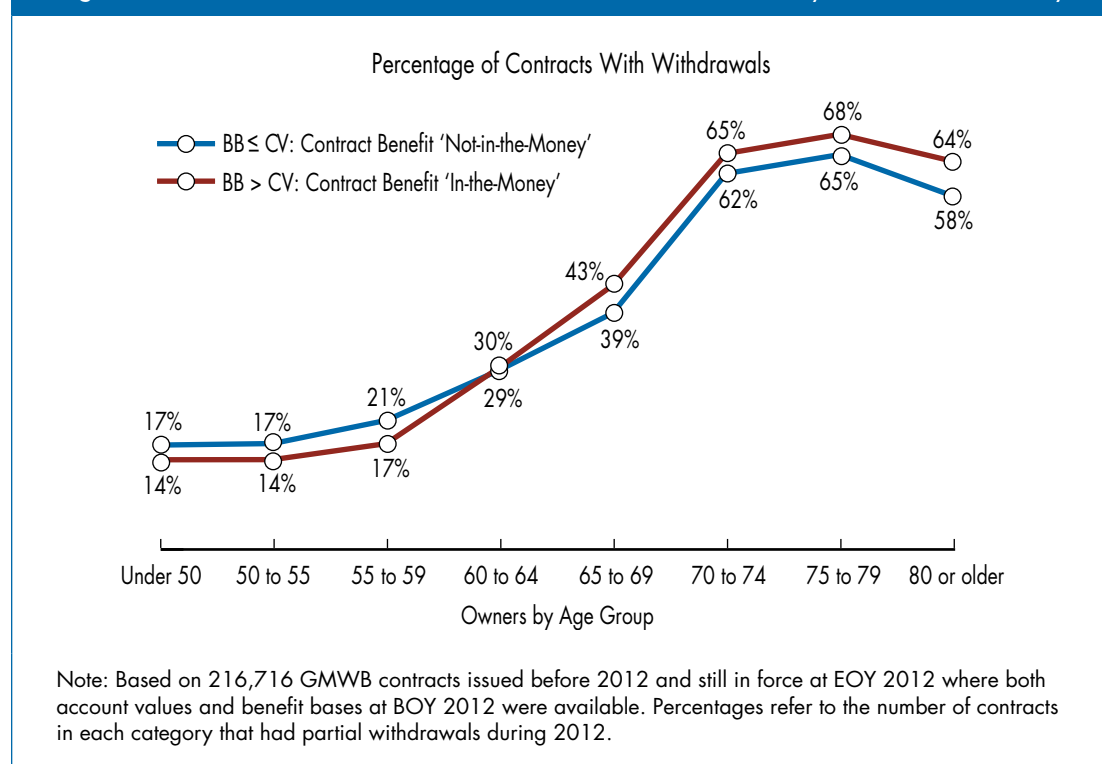
## Withdrawal Activity in Contracts in-the-Money or Not-in-the-Money

The 2008–2009 market downturn caused massive losses in account values of annuity contracts, causing most GMWB benefits to be in-the-money — meaning the benefit base was higher than the account value. Many of these contracts experienced a strong market recovery in the later part of 2009, a moderate market gain in 2010, a flat market in 2011, and then moderate gains in 2012. At EOY 2012, less than half (46 percent) of GMWB contracts had benefit base amounts greater than the account values. Our findings indicate that market volatility, or mixed market gains that resulted in some GMWB contract benefits being in-the-money, did not significantly impact customers’ withdrawal behaviors in 2012.

A contract benefit being in-the-money appeared to have no influence on withdrawal behavior of GMWB owners in 2012.

Among the 216,716 GMWB contracts issued before 2012 and still in force at EOY 2012, there was no strong indication that average owners were motivated to take withdrawals from contracts that were in-the-money versus contracts not-in-the-money (Figure 2-23). The overall utilization rate for contracts in-the-money at BOY was 45 percent. For the 25 percent of all GMWB contracts where benefits were not-in-the-money at BOY 2011, the utilization rate during the year was 46 percent. The percent of owners taking withdrawals when contracts are in-the-money is higher among older customers, for example, aged 60 or over.

**Figure 2-23: GMWB Withdrawal Rates for Contracts in-the-Money vs. Not-in-the-Money**



Whether or not contracts are in-the-money appears to have little impact on owner withdrawal behavior. For contracts that are in-the-money, we believe that the percent of owners taking withdrawals is more a function of older contracts purchased before the market crisis in 2008. There are a few main reasons for the withdrawal activity among these contracts.

First, the contracts issued between 2005 and 2008 (70 percent of all GMWB contracts) were more likely to be in-the-money, as these contracts lost the most value in the market crisis. We have seen before that the percent of owners taking withdrawals is really a function of owner age and source of funds. The owners who bought their annuity before 2008 are now older, and many of them needed to take RMDs, irrespective of whether or not their contracts were in-the-money.

Second, though owners over age 60 show more withdrawal activities, owners under age 60 do not demonstrate any indication of increased withdrawal activity.

Third, we have seen that once owners start to take withdrawals, they are more likely to continue their withdrawals in subsequent years. The owners who started withdrawals a few years ago are more likely to have contract values in-the-money as their account values, pressured by cash outflows from withdrawals, are more prone to suffer from market volatility than owners who started withdrawals in recent years.

Fourth, we did not see any heightened withdrawal activity looking back just after the market crisis in 2008 and 2009. In fact fewer owners took withdrawals from their qualified annuities, as RMD rules were relaxed in 2009.

## Utilization by Selected Characteristics

Utilization of GMWBs varies substantially across a variety of owner, contract, and benefit characteristics for contracts sold before 2012 (Table 2-9). These patterns are consistent across different utilization measurements, such as the percent of contracts with systematic withdrawals and the withdrawal rate weighted by contract value.<sup>15</sup>

**Table 2-9: GMWB Utilization by Selected Characteristics**

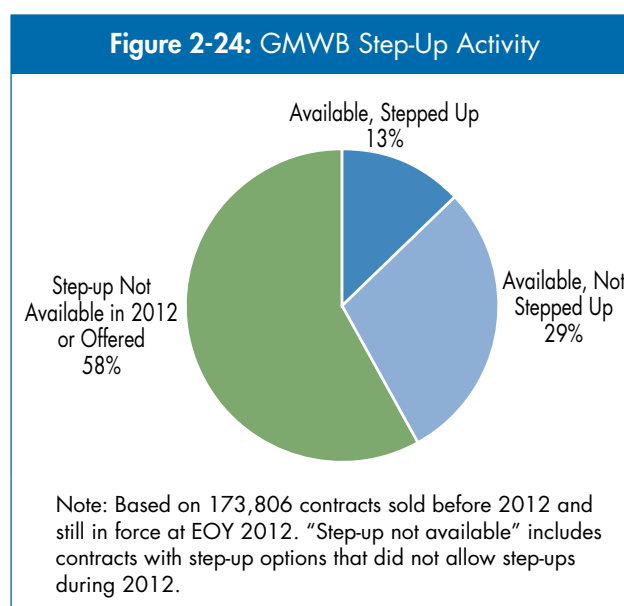
	Unweighted		Weighted by 2012 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
<b>Age of owner</b>				
Under 50	14%	7%	26%	14%
50 to 54	15%	8%	20%	12%
55 to 59	17%	11%	25%	18%
60 to 64	29%	19%	37%	27%
65 to 69	41%	32%	47%	36%
70 to 74	64%	49%	65%	49%
75 to 79	67%	54%	65%	51%
80 or older	61%	52%	57%	46%
<b>Market type</b>				
IRA	50%	37%	56%	41%
Nonqualified	36%	29%	38%	30%
<b>Contract value, EOY 2012</b>				
Under \$25,000	39%	28%	47%	32%
\$25,000 to \$49,999	44%	35%	48%	37%
\$50,000 to \$99,999	46%	36%	49%	38%
\$100,000 to \$249,999	45%	34%	48%	36%
\$250,000 to \$499,999	48%	37%	50%	39%
\$500,000 or more	46%	34%	47%	34%
<p>Note: Based on 226,048 contracts sold before 2012 and still in force at EOY 2012. Percentages refer to the number of contracts in each category that had partial (or systematic) withdrawals during the year. Systematic withdrawals represent a subset of all partial withdrawals.</p> <p>We have not shown other measures like percent of owners taking withdrawals by channels or asset allocation restrictions in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.</p>				

<sup>15</sup> This measure of utilization should not be equated with the percentage of contract value withdrawn.

- As we saw with GLWBs, older GMWB owners are much more likely to take withdrawals, especially systematic withdrawals, than are younger owners. In part, this activity reflects RMDs from IRAs after age 70½.
- Owners of VAs with larger contract values are also more apt to take withdrawals than owners with smaller contract values.

## Step-Up Activity

Most contracts with GMWBs (93 percent) allow owners to step up the value of their benefit bases one or more times if their contract values have risen or withdrawals are deferred. In general, these step-up options are time-bound; the owner must choose to step up around specified contract anniversaries, and sometimes must wait several years before the first step-up opportunity. Moreover, contract values must actually be higher than benefit bases in order for step-up opportunities to exist. Therefore, not all owners of contracts with step-up options were able to step up the value of their benefit bases during 2011.<sup>16</sup>



Forty-two percent of owners had step-up options available during 2012 (Figure 2-24). Of those, 3 out of 10 chose to step up their benefit bases.

- Recently issued contracts (e.g., 2009 and 2010), which are more likely to be out-of-the-money because of subsequent market growth, are much more likely to have been stepped up in 2012 than older contracts that might be in-the-money. More than 3 out of 4 owners who bought their contracts in 2009 or in 2010 stepped up in 2012.
- Older contracts (e.g., 2005) are less likely to have contract values that exceed benefit bases than are more recent contracts (e.g., 2008 or after). This is because withdrawals have decreased the benefit base value. Therefore, older contracts are less likely to be able to step up the value of their benefit bases.

<sup>16</sup> More recent GMWB designs, introduced during and after 2006, offer more frequent step-up opportunities.



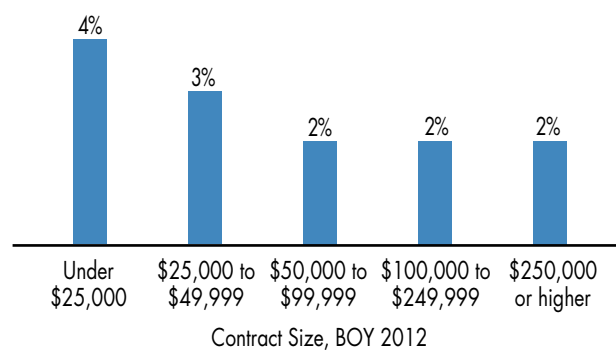
- Two thirds of the GMWB contracts that stepped up were owned by individuals under age 70.
- GMWB contracts issued in 2007 and later are more likely to allow step-ups in the contract as an incentive. Two thirds of the contracts that benefited from step-ups were from these contracts.

## Additional Premium and Net Flows

Many retail VAs allow owners to add premium after issue, though in practice most contracts do not receive ongoing deposits. For some GMWBs, the calculation of the benefit base will incorporate premium that is received within a certain time period after the issue of contract. Among contracts sold in 2012 or earlier:

- Only 3 percent of contracts received additional premium during 2012.
- The average additional premium in 2012 was \$26,111, with a median of \$6,000.
- Younger owners are more likely to add premium than older owners. For example, 6 percent of owners under age 60 added premium for contracts, compared with 1 percent of owners aged 70 or older.
- Three percent of IRAs received additional premium while 2 percent of nonqualified contracts received additional premium.
- Only 4 percent of contracts that had BOY contract values less than \$25,000 received additional premiums while contracts with BOY contract values of \$50,000 or more were half as likely to receive additional premiums (Figure 2-25).

**Figure 2-25: GMWB Percent of Contracts Receiving Additional Premium by Size of Contract**



Note: Based on 226,045 contracts issued before 2012 and still in force at EOY 2012.

Similar to GLWBs, GMWB owners rarely add premium after the second year of owning a contract. Eight percent of a constant group of contracts issued in 2007 added premium in one of the calendar years after issue and only 3 percent added premium two or more years after the year of issue. In addition, following a similar pattern as the GLWBs, younger GMWB owners are more likely to put additional premiums into their contracts.

Premium received in new and existing contracts constituted less than one fifth of the outflows associated with partial withdrawals, full surrenders, deaths, and annuitizations (Table 2-10). The total number of GMWB contracts in force declined about 7 percent during 2012.

**Table 2-10: GMWB Net Flows**

	Dollars (Billions)	Contracts	Average Contract Size
<b>In-force, BOY 2012</b>	\$25.20	247,698	\$101,740
<b>Premium received during 2012</b>			
Newly issued contracts	\$0.41	3,729	\$110,936
Existing contracts	\$0.16	n/a	n/a
<b>Benefits paid</b>			
Partial withdrawals	\$1.17	n/a	n/a
Full surrenders	\$1.77	18,984	\$93,401
Annuitizations	\$<0.1	601	\$151,115
Deaths/Disability	\$0.18	2,093	\$87,110
<b>Investment growth</b>	\$2.51	n/a	n/a
<b>In-force, EOY 2012</b>	<b>\$25.06</b>	<b>229,749</b>	<b>\$109,076</b>

Note: Based on 247,698 contracts. Dollar values for contracts sold before 2012 that terminated during the year were set equal to either BOY contract value (if termination occurred before contract anniversary date) or the anniversary contract value (if termination occurred on or after the contract anniversary date). Dollar values for contracts sold in 2012 that terminated during the year were set equal to the current-year premium.

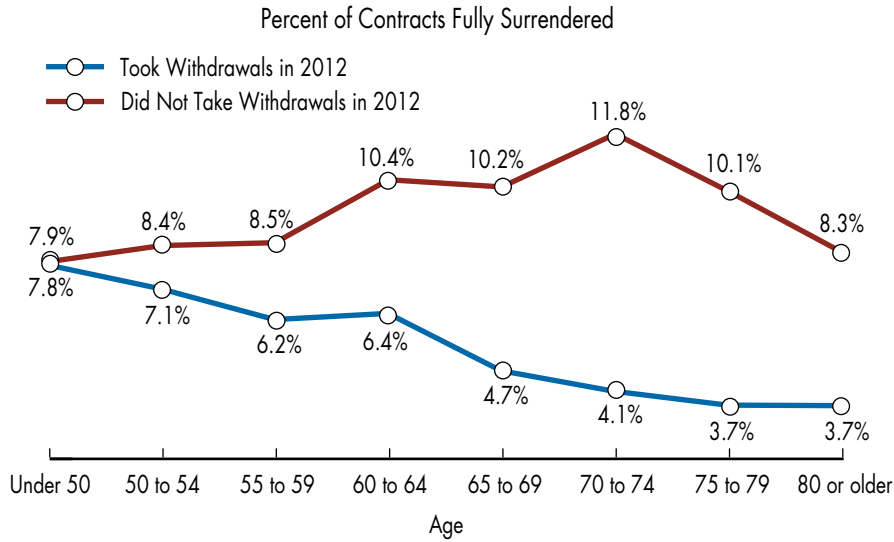
## Persistency

GMWB contract  
surrender rate  
in 2012 was  
**7.7%**.

Surrender rates in 2012 among GMWB contracts issued before 2012 were 7.7 percent and 7.4 percent based on cash surrender value.

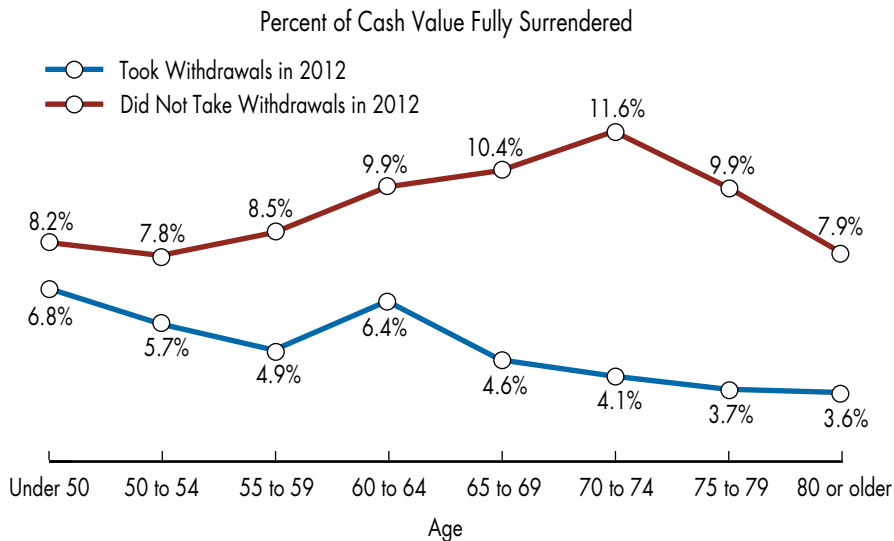
However, owners who did not take withdrawals in 2012 had higher surrender rates. When the GMWB owners, particularly owners over age 70 took withdrawals, the surrender rates are relatively low, around 4 percent (Figures 2-26 and 2-27).

**Figure 2-26: GMWB Contract Surrender Rates by Owners Taking Withdrawals in 2012**



Note: Based on 245,384 GMWB contracts issued before 2012.

**Figure 2-27: GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2012**

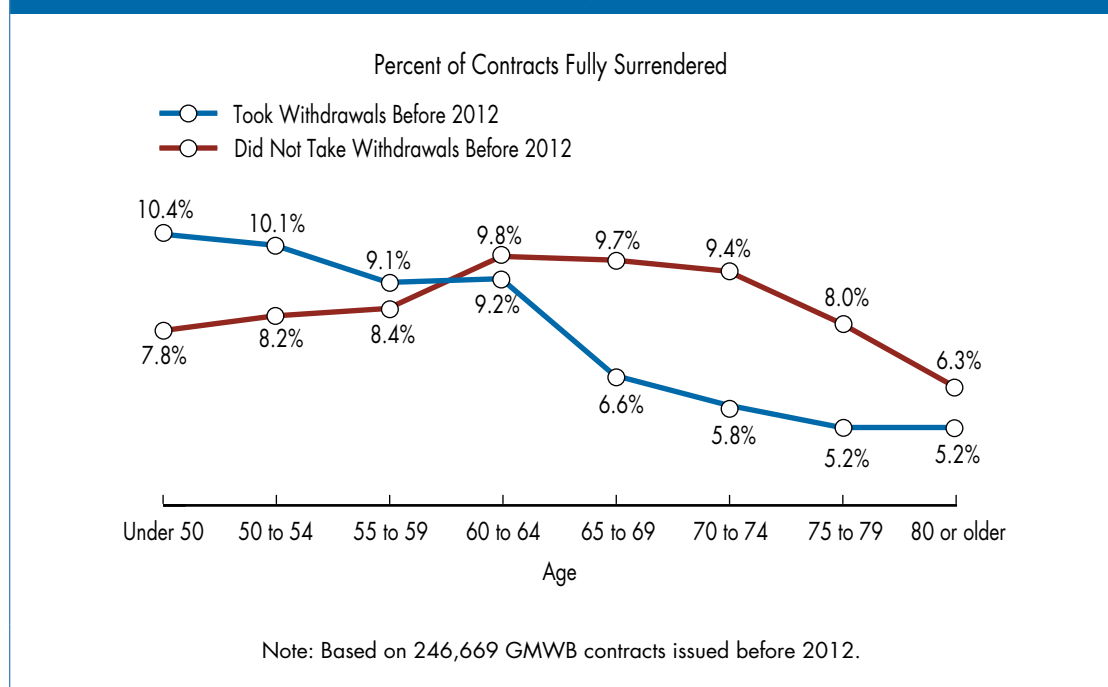


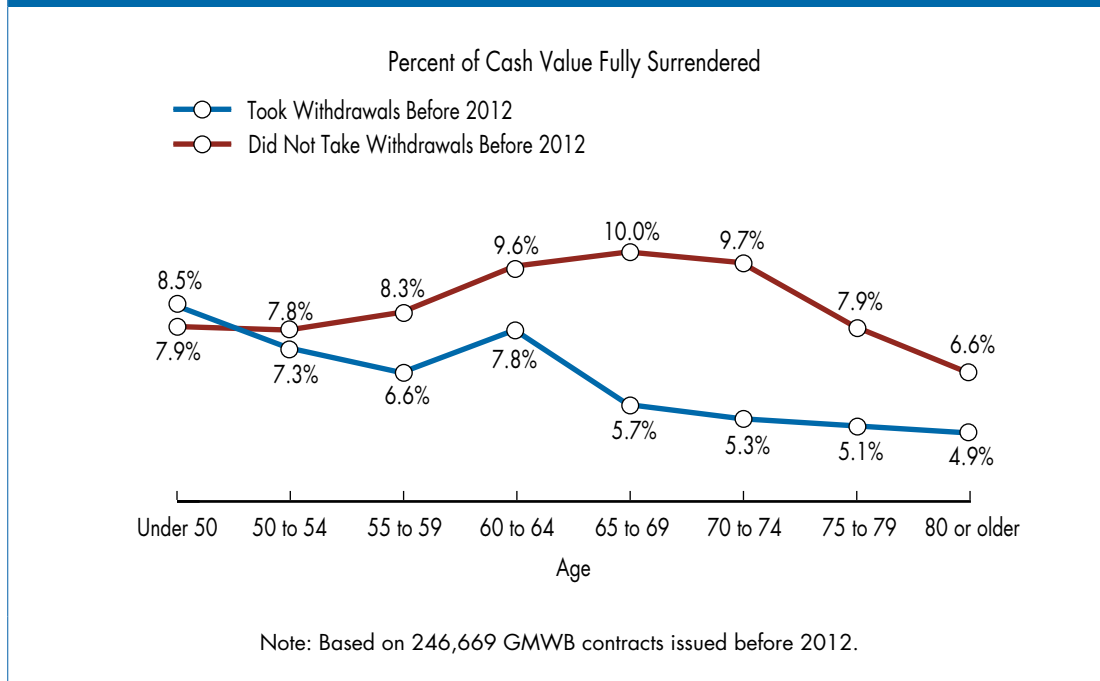
Note: Based on 245,384 GMWB contracts issued before 2012.

Higher surrender rates are also associated with younger owners, particularly those under age 60 who took withdrawals in 2012. We have already shown that even though younger owners own a significant portion of GMWB contracts, they are not likely to take withdrawals. When these younger owners take withdrawals, they typically do so with occasional withdrawals. Moreover, their average withdrawal amount is much higher, and not likely supported by the guaranteed benefit base in their contracts. These facts lead to the conclusion that these younger owners are really practicing partial surrenders. Some of these younger owners might have emergency needs, while others might find the contracts no longer meet their needs.

Past withdrawals can also indicate increased likelihood that younger owners will fully surrender earlier than normal. Figures 2-28 and 2-29 show the contract and cash value surrender rates for owners who took withdrawals before 2012.

**Figure 2-28: GMWB Contract Surrender Rates by Owners Taking Withdrawals Before 2012**



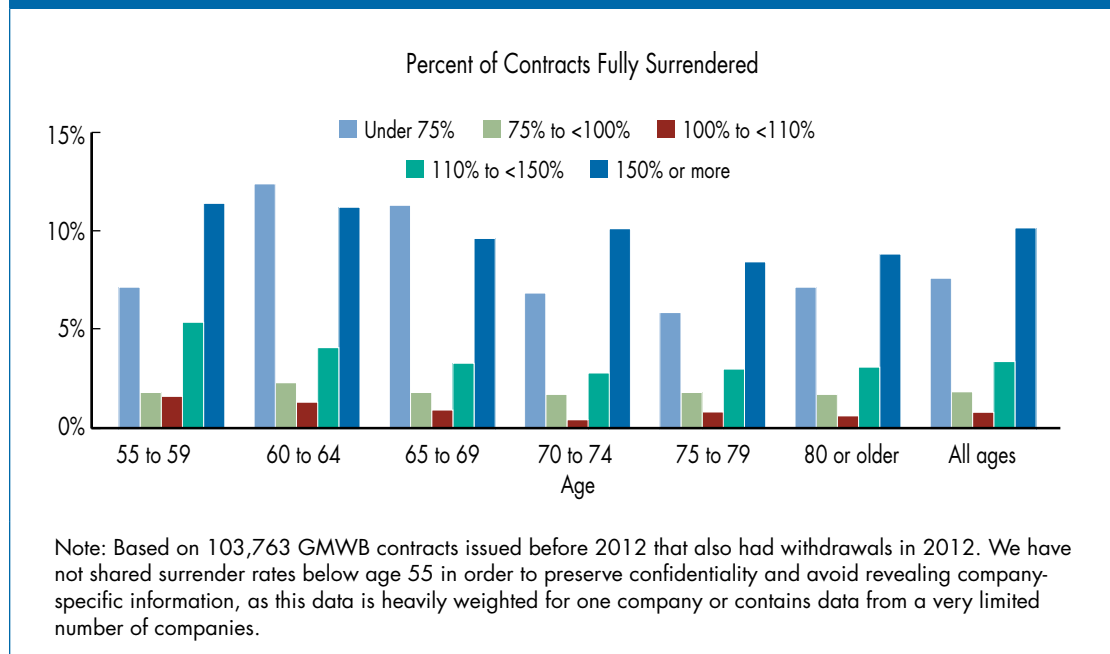
**Figure 2-29: GMWB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2012**

Nearly 10 percent of owners under age 60 who took withdrawals before 2012 surrendered their contracts by EOY 2012. In contrast, only 8 percent of owners under age 60 who did not take withdrawals before 2012 surrendered their contracts in 2012. Surrender rates among owners who did not take withdrawals before 2012 were higher among older owners. It is possible that many of these owners did not need the withdrawal guarantees or funds for immediate use.

### Surrender Activity by Percentage of Benefit Maximum Withdrawn

Figure 2-30 shows the contract surrender rates among owners who took withdrawals in 2012 by the percentage of benefit maximum withdrawn. Contract surrender rates were quite high among both the owners who took withdrawals below 75 percent of the maximum allowed in the contracts and the owners who took 150 percent or more of the maximum allowed in the contracts.

**Figure 2-30: GMWB Contract Surrender Rates by Owners Taking 2012 Withdrawals in Relation to Benefit Maximum Allowed**

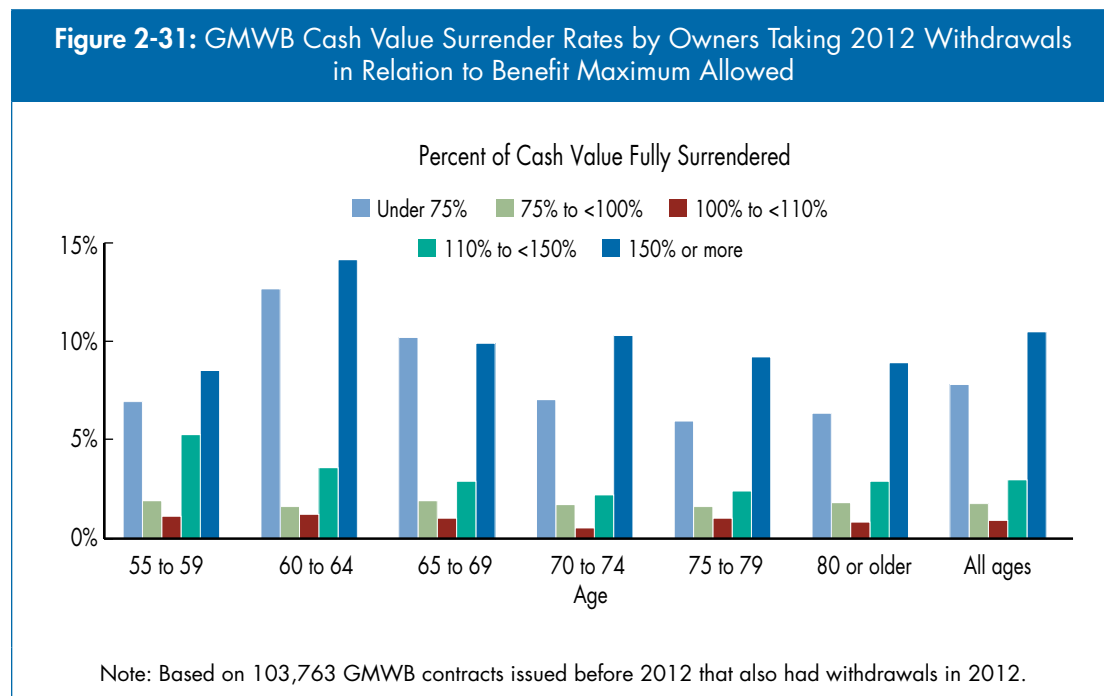


Similar to GLWBs, the GMWB surrender rates show a U-shaped relationship with the percentage of benefit maximum withdrawn — those with very low and very high ratios of withdrawals to the maximum allowed have higher surrender rates than those in the middle categories. This relationship holds true across all age groups. Among the 58 percent of owners who withdrew between 75 percent and less than 150 percent of the benefit maximum, surrender rates were under 2 percent. Among the subset of these owners who withdrew between 100 percent and less than 110 percent of the benefit maximum, rates were under 1 percent.

In summary, the GMWB owners in two extremes — those taking less than 75 percent or 150 percent or more of the maximum withdrawal amount allowed in their contracts accounted for 42 percent of all owners who took withdrawals in 2012. But they were responsible for 78 percent of contracts surrendered and 78 percent of cash value surrendered in 2012. Any withdrawal behavior not in line with the GMWB’s maximum withdrawal amount is thus a reliable indicator of surrender behavior.

**78%** of all contracts surrendered in 2012 came from owners who withdrew either less than 75 percent or 150 percent or more of the maximum withdrawal amount allowed in their contracts.

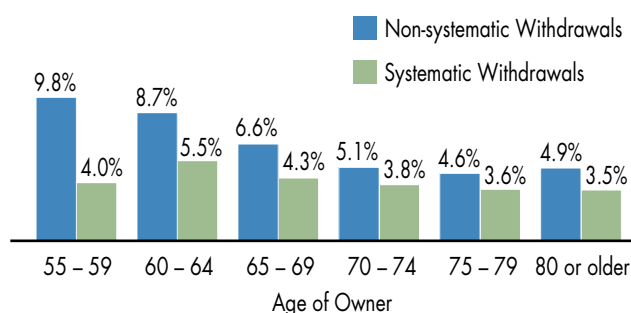
The cash value surrender rates among owners who took withdrawals in 2012, split by the percentage of benefit maximum withdrawn, follow a very similar pattern to the contract surrender rates (Figure 2-31).



## Surrender Activity by Owners Taking Withdrawals by Withdrawal Method and Presence of Surrender Charge

Another strong indicator of whether owners are likely to surrender their contracts is the method they use to take their withdrawals — systematic or non-systematic (Figure 2-32). As we have seen, owners who use systematic withdrawals are less likely to take more than the benefit maximum, and most excess withdrawals are being made by younger owners.

**Figure 2-32: GMWB Contract Surrender Rates by Withdrawal Methods**



Note: Based on 103,922 GMWB contracts issued before 2012 that also had withdrawals in 2012.

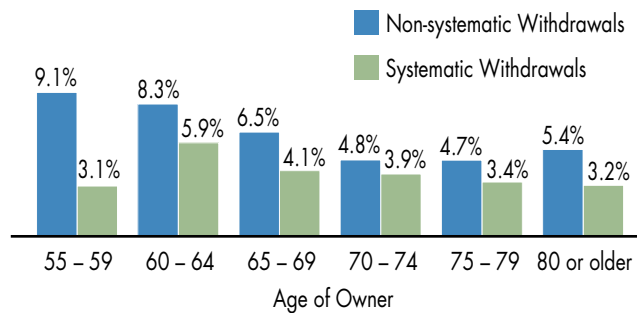
GMWB contract surrender rates are **6.6%** among owners who take non-systematic withdrawals compared with **3.9%** among owners who take systematic withdrawals in 2012.

Overall, the contract surrender rate among owners who took non-systematic withdrawals in 2012 was 6.6 percent while the surrender rate among owners who withdrew systematically was 3.9 percent. Non-systematic withdrawals are often linked with younger owners who have higher surrender rates.



Owners using a non-systematic withdrawal method accounted for a quarter of all owners taking withdrawals; they account for just over one third of all surrendered contracts and cash surrender values in 2012. The cash value surrender rates by withdrawal methods follow a very similar pattern to the contract surrender rates (Figure 2-33).

**Figure 2-33: GMWB Cash Value Surrender Rates by Withdrawal Methods**

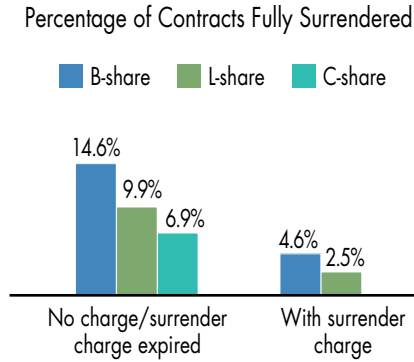


Note: Based on 102,052 GMWB contracts issued before 2012 that also had withdrawals in 2012.

Persistency among contracts with surrender charges is higher than in contracts without surrender charges. The contract surrender rate in 2012 was 4.5 percent for contracts with surrender charges and more than three times that amount (15.9 percent) for contracts that exited the surrender penalty period in 2012. Among contracts that exited the surrender penalty period in 2011 or earlier, the contract surrender rate was 9.3 percent.

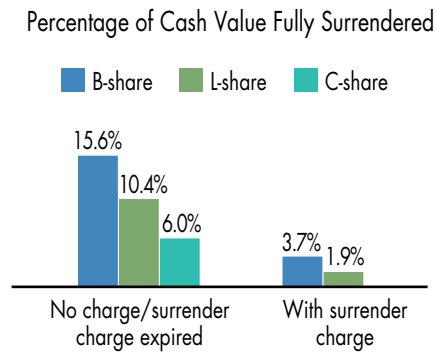
Figures 2-34 and 2-35 illustrate the contract and cash value surrender rates for contracts by presence of surrender charges and share classes. At BOY 2012, 48 percent of the GMWB contracts had no surrender charges.

**Figure 2-34: GMWB Contract Surrender Rates in 2012 by Share Classes**



Note: Based on 229,333 GMWB contracts issued before 2012.

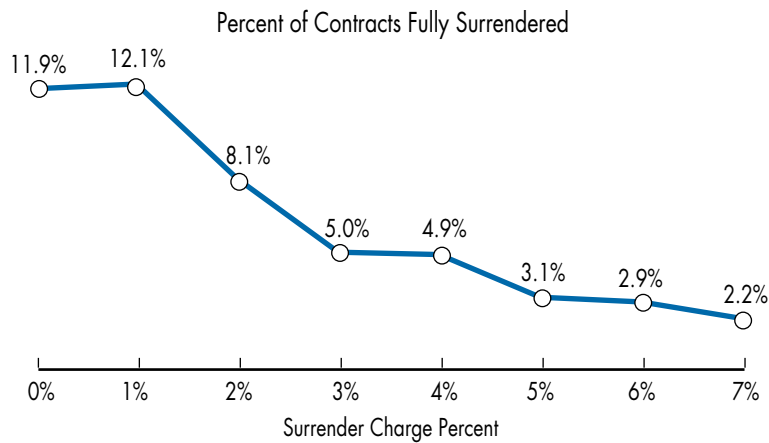
**Figure 2-35: GMWB Cash Value Surrender Rates in 2012 by Share Classes**



Note: Based on 229,333 GMWB contracts issued before 2012.

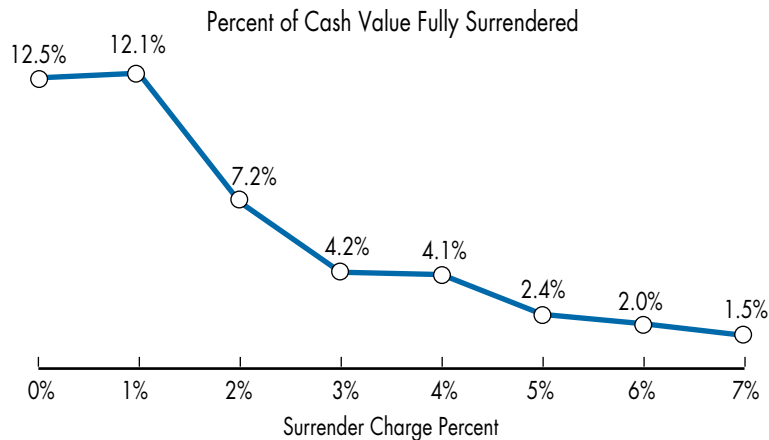
Surrender rates are influenced by the surrender charges present in the contract. Contracts with higher surrender charges have lower surrender rates and vice versa (Figures 2-36 and 2-37).

**Figure 2-36: GMWB Contract Surrender Rate in 2012 by Surrender Charge Percentage**



Note: Based on 226,337 GMWB contracts issued before 2012. We have not shown surrender charge percent over 7 percent in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

**Figure 2-37: GMWB Cash Value Surrender Rate in 2012 by Surrender Charge Percentage**



Note: Based on 226,337 GMWB contracts issued before 2012. We have not shown surrender charge percent over 7 percent in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

Another important factor for surrender rates involves whether or not contracts are in-the-money. In general, surrender rates are lower for contracts in-the-money. GMWB owners appear to be sensitive to the degree of ‘in-the-moneyness’ when deciding whether or not to surrender their contracts. We also completed analyses, controlling for withdrawals before 2012, and found similar results. Actuaries need to account for this sensitivity when setting assumptions for lapse behavior.

However, looking at the surrender rates based only the degree of in-the-moneyness may not completely address all issues when trying to understand the persistency risk. We have also seen that owner surrender behavior is closely connected with withdrawal behavior.

Surrender rates for GMWB contracts are not as low for VAs with GLWBs, and are comparable to overall retail VA persistency. Across all contracts, 7.7 percent surrendered during 2012. For business sold before 2012, cash value surrender rates were 7.4 percent (Table 2-11).

**Table 2-11: GMWB Surrender Rates**

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>All contracts</b>	<b>7.7%</b>	<b>7.4%</b>
<b>Year of issue</b>		
Before 2004	7.8%	7.4%
2004	10.5%	10.7%
2005	9.9%	9.6%
2006	7.1%	6.8%
2007	6.3%	5.9%
2008	6.6%	6.8%
2009	4.4%	3.8%
2010	3.1%	2.1%
<b>Age of owner</b>		
Under 50	8.3%	8.1%
50 to 54	8.6%	7.7%
55 to 59	8.5%	7.8%
60 to 64	9.6%	8.9%
65 to 69	8.3%	8.0%
70 to 74	7.2%	7.0%
75 to 79	6.1%	6.0%
80 or older	5.6%	5.6%

**Table 2-11: GMWB Surrender Rates (continued)**

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>Contract value, BOY 2012</b>		
Under \$25,000	9.6%	8.7%
\$25,000 to \$49,999	7.5%	7.5%
\$50,000 to \$99,999	7.1%	7.1%
\$100,000 to \$249,999	7.1%	7.2%
\$250,000 to \$499,999	7.3%	7.3%
\$500,000 or higher	7.8%	8.1%
<b>Gender</b>		
Male	7.9%	7.5%
Female	7.5%	7.2%
<b>Market type</b>		
IRA	7.6%	7.0%
Nonqualified	7.8%	7.9%
<b>Cost structure</b>		
B-share	7.1%	6.6%
C-share	6.9%	6.0%
L-share	9.1%	9.3%
<b>Distribution channel</b>		
Bank	9.4%	9.2%
Career agent	5.3%	4.7%
Independent agent/independent B-D	8.4%	7.9%
Full-service National B-D	8.5%	8.4%
<p>Note: Based on 246,669 contracts sold before 2012. Percent of contracts surrendered = number of contracts fully surrendered / total number of contracts in force. Percent of contract value surrendered = sum of values of fully surrendered contracts / total contract value in force.</p> <p>We have not shared some surrender rates by year of issue and share classes in order to preserve confidentiality and to avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or only a very limited number of companies.</p>		

## Product and Benefit Characteristics

The features of GMWBs are similar to those of GLWBs, with some important differences (Table 2-12). GMWBs tend to be less expensive, are much less likely to reward delayed withdrawals with automatically increasing benefit bases, and often have higher maximum annual withdrawal percentages.

**Table 2-12: GMWB Product and Benefit Characteristics**

	Issued Before 2006	Issued in 2006	Issued in 2007	Issued in 2008	Issued in 2009	Issued in 2010	Issued in 2011	Issued in 2012
<b>Average M &amp; E charge</b>	1.34	1.29	1.41	1.41	1.37	1.36	1.42	1.36
<b>Average benefit fee</b>	0.53	0.57	0.54	0.56	0.61	0.61	0.60	0.72
<b>Average number of subaccounts</b>	55	55	54	56	56	55	56	51
<b>Product has fixed account</b>								
Yes	72%	85%	66%	67%	58%	62%	64%	19%
No	28%	15%	34%	33%	42%	38%	36%	81%
<b>Product still available as of 12-31-2012</b>								
Yes	45%	55%	83%	89%	93%	96%	97%	100%
No	55%	45%	17%	11%	7%	4%	3%	0%
<b>Rider still available as of 12-31-2012</b>								
Yes	15%	11%	28%	31%	46%	42%	42%	99%
No	85%	89%	72%	69%	54%	58%	58%	1%
<b>Cap on benefits</b>								
Yes	61%	70%	31%	26%	2%	0%	0%	0%
No	39%	30%	69%	74%	98%	100%	100%	100%
<b>Benefit fee basis</b>								
Benefit base	45%	58%	63%	58%	57%	63%	65%	19%
Account value	52%	40%	34%	39%	41%	37%	35%	81%
VA subaccounts	3%	1%	2%	2%	1%	0%	0%	0%
Other	<1%	<1%	<1%	<1%	<1%	0%	0%	0%
<b>Average maximum age at election</b>	81	81	83	84	85	85	85	85

Table 2-12: GMWB Product and Benefit Characteristics (continued)

	Issued Before 2006	Issued in 2006	Issued in 2007	Issued in 2008	Issued in 2009	Issued in 2010	Issued in 2011	Issued in 2012
<b>Asset allocation restrictions</b>								
Forced asset allocation model	25%	15%	38%	41%	43%	38%	36%	82%
Limitations on fund selection	3%	1%	2%	2%	1%	0%	0%	0%
Other restrictions	5%	9%	2%	1%	0%	0%	0%	0%
No, but may restrict	33%	32%	21%	13%	1%	0%	0%	0%
No restrictions	15%	17%	36%	42%	56%	62%	64%	18%
Yes, dynamic asset allocation	19%	26%	0%	0%	0%	0%	0%	0%
<b>Among contracts with maximum charge information provided</b>								
Maximum rider charge	1.15%	1.26%	0.87%	0.81%	0.77%	0.76%	0.76%	0.75%
<b>Step-up use restrictions</b>								
Can be used multiple times	83%	95%	95%	94%	94%	95%	93%	82%
Can be used once	10%	4%	4%	1%	0%	0%	0%	0%
No	7%	1%	1%	5%	6%	5%	7%	18%
<b>Step-up availability</b>								
Quarterly or more frequently	0%	0%	3%	11%	0%	0%	0%	0%
Annually	66%	82%	72%	70%	97%	100%	100%	100%
Every 3 years	1%	2%	2%	1%	1%	0%	0%	0%
Every 5 years	33%	16%	23%	18%	2%	0%	0%	0%
<b>Benefit base automatically increases if withdrawals are not taken immediately</b>								
Yes, based on compound interest	0%	1%	1%	1%	1%	0%	0%	0%
Yes, based on simple interest	13%	7%	13%	15%	2%	1%	1%	1%
No	87%	92%	86%	84%	97%	99%	99%	99%
<b>Maximum annual withdrawal percentage</b>								
5%	23%	29%	18%	19%	7%	5%	7%	18%
6%	0%	0%	1%	0%	0%	0%	0%	0%
7%	73%	68%	79%	80%	93%	95%	93%	82%
10%	4%	3%	2%	1%	0%	0%	0%	0%
<b>Impact on benefit base if excess withdrawals are taken – Yes</b>								
Yes, pro rata	30%	22%	32%	30%	43%	38%	36%	82%
Yes, dollar-for-dollar	8%	24%	43%	55%	58%	63%	65%	19%
Yes, none, if RMDs from IRA	58%	54%	66%	80%	99%	100%	100%	100%
Other	64%	83%	53%	50%	4%	0%	0%	0%

Note: Based on 251,449 contracts sold before 2012.

## Key Findings

- In terms of annual withdrawal maximums, 7 percent is by far the most common, followed by a 5-percent maximum (usually limited to GMWBs that have benefit bases that automatically increase if withdrawals are delayed).
- Unlike GLWB contracts, most GMWB contracts do not offer an automatic increase in benefit base in case the withdrawals are not taken immediately. Also, most GMWB contracts do not have caps on benefit bases.
- Annual step-up options are the most common.



# Chapter Three

2012 EXPERIENCE

## Guaranteed Minimum Income Benefits



## Chapter Three: Guaranteed Minimum Income Benefits

Guaranteed minimum income benefits (GMIBs) are the second most popular type of GLB in the VA market. In 2012, sales of GMIBs were estimated at \$18.1 billion, down 27 percent from the 2011 estimated total of \$24.7 billion. GMIB election rates, when any GLB was available, pulled back in 2012 — starting the first quarter at around 23 percent and then falling to 18 percent for the rest of the year.<sup>17</sup> With the purchase of a GMIB, owners can receive guaranteed income at the end of a waiting period, based on annuitization of the benefit base. However, most GMIB owners have the flexibility of taking withdrawals during the waiting period without disturbing the benefit base. Feature innovation for GMIBs has incorporated withdrawals similar to GLWBs, blurring the distinction between GLWBs and GMIBs.

Nearly all GMIBs have waiting periods of 7 to 10 years or more before the contract can be annuitized. During the waiting period, annuitizations are not subject to the guarantees specified within the GMIBs. In 2012, very few contracts reached their maturity dates, so utilization based on annuitization was extremely rare.

As they did with GLWBs, companies enhanced GMIB benefits during early 2008. Some enhancements include easing asset allocation restrictions and increasing benefit base growth rates (e.g., from 5 to 6 percent annually). After the market crisis of 2008 and 2009, companies made their GMIBs less generous by changing the growth rates and annuitization factors that determine guaranteed payout amounts.

GMIB analyses are based on a total of 1,661,177 VAs, issued by 16 companies. These results represent a total of 67 GMIB riders introduced between 1995 and 2012. Forty-three percent of the contracts were issued in 2006 or earlier.

At end-of-year (EOY) 2012, LIMRA estimates the GMIB assets in the industry at \$199 billion.<sup>18</sup> The in-force GMIB contracts in the current study represent \$173 billion in assets as of December 31, 2012 — 87 percent of total industry assets.

<sup>17</sup> *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2012*, LIMRA, 2013.

<sup>18</sup> *Ibid.*

## Owner Profiles

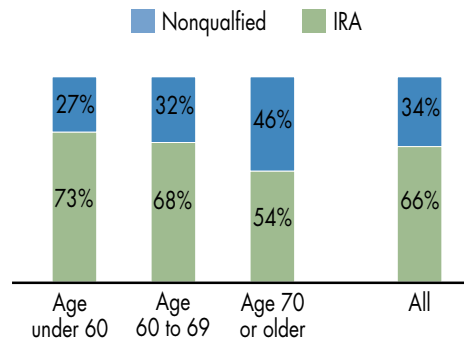
### Source of Funds and Ownership of GMIBs

Two thirds of all GMIB contracts were funded from qualified sources of money, part of a trend toward a greater share of annuity contracts being funded from qualified sources or rollover assets rather than nonqualified sources (Figure 3-1). Funding a GMIB with qualified savings is more common among younger buyers, particularly those under age 70. While the owners under age 60 constitute just over one third of GMIB owners in the study (35 percent), 3 out of 4 funded their contracts with qualified savings. To benefit from the popularity of GMIBs among younger consumers, companies should direct their marketing message to

Two thirds of all GMIB contracts were funded with IRA money.

attract savings from qualified accounts like IRAs and rollover assets. Insurance companies can leverage their products to receive a bigger share of these assets, as Baby Boomers start to retire or plan for guaranteed income in retirement. Owners aged 70 or over represent a quarter of the GMIB contracts.

Figure 3-1: GMIB Ownership of Annuity by Sources of Funds and Age Groups



Note: Based on 1,587,092 contracts issued before or in 2012 and still in force at EOY 2012 .

## GMIB Owner and Contract Characteristics

Table 3-1 provides a summary of GMIB owner and contract characteristics at EOY 2012.

Table 3-1: GMIB Owner and Contract Characteristics	
	GMIB Contracts In Force
<b>Age of owner</b>	
Under 50	11%
50 to 54	9%
55 to 59	15%
60 to 64	20%
65 to 69	20%
70 to 74	14%
75 to 79	8%
80 or older	4%
<b>Average age</b>	62.4 years
<b>Gender</b>	
Male	52%
Female	48%
<b>Market type</b>	
IRA	66%
Nonqualified	34%
<b>Distribution Channel</b>	
Career agent	25%
Independent agent/independent B-D	40%
Full-service National B-D	25%
Bank	10%
<b>Year of issue</b>	
Before 2002	5%
2002	4%
2003	8%
2004	9%
2005	9%
2006	9%
2007	10%
2008	10%
2009	9%
2010	8%
2011	12%
2012	8%
Note: Based on 1,587,092 contracts still in force at EOY 2012.	

**Table 3-1: GMIB Owner and Contract Characteristics (continued)**

	<b>GMIB Contracts In Force</b>
<b>Cost Structure</b>	
A-share	3%
B-share	73%
C-share	3%
L-share	21%
<b>Contract value, EOY 2012 as percent of contracts</b>	
Under \$25,000	21%
\$25,000 to \$49,999	19%
\$50,000 to \$99,999	25%
\$100,000 to \$249,999	26%
\$250,000 or higher	10%
<b>Contract value, EOY 2012 as percent of contract value</b>	
Under \$25,000	3%
\$25,000 to \$49,999	6%
\$50,000 to \$99,999	16%
\$100,000 to \$249,999	36%
\$250,000 or higher	39%
<b>Average contract value, EOY 2012</b>	<b>\$109,207</b>
<b>Median contract value, EOY 2012</b>	<b>\$65,763</b>
Note: Based on 1,587,092 contracts still in force at EOY 2012 .	

### Key Findings

- B-share (73 percent) and L-share (21 percent) contracts were by far the most common cost structures in 2012.
- Two thirds of GMIB contracts were purchased using qualified money.
- Four out of ten contracts were issued through the independent agent/independent B-D channel; 1 in 4 through career agents and Full Service National B-Ds.
- At EOY 2012 , 36 percent of the contracts had values of \$100,000 or more, representing three fourths of GMIB assets.

## Benefit Base

At beginning-of-year (BOY) 2012, 9 out of 10 GMIB contracts issued before 2012 had benefit bases that exceeded contract values (i.e., were ‘in-the-money’), still recovering from market losses over the last few years. The average difference between the median benefit base and contract value was approximately \$15,700 (Table 3-2).

**Table 3-2: GMIB Benefit Bases and Contract Values, at BOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$181,791,642,988	\$144,893,066,558	80%
Average	\$126,396	\$100,741	80%
Median	\$76,295	\$60,573	79%
Percent of contracts where benefit base was greater than contract value			88%
Note: Based on 1,438,272 GMIB contracts issued before 2012 with GMIB benefit bases as of BOY and EOY 2012. Excludes contracts for which the GMIB benefit bases could not be determined.			

With the improving equity market and gains in fixed-income funds in 2012, the average contract value increased 8 percent, while the average benefit base amount grew 7 percent due to auto roll-ups and other incentives allowed in the contracts. As a result, the percentage of GMIB contracts where the benefit base exceeded the contract value remained unchanged at EOY 2012 (Table 3-3). The average difference between the median benefit base and contract value deteriorated from \$15,700 at BOY 2012 to \$16,300 by EOY 2012. At EOY 2012, the median benefit base stood at \$81,800, almost 25 percent higher than the median contract value of \$65,500.

**Table 3-3: GMIB Benefit Bases and Contract Values, at EOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$194,190,709,535	\$157,161,694,375	81%
Average	\$135,017	\$109,271	81%
Median	\$81,752	\$65,485	80%
Percent of contracts where benefit base was greater than contract value			88%
Note: Based on 1,438,272 GMIB contracts issued before 2012 with GMIB benefit bases as of BOY and EOY 2012. Excludes contracts for which the GMIB benefit bases could not be determined.			

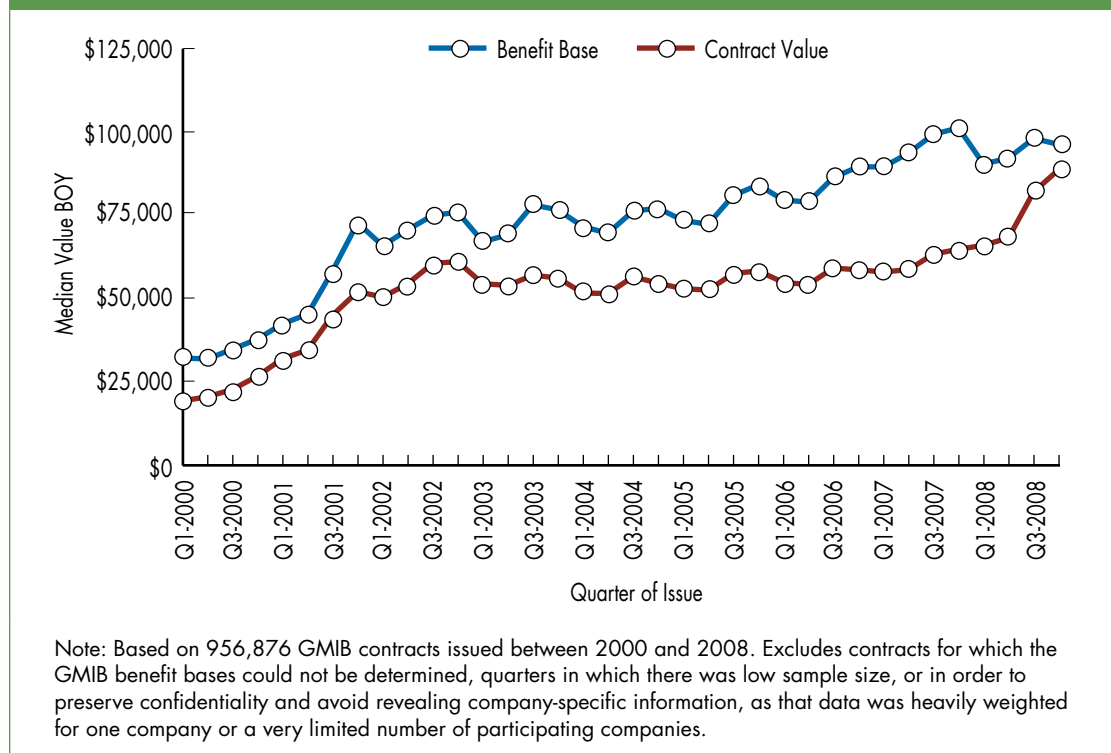
The average benefit base was 24 percent higher than the average contract value at EOY 2012.

GMIB contracts — particularly those that have been in force for a long period of time — have experienced considerable market volatility: gains in the early periods of 2005–2007, deep losses during the market crisis in 2008–2009, moderate gains in 2010, a flat return in 2011, and then reasonable gains in 2012.

Figure 3-2 shows BOY 2012 median contract value and median benefit base value by quarter of issue. Contracts sold before 2002 had relatively small contract values compared with those in mid- to late 2000. For these contracts, exposure to two bear markets (2001–2002 and 2008–2009) reduced their contract values significantly while their benefit bases remained the same or grew.

New benefit calculation methods were introduced in 2003 and later. Older benefit calculation methods defined the benefit base in terms of premiums paid, or premiums increased at a specified annual rate (e.g., 6-percent roll-up) until benefit maturity. The more recent benefit calculations take into account positive investment performance, by “ratcheting up” the benefit base over time. Contracts issued in late 2006 through 2007 were most impacted by market losses, and their benefit bases exceed the contract values by \$30,000 to \$37,000.

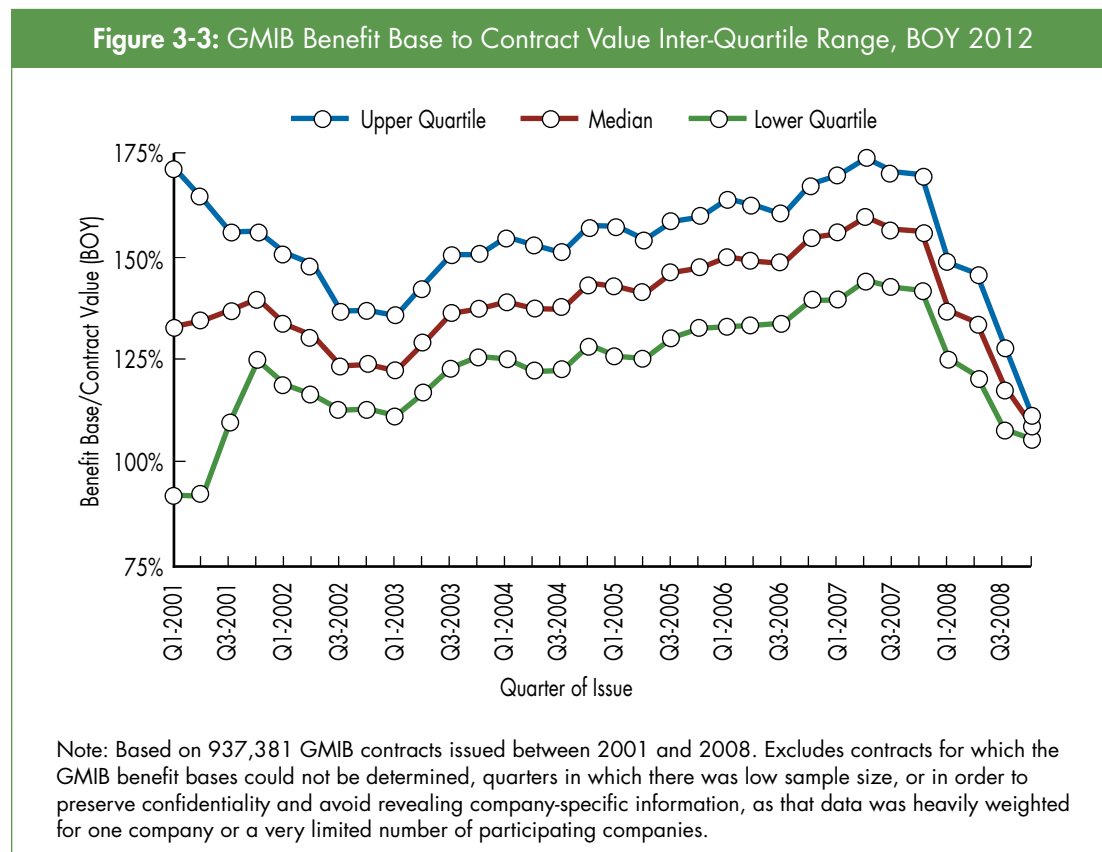
Figure 3-2: GMIB Median Contract Value vs. Median Benefit Base, BOY 2012





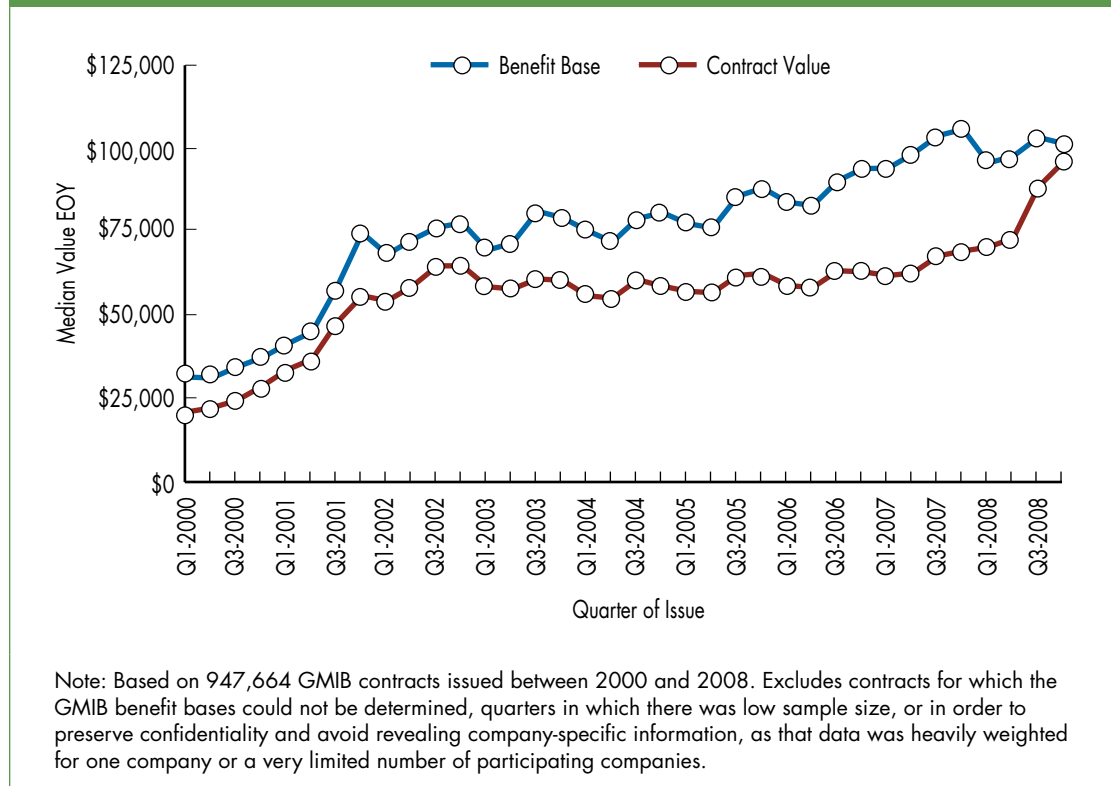
Looking at the quartile ranges of the BB/CV ratios at BOY 2012, contracts issued in early 2001 had the largest deviation of BB/CV ratios (Figure 3-3). From 2002 through mid-2008, the range between the upper and lower quartiles remained fairly tight — between 20 and 32 basis points). All of these trend lines increased from Q1 2003 through Q2 2007. Beginning Q3 2007, the inter-quartile ratios start to decline with decreasing duration (more recently-issued contracts tend to have a tighter distribution) because there has been less time for any group of contracts to pull far ahead (or fall far behind) the rest of the pack in terms of performance.

The upper and lower quartiles refer to the distribution of BB/CV ratios at BOY 2012, not the distribution of contract values. The inter-quartile range gives a sense of how widely (or narrowly) the ratios are distributed.



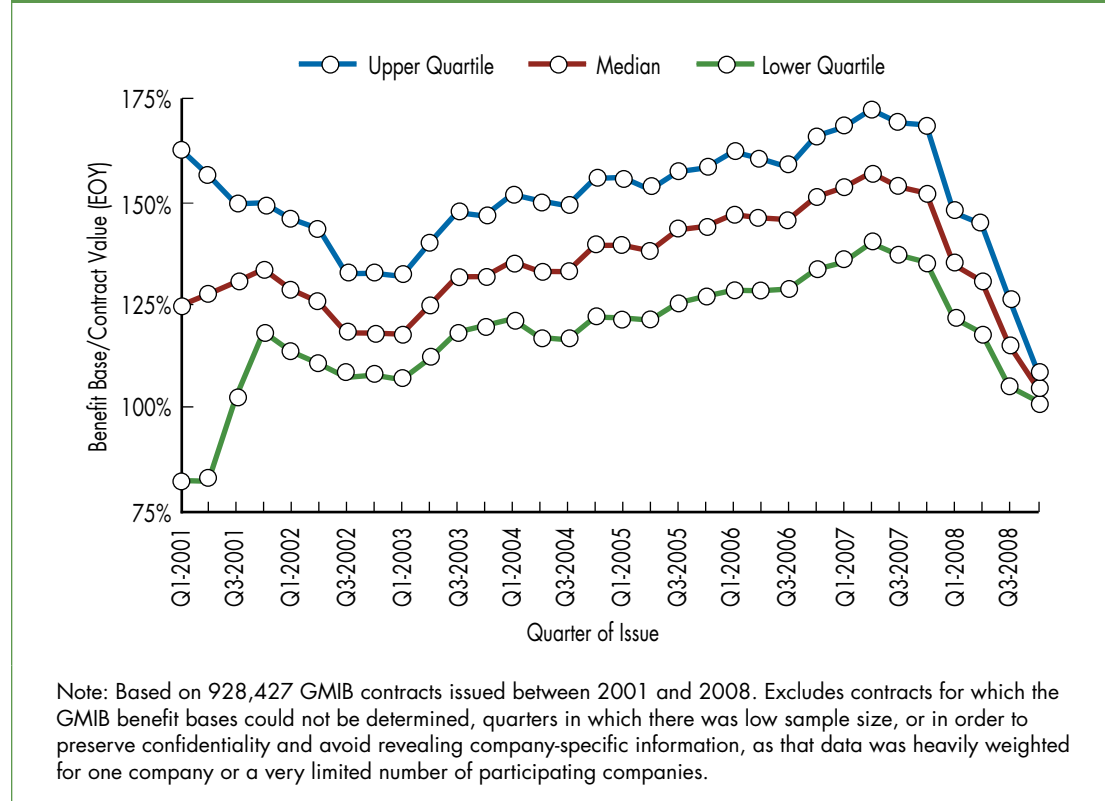
By EOY 2012, the difference between the benefit base amount and contract value for the typical contract had improved some (Figure 3-4). Overall, the median contract value grew 8.1 percent while the median benefit base grew 7.2 percent. The median contract value increased from \$60,600 at BOY 2012 to \$65,500 at EOY 2012, while the median benefit base amount increased from \$76,300 at BOY 2012 to \$81,800 at EOY 2012.

**Figure 3-4: GMIB Median Contract Value and Median Benefit Base, EOY 2012**



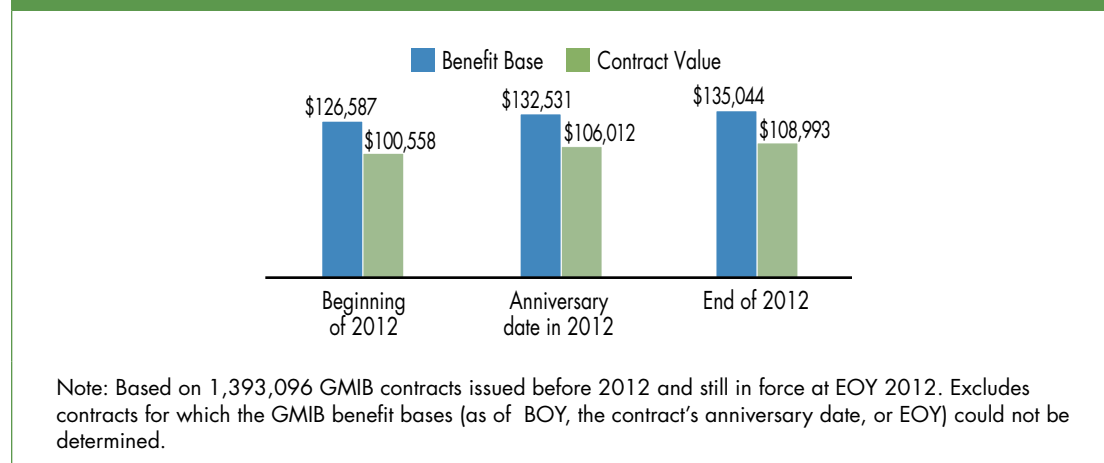
The inter-quartile range analysis at EOY 2012 shows a slight decline in BB/CV ratios compared to BOY (Figure 3-5). The range between the upper and lower quartiles remained relatively unchanged. The median ratios of BB/CV in contracts issued from Q1-2001 through Q4-2008 ranged from 105 percent to 157 percent at EOY.

Figure 3-5: GMI Benefit Base to Contract Value Inter-Quartile Range, EOY 2012



The average contract value grew from \$100,600 at BOY 2012 to \$109,000 at EOY 2012, an increase of 8.4 percent (Figure 3-6). On the anniversary date, the average benefit base increased slightly from \$126,600 at BOY to \$132,500, possibly due to roll-up and step-up provisions. At EOY 2012, the average benefit base was \$135,000, a difference of \$26,100 compared with the average contract value.

**Figure 3-6: GMB Average Contract Value and Average Benefit Base Values**



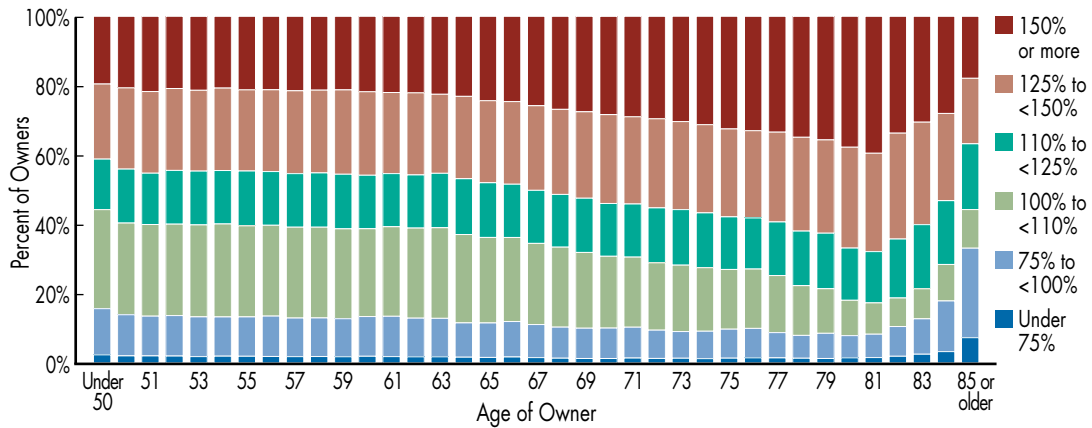
### Benefit Base to Contract Value Ratios by Age

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 favorable or unfavorable benefit base to account value ratios. The BB/CV ratios can be favorable or unfavorable based on factors like the duration of contracts and the impact of market returns on the account 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 account 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.

One half of the contracts had BOY BB/CV ratios of 125 percent or more, while 44 percent had EOY ratios of 125 percent or more.

Figure 3-7 shows the BB/CV ratios by age at BOY 2012. For in-force contracts issued before 2012, at BOY, only 12 percent of contracts had contract values below their benefit base amounts; 23 percent of the contracts had BB/CV ratios of 100 to less than 110 percent; and 15 percent of contracts had their benefit bases exceeding contract values by 110 to less than 125 percent. One half of the contracts had BB/CV ratios of 125 percent or more.

**Figure 3-7: GMB Benefit Base to Contract Value Ratios by Age — BOY 2012**

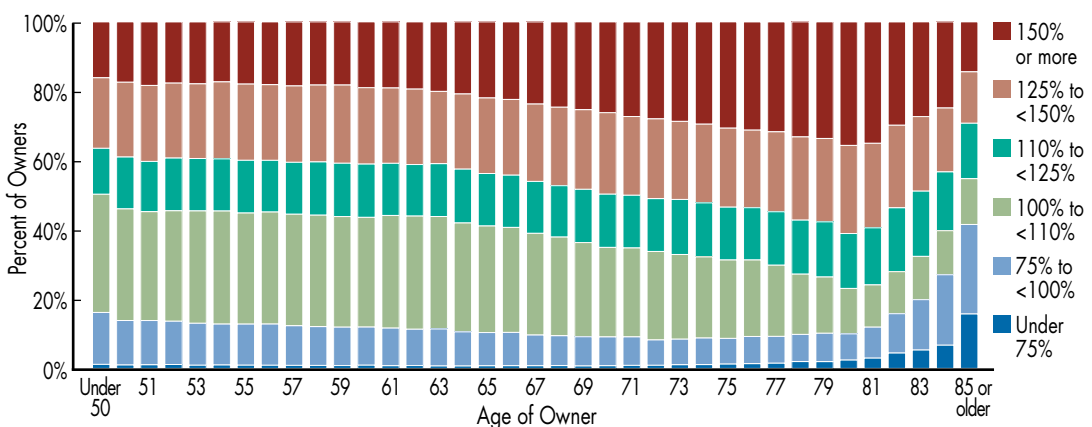


Note: Based on 1,449,345 GMB contracts issued before 2012 and still in force at EOY 2012. Excludes contracts for which the GMB benefit bases or contract values could not be determined.

Owners aged 70 or older had comparatively more contracts with BB/CV ratios of 125 percent or more. Fifty-seven percent of contracts with owners aged 70 to 79, and 58 percent of those with owners aged 80 or older, had BB/CV ratios of 125 percent or more. Though owners aged 70 or older constituted only a quarter of all contract owners, 30 percent of all contracts with BB/CV ratios of 125 percent or more were within this age cohort.

Figure 3-8 shows the distribution of BB/CV ratios by age at EOY 2012. Twelve percent of contracts had contract values below their benefit base amounts; 29 percent had BB/CV ratios of 100 to less than 110 percent; 15 percent had benefit bases exceeding contract values by 110 to less than 125 percent, and 44 percent had BB/CV ratios of 125 percent or more.

**Figure 3-8: GMB Benefit Base to Contract Value Ratios by Age — EOY 2012**



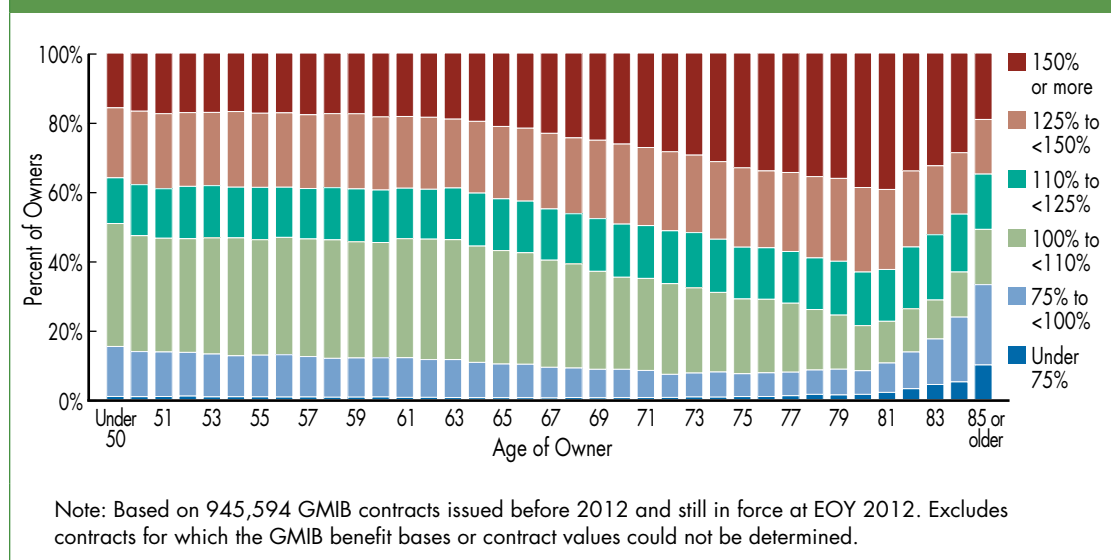
Note: Based on 1,438,271 GMB contracts issued before 2012 and still in force at EOY 2012. Excludes contracts for which the GMB benefit bases or contract values could not be determined.

Additional analysis of BB/CV ratios by age and source of money allows more insight into how companies can evaluate their own of books of business relative to the mix of qualified-nonqualified business.

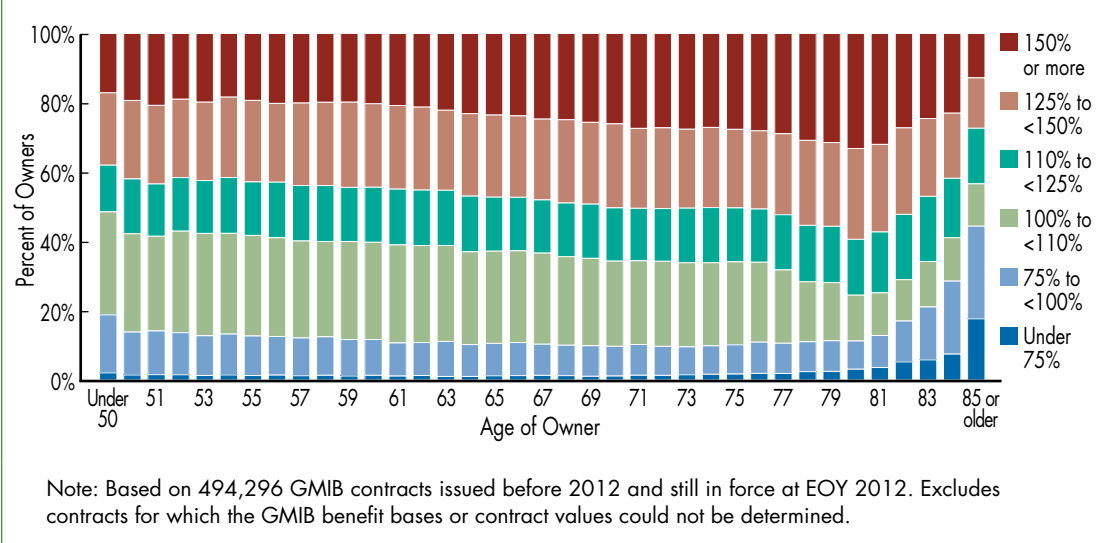
For IRA contracts at EOY 2012, 12 percent had values below their benefit base amounts; 31 percent had BB/CV ratios of 100 to less than 110 percent; 15 percent had benefit bases exceeding contract values by 110 to less than 125 percent, and 42 percent had BB/CV ratios of 125 percent or more (Figure 3-9).

For nonqualified contracts at EOY 2012, 13 percent had contract values below their benefit base amounts; 25 percent had BB/CV ratios of 100 to less than 110 percent; 16 percent had benefit bases exceeding contract values by 110 to less than 125 percent, and 46 percent had BB/CV ratios of 125 percent or more (Figure 3-10).

**Figure 3-9: GMIB Benefit Base to Contract Value Ratios by Age — IRA Contracts at EOY 2012**



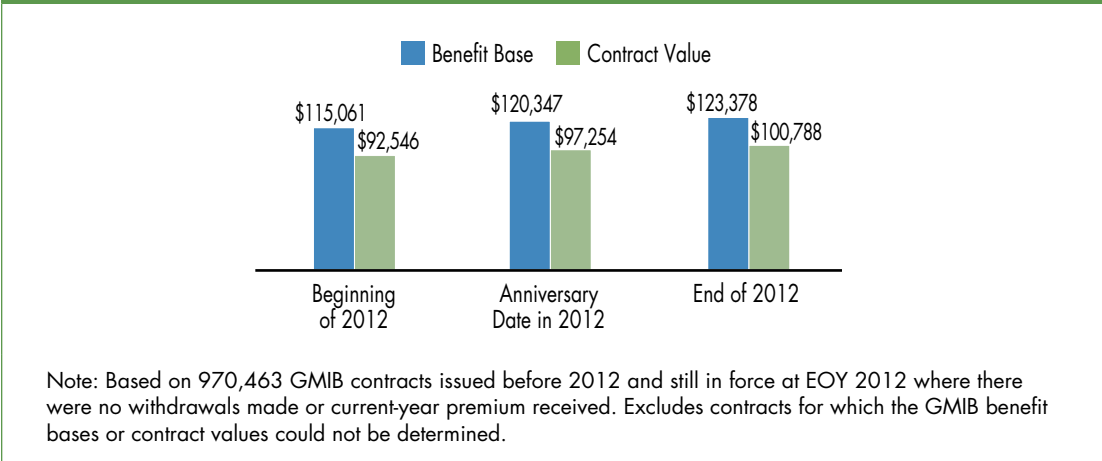
**Figure 3-10: GMIB Benefit Base to Contract Value Ratios by Age — Nonqualified Contracts at EOY 2012**



**Benefit Base for Contracts With Withdrawals vs. Without Withdrawals**

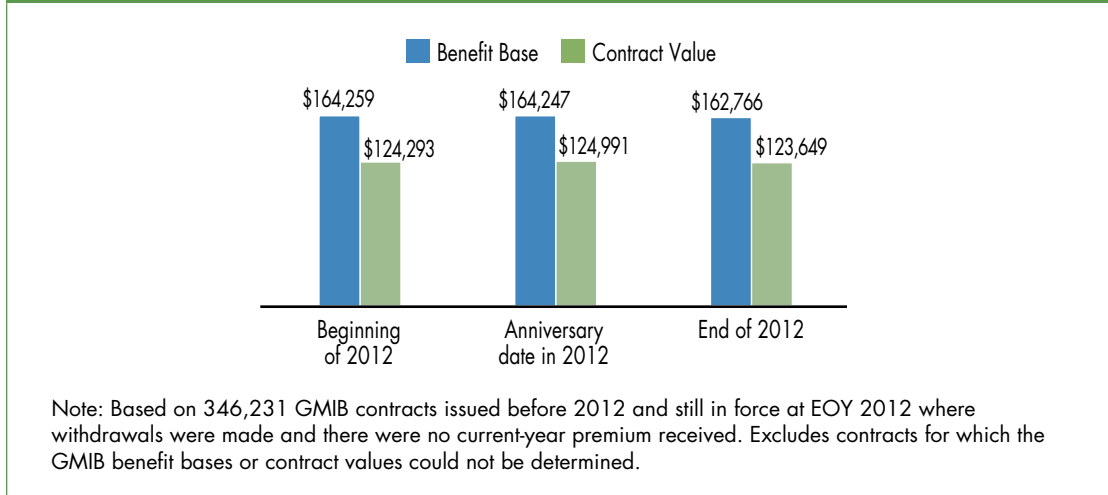
For in-force contracts issued before 2012 that did not have withdrawals (or additional premium) during the year, the average benefit base rose steadily from \$115,100 to \$120,300 on the anniversary date, to \$123,400 by EOY 2012, registering an 7.2 percent overall increase (Figure 3-11). The reason for such increases can be attributed to automatic roll-up of benefit bases in the case of non-withdrawals, and the ratcheting up of benefit bases due to equity market and fixed-income fund gains. The average contract value improved 8.9 percent during 2012 for contracts without withdrawals, going from \$92,500 at BOY 2012 to \$100,800 at EOY 2012.

**Figure 3-11: GMIB Average Contract Value, Average Benefit Base for Contracts Without Withdrawals**



Among contracts that incurred withdrawals in 2012, the average benefit base went down 0.9 percent from \$164,300 at BOY 2012 to \$162,800 at EOY 2012. The average contract value declined 0.5 percent during the year from \$124,300 to \$123,600, as withdrawals during the year were pretty much offset by market gains in 2012 (Figure 3-12).

**Figure 3-12: GMB Average Contract Value, Average Benefit Base for Contracts With Withdrawals**





## In-the-Money

A simple means of assessing the extent to which a contract with a GMIB is “in-the-money” is to compare the GMIB benefit base with the contract value as of a particular point in time. This measure has the advantage of being straightforward and may correspond with how some contract owners perceive the in-the-moneyness of their benefits. However, the BB/CV ratio is not a precise measurement because the true value of the GMIB benefit lies in its ability to generate a specific lifetime income stream, which cannot be determined from the benefit base alone. Moreover, the value of the income stream that can be generated from the GMIB cannot be directly compared with the contract value; it must instead be compared with the income that can be generated from the contract value. If the income guaranteed under the terms of the GMIB exceeds the income that can be derived from the contract value, the benefit is in-the-money from the perspective of the contract owner.

While this in-the-money metric is less straightforward to determine than the simple BB/CV ratio, it could conceivably be part of the calculus when owners and their financial advisors assess whether or not to utilize the GMIB. If so, then annuitization activity may be better calibrated to this metric than the simpler ratio, particularly among owners with larger contract sizes who are more likely to receive assistance from financial professionals.

To calculate the in-the-moneyness of contracts with GMIBs, we followed the following procedure, first for all in-force contracts, and then for the subset of contracts that reached their benefit maturities in 2012 or earlier:

1. For each contract in force at EOY 2012, we determined the hypothetical payout under the terms of the GMIB using actuarial present value (APV) factors reported by companies for each of the GMIB riders they sold. These APV factors included: a) the mortality table; b) mortality improvement scale; c) age setback, if any; and d) interest rate. For each of the GMIB riders we examined two payout options: life only, and life with 10-year period certain. These APV factors were multiplied by the EOY GMIB benefit base. To facilitate this analysis, we assumed that all contracts had the option of exercising the GMIB benefit as of EOY 2012.

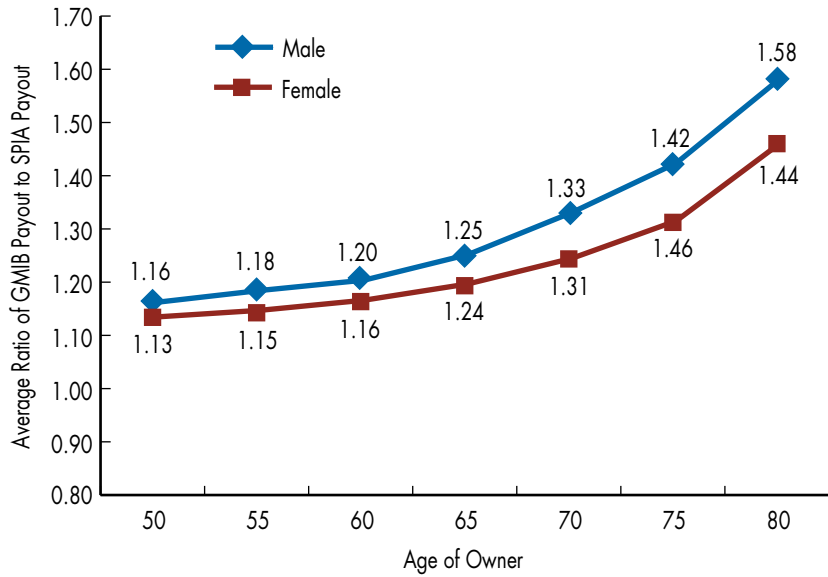
2. We determined the hypothetical SPIA income that could be generated using the contract value (ignoring any surrender charges or other fees). For each in-force contract, we applied the contract value to average SPIA quotes available from 18 insurers, representing 63 percent of 2012 fixed immediate annuity industry sales, in December 2012, using data from CANNEX, to determine the corresponding payout income. As with the GMIBs, we calculated life only and life with 10-year period certain payouts.
3. We divided the hypothetical GMIB payout by the hypothetical SPIA payout for each contract. Ratios greater than 1.0 indicate the contract was (hypothetically) in-the-money at the end of 2011. Higher ratios indicate greater in-the-moneyness, and lower ratios indicate lower in-the-moneyness. If the ratio was under 1.0, it was set to 1.0, on the grounds that an owner would always select the higher of the GMIB or SPIA payout. Ratios were also capped at a maximum of 15.0. For each company represented in the analysis, we then averaged these ratios for each age (50 to 80) and gender.

On average, the GMIB payout is about 24 percent higher than the corresponding SPIA payout.

Figure 3-13 illustrates the average GMIB-to-SPIA payout ratios for life-only payouts for male and female owners, for all benefit maturity years. Ratios exceed 1.0 across the entire age range for both genders, indicating that the average GMIB contract is in-the-money. On average, the GMIB payout is about 24 percent higher than the corresponding SPIA payout. This result reflects the fact that at EOY 2012 most GMIB contracts had benefit bases that were higher than contract values — enough to offset any reductions in payouts based on the GMIB calculation (e.g., age setbacks).

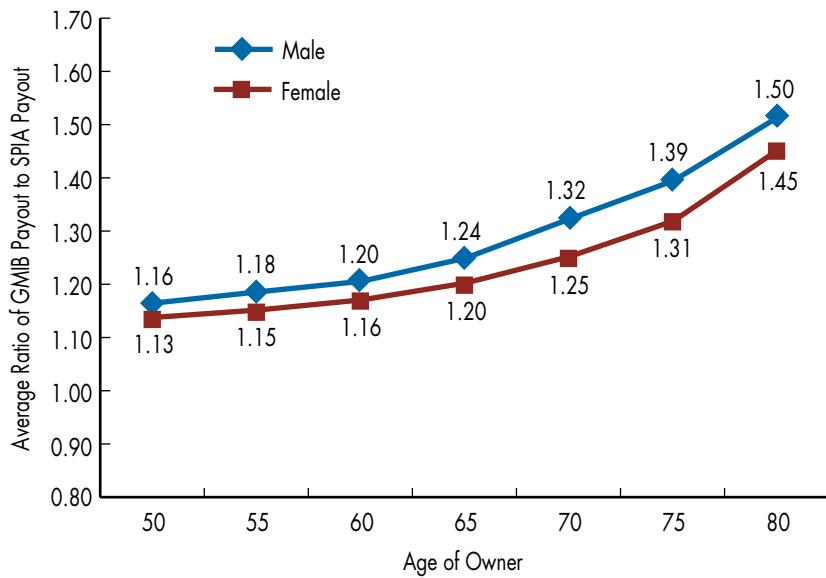
The ratios are higher for men than for women, and increase with age, largely because the GMIB payouts become more generous relative to SPIA payouts, per dollar applied, at older ages. The pattern is not appreciably different for life with 10-year period certain payouts (Figure 3-14). One possible reason why GMIB payouts become more generous relative to SPIA payouts at older ages has to do with the effect of shorter durations at older ages and the current shape of the yield curve (i.e., low, short-term rates) on current SPIA rates. In addition, insurers may need to absorb the up-front expense loads (unique to SPIA rates in comparison) over a shorter time frame at older ages.

**Figure 3-13: Ratio of GMIB Payout to SPIA Payout, for Life-Only Payouts — All Benefit Maturity Years**



Note: Based on 317,436 contracts in force at the end of 2012.

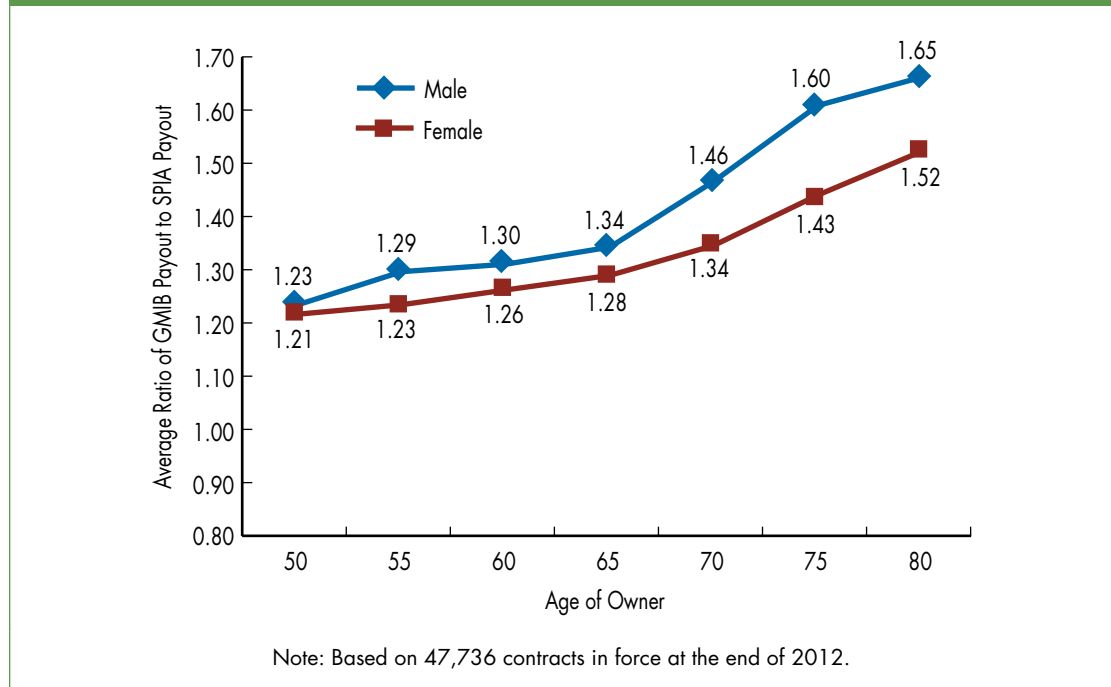
**Figure 3-14: Ratio of GMIB Payout to SPIA Payout, for Life With 10-Year Period Certain Payouts — All Benefit Maturity Years**



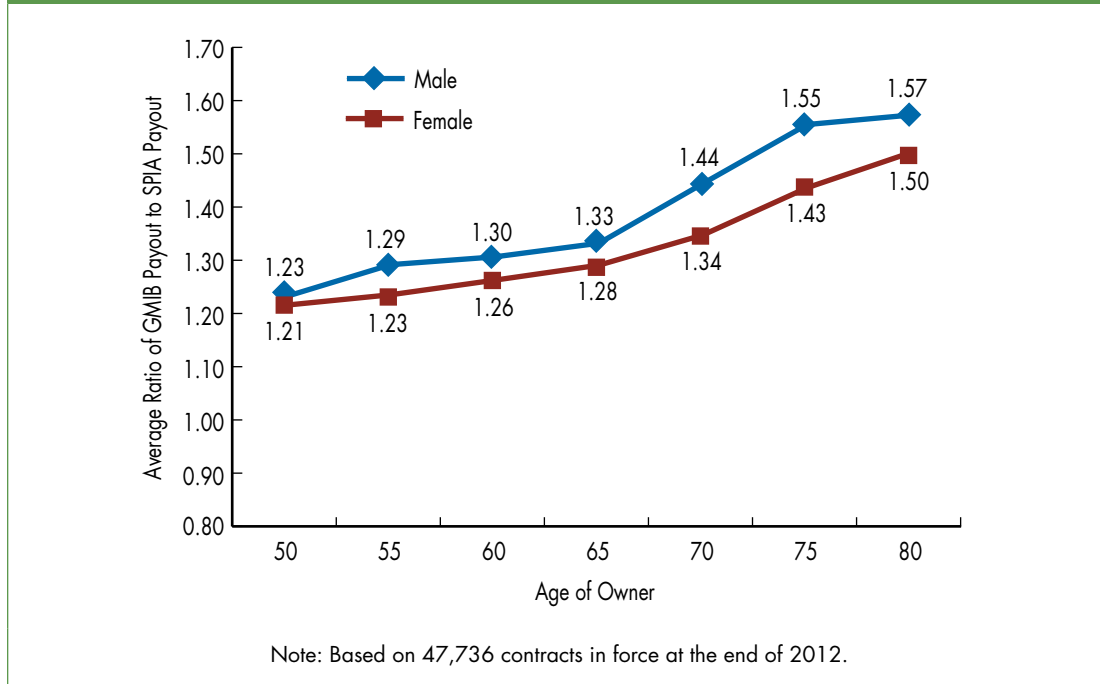
Note: Based on 317,436 contracts in force at the end of 2012.

The previous analyses assumed that all contracts had the option of exercising the GMIB benefit as of EOY 2012. In fact, only 15 percent of these contracts had reached the end of the waiting period by 2012 and therefore most did not have the ability to activate the GMIB. Among the group of contracts that did have GMIB maturities in 2012 or earlier, a similar pattern is obtained: average ratios of GMIB payouts to SPIA payouts are above 1.0 and increase with age (Figure 3-15 and Figure 3-16). However, there are two differences. First, overall ratios are higher — on average, the GMIB payout is about 37 percent higher than the corresponding SPIA payout. The higher in-the-moneyness results from the higher BB/CV ratios for older business. Second, the gender difference observed in the previous analysis is magnified for ages 70 and older. This difference reflects relatively higher BB/CV ratios for men than for women.

**Figure 3-15: Ratio of GMIB Payout to SPIA Payout, for Life-Only Payouts — Benefit Maturity Years 2012 or Earlier**



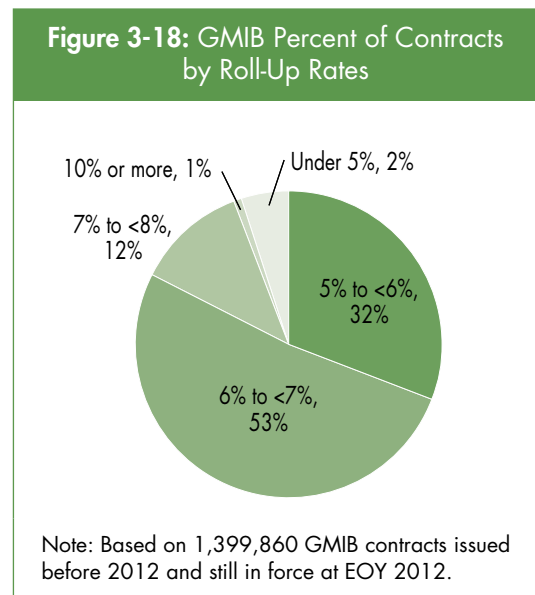
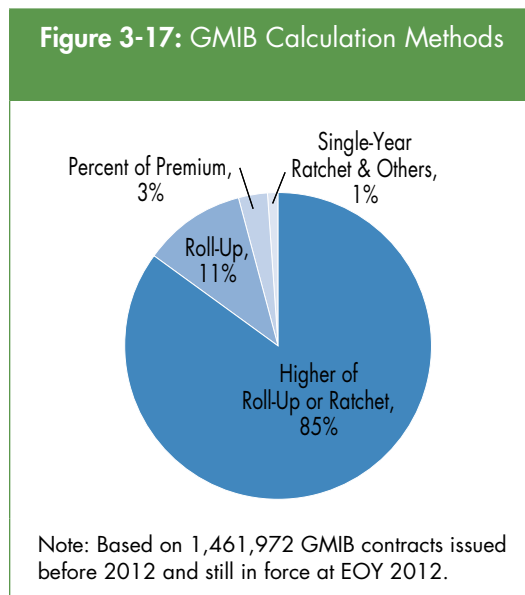
**Figure 3-16:** Ratio of GMIB Payout to SPIA Payout, for Life With 10-Year Period Certain Payouts — Benefit Maturity Years 2012 or Earlier



An alternative method for assessing in-the-moneyness for all contracts in force (not just those that have reached their benefit maturities) would be to estimate the future GMIB benefit bases and contract values as of the end of the waiting period, and discount these values back to the end of 2012. While it might be possible to estimate future benefit bases for GMIBs with annual roll-ups at a set percentage, future contract values will represent returns based on market performance and are thus largely unpredictable (especially given asset allocation restrictions and/or use of limited subaccounts like managed volatility funds). Some GMIB allow step-ups if the contract value exceeds the benefit base — owners may or may not choose to exercise this option, so the benefit base could be greater than what would result from the annual roll-up percentage. Future immediate annuity payouts may be more or less generous than they were at EOY 2012. And this method would also have to assume no surrenders or deaths occur prior to the benefit maturity date, or else incorporate still more assumptions about termination activity. For these reasons we only assessed the GMIB to SPIA ratios as they were at the end of 2012.

### GMIB Benefit Calculation Methods

Almost all GMIB contracts issued before 2012 had GMIB benefits that were based on the roll-up or higher of ratchet or roll-up calculation methods (96 percent), which sets benefit bases equal to the higher of the largest prior anniversary or premiums rolled up at a specified growth rate (Figure 3-17). The most common 2012 annual roll-up percentages were 5, 6, and 7 percent. Roll-up rates from 5 to less than 6 percent were offered on one third of all contracts, while roll-up rates from 6 to less than 7 percent were purchased by more than half of GMIB contracts (Figure 3-18).



The ability to take withdrawals up to the roll-up rate for a limited period of time is one of the most distinguishing features of GMIBs, attracting investors to stay in the contracts while still providing guaranteed income for life upon annuitization. In GMIB contracts, the combined effect of market gains or losses, roll-up percentages, and withdrawal provisions (e.g., dollar-for-dollar adjustment with benefit bases) influences the difference between the benefit bases and account values.

One notable difference between GMIBs and GLWBs is their relative measures of the benefit base to account value ratio. The ratio of benefit base to account value in GLWBs at EOY 2012 was much lower than the ratio in GMIBs, for contracts with or without withdrawals. However, one risk for GMIB contracts lies in how many owners annuitize their contracts at the end of the waiting period, and what minimum interest rate and corresponding assumptions will be

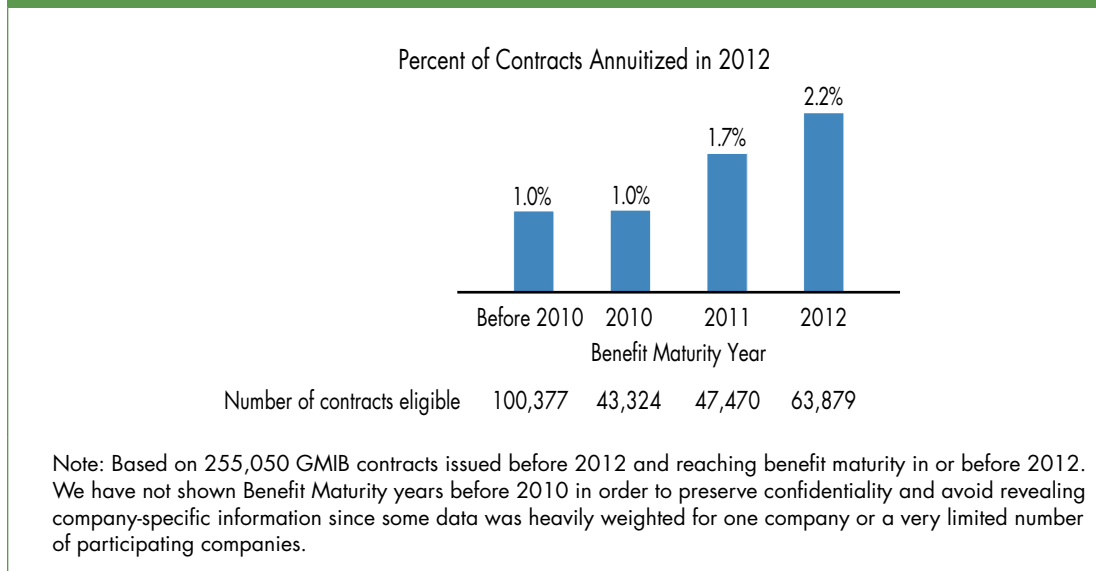
used to calculate guaranteed income for life. Companies should examine their own customer base to determine whether their ratios and contract pricing align with those of the industry. In addition, companies should look at their own customers' inclinations to annuitize.

## Annuitization

One integral part of the GMIB value proposition is the ability to receive guaranteed income upon annuitization after the initial accumulation period or waiting period is over. Owners of traditional annuities rarely exercise their right to annuitize, and that behavior also applies to contracts with GMIBs.

About 63,900 GMIB contracts issued before 2012 reached benefit maturity in 2012 (Figure 3-19). The 2012 annuitization rate for contracts reaching benefit maturity in 2012 was 2.2 percent. These contracts were mainly issued in the early 2000s. The annuitization rate in 2012 for contracts reaching benefit maturity in 2011 was slightly lower at 1.7 percent. More than 100,000 GMIB contracts reached their benefit maturity in 2010 or before, and the annuitization rate for these in-force GMIB contracts was very low. Overall, the annuitization rate for all GMIB contracts issued before 2012 — and annuitized in 2012 — was only 0.3 percent.

**Figure 3-19: GMIB Contracts Annuitized in 2012, by Benefit Maturity**



The 2012 annuitization rate for contracts reaching benefit maturity in the same year was relatively lower than the annuitization rate experienced in previous years. In addition to their fear of losing control of assets, owners may be disinclined to annuitize because the guaranteed

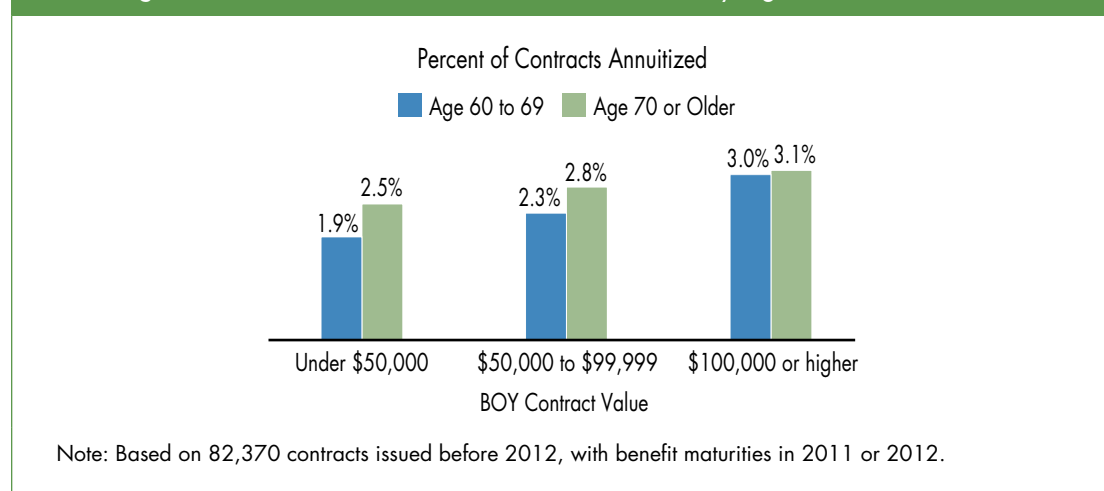
annuity payout rates used in GMIB contracts may be based on annuity purchase factors that are less generous than would otherwise be used, or their plan may have changed. Also please note that these annuitization rates reflect all GMIB types — dollar-for-dollar withdrawals and pro-rata adjustments. Pro-rata adjustment contracts generally have higher annuitization rates.

### Contracts With Benefit Maturities in 2011 or 2012

Contract owners over age 60 are more likely to annuitize than are younger owners: Among contracts that reached benefit maturity in 2011 or 2012, 2.7 percent of owners in their 70s or older annuitized in 2012, compared with 2.3 percent for ages 60 to 69 and 0.3 percent for owners under age 60. It is likely that some of this activity is driven by the need for individuals owning IRA VAs to commence required minimum distributions (RMDs) after age 70½. However, among IRA contracts, the increase in annuitization activity around age 70 (2.4 percent among those aged 60 to 69 to 3.0 percent among those aged 70 or older) is less pronounced than the increase in withdrawal activity observed at this age. For nonqualified contracts, annuitization rates were 2.3 percent for owners aged 60 to 69 to 2.5 percent for owners aged 70 or older.

Larger contract sizes are associated with higher annuitization activity among contracts issued before 2012 that reached benefit maturity in 2011 or 2012 (Figure 3-20). For owners aged 60–69, the percentage of contracts with BOY contract values of \$100,000 or more that annuitized in 2012 was 58 percent larger than the percentage of contracts with values under \$50,000. For owners aged 70 or older, there was a 24-percent increase in the percentage of contracts with BOY contracts of \$100,000 or more that annuitized in 2012 over contracts with values under \$50,000.

**Figure 3-20: GMIB Contracts Annuitized in 2012, by Age and Contract Size**

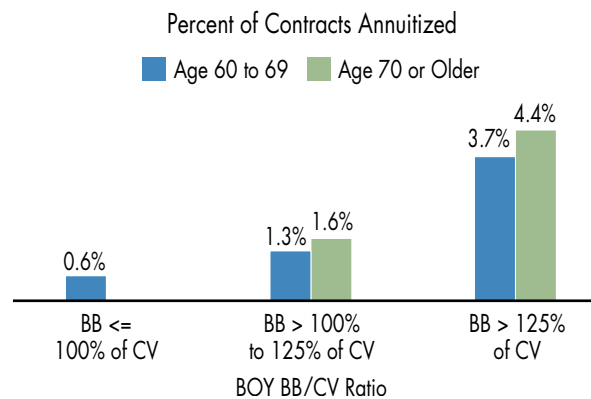




The in-the-moneyness of contracts, as measured by the BB/CV ratio, also appears to be linked to annuitization rates (Figure 3-21). Less than 1 percent of contracts that reached benefit maturity in 2011 or 2012 were annuitized when the benefit base was equal to or less than the contract value. But the annuitization rate jumped to around 4 percent when the benefit base was more than 125 percent of the contract value.

Our assessment of BB/CV ratios — by year of issue for contracts issued before 2012 with benefit maturity dates in 2011 or 2012 — found that 4 out of 10 contracts whose benefit base amounts were less than or equal to the contract values, were issued in 2005 or 2006. Of the contracts that were in-the-money, roughly half were issued in 2002.

**Figure 3-21: GMB Contracts Annuitized in 2012 With Benefit Maturity Date in 2011 or 2012, by Age and BOY 2012 BB/CV Ratio**



Note: Based on 78,248 contracts issued before 2012, with benefit maturities in 2011 or 2012. The percent of contracts annuitized for ages 70 or older with benefit base less than or equal to the contract value has been suppressed in order to preserve confidentiality and avoid revealing company-specific information, as that data was heavily weighted for one company or a very limited number of participating companies.

## Withdrawal Activity

### Withdrawals

GMIB contracts have no guaranteed withdrawal benefit during the accumulation years, and the true guaranteed income benefit or benefit utilization starts after annuitization. However, many popular GMIB contracts allow dollar-for-dollar annual withdrawals, typically equal to or less than the roll-up percentages applied in the contract to reset the benefit base upward on every anniversary. Thus, a GMIB owner can withdraw up to a certain percentage annually without reducing the starting benefit base. This is an attractive and flexible option for many investors. The attraction lies in the ability to take withdrawals at a prescribed rate, without disturbing the benefit base, irrespective of market gains or losses. So, if partial withdrawals occur, we assume that owners have utilized the withdrawal provisions in their contracts.

Because the present study is based on a single calendar year, withdrawal activity over time usually could not be tracked. Although we asked companies for the cumulative total withdrawals prior to 2012, not all companies could provide this information. In addition, not all companies could distinguish systematic withdrawals — which are more likely to be associated with utilization of withdrawal benefit contracts — from non-systematic or occasional withdrawals.

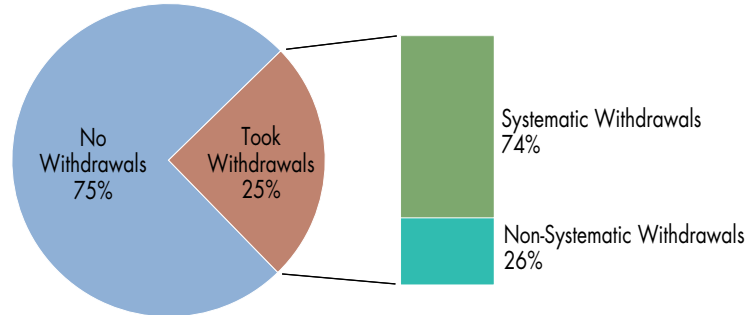
### Overall Withdrawals From Contracts Issued Before 2012

**1 in 4** GMIB contract owners took withdrawals during 2012.

**3 out of 4** used systematic withdrawals.

Twenty-five percent of GMIB contracts issued before 2012 and still in force at EOY 2012 had at least some withdrawal activity during 2012 (Figure 3-22). This is relatively close to the 21 percent of GLWB owners who took withdrawals in 2012. Almost 3 out of 4 of these GMIB contract owners utilized systematic withdrawals.

**Figure 3-22: GMI Percentage of Contracts With Withdrawals**



Note: Based on 1,461,978 GMI contracts issued before 2012 and still in force at EOY 2012.

Based on the 372,744 contracts issued before 2012 with withdrawals in 2012:

- The average withdrawal amount was \$10,802. The withdrawal rate was 8.7 percent based on the average BOY contract value of \$124,521.
- The median withdrawal amount was \$6,000 based on the median BOY contract value of \$79,290.
- Total 2012 withdrawals were \$4.1 billion, 2.7 percent of BOY in-force assets.

**\$6,000** was the median withdrawal amount in 2012.

### Withdrawal Activity by Benefit Reduction Methods

In general, GMI riders allow owners to take withdrawals based on either a dollar-for-dollar or a *pro-rata* reduction from the benefit base. Dollar-for-dollar reductions allow the owners to withdraw up to the roll-up amount in the benefit base so that the base benefit remains unchanged. This method of benefit base calculation and withdrawal provision provides protection during a declining market. Eighty-eight percent of contracts allow this benefit reduction method for withdrawals (Table 3-4).

**Table 3-4: GMI Withdrawal Rates by Benefit Reduction Methods**

Benefit Reduction Method	Percentage of Contracts	Percentage of Contracts With Withdrawals in 2012
Dollar-for-dollar	88%	28%
<i>Pro-rata</i>	12%	16%
Overall	100%	25%

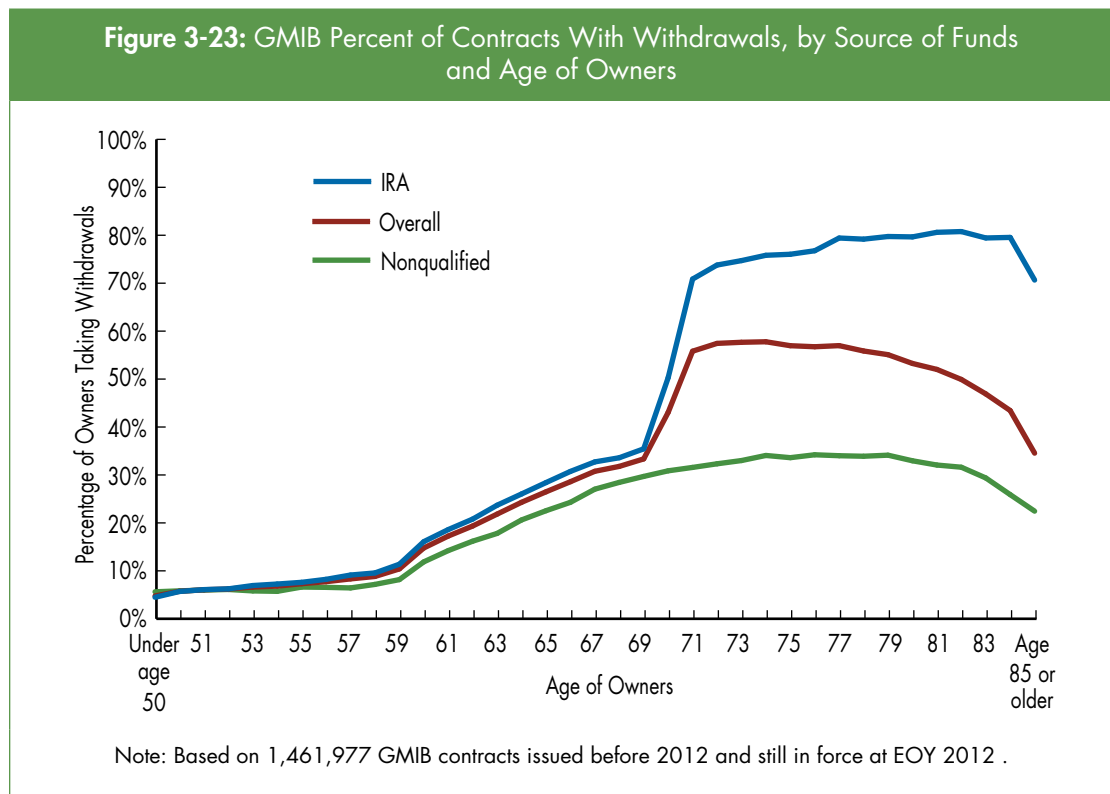
Note: Based on 1,461,948 GMI contracts issued before 2012 and still in force at EOY 2012 .

On the other hand, *pro-rata* withdrawals reduce the benefit base by the same percentage as the withdrawal. This withdrawal provision benefits contract owners when there are market gains in the account value. Twelve percent of GMIB contracts offer this method. However, only 16 percent of those contract owners took withdrawals in 2012, significantly lower than the 28 percent of owners who took dollar-for-dollar withdrawals.

### Withdrawal Activity by Source of Funds

The percentage of qualified withdrawals approached 80 percent for GMIB owners in their late 70s and early 80s.

The source of funds (i.e., whether the annuity was funded with qualified or nonqualified money) is one of the more valuable factors for understanding customer withdrawal behavior. The overall incidence of withdrawals in GMIB contracts over the past few years has stayed around 20 to 25 percent. However, analyzing withdrawal activity by source of funds and age reveals that the utilization rate of withdrawal provisions in GMIB contracts is in fact quite high for certain customer segments (Figure 3-23).



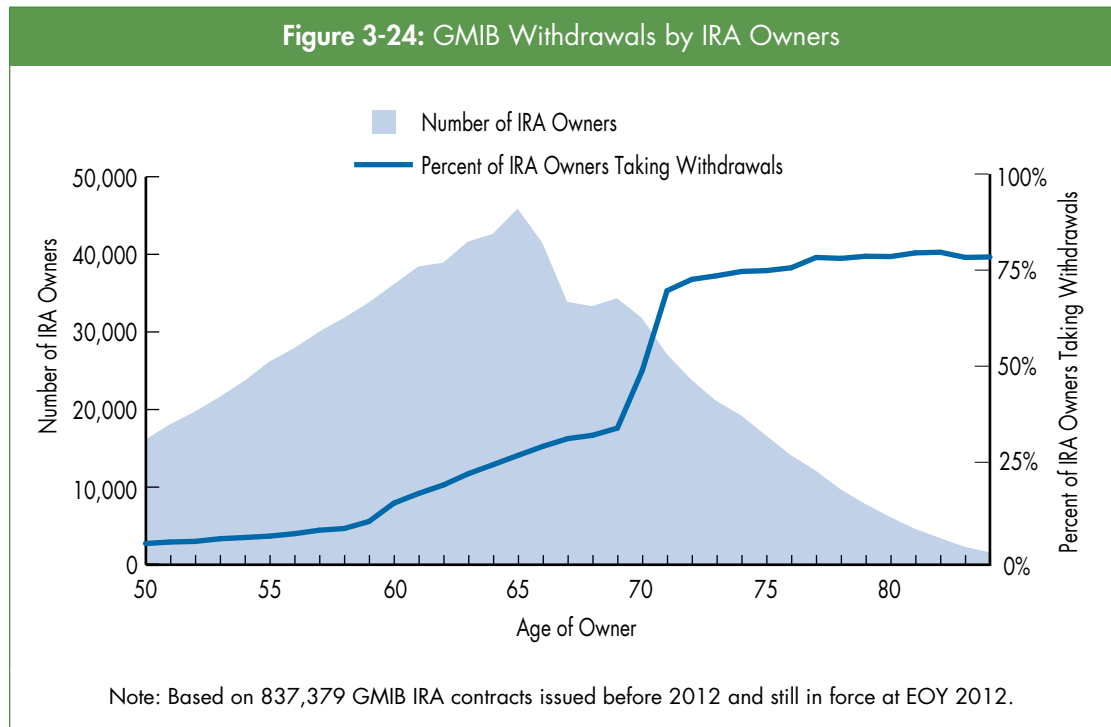
As with GLWBs, GMIB owner withdrawal behavior can be viewed in three different phases:

- Under age 60, when most of the owners are not retired, withdrawal rates for customers who use either qualified or nonqualified money to buy their contracts remain low, typically less than 10 percent. 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. Early in this phase, the percent of owners taking withdrawals rises slowly in parallel for both qualified and non-qualified owners.
- Between ages 60 and 70 — sometimes termed as the transition ages in retirement — less than one third are fully utilizing the withdrawal provisions in their GMIB contracts.
- After age 70, the need for RMDs from qualified annuities forces many GMIB owners to take withdrawals, and the percent of IRA customers taking withdrawals quickly jumps to 73 percent by age 72. After this age, the percent of qualified owners withdrawing slowly rises to around 80 percent by age 80.

GMIB owners are less likely to use withdrawal provisions if they bought the annuity with nonqualified money. Nonetheless, there is a steady increase in the proportion of owners who take withdrawals from age 60 to age 65 (11 percentage points), and to age 75 (11 percentage points). Then the percentage of owners taking withdrawals levels off at around 33 percent before declining for owners aged 80 and older.

The overall percent of owners taking withdrawals increasingly resembles the nonqualified line after age 75, because more and more contracts are nonqualified as owner age increases. Among GMIB owners aged 70 and over, half own nonqualified annuities and only 31 percent are taking withdrawals. On the other hand, 71 percent of owners aged 70 and over who own qualified annuities are taking withdrawals. Overall, just over half of owners aged 70 and over are taking withdrawals from their GMIB contracts.

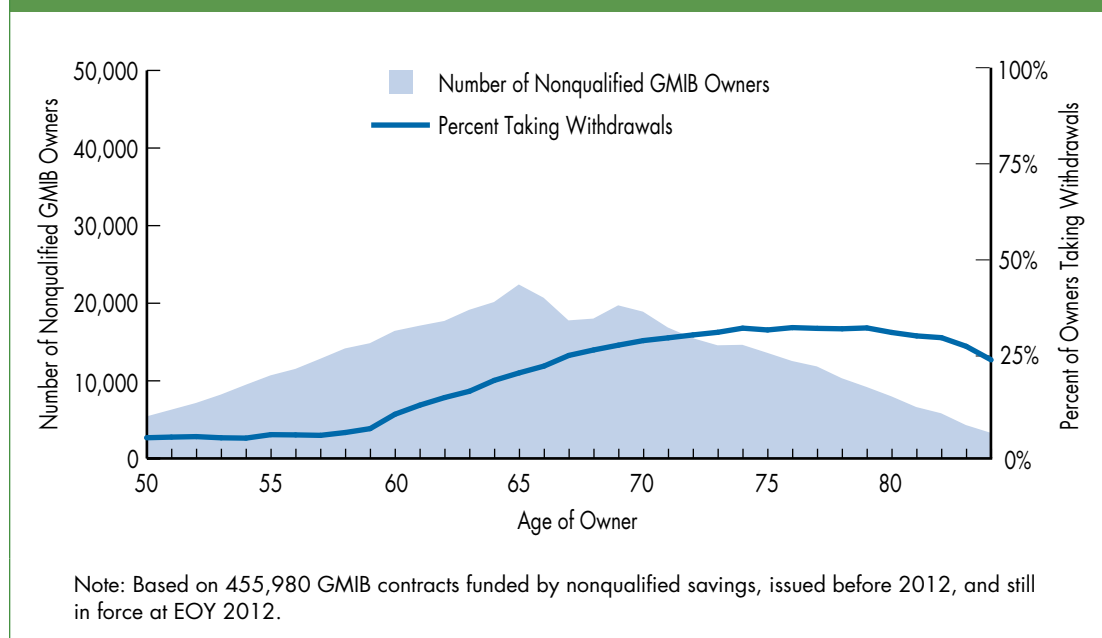
Insurance companies managing GMIB rider risk should distinguish and evaluate that risk based on the sources of funding. The distinction between qualified and nonqualified sources of funds is important. The composite withdrawal activity by age cohort is not as reliable a measure of actual risk. With almost three quarters of qualified GMIB owners under age 70 — and only 1 in 6 taking withdrawals — the measure is skewed downward. This is particularly important as more younger customers invest in annuities with qualified savings, and as companies focus on attracting more rollover money. From the standpoint of insurance companies, qualified GMIB annuities could cost more to administer than nonqualified contracts, as customers begin taking RMDs at age 70½. As increasing numbers of young investors buy annuities with qualified sources of funds, the disparity between the cost and risk of offering qualified annuities and nonqualified annuities will continue to increase (Figure 3-24).



In the next 5 years, another 20 percent of owners (around 189,000) currently between ages 65 and 69 will reach age 70 or older, and a majority of them will start to take withdrawals to meet RMDs. In 2012, only 31 percent of owners aged 65–69 took withdrawals. The need to take RMDs will essentially drive withdrawal behavior, and the more a company’s customer mix is over-weighted with qualified contract owners, the more risk it takes on with its GMIBs.

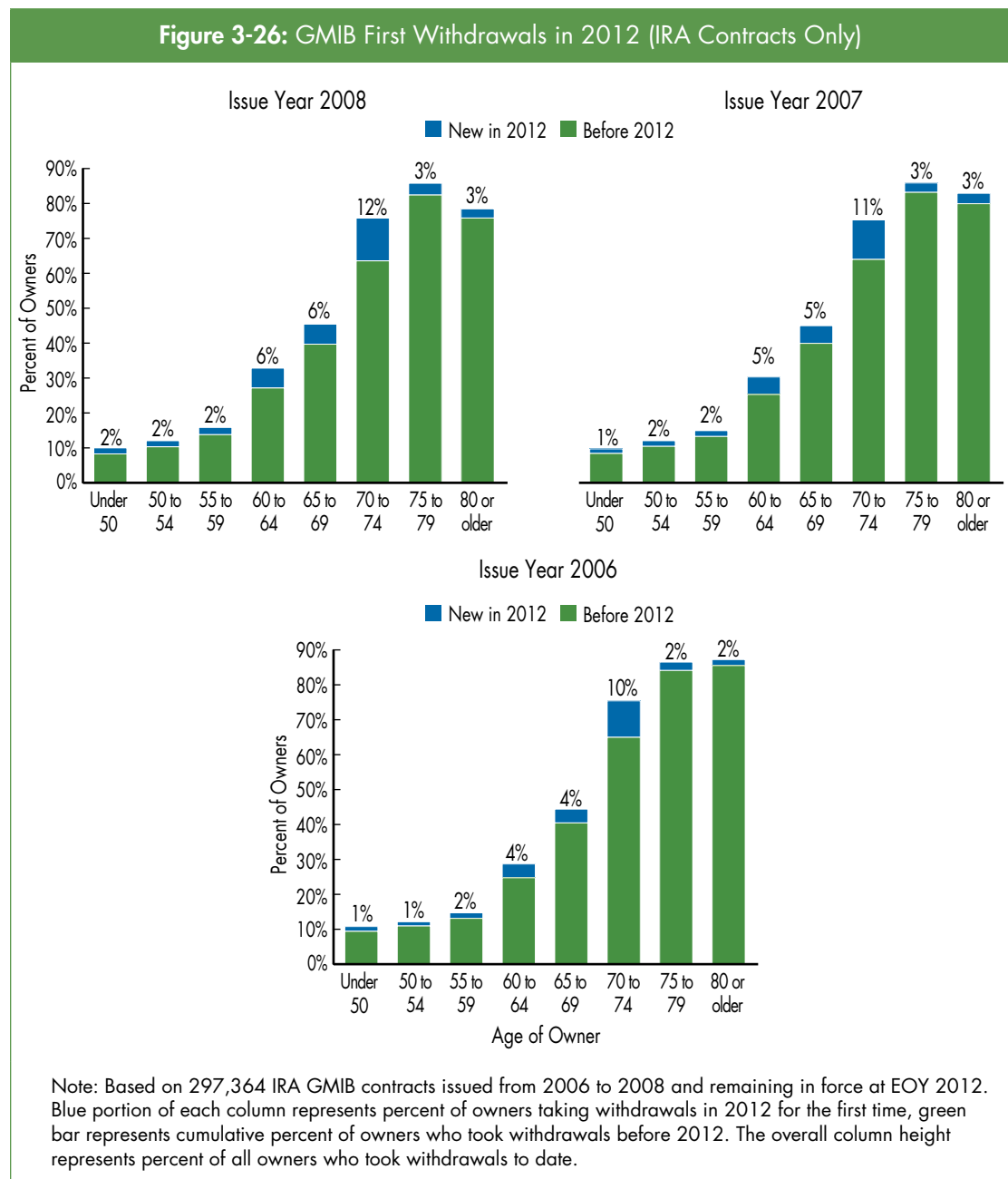
In comparison with IRA annuities, 31 percent of GMIB owners aged 70 or over who funded their annuities with nonqualified money took withdrawals in 2012 (Figure 3-25). Twenty-six percent of GMIB nonqualified owners aged 65–69 took withdrawals in 2012.

**Figure 3-25: GMIB Withdrawals by Nonqualified Owners**



## Taking First Withdrawal From IRA Annuity in 2012

There is a distinct pattern of withdrawal behavior from IRA-funded GMIB annuities, principally driven by age and the need to take RMDs. Figure 3-26 shows the percent of owners taking their first withdrawals in 2012 by individual issue years from 2006 to 2008. We have kept the analysis limited to issue years 2006 to 2008 due to lack of representative company samples from all participating companies.





The upper left corner of Figure 3-26 shows withdrawal activity for contracts issued in 2008. The Y-axis shows the percent of customers who took withdrawals by age groups. The green bar for each age group shows the percent of customers who took their withdrawals before 2012 and the blue colored bar shows the percent of owners taking their first withdrawals in 2012.

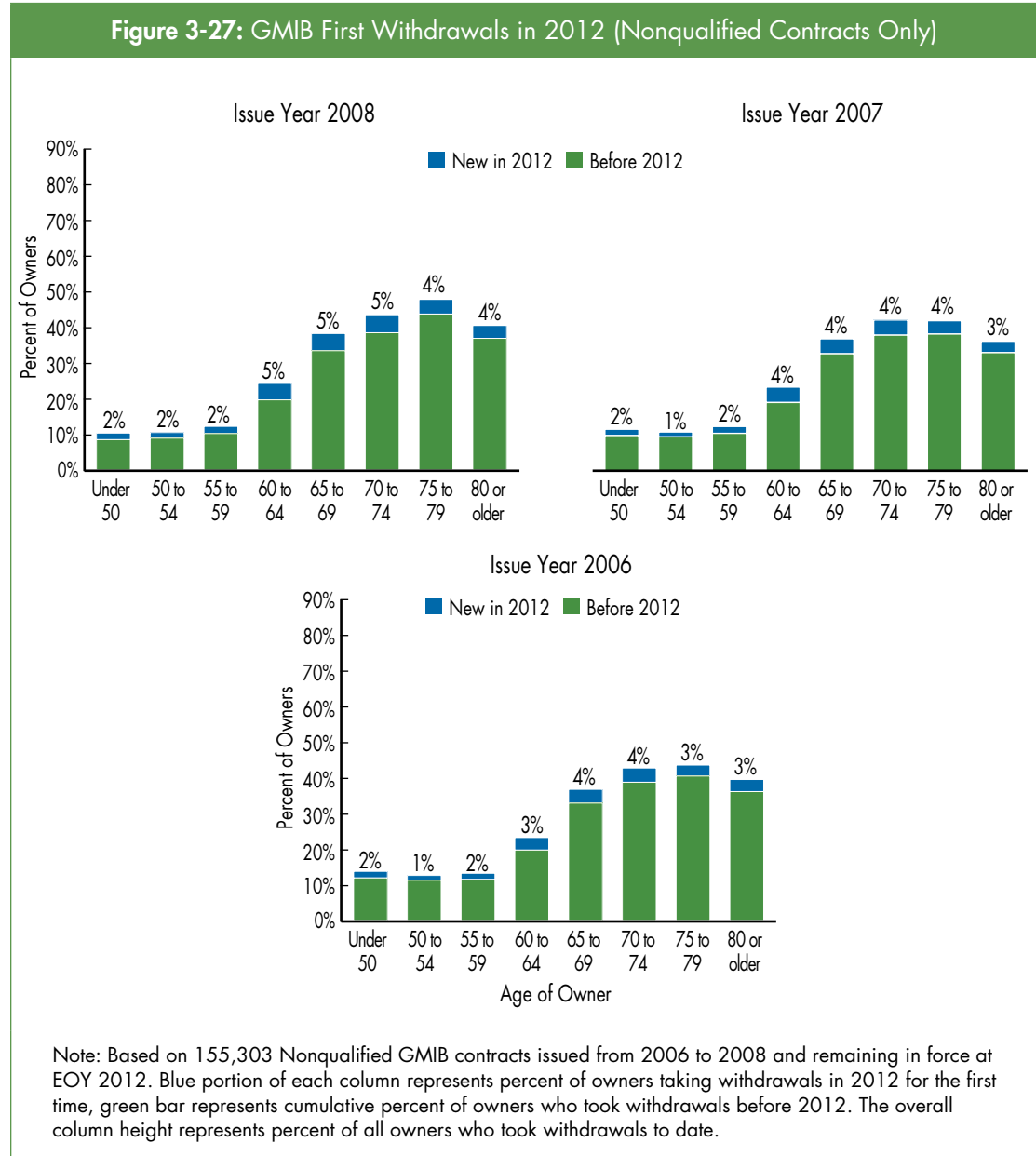
Owners who bought their annuities in 2008 had at least four years to take withdrawals. For these owners, only a small percent under age 70 initiated their first withdrawals in 2012. The marginal increases in the percentage of owners from each age group taking their first withdrawals remains relatively small — within a range of 2 to 6 percent for each age group under age 70. However, 12 percent of owners aged 70 to 74 took their first withdrawals in 2012. Almost two thirds of owners aged 70 to 74 had already taken withdrawals before 2012. Previous LIMRA studies show that owners who turn age 71 have the highest percentage of first withdrawals due to RMDs.

Around 10 to 12 percent of qualified owners aged 70–74 took first withdrawals in 2012.

We witness an almost identical trend in owner withdrawal behavior for IRA annuity contracts issued in 2007 and 2006. For IRA contracts, age and the need to take RMDs are the principal drivers for withdrawals from GMIBs. The distinct pattern of first withdrawals in 2012 from GMIB contracts is remarkably similar to the pattern of first withdrawals in 2012 for GLWB owners.

## Taking First Withdrawal From Nonqualified Annuity in 2012

The percent of nonqualified GMIB annuity owners taking their first withdrawals in 2012 reflects more streamlined withdrawal behavior. Figure 3-27 shows the percent of nonqualified owners taking their first withdrawals in 2012 by individual issue years from 2006 to 2008.



Without the need to take RMDs, the percent of nonqualified owners who bought their annuities in 2008 and took their first withdrawals in 2012 increased slightly with age. Only a small percent of owners aged 70 or under took their first withdrawals in 2012 within a range of 2 to 5 percent, which is similar to the behavior of IRA owners. For ages 70 and up, the percent of customers taking their first withdrawals remained around 4 to 5 percent for each age group. One third of owners aged 65 to 69 had already taken withdrawals before 2012; this percentage increases to around 4 in 10 for ages 70 to 74.

We witnessed an almost identical pattern in owner withdrawal behavior for nonqualified annuity contracts issued in 2007 and 2006. For nonqualified contracts, age and contract duration are the principal drivers for withdrawals. Five percent or fewer of the nonqualified owners began their first withdrawals each year; and the cumulative percent of these owners who took withdrawals, to date, from their GMIB contracts remains below 50 percent.

### Withdrawal Activity for Contracts Issued in 2008

In order to gain 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 tracked GMIB contracts bought in 2008 and measured owners' withdrawal behaviors. Table 3-5 shows the withdrawal behavior of 2008 IRA buyers aged 57 to 75 during 2008 to 2012 (5 years of withdrawal history), and assessed what percent of those buyers began taking their first withdrawals from 2008 to 2012.

		Age at Purchase																		
Withdrawals started at	Age	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57		5%																		
Age 58		4%	5%																	
Age 59		6%	6%	5%																
Age 60		8%	10%	12%	12%															
Age 61		5%	5%	7%	10%	11%														
Age 62			6%	6%	8%	10%	14%													
Age 63				6%	6%	7%	11%	14%												
Age 64					5%	6%	7%	12%	14%											
Age 65						6%	6%	8%	12%	17%										
Age 66							6%	8%	8%	14%	17%									
Age 67								6%	7%	7%	12%	16%								
Age 68									5%	6%	8%	12%	16%							
Age 69										5%	6%	7%	12%	16%						
Age 70											18%	22%	25%	16%	25%					
Age 71												24%	26%	42%	18%	34%				
Age 72													6%	7%	34%	17%	39%			
Age 73														4%	6%	25%	14%	33%		
Age 74															3%	5%	24%	17%	36%	
Age 75																4%	6%	27%	18%	37%
Age 76																	3%	7%	26%	18%
Age 77																		2%	6%	25%
Age 78																			4%	5%
Age 79																				2%
Cumulative		28%	32%	37%	40%	41%	45%	48%	46%	49%	60%	80%	85%	85%	86%	85%	86%	86%	90%	87%
Percent of owners taking withdrawals in all subsequent years		74%	73%	75%	79%	78%	80%	82%	84%	83%	85%	90%	92%	91%	88%	83%	82%	84%	83%	85%

First Withdrawals in 1st Year – 2008  
 First Withdrawals in 2nd Year – 2009  
 First Withdrawals in 3rd Year – 2010  
 First Withdrawals in 4th Year – 2011  
 First Withdrawals in 5th Year – 2012

Note: Based on a constant group of 53,092 contracts issued in 2008 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred from 2008 –2011, and withdrawals continued every year through 2012.

**First Year — 2008**

- Five percent of owners aged 57–59 took withdrawals during their first year of purchase. For owners aged 60–69, that percent ranged from 11 to 17 percent.
- One quarter of owners aged 70 in 2008 took withdrawals in the first year.
- In general, around one third of 2008 owners over age 70 took withdrawals in their first contract year.

**Second Year — 2009**

- In their second year of holding a GMIB rider, the percentage of owners aged 60–69 in 2009 taking their first withdrawals from their annuity was either a little lower than or the same as the percentage of owners who took withdrawals in the first year (ranged from 10 to 14 percent). In 2009, the RMD rules were eased so it is not surprising the percentage of owners who took their first withdrawals was lower than that of the prior year.
- However, almost 1 in 6 (16 percent) of owners who turned age 70 took their first withdrawals in 2009, their second year of holding. Eighteen percent of owners aged 70 at purchase, and 71 in their second year, took their first withdrawals in 2009. This was almost half of the percentage of owners aged 71 who took withdrawals in 2008.
- For owners aged 72 and over, 14 to 18 percent took their first withdrawals in their second year. This was roughly half of the percentage of 2008 owners taking their first withdrawals for this same age group.

**Third Year — 2010**

- In their third year of ownership, owners who turned ages 60–69 in 2010 and took their first withdrawals remained within a range of 7 to 10 percent.
- For owners who turned ages 70 and 71 in 2010 and took their first withdrawals, we see the withdrawal percentages jump to 25 percent and 42 percent, respectively. One third of owners who turned to age 72 (at purchase they were aged 70) took their first withdrawals in 2010. From age 73 and over, approximately 1 in 4 owners took their first withdrawals.

**Fourth Year — 2011**

- In their fourth year of ownership, owners who turned ages 60–69 in 2010 and took their first withdrawals remained within a relatively tight range of 5 to 8 percent.
- For owners who turned ages 70 and 71 in 2011 and took their first withdrawals, the withdrawal percentages increased to 22 percent and 26 percent respectively. From age 72 and over, only 5 to 7 percent of owners took their first withdrawals, at an almost uniform rate, in their fourth year of ownership.

**Fifth Year — 2012**

- The pattern of owners taking first withdrawals — for those under age 70 when they start withdrawals — is similar to 2010.
- For owners who turned ages 70 and 71 in 2012 and took first withdrawals, percentages were 18 percent and 24 percent, respectively.
- Six percent or fewer of 2008 owners aged 72 and older started their first withdrawals in 2012. The pool of GMIB owners who have not yet taken their withdrawals is shrinking.

The last row of Table 3-5 provides the percentage of owners taking withdrawals in all subsequent years based on contracts where the first withdrawal occurred between 2008 and 2011, and thereafter withdrawals continued every year through 2012.

For example, 92 percent of 68-year-olds who purchased their annuities in 2008 took their first withdrawals between 2008 and 2011, and continued to take withdrawals every year through 2012. Overall, once owners begin to take withdrawals, they are more likely to utilize the lifetime withdrawal benefit, provided that they do not surrender their contracts in later years.

**Withdrawal Activity for Nonqualified Contracts Issued in 2008**

For nonqualified annuity owners, aged 57 to 69, we see a similar first-year withdrawal pattern to the 2008 IRA owners (Table 3-6). In the second year, 3 to 14 percent of owners aged 60 and older took their first withdrawals. After the second year, the range is much tighter — from 3 to 7 percent of owners aged 60 and older took their first withdrawals in each year. However, for ages 70 or 71, we do not see a spike in withdrawals.

For contracts in their third to fifth year of ownership, the percentage of owners taking first withdrawals does not vary significantly across observation years. In 2012, across all ages, the percentage of owners taking withdrawals remained within a band of 3 to 6 percent, as the

pool of owners who have not taken withdrawals up to that point shrinks. Obviously, we expect the percentage of owners taking their first withdrawals in the following years to be lower, as more and more owners start taking lifetime withdrawals. Note that most of these owners used systematic withdrawal plans (SWPs) to receive their regular withdrawals.

Table 3-6: GMB First Withdrawals for 2008 Nonqualified Buyers																			
Age at Purchase																			
Withdrawals started at	Age 57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Age 57	2%																		
Age 58	3%	2%																	
Age 59	5%	4%	4%																
Age 60	5%	7%	8%	8%															
Age 61	6%	4%	5%	7%	10%														
Age 62		5%	5%	5%	9%	11%													
Age 63			4%	5%	6%	10%	13%												
Age 64				5%	5%	6%	10%	12%											
Age 65					5%	4%	6%	11%	14%										
Age 66						5%	6%	5%	12%	15%									
Age 67							4%	6%	5%	10%	15%								
Age 68								5%	5%	5%	10%	16%							
Age 69									4%	5%	7%	11%	18%						
Age 70										5%	5%	7%	10%	18%					
Age 71											4%	5%	6%	12%	18%				
Age 72												6%	5%	7%	13%	19%			
Age 73													5%	4%	6%	12%	20%		
Age 74														4%	5%	6%	14%	21%	
Age 75															5%	4%	6%	12%	23%
Age 76																5%	4%	6%	13%
Age 77																	4%	5%	5%
Age 78																		3%	4%
Age 79																			3%
Cumulative	20%	23%	27%	30%	35%	35%	39%	39%	40%	40%	42%	44%	45%	45%	46%	46%	48%	47%	49%
Percent of owners taking withdrawals in all subsequent years	73%	71%	71%	79%	81%	80%	84%	81%	81%	85%	85%	84%	83%	85%	81%	86%	86%	82%	82%

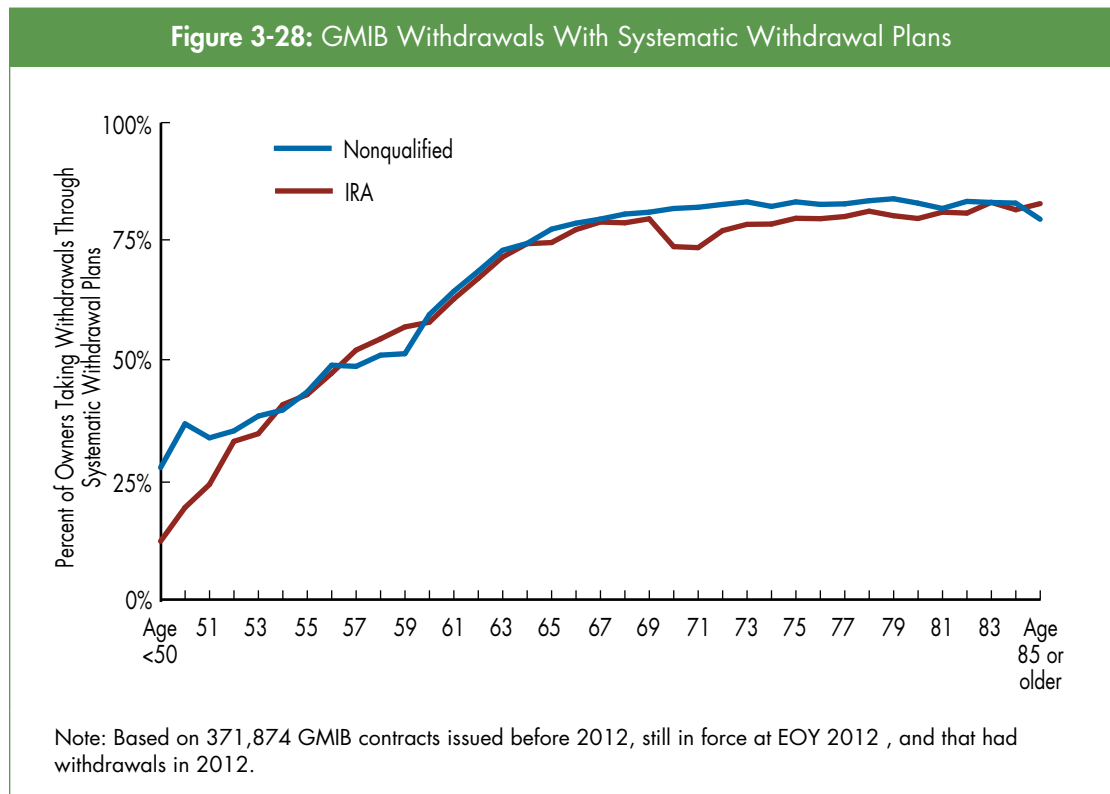
■ First Withdrawals in 1st Year — 2008  
■ First Withdrawals in 2nd Year — 2009  
■ First Withdrawals in 3rd Year — 2010  
■ First Withdrawals in 4th Year — 2011  
■ First Withdrawals in 5th Year — 2012

Note: Based on a constant group of 29,301 contracts issued in 2008 and still in force at EOY 2012. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred from 2008–2011, with withdrawals continuing every year through 2012.

### Systematic Withdrawal Activity

One predictor that can help determine if GMIB owners will continue to take advantage of withdrawal provisions is what method they use — SWPs or occasional withdrawals. Withdrawals through SWPs indicate customers’ intentions to take withdrawals on a continuous basis, and strongly suggest that they are utilizing the withdrawal provisions in their GMIB contracts.

Overall, 74 percent of owners who take GMIB withdrawals use SWPs. Older owners are more likely to take withdrawals through SWPs, and younger owners — particularly those under age 60 — are more likely to take occasional withdrawals (Figure 3-28). After age 70, owners who take withdrawals from their GMIB annuities are more likely to use SWPs — the percentage of owners using SWPs reaches just over 80 percent for owners in their 80s.





The median annual withdrawal amount for those taking just an SWP in 2012 was \$5,400 and the average was \$8,428.

Table 3-7 shows the average and median withdrawal amount for owners who took only SWP withdrawals in 2012, for both qualified and nonqualified contracts. The median withdrawal amounts for both qualified and nonqualified owners aged 60 and older were within expectations, while those under age 60 were influenced by owners who were

likely taking partial surrenders. This is a very small percentage of contracts that had withdrawals.

**\$5,400** was the median withdrawal amount when taken on a systematic basis — **\$7,000** when taken on a occasional basis.

**Table 3-7: GMIB Systematic Withdrawal Amounts by Source of Funds**

Age	Systematic Withdrawals Average Withdrawal Amount		Systematic Withdrawal Median Withdrawal Amount	
	IRA	Nonqualified	IRA	Nonqualified
Under 60	\$12,733	\$14,022	\$9,492	\$8,029
60–69	\$10,539	\$9,774	\$7,200	\$6,000
70 or more	\$6,370	\$8,083	\$3,960	\$5,343
<b>Total</b>	<b>\$8,211</b>	<b>\$8,961</b>	<b>\$5,220</b>	<b>\$5,760</b>

Note: Based on 257,219 GMIB contracts issued before 2012 and still in force at EOY 2012, with withdrawals in 2012 through a SWP. Represents contracts with only systematic withdrawals.

For those contracts with only occasional (i.e., non-systematic) withdrawals, the median amount in 2012 was \$7,024 and the average was \$14,977. For owners under age 60, particularly nonqualified taking occasional withdrawals, the median withdrawal amount was relatively high, and they are more likely to partially surrender the contracts (Table 3-8).

**Table 3-8: GMIB Occasional Withdrawal Amounts by Source of Funds**

Age	Occasional Withdrawals Average Withdrawal Amount		Occasional Withdrawal Median Withdrawal Amount	
	IRA	Nonqualified	IRA	Nonqualified
Under 60	\$18,997	\$24,812	\$10,000	\$11,000
60–69	\$16,309	\$18,582	\$8,556	\$8,311
70 or more	\$9,118	\$16,615	\$4,900	\$7,500
<b>Total</b>	<b>\$13,652</b>	<b>\$19,005</b>	<b>\$6,686</b>	<b>\$8,506</b>

Note: Based on 96,691 GMIB contracts issued before 2012 and still in force at EOY 2012 with withdrawals in 2012. Represents contracts taking only occasional or non-systematic withdrawals.

A small percentage of owners took both SWP and occasional withdrawals. Table 3-9 provides the distribution of withdrawals for those owners taking only occasional withdrawals, only systematic withdrawals, and those who took both occasional and systematic based on the dollar amount of their withdrawals.

**Table 3-9: GMIB Withdrawal Amounts as Percent of Total Withdrawal Amount**

Age	Only Occasional Withdrawals		Only Systematic Withdrawal		Both Systematic and Occasional Withdrawal	
	IRA	Nonqualified	IRA	Nonqualified	IRA	Nonqualified
Under 60	4%	2%	3%	1%	1%	0%
60-69	9%	3%	15%	6%	4%	1%
70 or more	8%	4%	20%	14%	3%	2%
<b>Total</b>	<b>21%</b>	<b>9%</b>	<b>38%</b>	<b>21%</b>	<b>8%</b>	<b>3%</b>

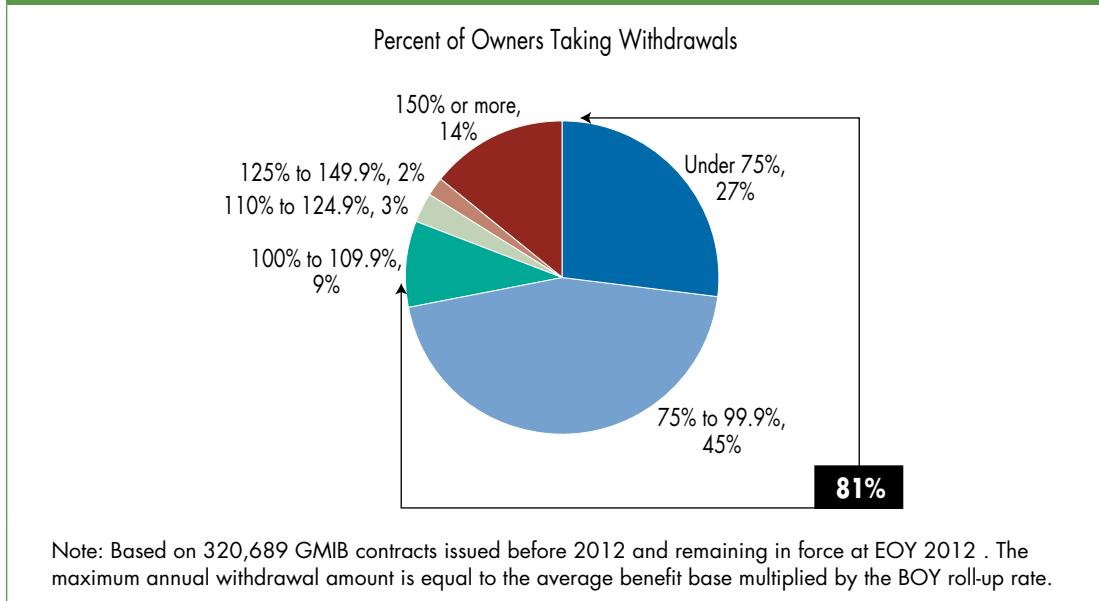
Note: Based on 371,874 GMIB contracts issued before 2012 and remained in force at EOY 2012 with withdrawals in 2012.

### Percentage of Maximum Annual Benefit Withdrawn

Like GLWBs, many GMIBs provide a specified maximum withdrawal amount, typically a dollar-for-dollar amount equal to roll-up rates, annually, for a certain period until the income phase begins, without disturbing the benefit base. However, if the owner withdraws more than the maximum allowed amount in a contract year, this triggers an adjustment of the benefit base.

In this section, we look at the relationship of GMIB customers' actual withdrawal amounts in calendar-year 2012 to the maximum annual withdrawal amounts allowed in the contracts, which for our analysis is equal to the average benefit base multiplied by the BOY 2012 roll-up rate. There is some imprecision in measuring the maximum annual withdrawal amounts that are calculated based on the roll-up rate, because benefit bases can vary under certain circumstances during the year (e.g., if additional premium is received). Accordingly, we used a conservative measure of excess withdrawals — if partial withdrawals exceeded the maximum annual withdrawal as of BOY 2012 by 10 percent or more, then we considered them to have exceeded the withdrawal maximum. Figure 3-29 shows the degree to which withdrawals are higher or lower than the maximum withdrawal amounts allowed.

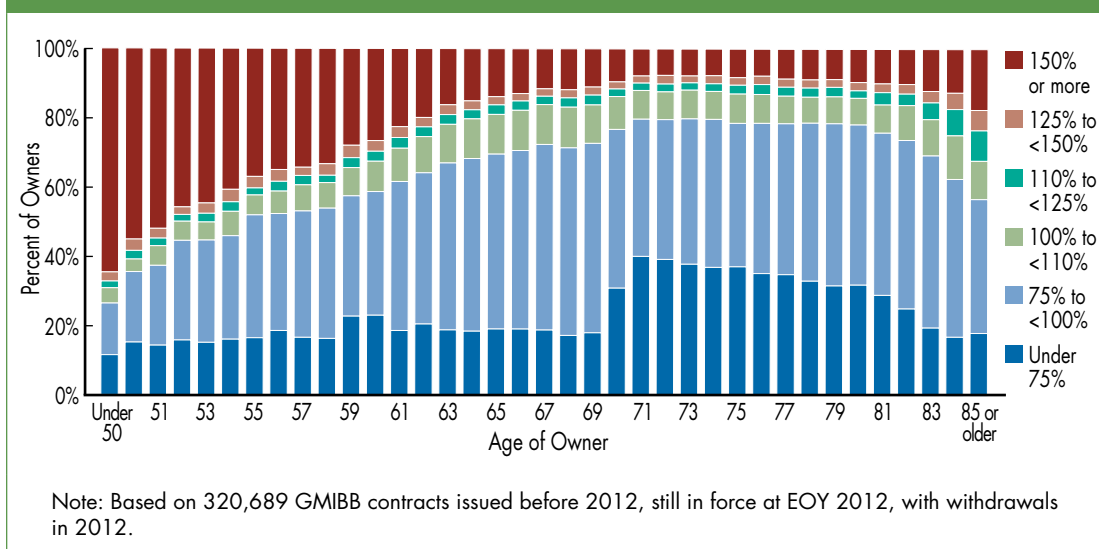
**Figure 3-29: GMIB Actual Withdrawals as a Percentage of Annual Benefit Maximum**



Around 8 in 10 owners (81 percent) who took withdrawals took less than 110 percent of the maximum allowed. Nineteen percent of owners withdrew 110 percent or more of the maximum amount allowed.

If we look at owner age, and withdrawal amounts in relation to maximum annual amounts allowed, we see that younger owners are more likely to take 125 percent or more of the maximum amount allowed (Figure 3-30).

**Figure 3-30: GMIB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age**



Only **14 percent** of owners aged 60 or over took withdrawals of 125 percent or more of the maximum amount allowed.

Withdrawal amounts for 57 percent of owners who took withdrawals in 2012 remained within 75 to less than 125 percent of the benefit maximum allowed (Table 3-10). One fourth (27 percent) of the owners withdrew less than 75 percent; and 14 percent exceeded 150 percent or more of the benefit maximum allowed in the contracts. Only 2 percent of owner withdrawals fell within 125 to less than 150 percent of the maximum allowed.

Out of the owners under age 60, 45 percent took withdrawals that exceeded 125 percent or more of the benefit maximum, most of them taking 150 percent or more. It's likely that many of these individuals are partially surrendering their contracts. On the other hand, out of the owners aged 60 or older, 14 percent took withdrawals that exceeded 125 percent or more of the benefit maximum. Many benefits will not penalize IRA annuity owners over age 70½ for taking excess withdrawals if they are doing so to satisfy IRS RMDs.

We have already demonstrated that reaching age 70½ is a trigger to begin withdrawals, if they haven't already started them. However, there is a noticeable change in the withdrawal pattern at age 70 where owners are taking out relatively low withdrawal amounts relative to the benefit maximum. Many are likely taking out only the RMD, which at these ages is a lower percentage of their balance. The percentage increases with age as the proportion of contracts taking out less than the maximum declines.

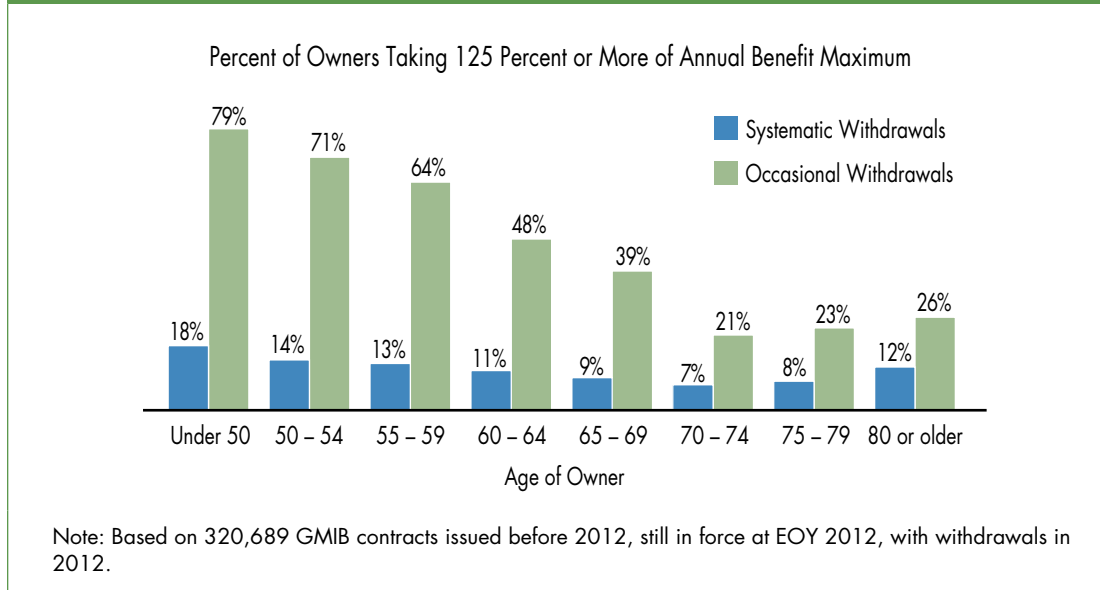
**Table 3-10: Percent of GMB Owners Taking Withdrawals as Percent of Annual Benefit Maximum**

Age	Withdrawal Amount as Percent of Annual Benefit Maximum Allowed in the Contract					
	Less than 75%	75% to <100%	100% to <110%	110% to <125%	125% to <150%	150% or more
Under 50	11%	15%	4%	2%	3%	65%
50 to 54	15%	27%	6%	2%	3%	47%
55 to 59	19%	36%	7%	3%	3%	33%
60 to 64	20%	45%	11%	3%	3%	19%
65 to 69	18%	53%	11%	3%	2%	12%
70 to 74	37%	42%	8%	2%	2%	8%
75 to 79	35%	44%	8%	3%	2%	8%
80 to 84	27%	47%	9%	4%	3%	10%
85 or older	18%	39%	11%	9%	6%	18%
<b>All ages</b>	<b>27%</b>	<b>45%</b>	<b>9%</b>	<b>3%</b>	<b>2%</b>	<b>14%</b>

Note: Based on 320,689 GMB contracts issued before 2012 with withdrawals in 2012.

A strong indicator of whether owners are likely to exceed the annual benefit maximum is the method they use — systematic or occasional. Most withdrawals that exceed 125 percent of the annual benefit maximum amount come from occasional withdrawals (Figure 3-31).

**Figure 3-31: GMIB Withdrawals to Annual Benefit Maximum Amount by Withdrawal Method and Age**



Six out of ten (58 percent) contracts with excess withdrawals (125 percent or more of the benefit maximum) came from occasional withdrawals. Nearly 4 in 10 occasional withdrawals (39 percent) exceeded 125 percent or more of the benefit maximum. On the other hand, only 9 percent of contracts using SWPs exceeded 125 percent or more of the maximum annual income allowed in the contract. Owners using SWPs, who withdraw at or below the benefit maximum, are quite consistent across all age groups. Even if we consider withdrawals between 110 to 125 percent of benefit maximum, this accounts for only another 3 percent of SWP users. Almost 3 in 4 GMIB owners take withdrawals through an SWP; and, when most of them withdraw amounts within the benefit maximum, they no doubt are utilizing the GMIB rider.

We also examined how the proportion of the benefit maximum withdrawn varies by contract size. We might expect larger contract sizes to be linked to wealthier and more sophisticated owners who are more likely to work with financial advisors and less inclined to exceed the GMIB benefit maximum, which could result in a reduction of the annual benefit base. Figures 3-32 and 3-33 illustrate the proportion of owners taking withdrawals by age and contract size. We are not able to provide the data for contract sizes of \$250,000 or more in order to preserve confidentiality and avoid revealing company-specific information, as that data was heavily weighted for one company or a very limited number of participating companies.

Owners under age 60 with contract sizes under \$100,000 at BOY 2012 were not as likely to take withdrawals that were less than 100 percent of the maximum annual amount. For example, of the owners aged 55–59 taking between 75 to 99 percent of their maximum amount allowed, 1 in 4 of those with contract sizes below \$100,000 took withdrawals compared with 41 percent for those with contract values of \$100,000 – \$249,999.

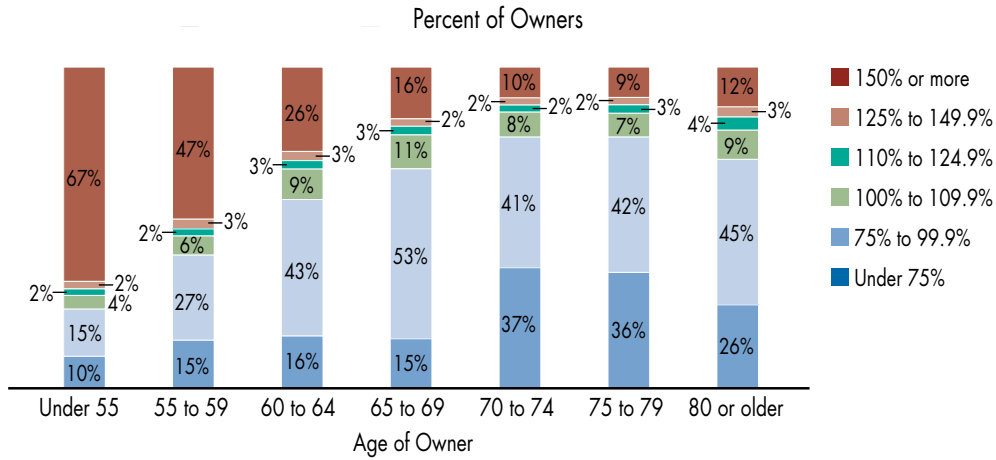
We see the opposite for those taking withdrawals of 150 percent or more. Almost half of owners aged 55–59 with contract sizes below \$100,000 took withdrawals of 150 percent or more of their maximum amount, compared with 23 percent of owners aged 55–59 with contract values of \$100,000 — \$249,999. Those with contract values of \$250,000 or more followed a similar trend.

As noted earlier, the relationship between efficiency and contract size is typically limited to owners under age 60; and even among this group, the greatest difference across contract sizes

**GMIB owners with higher contract values are less likely than those with lower contract values to significantly exceed the benefit maximum, particularly among younger owners.**

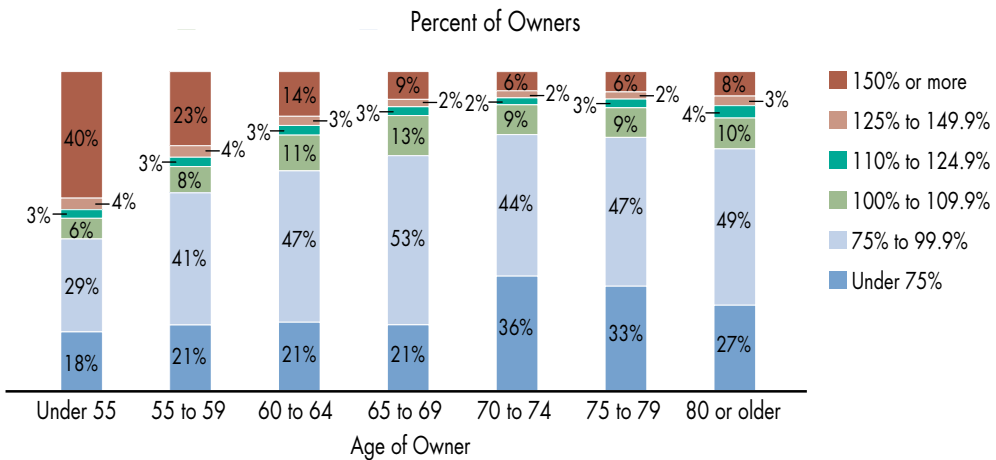
is not the increasing proportion taking amounts close to the benefit maximum, but rather the proportion of owners with contract sizes below \$100,000 taking amounts well above the benefit maximum. In short, GMIB owners with higher contract values are less likely than those with lower contract values to significantly exceed the benefit maximum, particularly among younger owners.

**Figure 3-32: GMI Withdrawals to Annual Benefit Maximum Amount by Age, Contract Sizes Under \$100,000**



Note: Based on 184,297 GMI contracts issued before 2012, still in force at EOY 2012, with withdrawals in 2012.

**Figure 3-33: GMI Withdrawals to Annual Benefit Maximum Amount by Age, Contract Sizes \$100,000 to \$249,999**

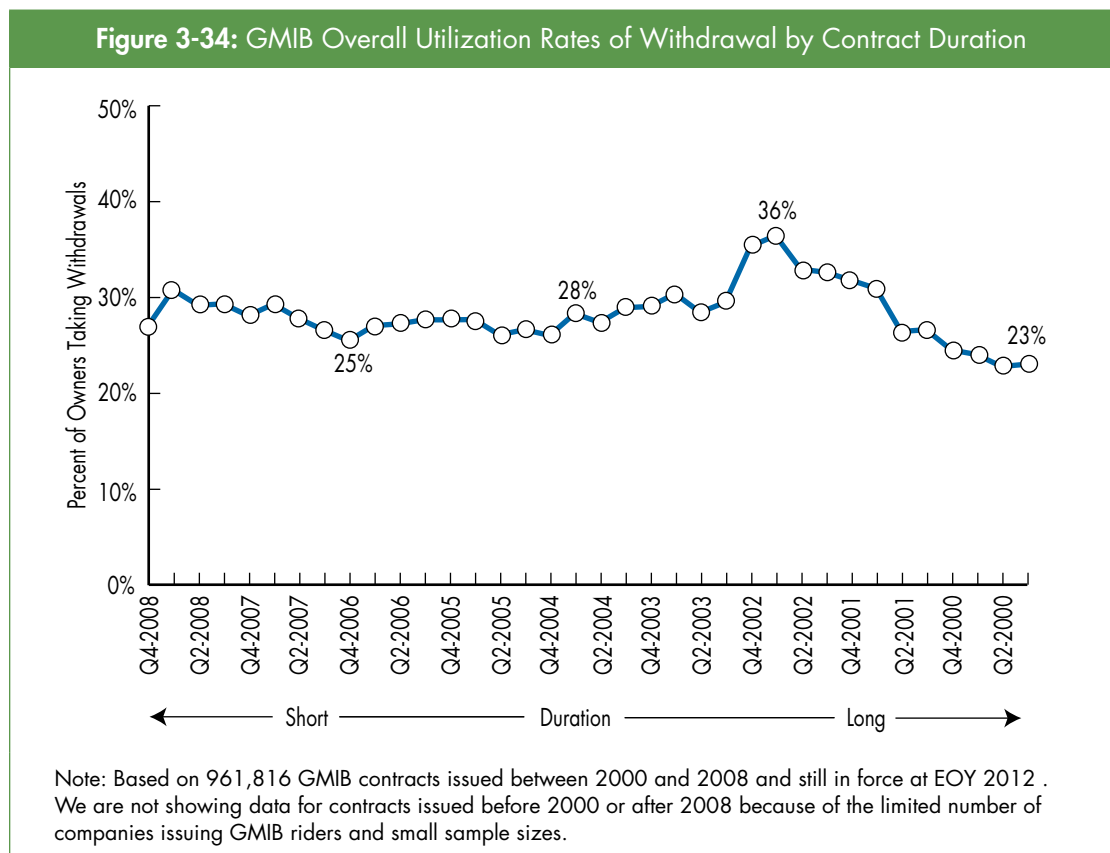


Note: Based on 95,625 GMI contracts issued before 2012, still in force at EOY 2012, with withdrawals in 2012.

### Withdrawal Activity by Duration

Contract duration is an important measure for evaluating what proportion of owners takes withdrawals from their annuities. By comparing their own withdrawal activity by contract duration with that of the industry, companies can assess the extent to which their customers' withdrawal patterns match both their own expectations and the experience of other VA companies. The comparison could also facilitate internal forecasts by estimating when and how many of the GMIB customers will take withdrawals and the resulting cash flow needed for the book of business.

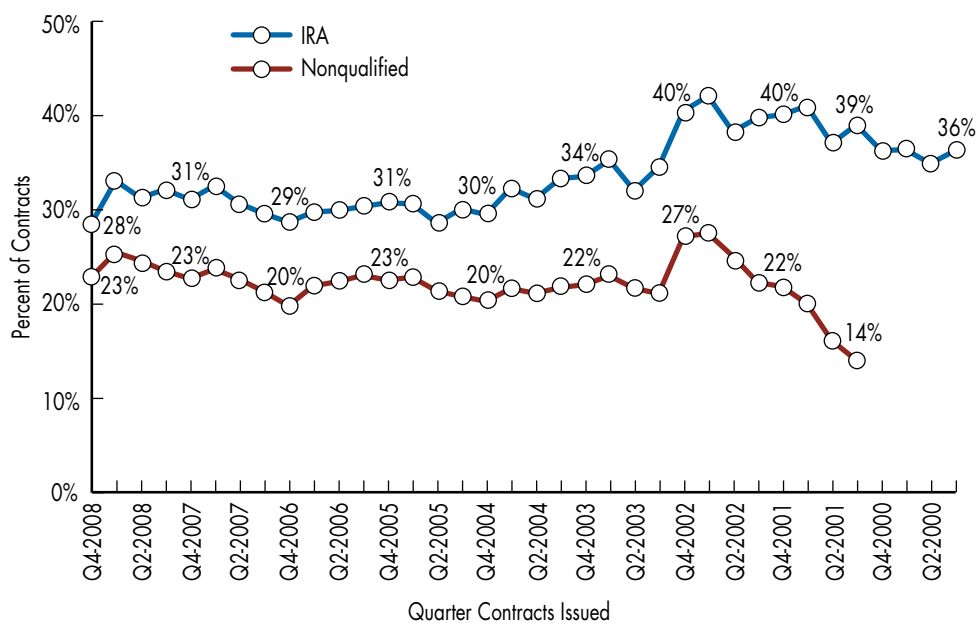
Withdrawals ranged from 23 to 36 percent for contracts with longer durations of more than 5 years. Withdrawal activities in longer-duration GMIB contracts were comparatively lower than those in GLWB contracts (Figure 3-34).





How do the overall utilization rates by contract duration periods differ for qualified and nonqualified contracts? For qualified owners, the withdrawal pattern remained around 30 to 35 percent for IRA contracts issued after 2002 while contracts issued in 2002 or earlier had withdrawal rates in the 35 to 40 percent range (Figure 3-35). Nonqualified contracts also had a relatively level withdrawal pattern for contracts issued after 2002 — around 20 to 25 percent. However, for contracts issued in 2002 or earlier, the withdrawal rates dropped to around 14 percent by Q1 2001.

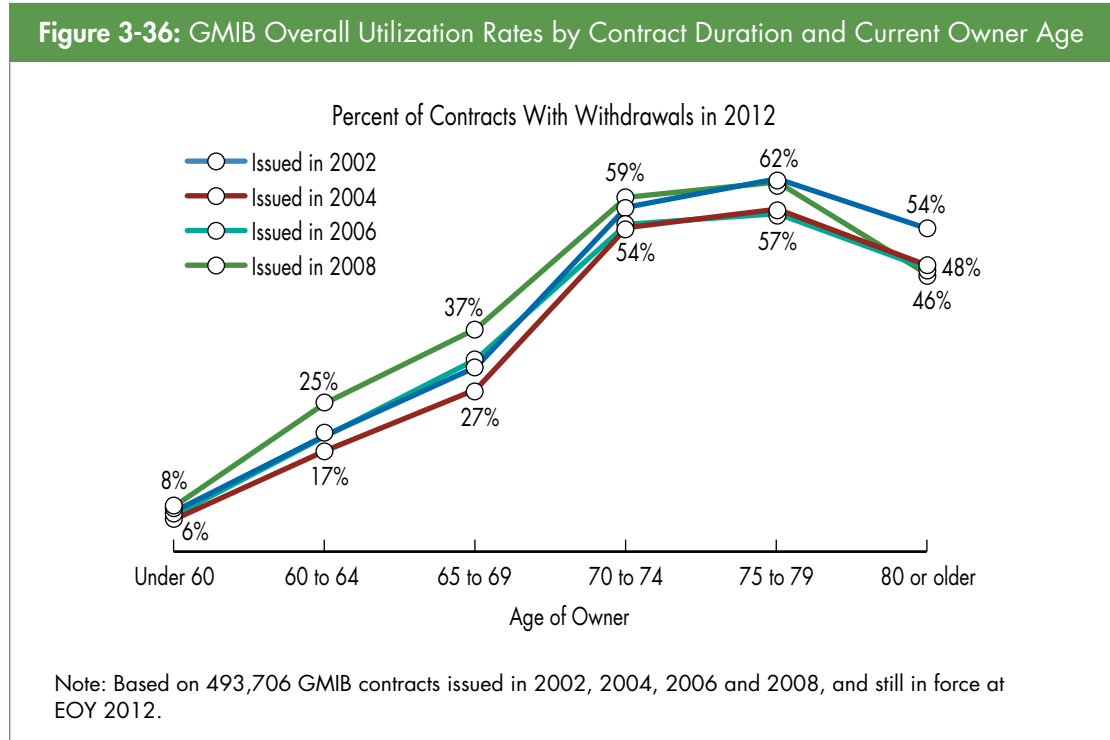
**Figure 3-35: GMB Overall Utilization Rates by Contract Duration and Source of Funds**



Note: Based on 951,588 GMB contracts issued from 2000 to 2008 and still in force at EOY 2012. We are not showing nonqualified data in 2000 or any data for contracts issued before 2000 or after 2008 because of the limited number of companies issuing GMB riders and small sample sizes.

### Withdrawal Activity by Duration and Age

We analyzed withdrawal activity by contract duration and owner age (Figure 3-36). For contracts purchased by individuals under age 60, the overall utilization rate is fairly stable across different issue years. Withdrawals among these younger age groups are uncommon.



From ages 60 to 79, withdrawal activity increases, as owners begin to retire or need to make withdrawals to satisfy RMDs. For example, for contracts issued in 2008, the overall withdrawal rate increases to 59 percent for owners aged 70–74. Withdrawal rates level off for ages 75–79

Mapping the duration of contracts by age group can improve understanding of GMIB customer withdrawal behavior — it follows a fairly consistent pattern.

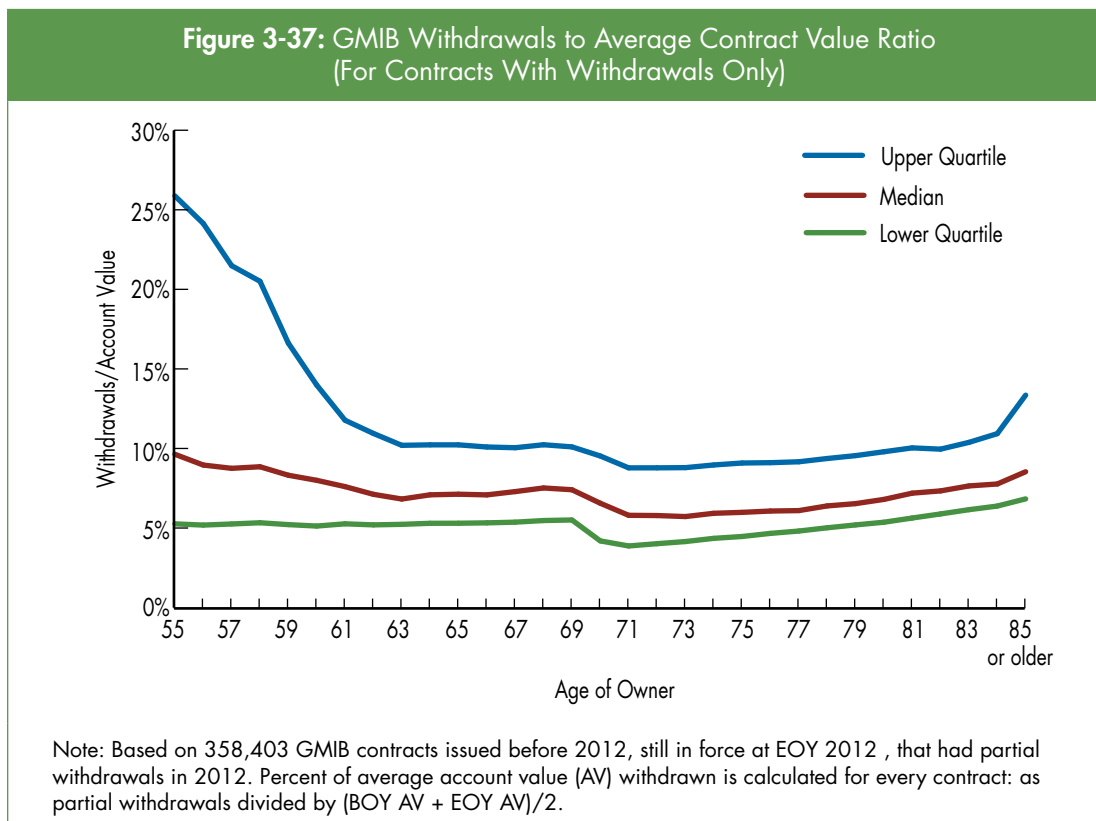
and then decrease 10 to 15 percentage points for ages 80 and older. We found a very similar pattern for contracts issued in 2001 – 2008. The source of funds used to purchase the annuity remains the underlying force for these incremental increases. However, mapping the duration of contracts by age groups can improve our understanding of GMIB customer withdrawal behavior.

## Withdrawal Amount as a Percentage of Contract Value

In order to provide context for the withdrawal amounts, we assessed the withdrawal amounts in relation to the contract value. Figure 3-37 shows the median and interquartile range for withdrawal amounts as a percentage of average contract value.

Typically a small number of younger owners take out large withdrawals. However, as we have seen, an increasing number of owners, beginning at age 60, take withdrawals, and their withdrawal amounts represent a more sustainable withdrawal pattern.

The median withdrawal amount was **\$6,000** in 2012 for contracts issued before 2012 that were in force at EOY 2012 .



The distribution of the withdrawals as a percent of average contract value withdrawn shows that, for owners aged 70 or over, the median, the upper quartile, and the lower quartile values are relatively close. This pattern also indicates that many owners taking withdrawals at older ages are withdrawing at similar ratios from their contract values; for example, for owners in their 60s and 70s, around 6 to 7 percent. For owners under age 60, the median of the ratios is higher than that of older owners, ranging from 8 to 10 percent, with the highest ratios among younger owners. Also there is a wide difference between the median and the upper quartile

values, indicating that a group of these younger owners are taking far more than the maximum allowed in the contracts. These large withdrawal amounts push up the overall average.

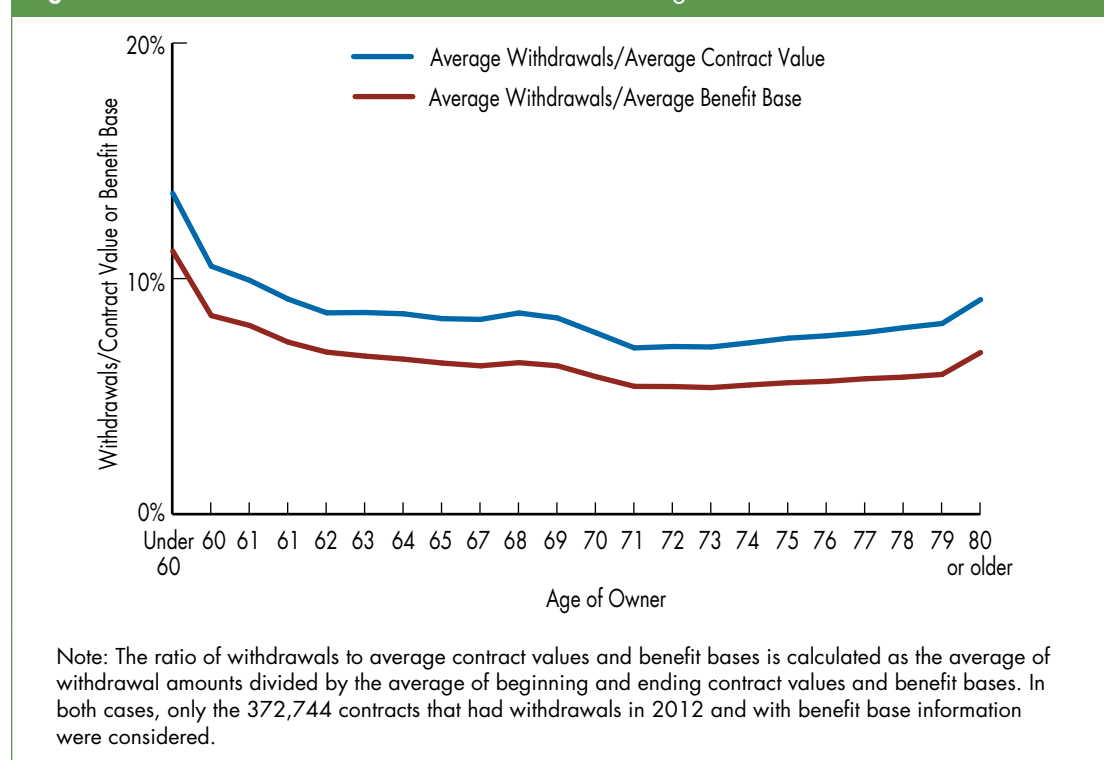
### Ratio of Withdrawal to Contract Value and to Benefit Base (for Contracts With Withdrawals Only)

Measuring the average withdrawal amount as a percent of average contract value and benefit base yields valuable insights into the risk associated with withdrawal provisions in GMIB riders. If the ratio of withdrawal to contract value remains lower than or very close to the ratio of withdrawal to benefit base, insurance companies take very little risk on the withdrawal provisions offered in GMIB riders.

On average, the ratio of withdrawal to contract value is higher than the ratio of withdrawal to benefit base.

For all ages, the ratio of average withdrawal amount to average contract value is higher than the ratio of average withdrawals to average benefit base (Figure 3-38). The average difference between the ratios is around 2 to 3 percentage points, for the bulk of GMIB owners aged 60 to 80. For owners under age 60 and taking withdrawals, the ratios of their 2012 withdrawal amount to average contract value as well as to benefit base were higher. Many of these withdrawals are likely partial surrenders of contracts that may be fully surrendered in future.

Figure 3-38: GMIB Ratio of Withdrawal Amount to Average Contract Value and to Benefit Base

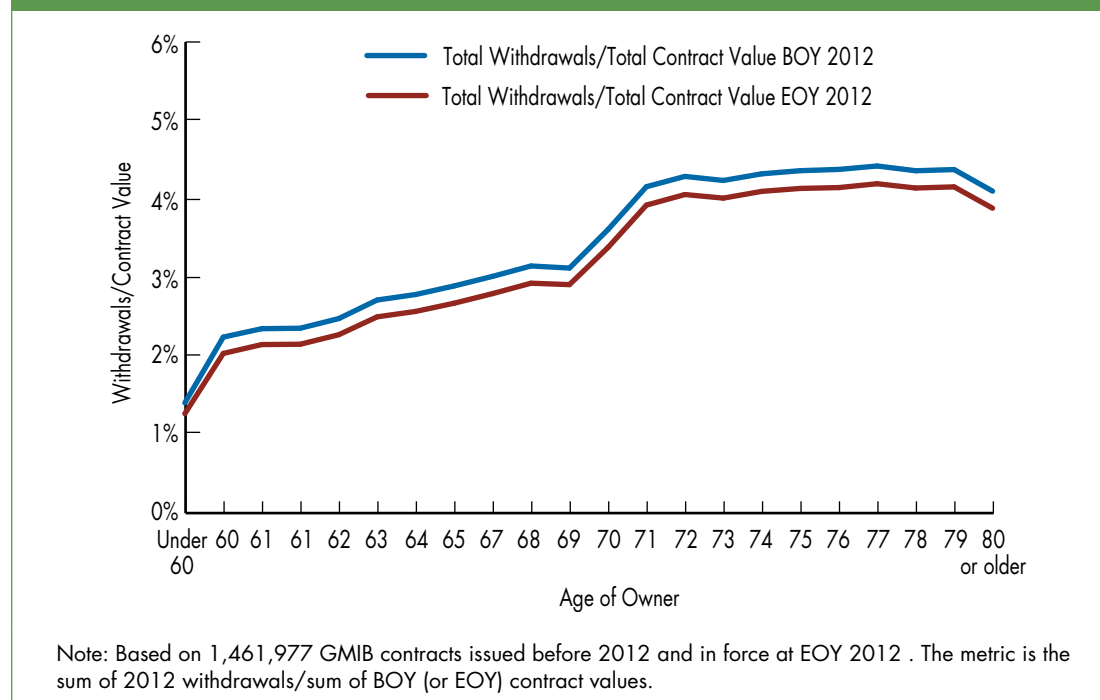


## Ratio of Withdrawal Amount to Contract Value

Another measure of withdrawal risk in GMIB riders originating in customer behavior can be ascertained by comparing the ratio of withdrawal amount to BOY contract value and the ratio of withdrawal amount to EOY contract value. This measure can be calculated two ways. First, total withdrawals in 2012 can be divided by total contract values at BOY and EOY, for all in-force contracts. Second, the same ratios can be computed for only the subset of contracts that had withdrawals in 2012. The first metric provides a measure of risk in terms of the total book of business, as well as the rate of cash outflow for each age; while the second provides an estimation of risk among the contracts where owners use the withdrawal provisions in GMIB riders.

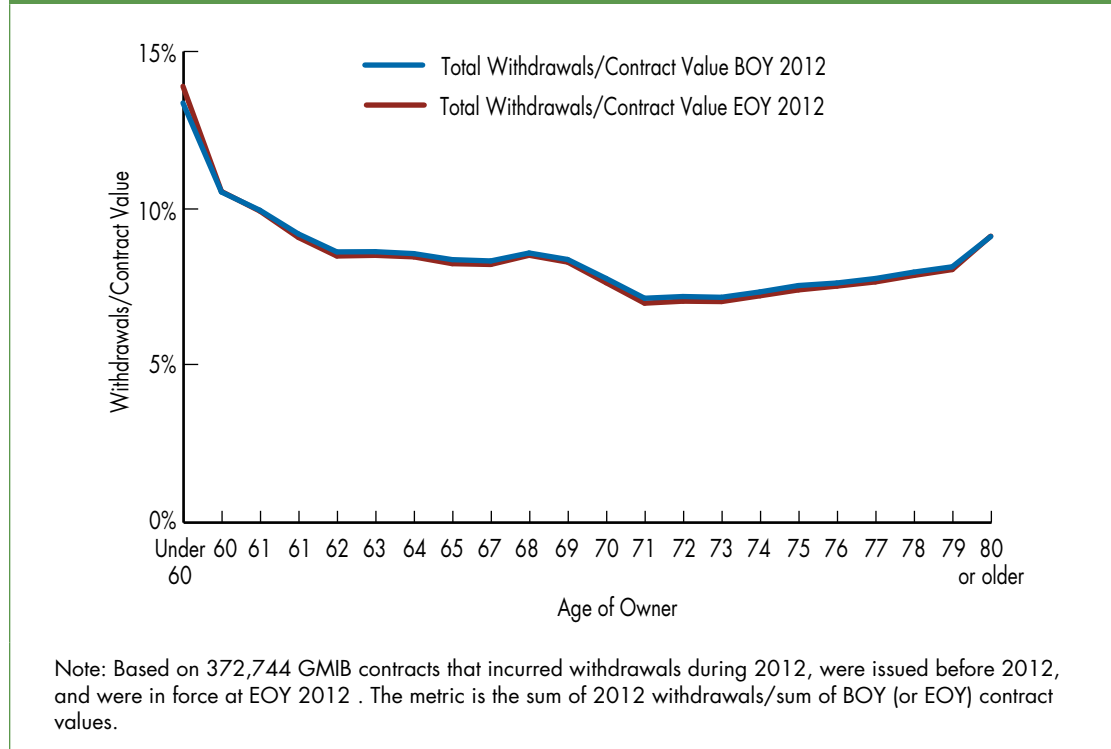
The cash outflow ratio, or ratio of total withdrawals to total BOY contract values for all contracts in force throughout the year, was 2.7 percent — higher than the corresponding ratio of 2.5 percent for EOY contract values. Across all ages, the ratio of total withdrawals to total contract values improved during the year, due to the growing equity markets and gains in fixed-income funds in 2012 (Figure 3-39). The degree and the shift of the ratio of withdrawal amounts to account values at EOY, above or below the ratio at BOY, indicates whether the total contract value has improved or worsened due to investment gains, despite withdrawals.

**Figure 3-39: GMIB Ratio of Total Withdrawal Amount to Total Contract Value (All Contracts)**



For GMIB contracts that had withdrawals, the rate of withdrawals or cash outflow ratio in relation to contract values at BOY, was 8.7 percent (Figure 3-40). Due to the market gains in 2012, the contracts that had withdrawals slightly improved their ratio of withdrawals to contract values during the year (8.6 percent at EOY 2012).

**Figure 3-40: GMIB Total Withdrawals to Total Contract Values (For Contracts With Withdrawals)**



However, there are a few noteworthy comparisons of withdrawals from GMIBs and guaranteed withdrawal benefits in GLWB contracts:

- GMIB contracts are not designed primarily for regular withdrawals. The GMIB withdrawal percentages — typically less than or equal to roll-up rates — are often higher than the withdrawal rates allowed in GLWB contracts, particularly for younger customers. So, as customers take withdrawals, the outflow of assets and resulting depletion rate on the account value are more prominent in GMIB contracts than in GLWB contracts.

- Overall the percent of contracts with withdrawals from GMIBs and GLWBs is fairly close, (21 percent for GLWB vs. 25 percent for GMIB).
- As a result, the ratio of withdrawals to contract values is higher in GMIBs (8.7 percent of BOY account value) than in GLWBs (8.0 percent of BOY account value).

However, an important distinction must be made. GLWB owners are guaranteed a withdrawal rate for life, while GMIB owners can take advantage of withdrawal provisions in the rider only for a specific period of time, typically until the end of waiting period. The risk management for these riders is very different, despite similar owner behavior.

We are not able to provide withdrawal activity results for GMIB contracts that are in-the-money or by distribution channel due to the limited number of companies with data in some of the categories.

In general, we have seen that for owners under age 65, there is little difference in withdrawal activity among contracts that are in-the-money versus contracts not-in-the-money. Slightly more owners aged 65 and older take withdrawals from contracts in-the-money compared with those not-in-the-money. However, this higher percent could be explained by the fact that many of these owners have older contracts and are more likely to take withdrawals.

For withdrawal behavior by distribution channel, the percent of owners taking withdrawals in bank channels was the highest, and follows a familiar pattern — the percent of owners taking withdrawals remains modest up to age 69; then, at age 70 and over, the percent of owners taking withdrawals increases. The overall percent of customers taking withdrawals in any channel is influenced by the mix of older and younger owners and the mix of qualified and nonqualified owners.

## Withdrawals by Selected Characteristics

Utilization of withdrawal provisions in GMIB contracts varies substantially across a variety of owner, contract, and benefit characteristics for contracts sold before 2012 (Table 3-11).

**Table 3-11: GMIB Withdrawals by Selected Characteristics**

	Unweighted		Weighted by BOY 2012 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
<b>Age of owner</b>				
Under 50	4%	1%	7%	2%
50 to 54	6%	2%	9%	5%
55 to 59	8%	4%	13%	9%
60 to 64	19%	13%	27%	20%
65 to 69	29%	23%	35%	29%
70 to 74	53%	41%	56%	43%
75 to 79	56%	45%	57%	44%
80 or older	46%	38%	45%	35%
<b>Market type</b>				
IRA	28%	21%	36%	27%
Nonqualified	20%	16%	25%	19%
<b>Contract value, EOY 2012</b>				
Under \$25,000	19%	12%	26%	15%
\$25,000 to \$49,999	24%	17%	27%	19%
\$50,000 to \$99,999	27%	20%	29%	22%
\$100,000 to \$249,999	28%	22%	31%	24%
\$250,000 to \$499,999	33%	26%	35%	27%
\$500,000 or higher	32%	25%	34%	26%

Note: Based on 371,874 GMIB contracts issued before 2012 and still in force at EOY 2012. Percentages refer to the number of contracts in each category that had partial (or systematic) withdrawals during the year. Systematic withdrawals represent a subset of all partial withdrawals. We have not shown some measures, for example data by distribution channels in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

## Key Findings

- Older owners are much more likely to take withdrawals than are younger owners, especially systematic withdrawals. In part, this reflects RMDs from IRAs after age 70½.
- Owners with larger contract values are more likely to take withdrawals than owners with smaller contracts.



## Additional Premium and Net Flows

Many retail VAs allow owners to add premium after issue, though in practice most contracts do not receive ongoing deposits. For most GMIBs, the calculation of the benefit base incorporates premium received within a certain time period after contract issue. Among GMIB contracts issued before 2012 and still in force at EOY 2012:

- Six percent received additional premium in 2012. Contracts issued in 2011 were more likely than contracts issued in earlier years to have additional premium.
- Younger owners are more likely to add premium than older owners. For example, 9 percent of owners under age 50 added premium, compared with 3 percent of owners aged 70 or older. Seven percent and 5 percent of owners aged 50–59 and aged 60–69 respectively added additional premium to their contracts in 2012.
- Contracts owned by men were slightly more likely to receive additional premium than those owned by women (6 percent vs. 5 percent)
- IRA contracts were slightly more likely to receive additional premium than nonqualified contracts (6 percent vs. 5 percent)
- Thirteen percent of a constant group of contracts that were issued in 2008 added additional premium in 2009, and roughly 5 to 9 percent added additional premium in each of the calendar years 2010 through 2012.

Premiums received for newly issued and existing contracts exceeded outflows associated with withdrawals, surrenders, deaths, and annuitizations — \$17.3 billion and \$9.6 billion, respectively (Table 3-12). The total number of GMIB in-force contracts grew by 3 percent during 2012. At EOY 2012, GMIB assets were \$173.3 billion, 14 percent higher than the \$152.3 billion at BOY 2012.

**Table 3-12: GMIB Net Flows**

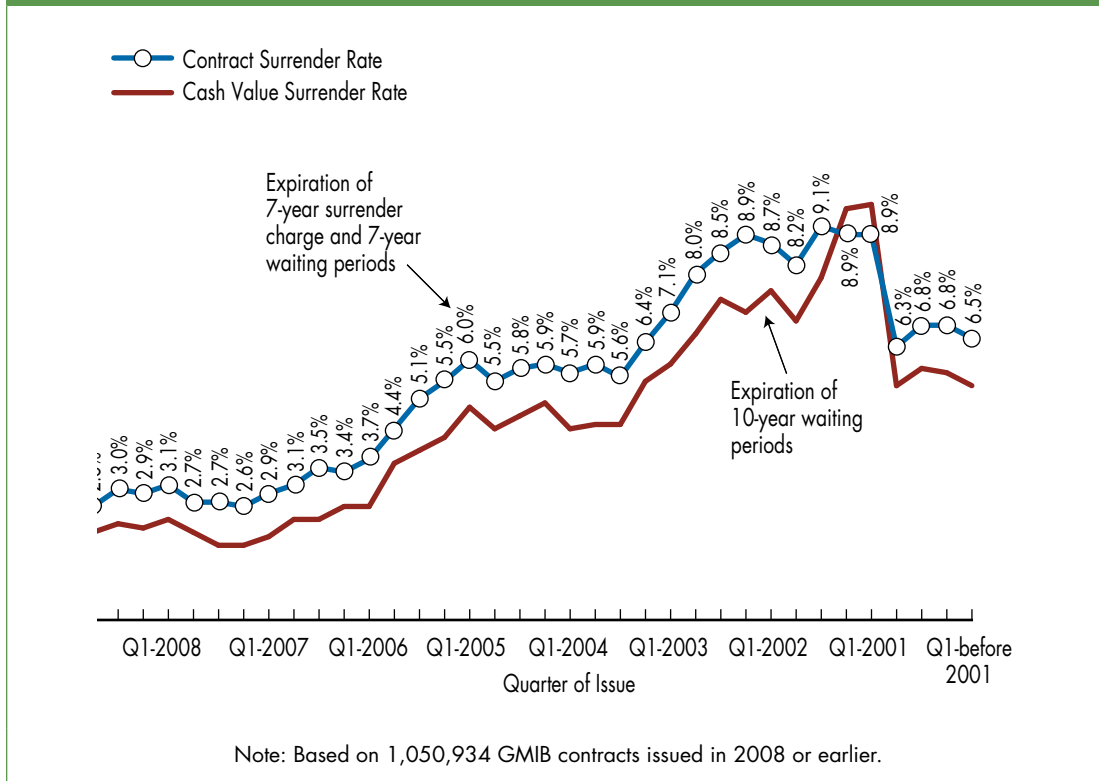
	Dollars (Billions)	Contracts	Average Contract Size
<b>In-force, BOY 2012</b>	<b>\$152.3</b>	<b>1,535,394</b>	<b>\$99,214</b>
<b>Premium received</b>			
Newly issued contracts	\$13.8	125,474	\$109,968
Existing contracts	\$3.5	N/A	N/A
<b>Benefits paid</b>			
Partial withdrawals	\$4.3	N/A	N/A
Full surrenders	\$3.9	58,736	\$67,157
Annuitizations	\$0.3	3,975	\$66,685
Death/Disability	\$1.0	11,201	92,296
<b>Investment growth</b>	<b>\$13.3</b>	<b>N/A</b>	<b>N/A</b>
<b>In-force, EOY 2012</b>	<b>\$173.3</b>	<b>1,586,956</b>	<b>\$109,207</b>

Note: Based on 1,535,394 GMIB contracts in the study. N/A=Not available. Dollar values for contracts issued before 2012 that terminated during the year were set equal to either BOY contract value (if termination occurred before contract anniversary date) or the anniversary contract value (if termination occurred on or after the contract anniversary date). Dollar values for contracts issued in 2012 that terminated during the year were set equal to the current-year premium.

## Persistency

Surrender activity among VAs with GMIBs is a critical factor in measuring risk. High or low persistency, as well as withdrawal rates and the difference between benefit bases and account values, can have an impact on product profitability and the reserve requirements for insurance companies.

**Figure 3-41: GMIB Surrender Rates in 2012 by Quarter and Year of Contract Issue**



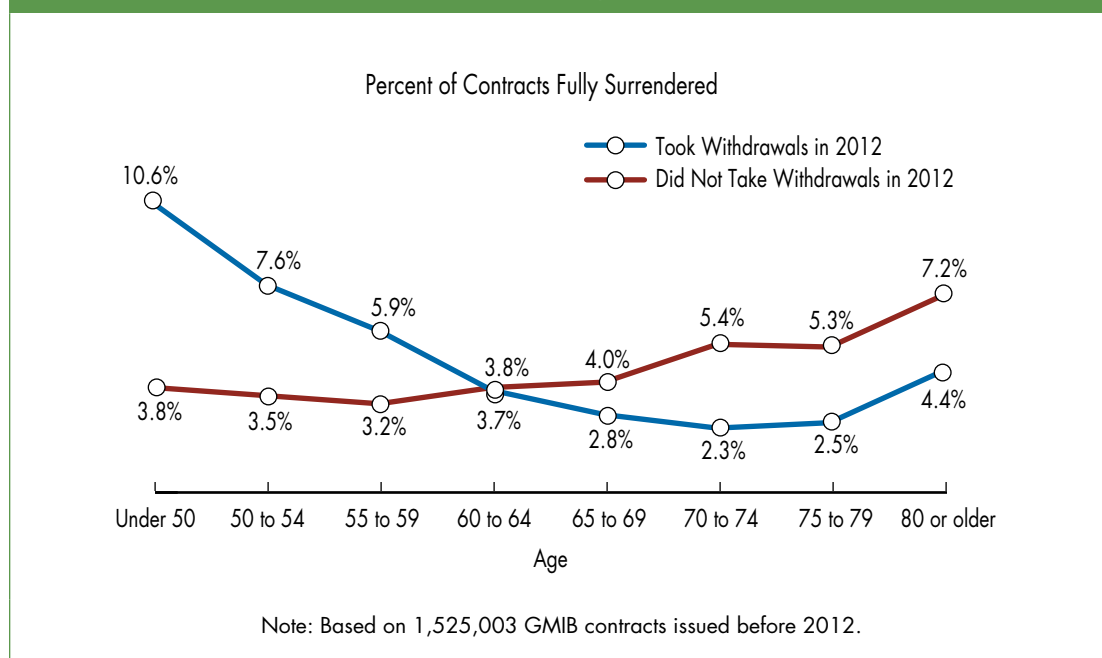
Overall surrender rates for VAs with GMIBs in 2012 were higher than surrender rates for VAs with GLWBs — 3.8 percent vs. 2.9 percent — and lower than the 7.7 percent for GMWBs. However, this comparison to GLWBs reflects the older GMIB contract base — just over one third of which were issued in 2005 or before, thus completing at least 7 years of holding periods — so that by 2012 most of these contracts were free of surrender charges. The surrender rate among contracts issued in 2005 or before was 6.3 percent (Figure 3-41). Contracts issued in 2001 and 2002 had the highest surrender rate — around 8 to 9 percent. Moreover, the difference between surrender rates based on contract values (2.7 percent) and those based on contract counts (3.8 percent) is relatively large for GMIB business, which indicates that smaller-than-average contracts are more likely to be surrendered.

2012 GMIB contract surrender rates were **3.8%**

## Surrender Activity of Owners Taking Withdrawals

Like persistency trends in other GLB riders, GMIBs with high surrender rates are influenced by younger owners, particularly those under age 60 who took withdrawals before or in 2012. We have already shown that even though younger owners own a significant portion of GMIB contracts, they are not likely to take withdrawals. However, when these younger owners take withdrawals, they typically do so with occasional withdrawals. Moreover, their average withdrawal amount is much higher, and not always supported by the guaranteed benefit base in their contracts. These younger owners are likely taking partial surrenders. Younger owners who took withdrawals in 2012 were also more likely to fully surrender their contracts (Figure 3-42).

**Figure 3-42: GMIB Contract Surrender Rate by Owners Taking Withdrawals in 2012**



Eleven percent of owners under age 50, 8 percent of owners between ages 50 and 54, and 6 percent of owners between ages 55 and 59 who took withdrawals during 2012 subsequently surrendered their contracts by EOY. Some of these younger owners might have had emergency or other needs and chose to surrender the contracts.

The contract surrender rate among owners under age 60 who took withdrawals in 2012 was 7.4 percent. On the other hand, the surrender rate was only 3.5 percent among owners under

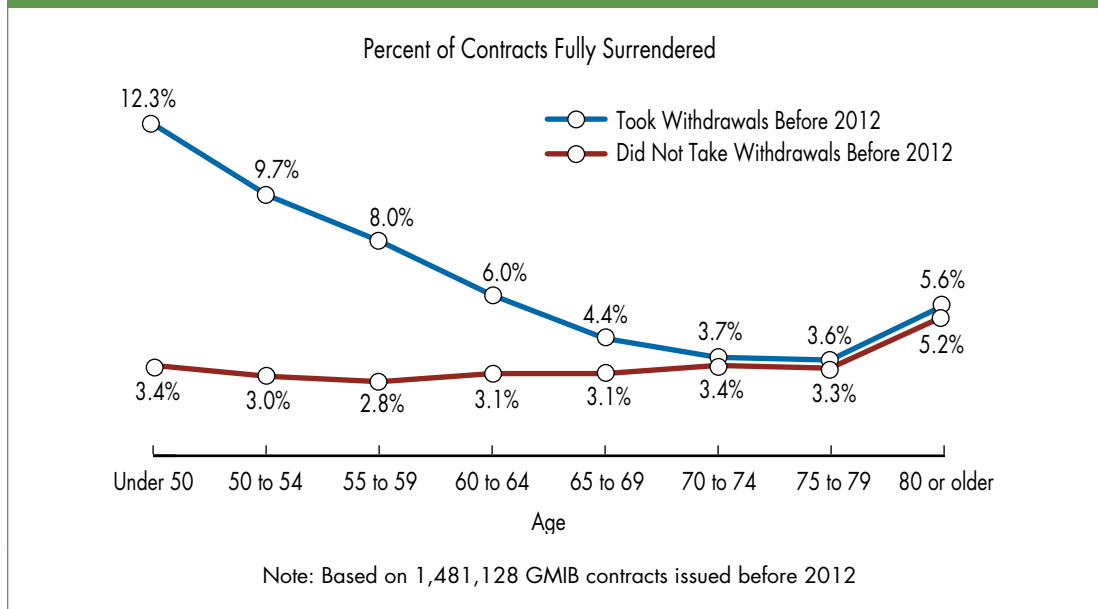
age 60 who did not take any withdrawals in 2012. The surrender rate for owners aged 60 or older who took withdrawals in 2012 (2.8 percent) was slightly lower than the rate for those who did not take withdrawals (4.5 percent).

Past withdrawals can also indicate whether younger owners will fully surrender contracts in future. Figure 3-43 shows the surrender rate for owners who took withdrawals before 2012.

**7.4%** is the contract surrender rate among owners under age 60 who took withdrawals in 2012.

**3.5%** is the contract surrender rate among owners under age 60 who did not take any withdrawals in 2012.

**Figure 3-43: GMB Contract Surrender Rate by Owners Taking Withdrawals Before 2012**

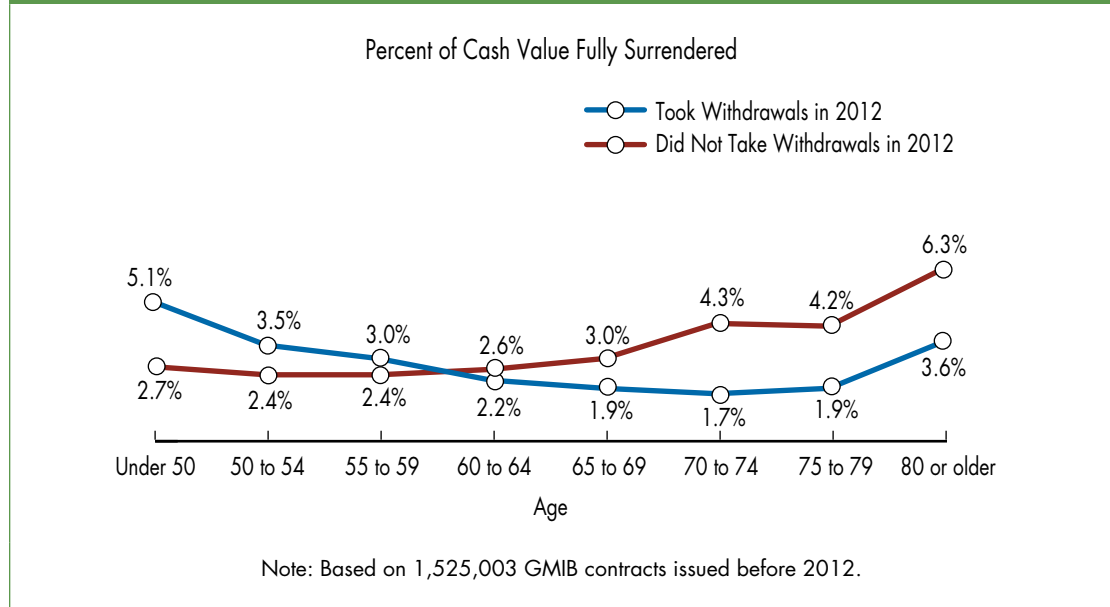


As we have seen, younger owners are the most likely to take withdrawals that exceed the benefit maximum. We believe that this activity represents an increased likelihood that they will surrender their contracts. Contracts where owners under age 60 took withdrawals — either in current or past years — show an increased likelihood of surrender. However, this increased surrender activity did not occur for owners over age 60. For them, a withdrawal in one year did not necessarily signal a higher likelihood of surrender in the next year. In general, the likelihood of surrender increases with age among contracts with no withdrawal activity. 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.

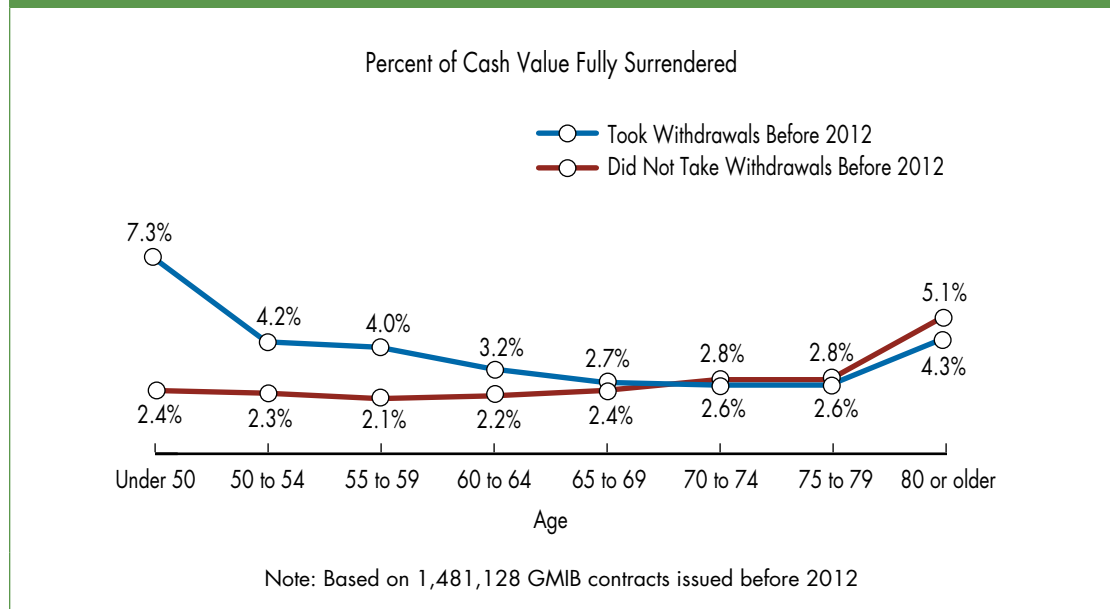
GMB surrender rates are relatively low for owners under age 70 who are not taking withdrawals.

We also looked at the cash value surrender rates of contracts with withdrawals in and before 2012. The cash value surrender rates follow a similar pattern to the contract surrender rates, except the cash value surrender rates are slightly lower, particularly for owners under age 70 taking withdrawals (Figures 3-44 and 3-45).

**Figure 3-44: GMB Cash Value Surrender Rate by Owners Taking Withdrawals in 2012**



**Figure 3-45: GMB Cash Value Surrender Rate by Owners Taking Withdrawals Before 2012**

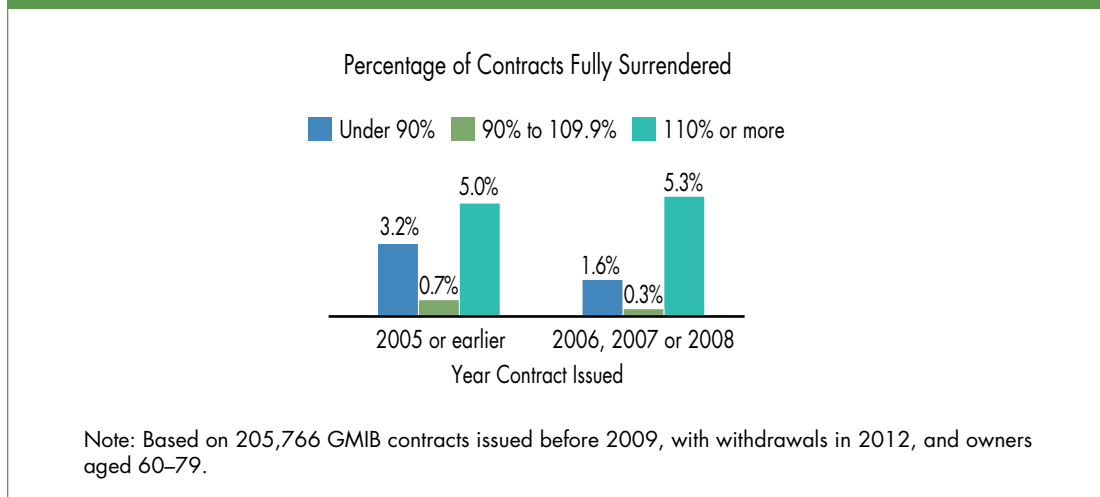


## Surrender Activity by Percentage of Annual Benefit Maximum Withdrawn

The previous section established the relationship between surrender activity and withdrawal activity. In this section, we focus on those contracts that took withdrawals, and examine how withdrawal amounts, as a percentage of the GMIB annual benefit maximum, are linked to surrender activity. To avoid exposing a single company's results, we limited this analysis to contracts issued in 2008 or earlier.

Figure 3-46 shows the contract surrender rates — for owners aged 60–79 who took withdrawals in 2012 — based on the percentage of annual benefit maximum withdrawn.<sup>19</sup> Contract surrender rates among the owners who took withdrawals of less than 90 percent of the maximum allowed, and the owners who took more than 110 percent of the maximum allowed are relatively high.

**Figure 3-46:** GMIB Contract Surrender Rates by Owners With Contracts Issued Before 2009 Taking 2012 Withdrawals, in Relation to Annual Benefit Maximum Allowed



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 category.

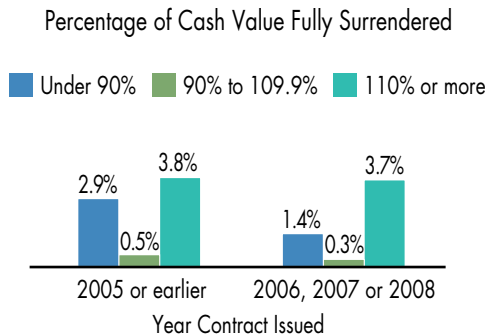
<sup>19</sup> See “Percentage of Maximum Annual Benefit Withdrawn” earlier in this chapter for the definition of GMIB benefit maximum.

Owners taking less than 90 percent or 110 percent or more of the annual maximum withdrawal amount allowed in their contracts accounted for 58 percent of all owners who took withdrawals in 2012 but were responsible for 9 out of 10 surrendered contracts.

The GMIB owners in two extremes — those taking less than 90 percent or 110 percent or more of the annual maximum withdrawal amount allowed in their contracts — accounted for 58 percent of all owners who took withdrawals in 2012. But they also were responsible for 9 out of 10 contracts that surrendered. The contract and cash surrender rates were very similar. Any withdrawal behavior not in line with the maximum withdrawal amount can be an reliable indicator of possible surrender behavior of GMIB owners.

The cash value surrender rates among owners who took withdrawals in 2012 — based on the percentage of annual benefit maximum withdrawn — follow a very similar pattern to that of contract surrender rates, except the cash value surrender rates were typically lower (Figure 3-47).

**Figure 3-47: GMIB Cash Value Surrender Rates by Owners With Contracts Issued Before 2009 Taking 2012 Withdrawals in Relation to Annual Benefit Maximum Allowed**



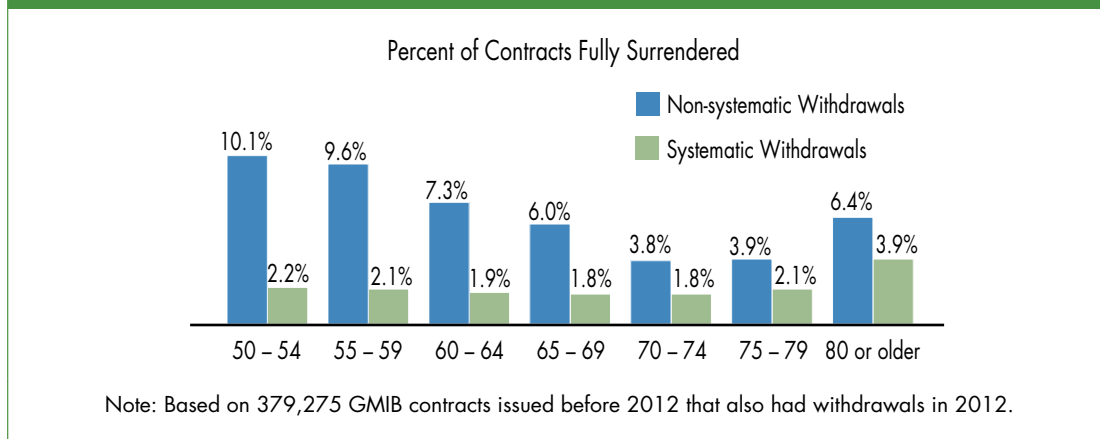
Note: Based on 205,766 GMIB contracts issued before 2009, with withdrawals in 2012 and owners aged 60–79.



## Surrender Activity by Owners Taking Systematic Withdrawals

Another strong indicator of whether owners are likely to surrender their contracts is the type of withdrawal method they use — systematic or occasional. As we have seen, owners who use systematic withdrawals are less likely to take more than the benefit maximum, and most excess withdrawals are being made by younger owners.

**Figure 3-48: GMIB Contract Surrender Rates by Withdrawal Methods**



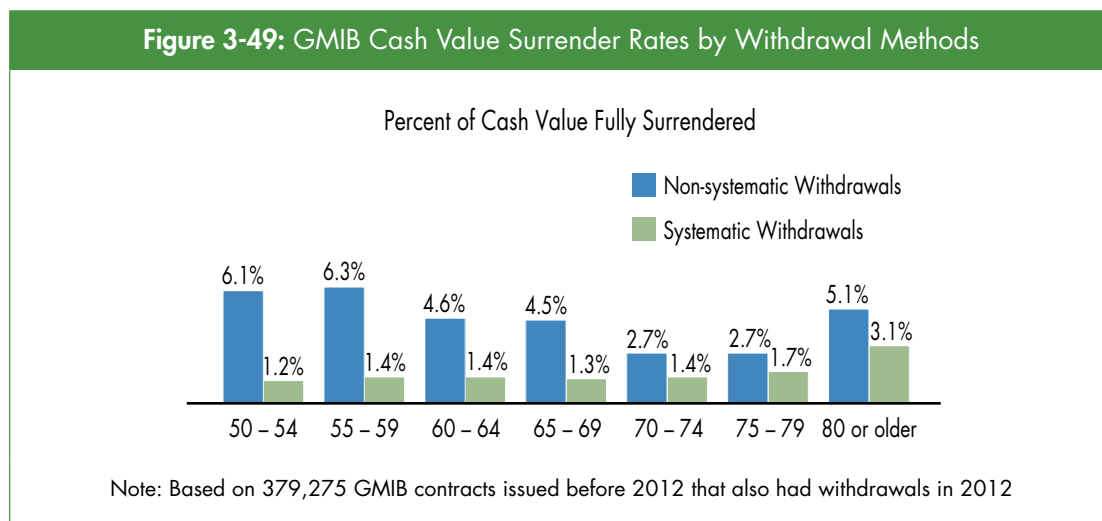
Overall, the contract surrender rate among owners who took non-systematic or occasional withdrawals in 2012 was 6.4 percent; while the surrender rate among owners who withdrew systematically was a very low 2.1 percent. Non-systematic or occasional withdrawals do not always maximize the benefit withdrawals; and, for younger owners, this indicates higher surrender rates (Figure 3-48).

Owners using a non-systematic or occasional withdrawal method accounted for just over a quarter (27 percent) of all owners taking withdrawals, but they account for just over half (53 percent) of all surrendered contracts and almost half (47 percent) of cash surrender values in 2012. Surrender rates among older owners who take non-systematic or occasional withdrawals are nearly double the surrender rates of older owners who take systematic withdrawals.

GMIB contract surrender rates are **6.4%** among owners who take occasional withdrawals compared with **2.1%** among owners who take systematic withdrawals.

The cash value surrender rates by withdrawal methods follow a very similar pattern to the contract surrender rates, except the cash value surrender rates are slightly lower, particularly for owners under age 70 taking non-systematic or occasional withdrawals (Figure 3-49).

**Figure 3-49: GMIB Cash Value Surrender Rates by Withdrawal Methods**



However, companies should note that GMIB contract owners — particularly owners under age 70 who are not taking withdrawals — hold on to their contracts longer. Companies should evaluate how their own customers behave compared with the industry, and re-assess their assumptions as needed. All VAs with GLBs are experiencing improved persistency compared with ordinary VAs; this will have an impact on the company’s assets and reserves, as a greater number of contract owners may ultimately receive benefits over the life of their contracts.

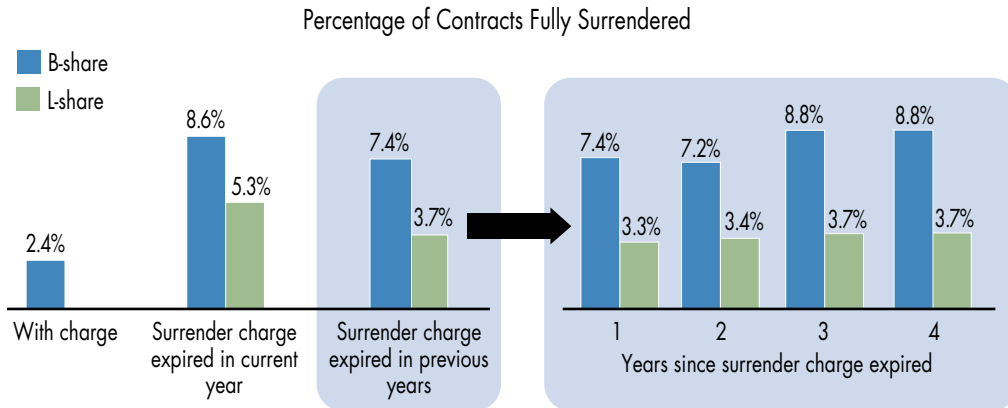
### Surrender Activity by Share Class

Looking at surrender rates by the presence of surrender charges shows that persistency among contracts with surrender charges is much higher than among contracts without surrender charges. The surrender rates for contracts where surrender charges expired in current and previous years were 7.0 percent for both B- and L-share contracts (Figure 3-50). The surrender rates for contracts where surrender charges expired in 2012 were 8.6 percent and 5.3 percent

The surrender rates for contracts where surrender charges existed are low — 2.4 percent for B-share contracts.

for B- and L-share contracts respectively. The surrender rates for contracts where surrender charges existed are low — 2.4 percent for B-share contracts. Seven out of ten B-share contracts were still within the surrender charge period in 2012. B-share contracts constituted around 84 percent of contracts. Cash value surrender rates were roughly 1 percentage point below the contract surrender rates (Figure 3-51).

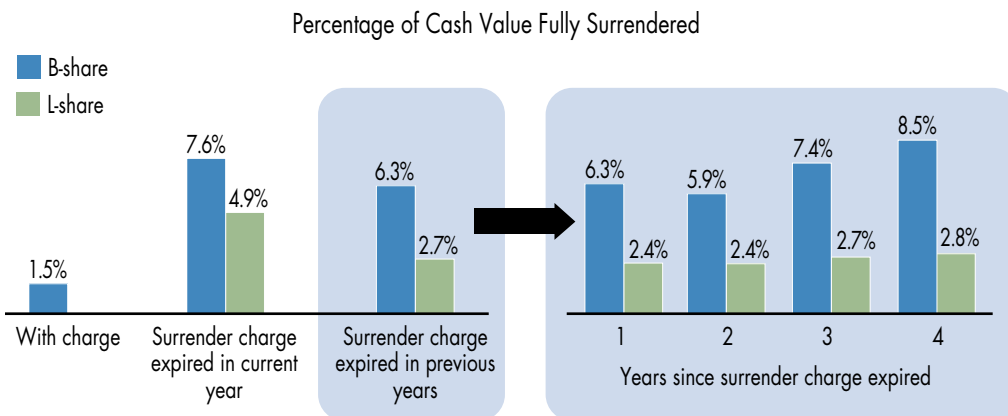
**Figure 3-50: GMIB Contract Surrender Rates in 2012 by Share Classes**



Note: Based on 1,438,862 B-share and L-share GMIB contracts issued before 2012.

\*We have not shown some measures related to L-share contracts where surrender charges existed, in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

**Figure 3-51: GMIB Cash Value Surrender Rates in 2012 by Share Classes**



Note: Based on 1,438,862 B-share and L-share GMIB contracts issued before 2012.

\*We have not shown some measures related to other share classes, in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

The surrender rates of GMIB contracts are influenced by the level of the surrender charges present in the contract. Naturally, contracts with high surrender charges have lower surrender rates and vice versa. The contract surrender rates are around 6 percent for contracts with no surrender charge, drop to around 4 percent for contracts with a 1–2 percent surrender charge, fall to 3 percent for those with 3–4 percent surrender charge, and remain around 1–2 percent for those with surrender charges at 5 percent or above. Cash value surrender charges are about 1 percentage point less and follow a similar pattern. Four in ten contracts were free of surrender charges, and a similar percentage had surrender charges of 5 percent or more; the remaining 2 in 10 contracts had surrender charges between 1 to 4 percent.

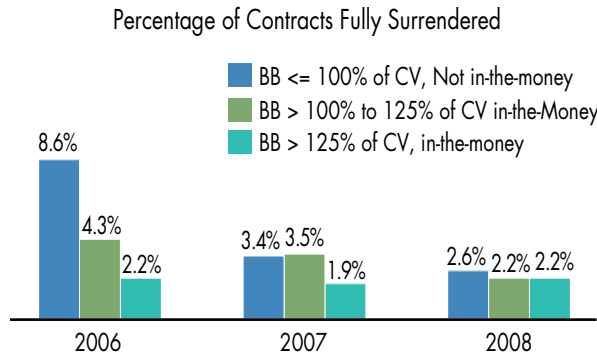
### **Surrender Activity by Degree of In-the-Money**

Another important way to look at GMIB surrenders rates involves whether or not the contracts are in-the-money. We looked at surrender rates by degree of in-the-money for contracts issued before 2012 that did not have withdrawals before 2012, for issue years 2006 to 2008 (Figures 3-52 and 3-53).

Surrender rates were lower for contracts that did not have any withdrawals before 2012 and were in-the-money. GMIB owners appear to be sensitive to the degree of in-the-money when deciding whether to surrender their contracts. We completed additional analyses of both those taking withdrawals in 2012 and the overall aggregated results, and found similar patterns (not shown due to limited sample size). Actuaries need to account for this sensitivity when setting assumptions for lapse behavior.

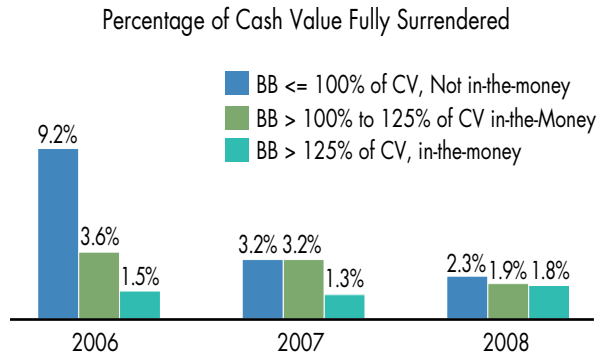
However, looking at the surrender rates based on only the degree of in-the-money may not completely address all issues when trying to understand the persistency risk. First, the vast majority of contracts — particularly those issued before 2008 — were in-the-money at the beginning of 2012. Second, for contracts with withdrawals before 2012, the benefit bases being lower than account values could have been caused by owners taking withdrawals exceeding the benefit maximums, resulting in pro-rata adjustments. Contracts that were in-the-money were most likely the contracts where owners took withdrawals within the benefit maximums, or through SWPs, or where owners have not yet started their withdrawals.

**Figure 3-52: GMIB Contract Surrender Rate by Degree of In-the-Moneyness When No Withdrawals Taken Before 2012**



Note: Based on 325,026 GMIB contracts issued between 2006 and 2008. We have not shown some measures related to other issue years either because of low sample size or in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies. In-the-money = benefit base was greater than account value.

**Figure 3-53: GMIB Cash Value Surrender Rate by Degree of In-the-Moneyness When No Withdrawals Taken Before 2012**



Note: Based on 325,026 GMIB contracts issued between 2006-2008. We have not shown some measures related to other issue years either because of low sample size or in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

In-the-money = benefit base was greater than account value.

Table 3-13 provides the GMIB contract and cash value surrender rates by selected characteristics.

<b>Table 3-13: GMIB Surrender Rates</b>		
	<b>Percent of Contracts Surrendered</b>	<b>Percent of Cash Value Surrendered</b>
<b>All contracts issued before 2012</b>	3.8%	2.7%
<b>Year of issue</b>		
Before 2001	7.3%	6.6%
2002	8.4%	7.0%
2003	6.3%	5.1%
2004	5.8%	4.6%
2005	5.3%	4.1%
2006	3.4%	2.4%
2007	2.7%	1.8%
2008	2.9%	2.1%
<b>Age of owner</b>		
Under 50	4.1%	2.9%
50 to 54	3.7%	2.5%
55 to 59	3.5%	2.5%
60 to 64	3.8%	2.5%
65 to 69	3.7%	2.6%
70 to 74	3.8%	2.8%
75 to 79	3.8%	2.9%
80 or older	5.9%	5.1%
<b>Contract value, BOY 2012</b>		
Under \$25,000	6.2%	5.4%
\$25,000 to \$49,999	4.0%	3.9%
\$50,000 to \$99,999	3.2%	3.1%
\$100,000 to \$249,999	2.6%	2.6%
\$250,000 to \$499,999	2.1%	2.1%
\$500,000 or higher	2.2%	2.3%
<b>Gender</b>		
Male	3.8%	2.7%
Female	3.9%	2.8%
<b>Market type</b>		
IRA	3.6%	2.4%
Nonqualified	4.3%	3.3%

Table 3-13: GMIB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>Cost structure</b>		
B-share	4.0%	2.8%
L-share	2.8%	2.1%
<p>Note: Based on 1,525,941 contracts issued before 2012. Percent of contracts surrendered = number of contracts fully surrendered / total number of in-force contracts. Percent of contract value surrendered = sum of values of fully surrendered contracts / total contract value in force.</p> <p>We have not shown some measures in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.</p>		

### Key Findings

- Larger GMIB contracts tend to have lower surrender rates.
- There is no significant difference in GMIB surrender rates between males and females.
- Nonqualified GMIB contracts surrender at a higher rate than IRA contracts. This difference may reflect the higher withdrawal activity level observed for IRA contracts.
- B-share contracts tend to have higher surrender rates than L-share contracts.





# Chapter Four

2012 EXPERIENCE

## Guaranteed Minimum Accumulation Benefits



## Chapter Four: Guaranteed Minimum Accumulation Benefits

Guaranteed minimum accumulation benefit (GMAB) riders in variable annuities (VAs) guarantee that the contract owner will receive a minimum amount after a set period of time or waiting period — either the amount initially invested or the account value with a locked-in guaranteed rate, or market gains locked in during the waiting period. The rider guarantees protection of the investment's value from a down market. The GMAB typically provides a one-time adjustment to the contract value on the benefit maturity date if the contract value is less than the guaranteed minimum accumulation value as stipulated in the contract. However, if the contract value is equal to or greater than the guaranteed minimum accumulation value, the rider ends without value and the insurance company pays no benefits.

Even though they are one of the simplest living benefits, GMABs differ from other GLB riders in terms of the nature of the guarantee. While GLWBs, GMWBs, and GMIBs offer guaranteed retirement income for life or for a certain period of time (at the owner's discretion), GMABs mainly guarantee protection of investments from market risk. GMABs are also different from other GLBs in terms of the risk posed to the insurer. With GLWBs, GMWBs, and GMIBs, the contract owner must choose to utilize the benefit. With GMABs, insurers are obligated to provide the guaranteed benefit to all owners whose GMABs are 'in-the-money' on their maturity date. This makes it even more important for companies to scrutinize the persistency patterns of contracts with these benefits.

Sales of contracts with GMABs continued to decline, down 25 percent to \$2.4 billion in 2012. Sales were \$3.2 billion in 2011 and \$3.7 billion in 2010. Election rates for GMABs remain very low (around 2 percent) when the rider is available.<sup>20</sup> This chapter is based on an analysis of 334,954 VA contracts with GMABs, issued by 14 companies. Of these contracts, 283,611 were issued before 2012 and were in force as of December 31, 2012. A total of 17,511 contracts were issued in 2012 and were in force at end-of-year (EOY) 2012. Forty percent of the contracts that remained in force in 2012 were issued in 2006 or before.

These results represent a total of 45 GMAB riders introduced between 1999 and 2012. This analysis represents in-force GMAB contracts, valued at \$25.9 billion at EOY 2012.

<sup>20</sup> *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2012*, LIMRA, 2013.

## Owner Profiles

GMAB buyers are typically younger than any other GLB buyers. In 2012, the average age of GMAB buyers was 53.2 years. Almost a third of buyers (34 percent) in 2012 were under age 50. The percent of GMAB buyers under age 50 increased from 30 percent in 2007 and 2008, to 45 percent in 2009 and 2010 before falling to 31 percent in 2011. Another one third of buyers (36 percent) were between ages 50 and 59.

The average age of GMAB buyers was 53.2 years in 2012.

Only 5 percent of GMABs were purchased by owners aged 70 and over. The average premium received for GMAB contracts in 2012 was \$89,800 — lower than other GLB contracts, reflecting the lower investable assets of the younger customer base (Table 4-1). However, on average, this was \$5,700 higher than in 2011, driven by larger IRA contracts. The median GMAB premium in 2012 was \$51,900.

**Table 4-1: GMAB Owner and Contract Characteristics**

	Issued Before 2012	Issued in 2012	All Contracts in Force	Average Premium (For Contracts Issued in 2012)
<b>Age of Owner</b>				
Under 50	22%	34%	23%	\$63,825
50 to 54	13%	17%	13%	\$84,270
55 to 59	16%	19%	16%	\$100,448
60 to 64	16%	16%	16%	\$112,627
65 to 69	13%	9%	13%	\$113,128
70 to 74	9%	4%	8%	\$132,073
75 to 79	6%	1%	5%	\$140,252
80 or older	5%	1%	5%	\$140,471
<b>Average age/premium</b>	59.1 years	53.2 year	58.7	\$89,827
<b>Gender</b>				
Male	49%	48%	49%	\$100,826
Female	51%	52%	51%	\$79,486
<b>Market type</b>				
IRA	68%	74%	68%	\$83,678
Nonqualified	32%	26%	32%	\$107,316
<b>Distribution channel</b>				
Career agent	23%	78%	27%	N/A
Independent Agent /Independent B-D	44%	4%	41%	N/A
Full-Service National B-D	9%	1%	8%	N/A
Bank	24%	17%	24%	N/A

**Table 4-1: GMAB Owner and Contract Characteristics (continued)**

	Issued Before 2012	Issued in 2012	All Contracts in Force	Average Premium (For Contracts Issued in 2012)
<b>Cost structure</b>				
B-share	77%	89%	77%	N/A
C-share	2%	0%	2%	N/A
L-share	18%	10%	18%	N/A
Other	3%	1%	3%	N/A
<b>Contract value, EOY 2012 as percent of contracts</b>				
Under \$25,000	28%	23%	28%	N/A
\$25,000 to \$49,999	22%	21%	22%	N/A
\$50,000 to \$99,999	24%	24%	24%	N/A
\$100,000 to \$249,999	20%	25%	20%	N/A
\$250,000 to \$499,999	5%	6%	5%	N/A
\$500,000 or higher	1%	2%	1%	N/A
<b>Contract value, EOY 2012 as percent of contract value</b>				
Under \$25,000	4%	3%	4%	N/A
\$25,000 to \$49,999	9%	8%	9%	N/A
\$50,000 to \$99,999	20%	18%	19%	N/A
\$100,000 to \$249,999	35%	37%	35%	N/A
\$250,000 to \$499,999	19%	20%	19%	N/A
\$500,000 or higher	13%	14%	13%	N/A
<b>Average contract value, EOY 2012</b>	\$85,459	\$95,739	\$86,057	N/A
<b>Median contract value, EOY 2012</b>	\$49,658	\$55,842	\$50,166	N/A
<b>Average premium received</b>		\$89,827		N/A
<p>Note: Based on 301,122 GMAB contracts still in force at EOY 2012. "Issued before 2012" based on 283,611 contracts; "Issued in 2012" based on 17,511 contracts. N/A=not available. Percentages are based on number of contracts unless stated otherwise. We have not shown some measures related to channels and share classes to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.</p>				

## Key Findings

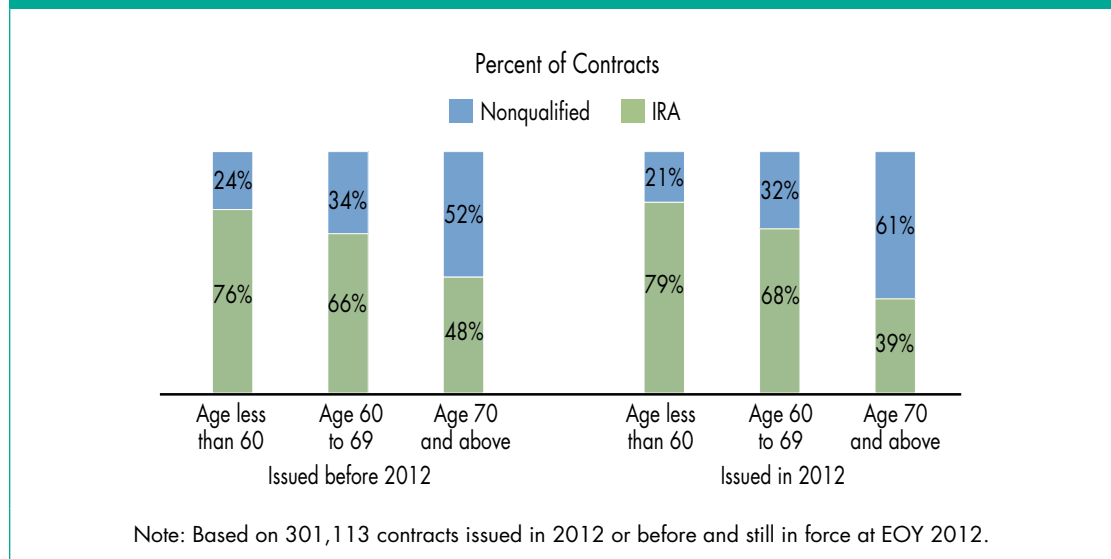
- One third of the 2012 buyers were under age 50.
- Nine out of ten contracts issued in 2012 were B-share contracts; while L-share contracts made up one tenth of new issues in 2012.
- Career agents issued three quarter and banks issued one sixth of GMAB contracts in 2012.
- The average premium received for GMABs was \$89,800.
- Average nonqualified premiums of \$107,300 were 28 percent higher than qualified purchases of \$83,700.

### Ownership of Qualified and Nonqualified GMAB Annuities

For GMAB contracts issued in 2012, 74 percent were qualified, compared with 68 percent of qualified contracts issued before 2012. This aligns with a broader industry shift that LIMRA has tracked in the total VA market, where annuities are increasingly being funded with tax-qualified money, the bulk of which likely comes from rollovers by younger individuals.

Based on contracts issued in 2012 and still in force at EOY 2012, ownership of qualified annuities is largely concentrated in the hands of owners under age 60. Among those owners, 4 out of 5 fund their annuities with qualified money (Figure 4-1). In contrast, 6 in 10 owners aged 70 or over fund their GMAB annuities with nonqualified sources.

**Figure 4-1: GMAB Ownership by Source of Funds and Age Group**



- GMABs can be appropriate annuity investments for conservative to moderate investors who have a long-term investment horizon, typically 7 to 10 years. The key motivators for buying a GMAB are its guarantee of principal protection, and the potential it offers for growth.
- GMAB riders often compete with fixed indexed annuities, which also offer upside market potential with limited downside risk. While growth from market gains in fixed indexed annuities is subject to many complex calculations, a VA with a GMAB rider typically enjoys unlimited upside potential.
- Since GMAB benefits are equally effective in guaranteeing both qualified and nonqualified assets against market volatility and loss of principal, the increased flow of qualified funds underscores investor concern about protecting retirement assets from a down market. This suggests that an effective strategy for insurance companies is to broaden the market appeal of their GMAB products to attract more of the nonqualified assets from younger as well as older investors, and to position the GMAB as an effective alternative to fixed-rate deferred annuities or indexed annuity products.
- After the waiting period is over in a GMAB contract, the initial guarantee and the obligation of the insurance company expire after adjustment of the guaranteed benefit, if there is any. However, the client can renew the GMAB contract for another period, or surrender the contract, or exchange the contract for another annuity. Subsequent to the need for preserving assets for a definite period from market downturn, a client may transition into another life-stage and may be interested in converting savings into income. As most of the investments in GMABs are qualified, clients will at least need to take RMDs. Companies should make a concerted effort to retain these assets and, when appropriate, guide the client to use the annuity for lifetime income.

**Three fourths** of GMAB contracts issued in 2012 were qualified, while **two thirds** of contracts issued before 2012 were qualified.

## Benefit Base

At beginning-of-year (BOY) 2012, the average GMAB contract value of \$80,100 exceeded the average benefit base of \$77,100 by 4 percent (Table 4-2). At BOY 2012, 39 percent of GMAB contracts issued before 2012 still had benefit bases that were in-the-money. This measure was certainly an improvement over 2010 when 55 percent of GMAB contracts issued before 2010 had benefit bases that exceeded contract values after experiencing severe losses during the market crisis of 2008 to 2009.

**Table 4-2: GMAB Benefit Base and Contract Value, at BOY 2012**

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$21,035,365,272	\$21,861,071,434	104%
Average	\$77,055	\$80,080	104%
Median	\$44,529	\$46,677	105%
Percent of contracts where benefit base exceeded the account value			39%
Note Based on 272,993 GMAB contracts issued before 2012 and remaining in force at EOY 2012. Excludes contracts for which the GMAB benefit bases could not be determined.			

**Table 4-3: GMAB Benefit Base and Contract Value, at EOY 2012**

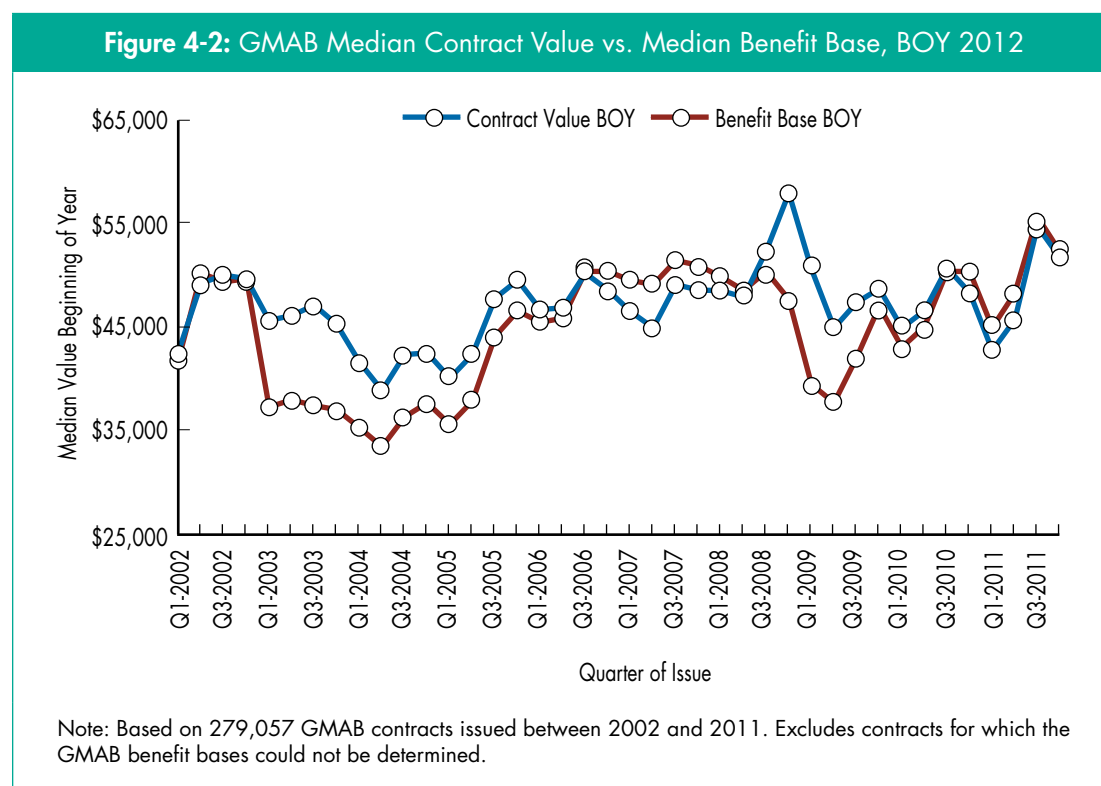
	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$20,722,861,533	\$23,257,187,596	112%
Average	\$75,910	\$85,193	112%
Median	\$43,489	\$49,425	114%
Percent of contracts where benefit base exceeded the account value			17%
Note: Based on 272,993 GMAB contracts issued before 2012 and remaining in force at EOY 2012. Excludes contracts for which the GMAB benefit bases could not be determined.			

**17%** of GMAB contracts were in-the-money at EOY 2012 compared to **39%** at BOY 2012.

In 2012, the S&P 500 market was up 12 percent. By EOY 2012, the average GMAB account value grew 6 percent from \$80,100 to \$85,200 (Table 4-3). The average benefit base also fell slightly from \$77,100 to \$75,900. As a result, only 17 percent of the GMAB contracts were in-the-money at EOY.

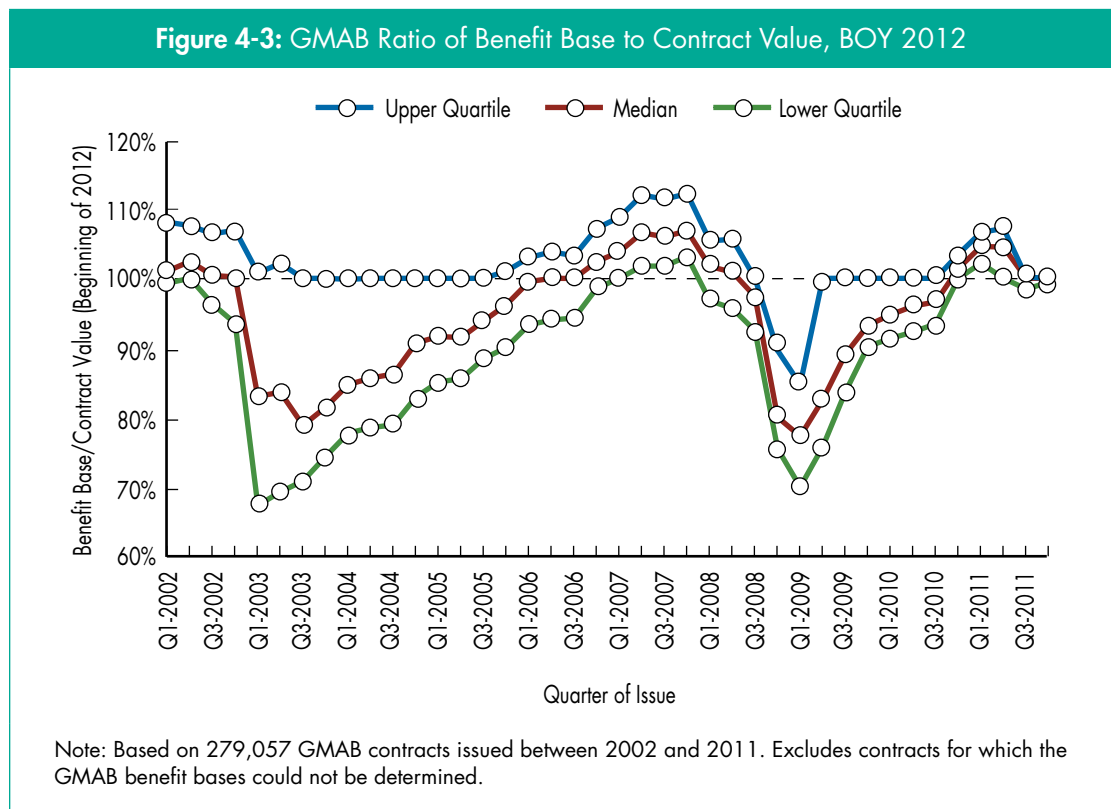


Because most GMAB contracts were issued several years ago (4 in 10 of the contracts were issued in 2006 or earlier), a large segment of the contracts went through considerable market volatility — involving both gains in 2005–2007, and deep losses during the market crisis in 2008–2009. The contracts issued in 2003, for example, experienced a brief period of market gains in 2006–2007, and had less of a setback during the last market crisis. Conversely, contracts issued in 2007, purchased at the height of the market, have yet to recover from massive losses suffered in the crisis. However contracts issued in late 2008 and early 2009, at the bottom of the crisis, had values higher than the benefit base (Figure 4-2). In general, at BOY 2012, median GMAB contract values were higher than the median benefit base from 2002 through Q2 2006, and Q3 2008 through Q3 2010.



Overall, contracts issued between Q1 2002 and Q2 2006 — 35 percent of in-force GMAB contracts — had median account values exceeding the median benefit base amounts up to as much \$9,600. For contracts issued between Q3 2006 and Q2 2008 — 3 in 10 in-force contracts were in-the-money, within a range of \$200 to \$4,200. Contracts issued between Q3 2008 and Q3 2010 — around 24 percent of all contracts — received the benefit of market gains during 2009 – 2010 and had median contract values higher than the median benefit base. The favorable difference between the median contract value and the median benefit base of these contracts ranged from \$300 to \$11,100.

However, not all GMAB contracts were out of the money. For example, those issued during 2002 or 2006–2008. Figure 4-3 shows the comparison between the ratio of the median benefit base to median contract value for GMABs at BOY 2012, as well as the inter-quartile range to understand how widely (or narrowly) distributed the ratios were.



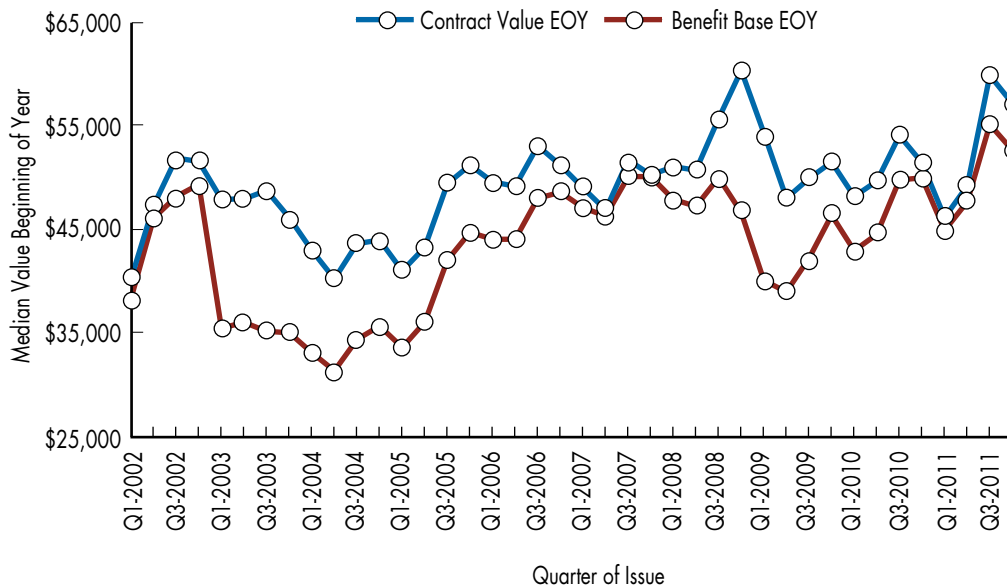
The upper and lower quartiles in Figure 4-3 refer to the distribution of median benefit base to contract value (BB/CV) ratios, not to the distribution of contract values. For example, for contracts issued in Q1 2003, the typical (median) contract had a benefit base that was around 83 percent of the contract value at BOY 2012.

The data show that the BB/CV ratios for contracts issued from Q1 2003 to Q3 2004 had the greatest differences — with 25 percent of those ratios below 70 – 80 percent while another 25 percent were at or above 100 percent at BOY.

During 2012, the equity market grew, and so did the contract values. Thus, the ratio of BB/CV improved, in all quarters. The median contract value increased from \$46,700 at BOY 2012 to \$49,400 at EOY 2012.

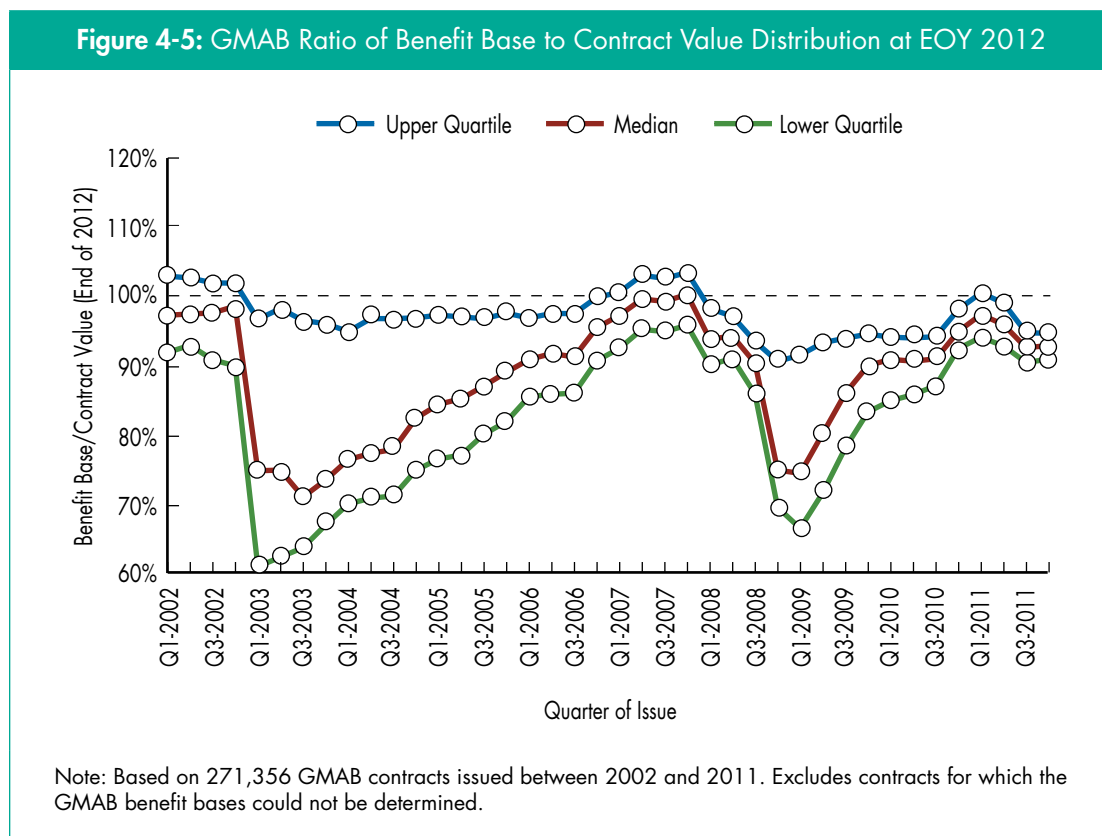
At EOY 2012, the median contract values exceeded the median benefit base values in every quarter. The gap between the median contract value and the median benefit base in GMAB contracts was largest for contracts issued in 2003, and from Q4 2008 to Q1 2009 (Figure 4-4). For these contracts, contract values exceeded benefit values by a range of \$11,100 to \$14,200 — these improvements were due to buying the GMAB contract in a low market, and subsequent market recoveries.

**Figure 4-4: GMAB Median Contract Value vs. Median Benefit Base, EOY 2012**



Note: Based on 271,356 GMAB contracts issued between 2002 and 2011 and remaining in force at EOY 2012. Excludes contracts for which the GMAB benefit bases could not be determined.

At EOY, almost all of the upper quartile ratios of BB/CV for GMAB contracts were at or below 100 percent. Figure 4-5 shows the year-end comparison of these ratios by quarter of issue, and the distribution of ratios in quartiles.

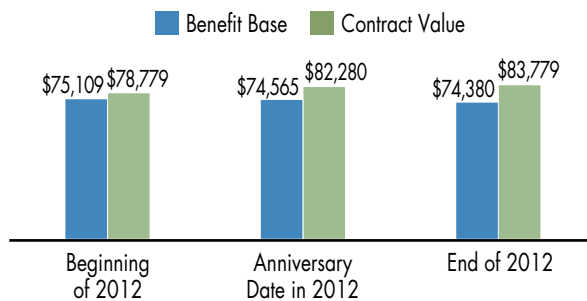


Given the growth in the equity markets and gains in fixed-income funds, the majority of GMAB contracts had BB/CV ratios that were near or below 100 percent. One in six contracts was issued in 2003 to 2004 and these contracts' median ratio was between 70 to 82 percent. Another 1 in 10 contracts were issued between Q4 2008 and Q2 2009 and these contracts also had relatively low BB/CV ratios at EOY 2012, with median ratios between 74 and 80 percent.

**The majority of GMAB contracts were not-in-the-money at EOY 2012.**

The average contract value increased from \$78,800 at BOY 2012 to \$83,800 at EOY 2012, gaining 6 percent in value (Figure 4-6). On the anniversary date in 2012, the average benefit base of \$74,600 was slightly lower than the average benefit base of \$75,100 at BOY, driven by withdrawals that occurred prior to the anniversary date. GMAB riders typically reduce the benefit base with each withdrawal. At EOY 2012 the average benefit base value of \$74,400 was about \$9,400 less than the average contract value.

**Figure 4-6: GMAB Average Contract Values and Benefit Base Values**



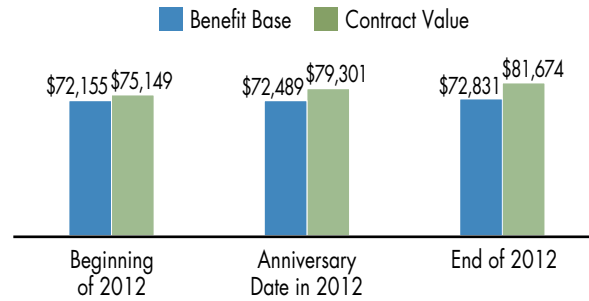
Note: Based on 226,826 GMAB contracts issued before 2012 and still in force at EOY 2012. Excludes contracts for which the GMAB benefit bases (as of BOY, the contract's anniversary date, or EOY) could not be determined.

Across all 226,826 GMAB contracts where companies reported both contract values and benefit bases, benefit bases totaled \$16.9 billion as of EOY 2012, compared with account balances of \$19.0 billion.

### **Benefit Base for Contracts With Withdrawals vs. Without Withdrawals**

GMAB contracts are not designed for taking withdrawals, and withdrawals typically cause a pro-rata reduction in the benefit base. For in-force contracts issued before 2012 that did not have withdrawals in 2012, the average benefit base remained relatively flat — \$72,200 at BOY compared to \$72,500 on the anniversary date and \$72,800 at EOY (Figure 4-7). Such a minor change in the benefit base is primarily because very few GMAB riders offer automatic increases of benefit bases in the case of non-withdrawals. However, the average value of these contracts increased during the year, given the equity market and fixed-income fund gains. At EOY 2012, the average contract value gained 9 percent and was \$8,800 larger than the average benefit base value for contracts without withdrawals.

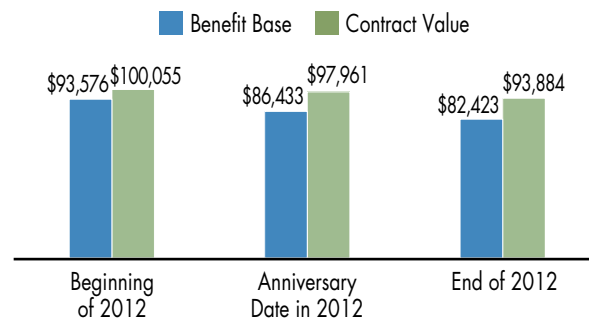
**Figure 4-7: GMAB Average Contract Value and Benefit Base for Contracts Without Withdrawals**



Note: Based on 179,245 GMAB contracts issued before 2012 and still in force at EOY 2012 with no withdrawals made or current-year premium received. Excludes contracts for which the GMAB benefit bases or contract values could not be determined.

Among contracts that had withdrawals in 2012, the average benefit base declined 12 percent, from \$93,600 at BOY to \$82,400 at EOY. The average contract value declined by 6 percent, but was \$11,500 above the benefit base (Figure 4-8).

**Figure 4-8: GMAB Average Contract Value and Benefit Base for Contracts With Withdrawals**

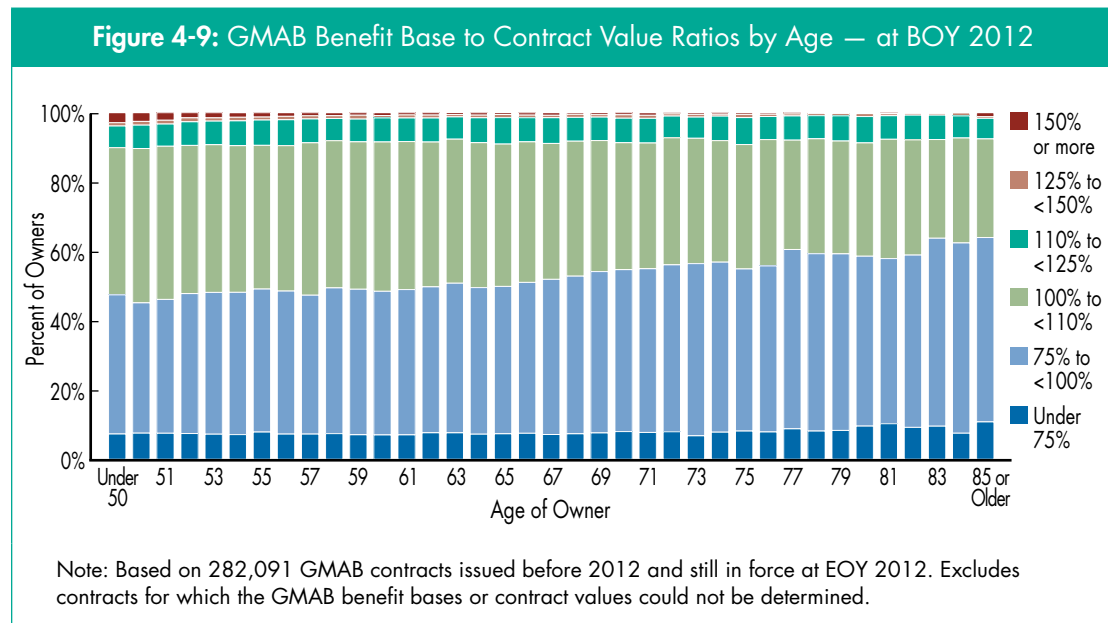


Note: Based on 37,825 GMAB contracts issued before 2012 and still in force at EOY 2012 with withdrawals made, but no current-year premium received. Excludes contracts for which the GMAB benefit bases or contract values could not be determined.

### Benefit Base to Contract Value Ratios by Age

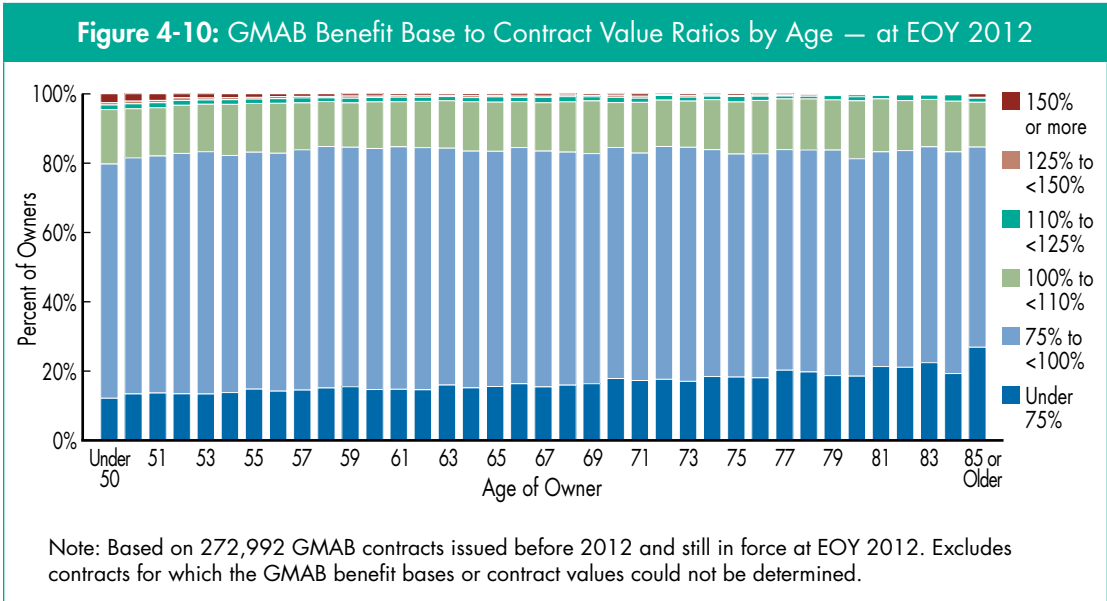
We have expanded the analysis of BB/CV ratios to drill down on age or age cohorts to see if any risks can be linked to favorable or unfavorable BB/CV ratios by age. This analysis shows that the BB/CV ratios differ by age and provides insights related to risks associated with each age or age cohort and comparisons within the GMAB industry.

Figure 4-9 provides the BB/CV ratios by age at BOY 2012. For in-force GMAB contracts issued before 2012, at BOY, half of the contracts had benefit base amounts below their contract values; 41 percent had BB/CV ratios between 100 to less than 110 percent; 7 percent had their benefit bases exceeding contract values by 110 to less than 125 percent and only 2 percent of the contracts had BB/CV ratios of 125 percent or more. Fifty eight percent of the owners aged 70 or older had BB/CV ratios below 100.



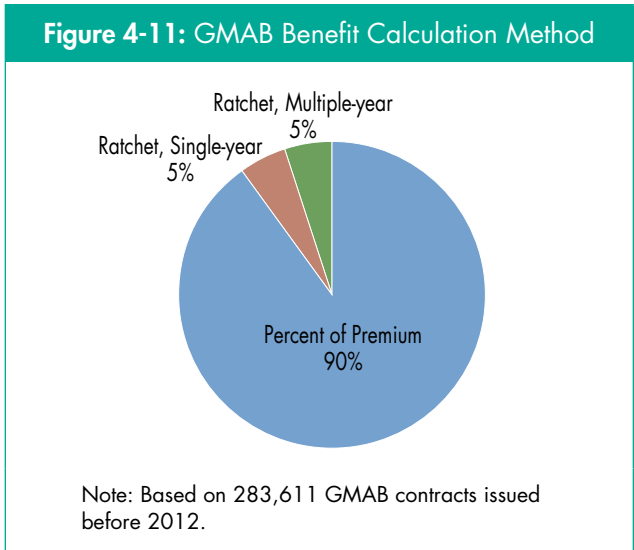
At EOY 2012, 5 out of 6 GMAB contracts had BB/CV ratios less than 100%.

Figure 4-10 shows the distribution of BB/CV ratios by age at EOY 2012. The contracts with favorable BB/CV ratios (less than 100 percent) improved to 5 out of 6 by EOY 2012.



**GMAB Benefit Calculation Method**

Nine out of 10 GMABs have benefit bases that are determined based on total premiums received (Figure 4-11). Only 4 percent of the GMAB contracts using the percent-of-premium benefit calculation method had roll-ups above 100 percent of premium.





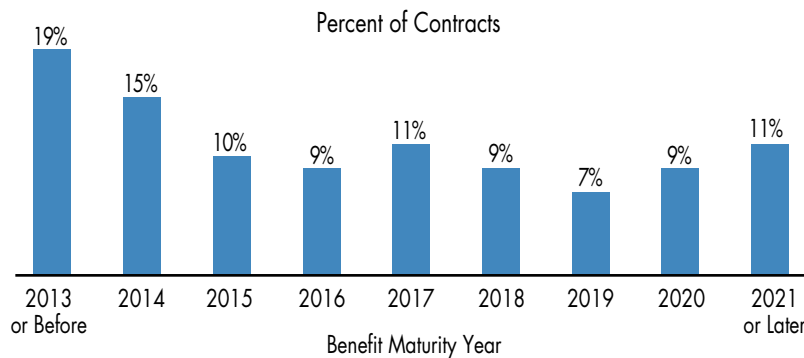
## Benefit Maturity

### Benefit Maturity of GMAB Contracts

GMAB benefit utilization simply requires the owner to keep the contract in force until the day of benefit maturity. At that point, if the accumulation benefit is in-the-money, then the contract value is automatically set to the guaranteed benefit base.

Most contracts (81 percent) have benefit maturity dates in 2014 or later (Figure 4-12). Nearly half of GMAB contracts in force will mature between 2013 and 2017.

**Figure 4-12: GMAB Percentage of Contracts by Benefit Maturity Year**

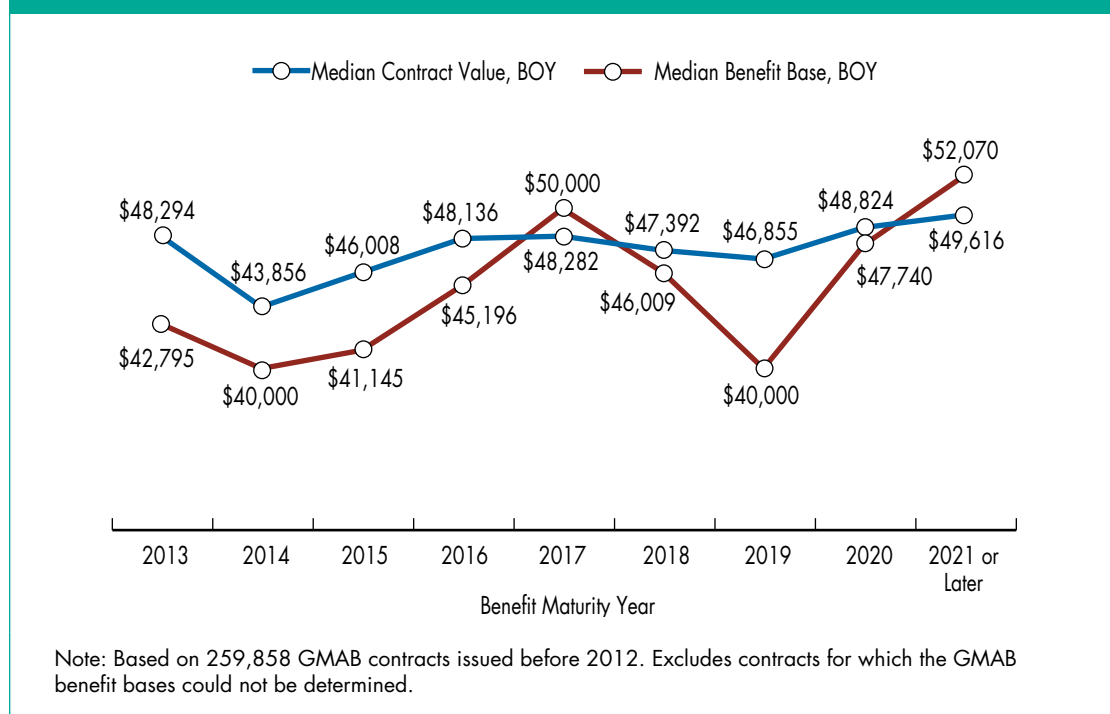


Note: Based on 276,940 contracts issued before 2012. Excludes contracts for which GMAB benefit maturity year could not be determined.

### Year of Benefit Maturity

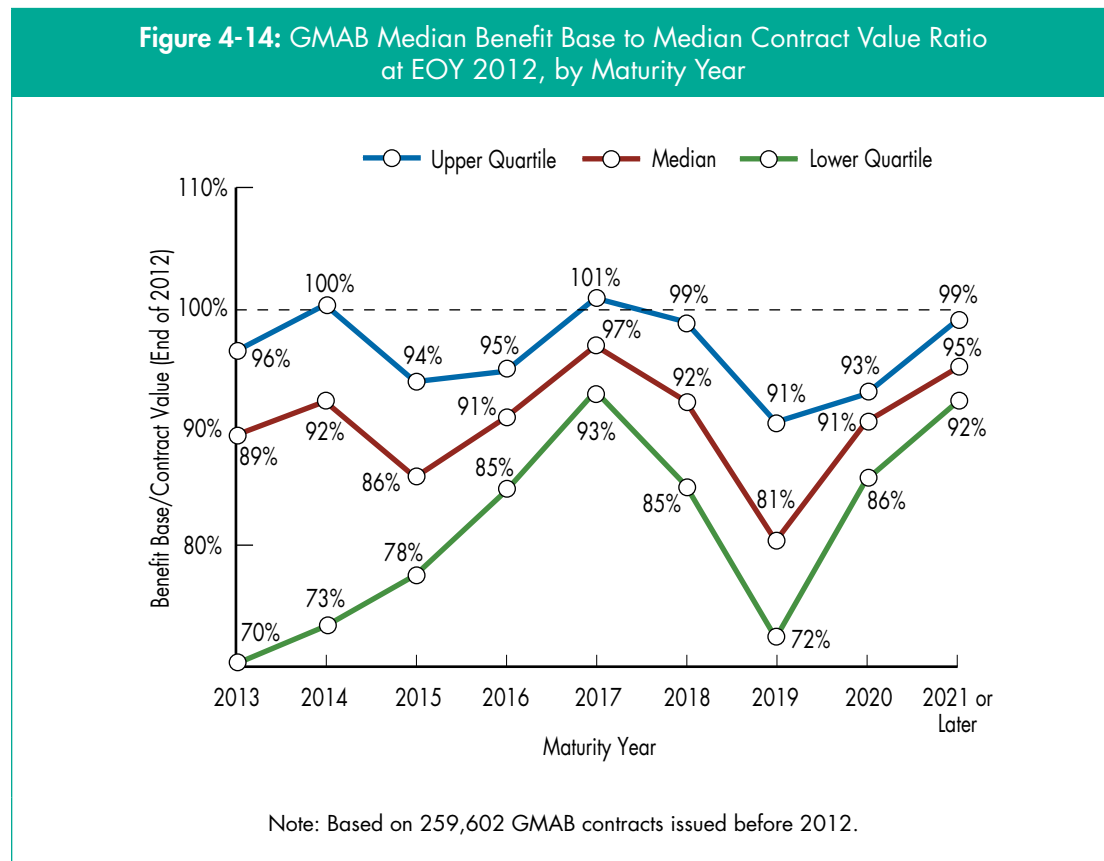
Most GMAB benefits mature 7 to 10 years after they are elected. Contracts with benefit maturities that occur before 2017 — 53 percent of all GMAB contracts — typically have median contract values that exceed the median benefit bases, which is favorable for annuity manufacturers (Figure 4-13). The difference between the median contract value and the median benefit base ranges from a favorable \$2,900 to \$5,500 for GMAB contracts where guarantees may accrue in the next five years. While the contract values for contracts with benefit maturity dates from 2017 and later remain relatively flat (around \$47,000 – \$50,000) there is a lot more volatility with the corresponding benefit bases — which range from \$40,000 to \$52,000. The contracts that will mature in 2019 have the greatest difference, with the median contract value exceeding the median benefit value by \$6,900 at BOY.

**Figure 4-13: GMAB Median Benefit Bases and Contract Values by Benefit Maturity Year**



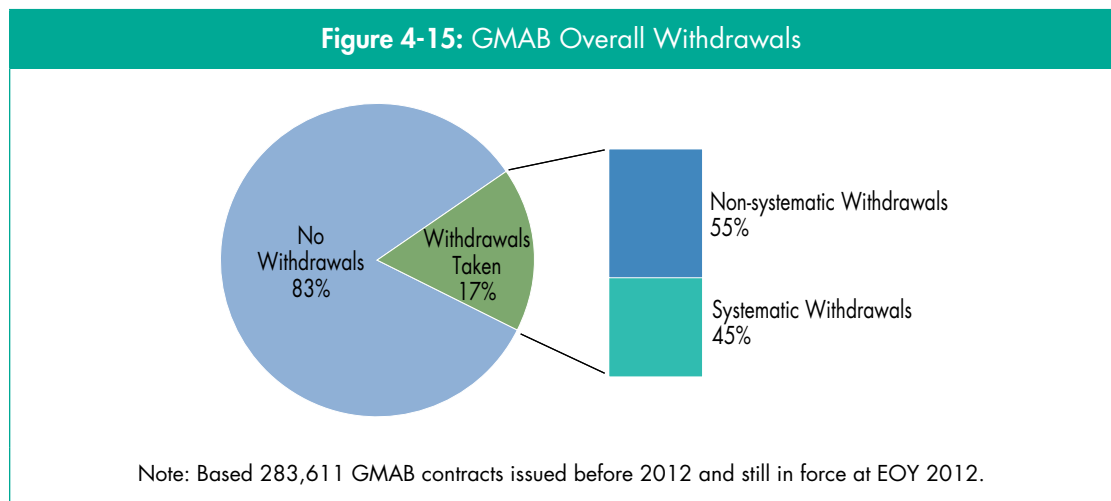
A comparison of the ratio of median benefit base to median contract value for GMAB contracts at EOY 2012 is shown in Figure 4-14. The inter-quartile ranges show the distribution of ratios for different maturity years by year-end. Companies can compare their own quartiles of this ratio and its distribution to see how favorable or unfavorable their own book of business is compared with this industry snapshot at EOY 2012.

GMAB contracts with benefit maturity in 2017 and after 2020 tend to have higher BB/CV ratios, with a median ratio of 97 percent and 95 percent, respectively.



## Withdrawal Activity

Despite the fact that GMAB contracts are not designed for owners to take withdrawals, and withdrawals cause the benefit base to be proportionately reduced, annuity customers do take withdrawals to meet financial needs. For example, customers may take withdrawals for emergencies, or to satisfy RMDs. Among 283,611 GMAB contracts issued before 2012 and still in force at EOY, 17 percent had some withdrawal activity during 2012 (Figure 4-15), very similar to experience in 2010 and 2011. For 45 percent of contracts, these withdrawals were systematic withdrawals.



Highlights below are based on GMAB contracts that had withdrawals in 2012:

- The percent of GMAB owners using systematic withdrawals is much lower compared with owners using systematic withdrawals in other GLB products.
- The total withdrawals amounted to \$720 million for the year, of which \$157 million were withdrawn systematically.

**17%** of GMAB owners took withdrawals in 2012.

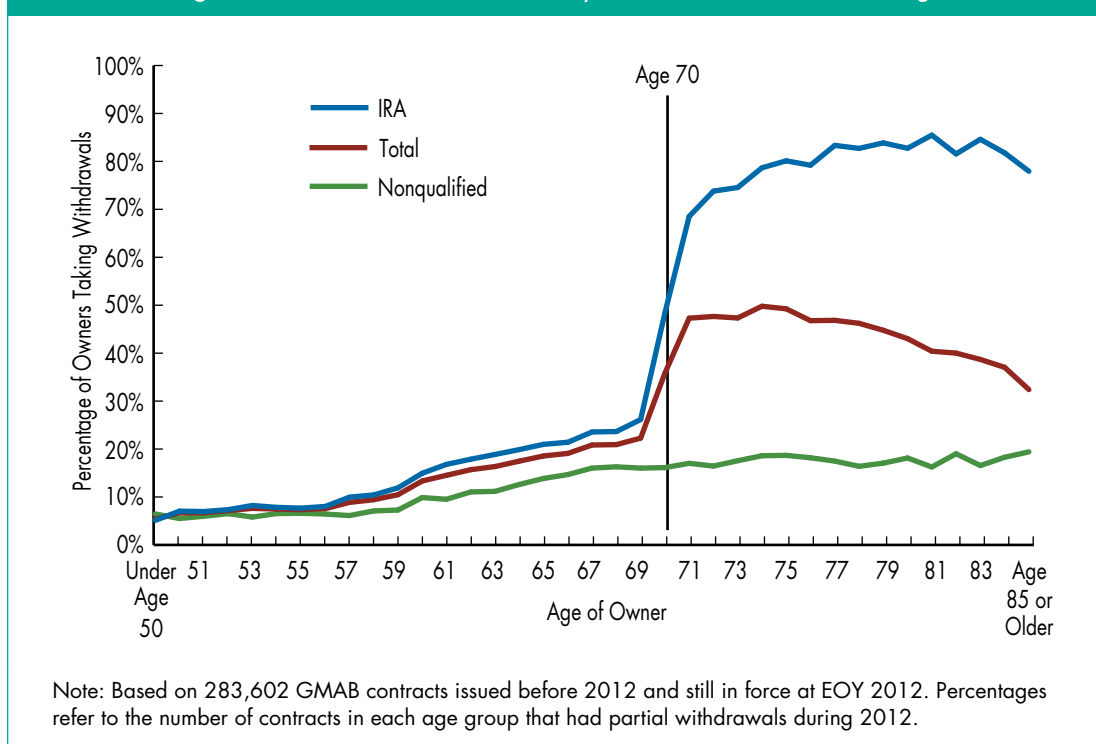
- The median withdrawal amount was \$6,600. The average withdrawal rate was 10.5 percent based on the average BOY median contract value of \$62,600.
- Median systematic withdrawal amount during the year was \$4,700.

## Withdrawal Activity by Source of Funds

Like all other GLBs, the source of funds is a major driving force for withdrawal behavior in GMABs. Even though the overall percent of owners taking withdrawals in GMAB contracts remained low, the percent of owners taking withdrawals was quite high among owners who funded their annuities with qualified funds (Figure 4-16), as we saw with other GLB riders.

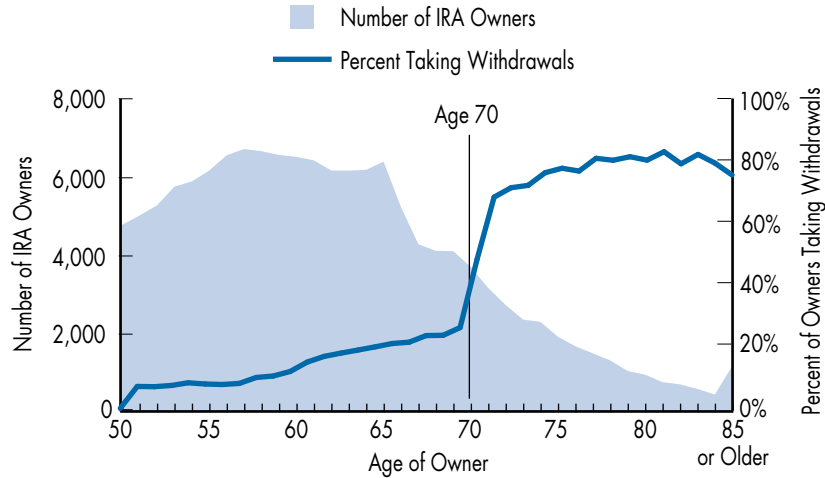
Around **80%** percent of older customers took withdrawals from annuities purchased with qualified money.

**Figure 4-16: GMAB Withdrawals by Fund Source and Owner Age**



After age 70, the need for RMDs from qualified annuities forces owners to take withdrawals; and the percentage of these customers taking withdrawals quickly jumps to around 70 percent by ages 71–72. After age 72, the percent of these customers withdrawing slowly rises to roughly 80 percent for owners aged 77 and older. Owners are less likely to take withdrawals if they used nonqualified money, and the percent of nonqualified customers withdrawing remains less than 20 percent for all ages.

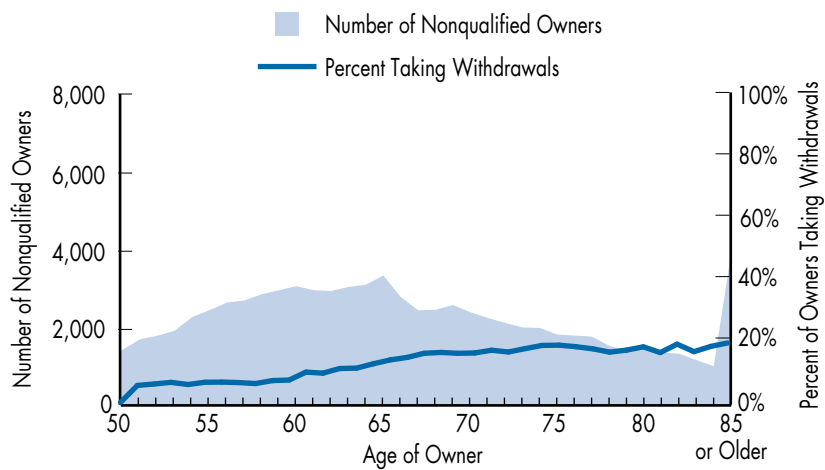
**Figure 4-17: GMAB Withdrawals by IRA Owners**



Note: Based on 186,944 GMAB contracts issued before 2012 and still in force at EOY 2012. Percentages refer to the number of contracts in each age group that had partial withdrawals during 2012.

In 2012, only 14 percent of GMAB owners who funded their annuities with qualified sources were age 70 or over (Figure 4-17). Nearly three fourths (72 percent) of these owners took withdrawals in 2012. On the other hand, 11 percent of owners aged 69 or under took withdrawals in 2012.

**Figure 4-18: GMAB Withdrawals by Nonqualified Owners**



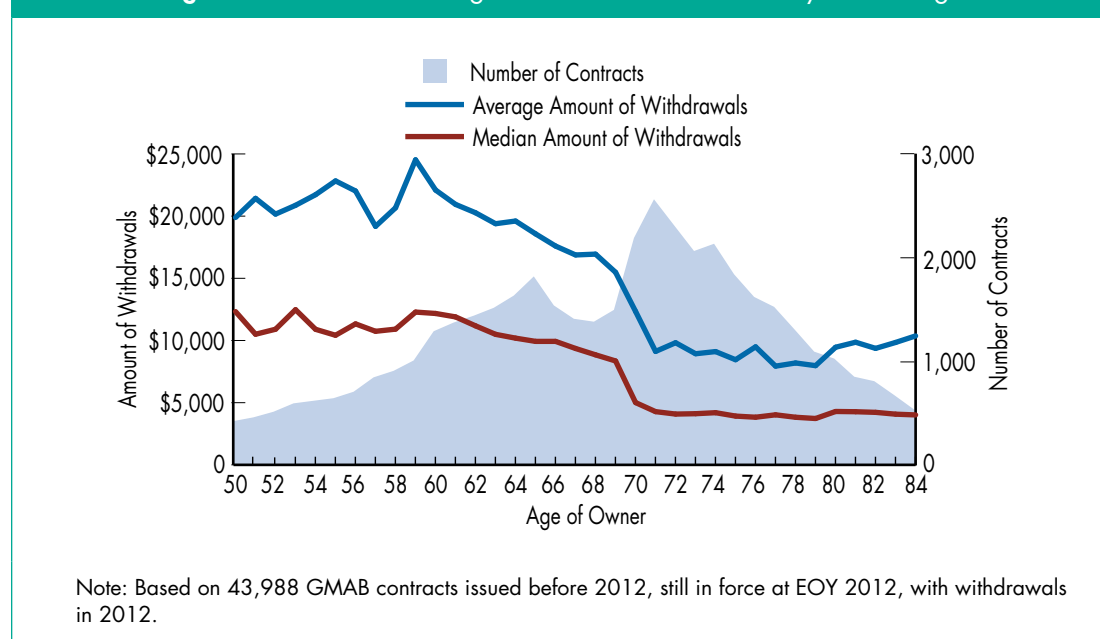
Note: Based on 85,277 GMAB contracts, funded by nonqualified savings, issued before 2012 and still in force at EOY 2012.

Only 12 percent of nonqualified owners took withdrawals in 2012 (Figure 4-18). The percent of owners taking withdrawals increases very slowly with age. Eighteen percent of owners aged 70 or over and 9 percent of owners aged 69 or under took withdrawals from their GMAB contracts.

### Average Amount of Withdrawals

The average amount of withdrawals in GMAB contracts was \$14,700 for contracts issued before 2012 that were in force at EOY 2012. The median amount was \$6,600.

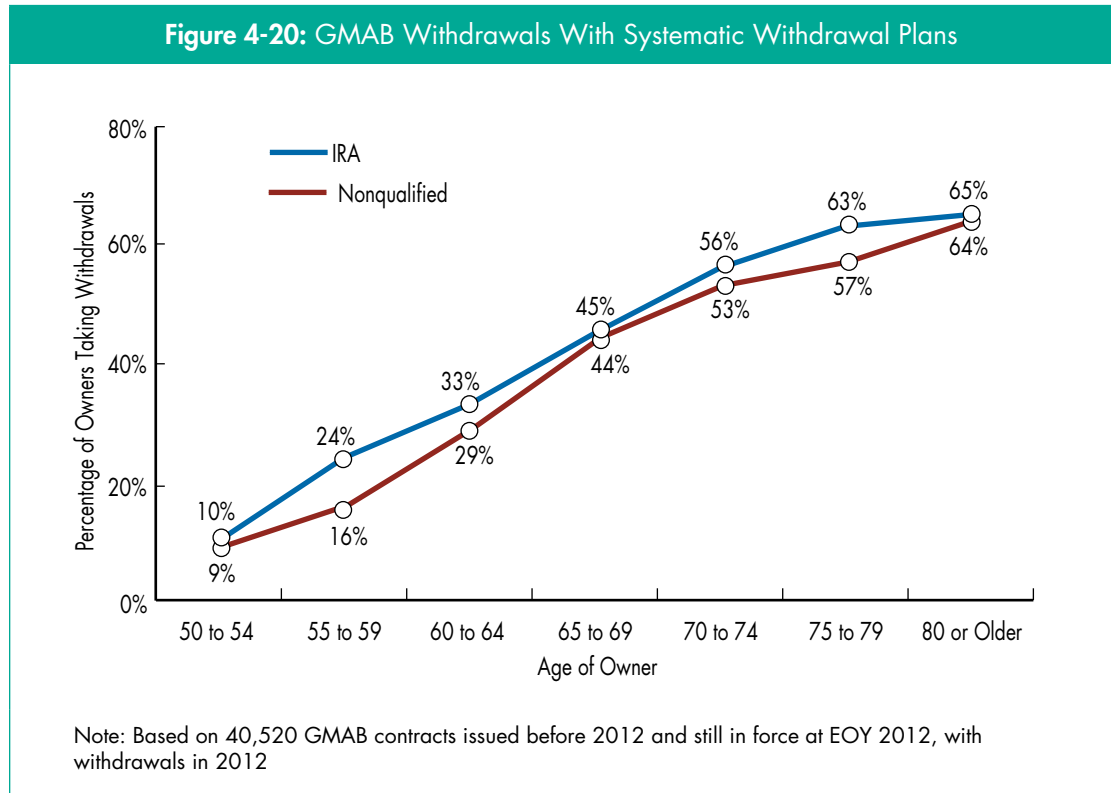
**Figure 4-19: GMAB Average Amount of Withdrawals by Owner Age**



Some owners in their 50s and 60s took average withdrawals of more than \$15,000 from their contracts (Figure 4-19). Despite only 13 percent of these owners taking withdrawals, their high withdrawal amounts accounted for almost 60 percent of all withdrawals in 2012. Since these withdrawals by owners under age 70 were not for RMDs, the withdrawals will reduce the benefit amount on a pro-rata basis. Most of these withdrawals were likely partial surrenders of the contracts. A more reasonable withdrawal pattern and average withdrawal amount emerges for owners over age 70, commensurate with RMD needs.

### Systematic Withdrawal Activity

One sixth of GMAB owners are taking withdrawals, most of which are to satisfy RMD requirements when taken by older owners. When older owners take withdrawals, many of them take advantage of a systematic withdrawal plan (SWP) or program (Figure 4-20). All insurance companies allow owners to use SWPs, particularly to satisfy RMD requirements. Typically companies treat such RMD withdrawals on accumulation benefit base as partial withdrawals which may impact the benefit base negatively as they are adjusted on a *pro-rata* basis.



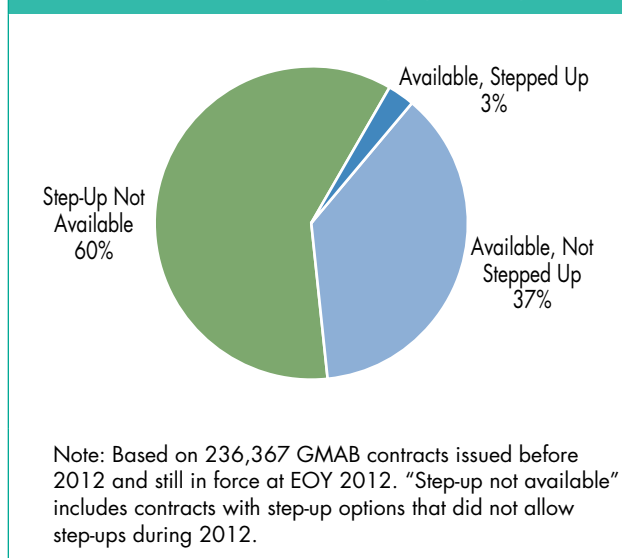
Overall, 46 percent of IRA owners took withdrawals using SWPs while 43 percent of nonqualified owners used SWPs. However, use of an SWP is higher among older owners. For example, 29 percent of IRA owners under age 70 used SWPs for withdrawals, and the rest took withdrawals non-systematically or occasionally. On the other hand, 60 percent of IRA owners aged 70 or over used SWPs for their withdrawals. In GMAB contracts, older owners are more likely to take withdrawals through SWPs; and younger owners, particularly those under age 70, are more likely to take occasional withdrawals.



## Step-Up Activity

Six out of ten GMAB contracts do not allow owners to step up the value of their benefit bases if their contract values have risen. However, some GMAB contracts allow the ability to lock in accumulated growth in contract values on contract anniversaries with a reset feature in the benefit base — with the provision that the contract is reset or restarted for another fixed period of time, typically 10 years. Many contracts also state that the client must request the step-up within a certain time frame after the anniversary date.

Figure 4-21: GMAB Step-Up Activity



Forty percent of owners had step-up options available in 2012. Only 3 percent chose to step up their benefit bases (Figure 4-21).

Higher contract values are associated with greater likelihood of stepped up contracts. When a step-up was available during the year, 14 percent of the contracts with BOY contract values of \$500,000 or more stepped up, but only 5 percent of contracts with BOY contract values under \$25,000 stepped up.

## Additional Premium and Net Flows

Contracts with GMAB riders typically do not allow owners to add premium to the guaranteed portion after the first anniversary. Many contracts have strict provisions to allow additional premium only during the first 90 to 180 days after issue. Among contracts issued in 2011 or earlier:

- Five percent received additional premium in 2012. Among contracts issued in 2011, 8 percent received additional premium and 8 percent of contracts issued in 2010 added premium in 2012.
- The average additional premium in 2012 was \$18,400, with a median of \$4,800.

- Younger owners were more likely to add premium than older owners. For example, 8 percent of owners under age 50 added premium, compared with 3 percent of owners aged 70 or older.
- Among contracts issued in 2012 and still in force at EOY 2012, the average premium was \$89,800 and the median was \$51,900.

Premium received and new contracts issued were offset by outflows associated with partial withdrawals, full surrenders, deaths, and annuitizations (Table 4-4). The total number of GMAB contracts in force declined by 5 percent during 2012.

**Table 4-4: GMAB Net Flows**

	Dollars (in Billions)	Contracts	Average Contract Size
<b>In-force, BOY 2012</b>	<b>\$25.6</b>	<b>317,391</b>	<b>\$80,611</b>
<b>Premium received</b>			
Newly issued contracts	\$1.57	17,519	\$89,835
Existing contracts	\$0.27	N/A	N/A
<b>Benefits paid</b>			
Partial withdrawals	\$0.99	N/A	N/A
Full surrenders	\$2.36	31,726	\$74,501
Deaths	\$0.16	1,972	\$80,934
Annuitizations	<\$0.1	131	\$69,044
<b>Investment growth</b>	\$2.01	N/A	N/A
<b>In-force, EOY 2012</b>	<b>\$25.9</b>	<b>301,081</b>	<b>\$86,057</b>

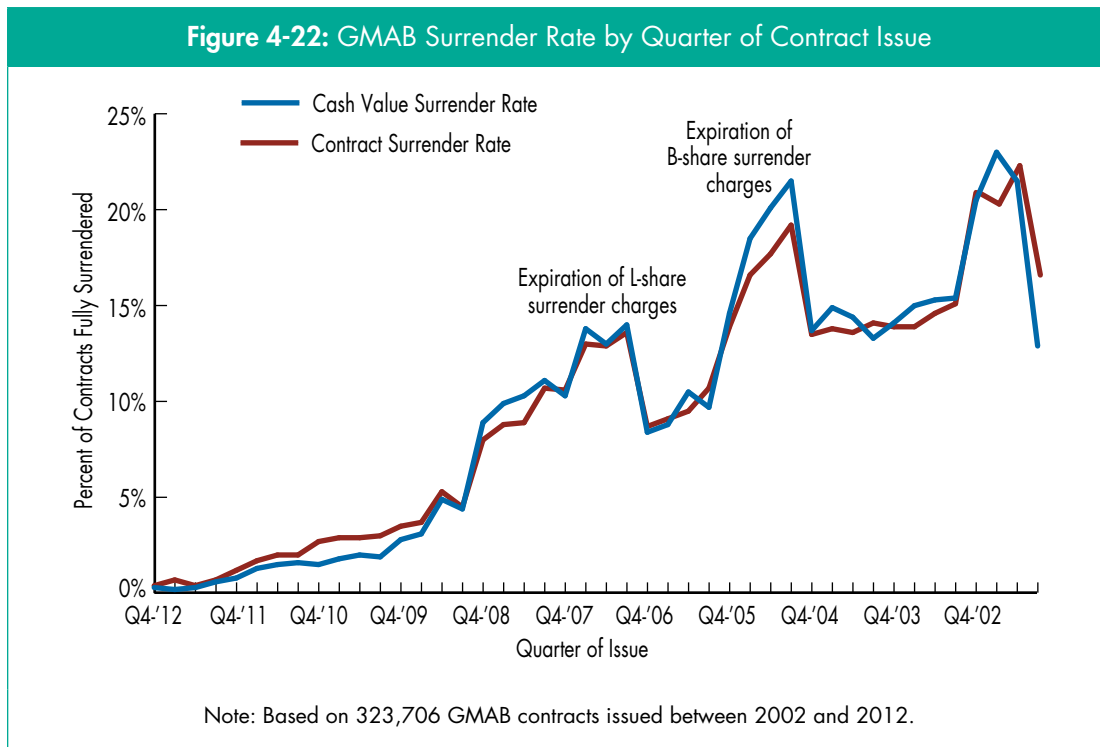
N/A=Not available. Note: Based on 334,951 GMAB contracts. Dollar values for contracts issued before 2012 that terminated during the year were set equal to either BOY contract value (if termination occurred before contract anniversary date) or the anniversary contract value (if termination occurred on or after the contract anniversary date). Dollar values for contracts issued in 2012 that terminated during the year were set equal to the current-year premium

## Persistency

GMABs have the highest overall surrender rates (9.9 percent) compared with other GLBs, and the highest surrender rates among VA contracts issued since 2004. However, surrender rates are expected to be higher for GMAB contracts once the benefit maturity period is reached, as the typical contract does not continue any protection of principal, while some other traditional benefits of annuities — like guaranteed death benefits, tax deferral for nonqualified contracts, and guaranteed lifetime income through annuitization — remain in effect. Some of these GMAB contracts may have some hybrid benefits that start once the GMAB rider expires.

Contract surrender rates were extremely high (15.3 percent) for GMAB contracts issued in 2005 or before (Figure 4-22). There is also a noticeable increase in surrender rates at the expiration of the B-share and L-share contingent deferred surrender charges. For example, for B-share contracts issued in 2005, the contract surrender rate was 17.3 percent; for L-share contracts issued in 2008, the contract surrender rate was 17.6 percent. Nearly all contracts (99.5 percent) issued in 2012 remained in force at EOY.

**9.9%** was the surrender rate in GMAB contracts in 2012.



### Surrender Activity by Share Class

Surrender rates among contracts with surrender charges were much lower than in contracts without surrender charges. Irrespective of share classes, the surrender rate for contracts where charges expired in 2012 was 23.3 percent — more than triple the rate of contracts where charges exist (6.8 percent). The

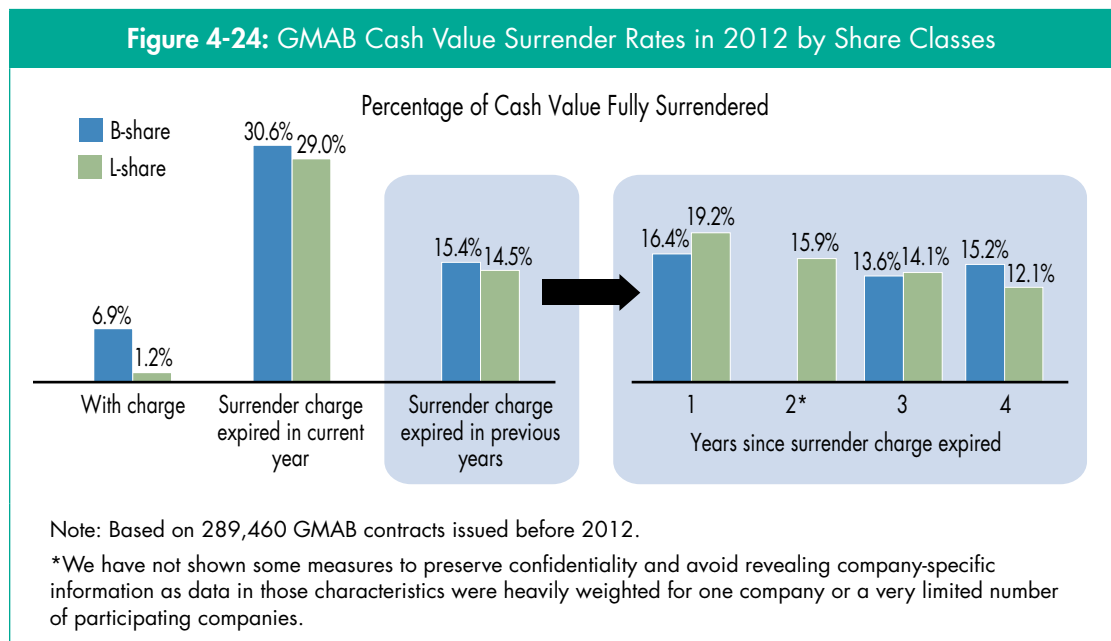
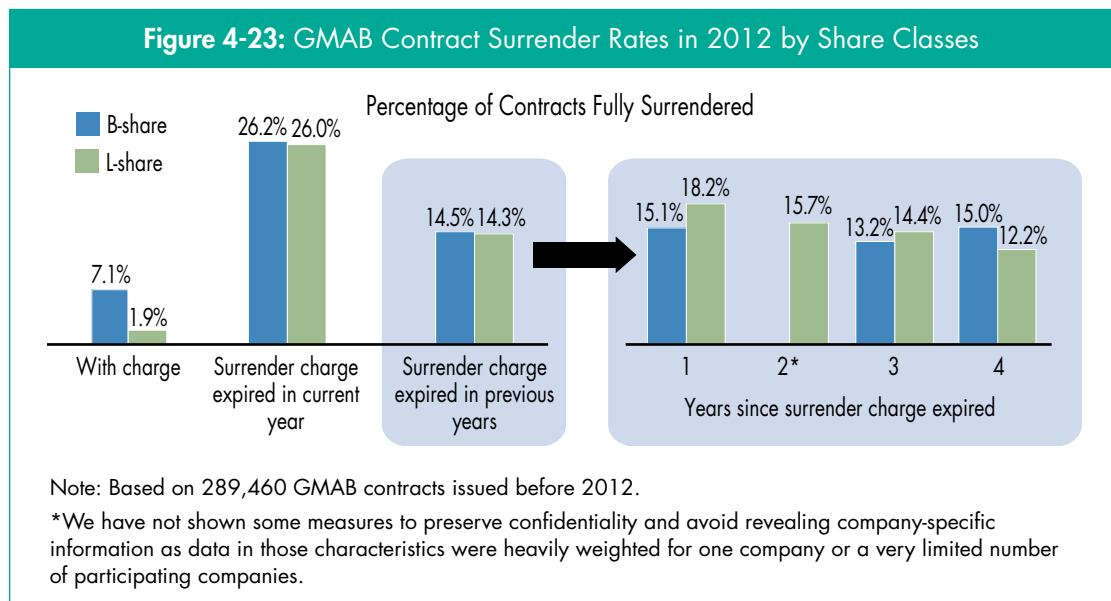
**6.8%** was the contract surrender rate in GMAB contracts when surrender charges were present.

**13.9%** of contracts were surrendered where charges expired in previous years.

**23.3%** of contracts were surrendered where charges expired in the current year.

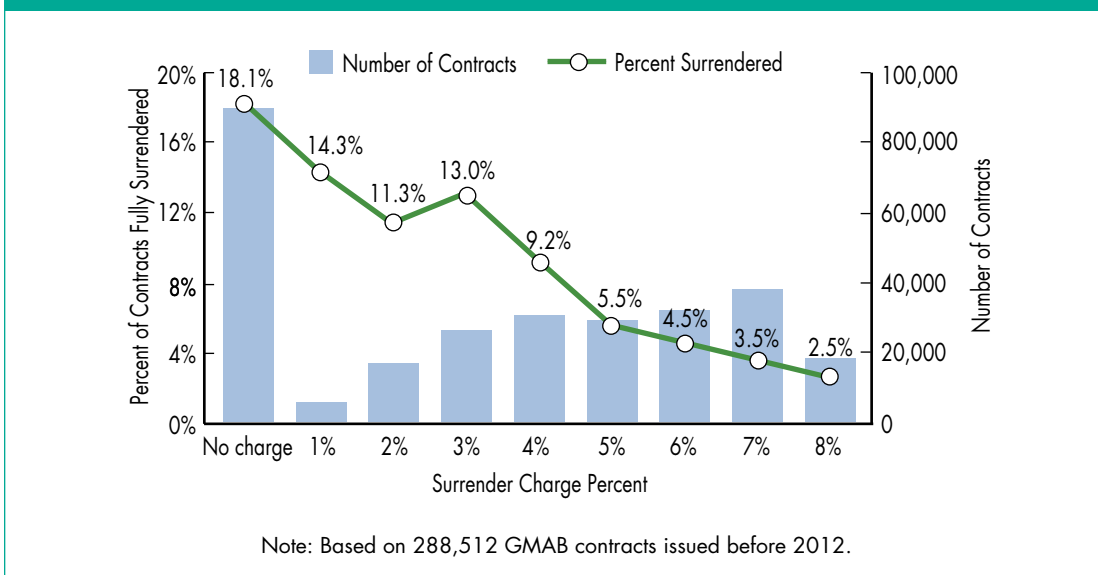
surrender rate of contracts that expired in previous years was 13.9 percent. Figure 4-23 illustrates the contract surrender rates for contracts by share classes while Figure 4-24 provides the cash value surrender rates.

Two thirds of GMAB contracts, with B- and L-share combined, were within the surrender charge periods in 2012. The contract surrender rates for B-share and L-share contracts with a surrender charge were 7.5 percent and 1.8 percent, respectively; the cash value surrender rates for B-share and L-share contracts with a surrender charge were 7.5 percent and 1.2 percent.

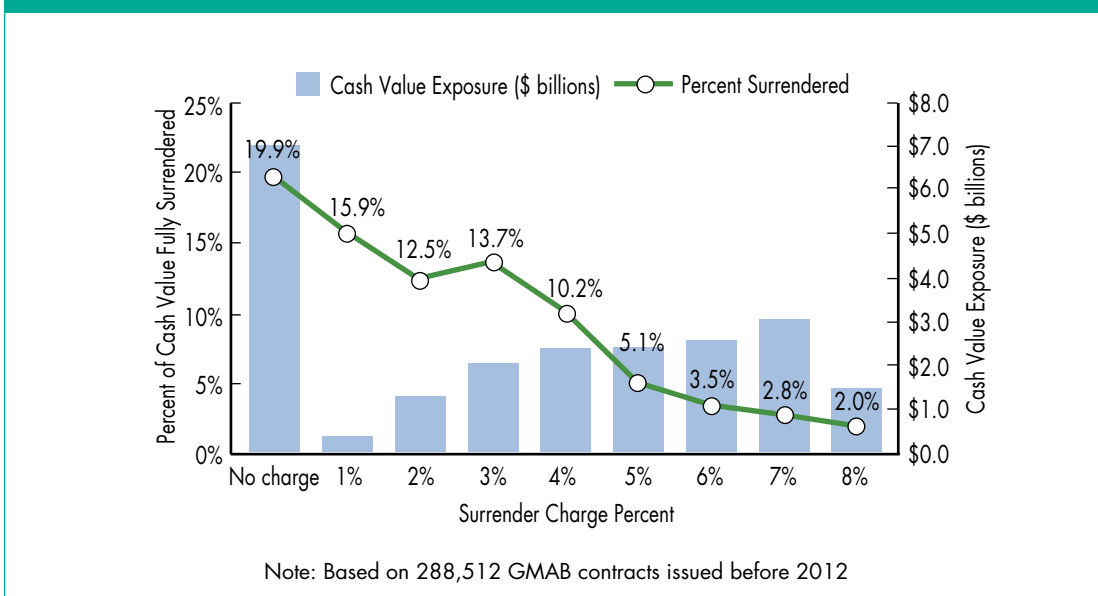


Contract surrender is influenced by the rate of surrender charge present. Naturally, contracts with the likelihood of higher penalties have lower surrender rates and vice versa (Figure 4-25). Nearly a third of GMAB contracts (30 percent) were free of surrender charges in 2012. Also the contracts free of surrender charges accounted for 30 percent of total account value of the contracts. Figure 4-26 provides the cash value surrender rates by presence of surrender charge.

**Figure 4-25: GMAB Contract Surrender Rates in 2012 by Surrender Charge Percentage**



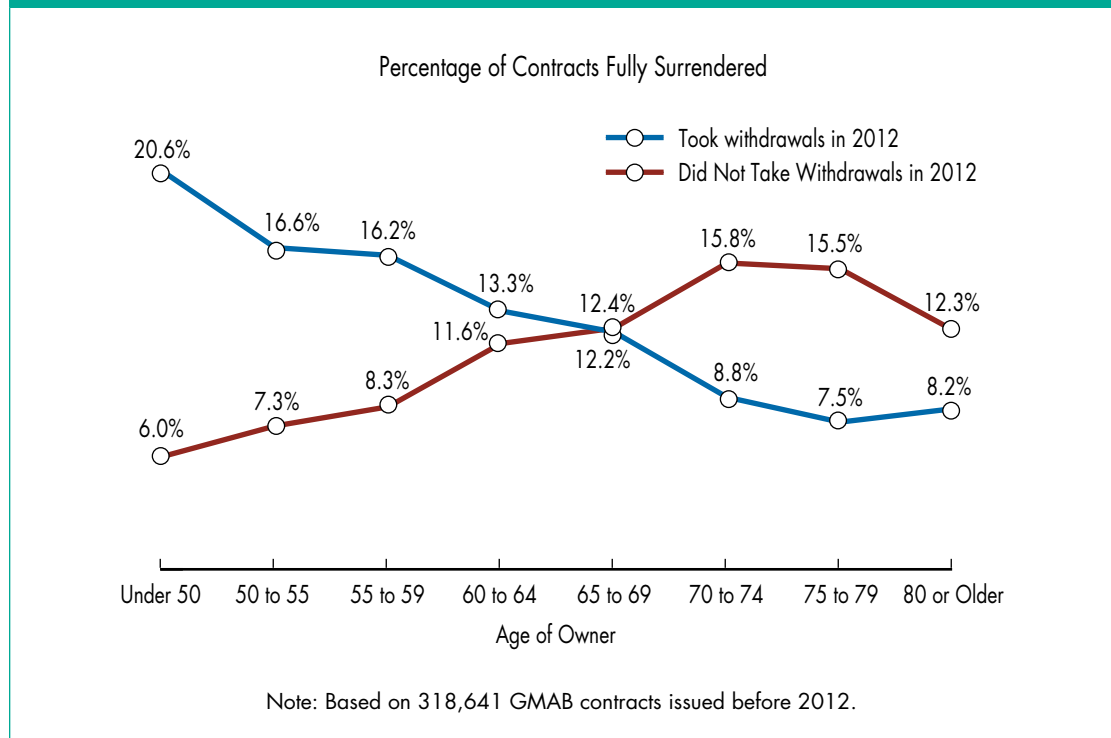
**Figure 4-26: GMAB Cash Value Surrender Rates in 2012 by Surrender Charge Percentage**



### Surrender Activity by Owners Taking Withdrawals

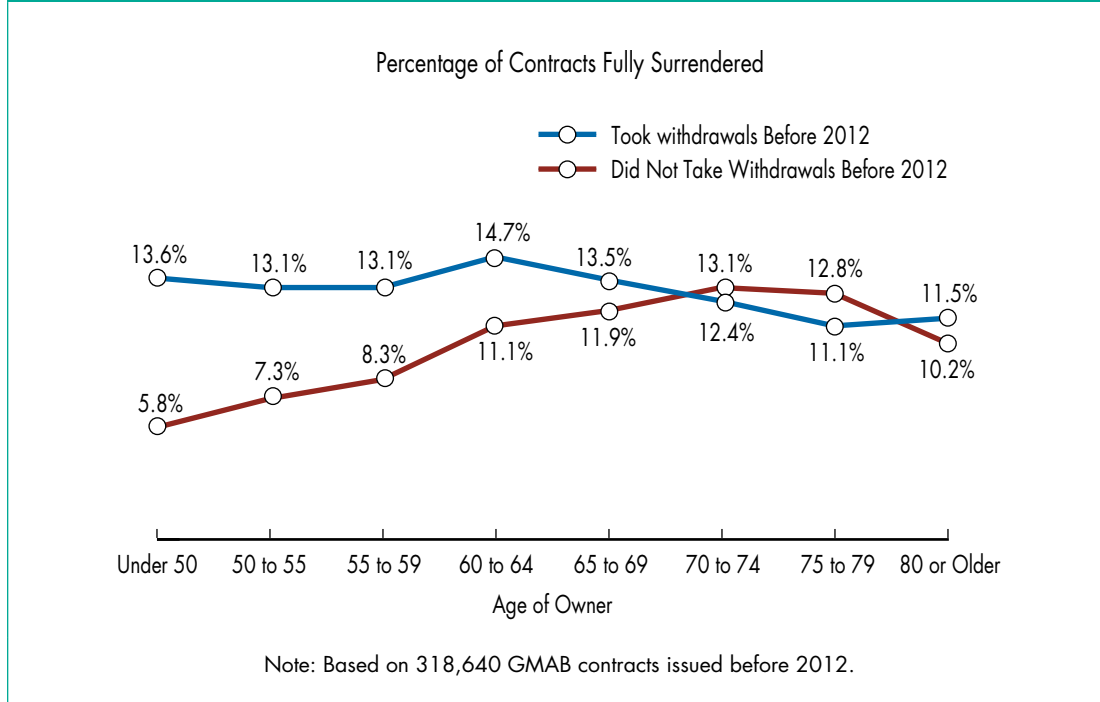
Higher GMAB surrender rates are associated with younger owners, particularly those under age 60 who took withdrawals before or in 2012. Even though younger owners own a significant portion of GMABs, some of them are taking large average amounts of withdrawals. It is likely that these younger owners are really taking partial surrenders. Owners under age 60 who took withdrawals in 2012 were also very likely to fully surrender their contracts compared to older owners (Figures 4-27 and 4-28).

**Figure 4-27: GMAB Contract Surrender Rates in 2012, by Owners Taking Withdrawals in 2012**



Twenty-one percent of owners under age 50; 17 percent of owners between ages 50 and 54; and 16 percent of owners between ages 55 and 59 who took withdrawals during 2012 subsequently surrendered their contracts by EOY 2012.

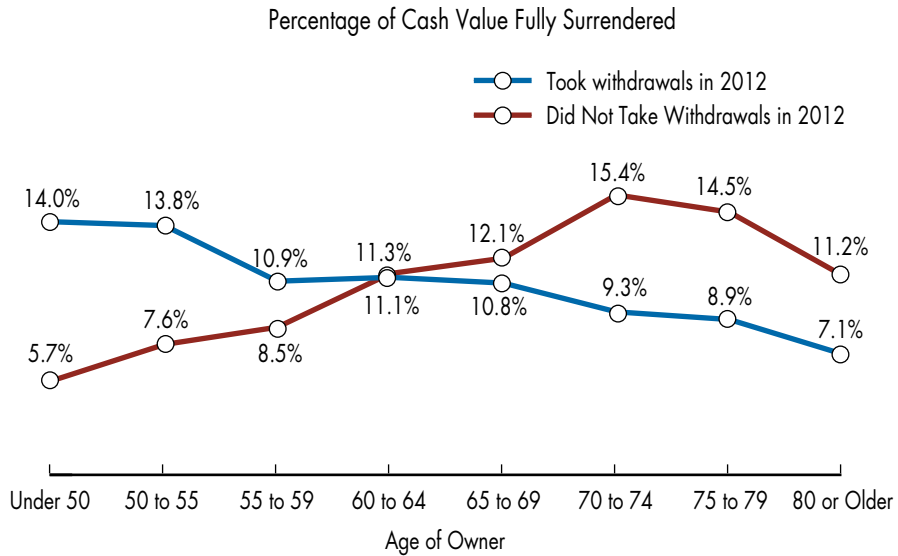
**Figure 4-28: GMAB Contract Surrender Rates by Owners Taking Withdrawals Before 2012**



Past withdrawals can also indicate whether younger owners are more likely to fully surrender contracts in the future. Figure 4-28 provides the contract surrender rates for owners who took withdrawals before 2011.

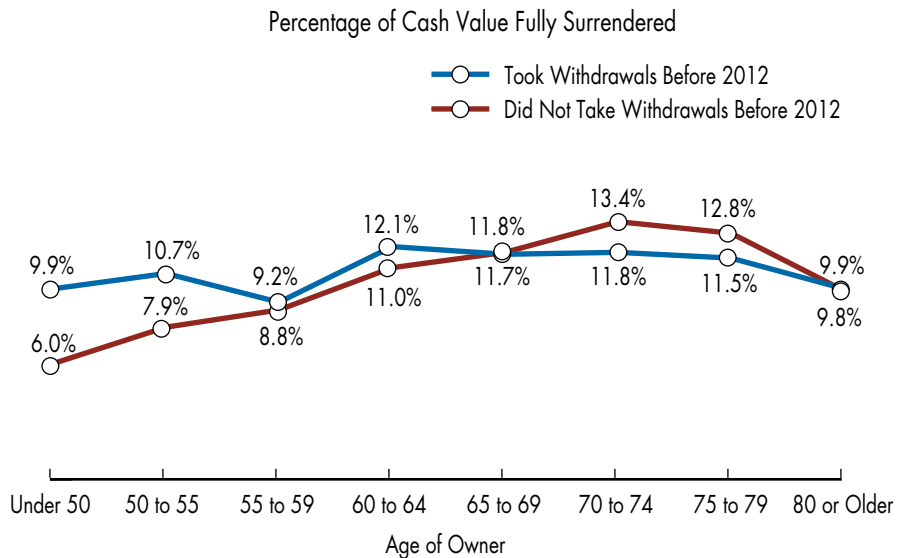
Figures 4-29 and 4-30 show the cash value surrender rates for owners taking withdrawals in 2012 and before 2012, respectively.

**Figure 4-29: GMAB Cash Value Surrender Rates in 2012, by Owners Taking Withdrawals in 2012**



Note: Based on 318,641 GMAB contracts issued before 2012.

**Figure 4-30: GMAB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2012**



Note: Based on 318,641 GMAB contracts issued before 2012.



It should be noted that many of the GMAB owners may have surrendered the contracts because the contract benefit matured. Benefit maturity in the contract may be the driving force for high surrender rates, and we see that reflected in high surrender rates among older owners; e.g., owners aged 70 to 79 who have not taken any withdrawals in 2012. But for many younger owners, taking withdrawals may be an early indicator of full contract surrender. Figure 4-31 provides contract and cash value surrender rates in 2012 by year of benefit maturity. Surrender rates increase from benefit maturity years 2013 to 2015 and then slowly decline thereafter.

**Figure 4-31: GMAB Surrender Rates in 2012 by Benefit Maturity Year**

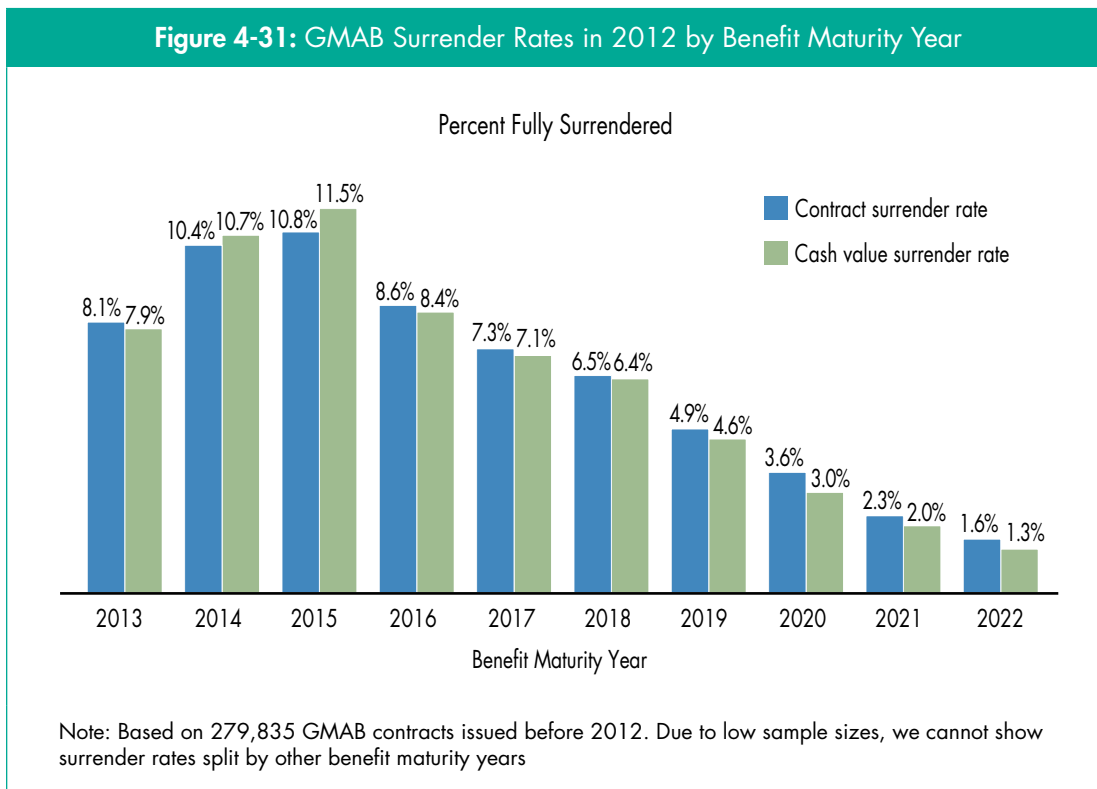
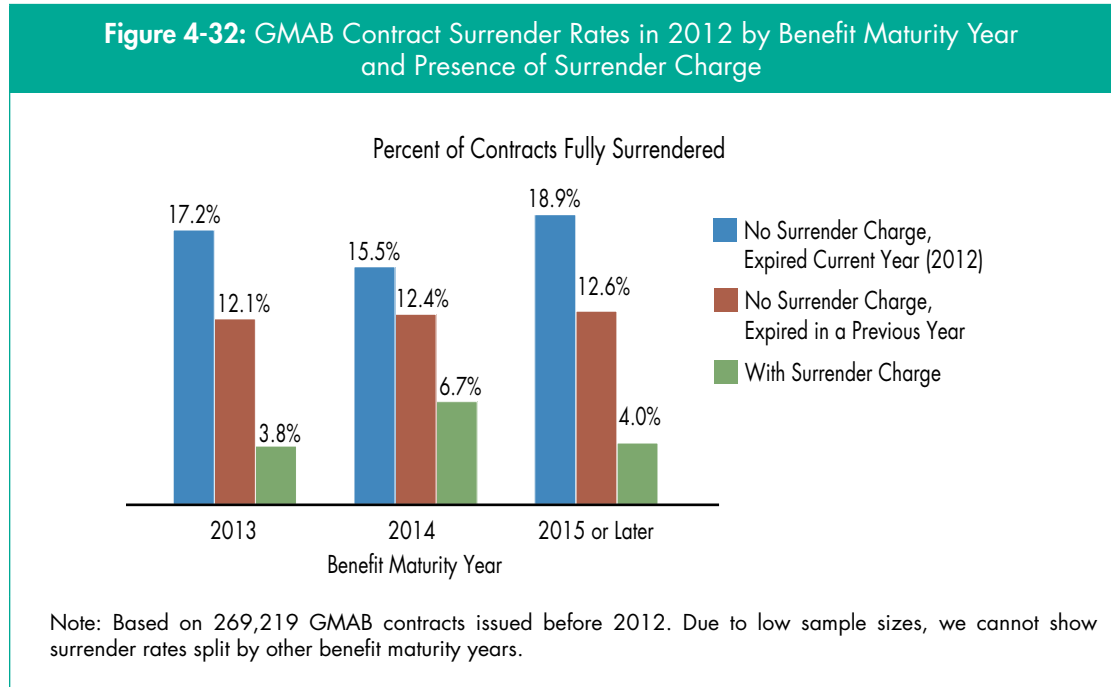


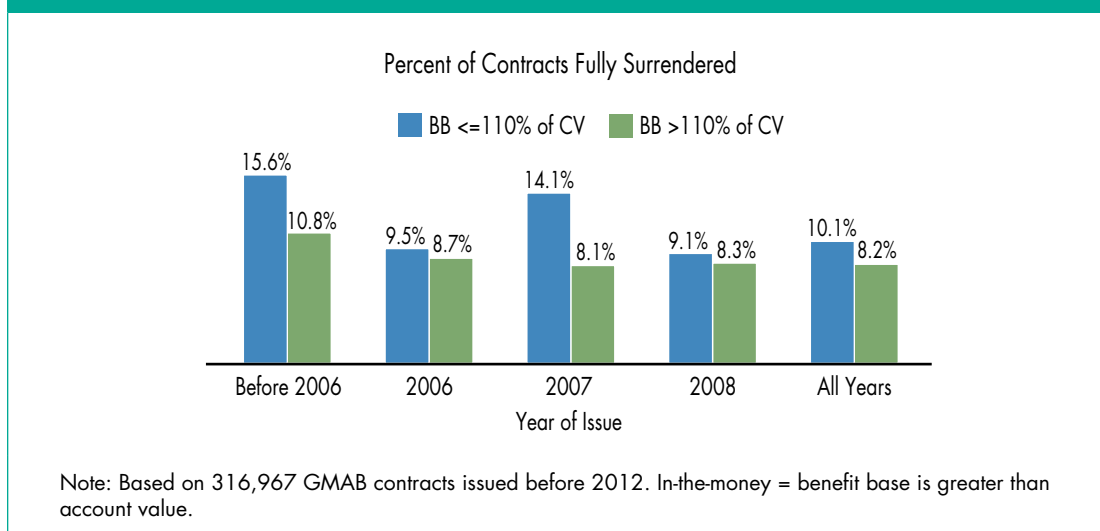
Figure 4-32 provides surrender rates for contracts where the surrender charge expired in 2012, before 2012, and those that still have a surrender charge. The surrender rates for contracts where the surrender charge expired in 2012 experience the shock lapse we see with other contracts in the year the surrender charge expires. Surrender rates for contracts where the surrender charge expired in previous years was around 12 to 13 percent. As we have seen in Figures 4-23 and 4-24, surrender rates for GMABs are relatively high once the surrender charge has expired. Surrender rates for contracts that still have a surrender charge are relatively low and remain in a range of about 4 to 7 percent. Two thirds of the GMAB contracts still had a surrender charge in 2012, one in ten had its surrender charge expire in the current year, and two in ten had its surrender charge expire in a previous year.



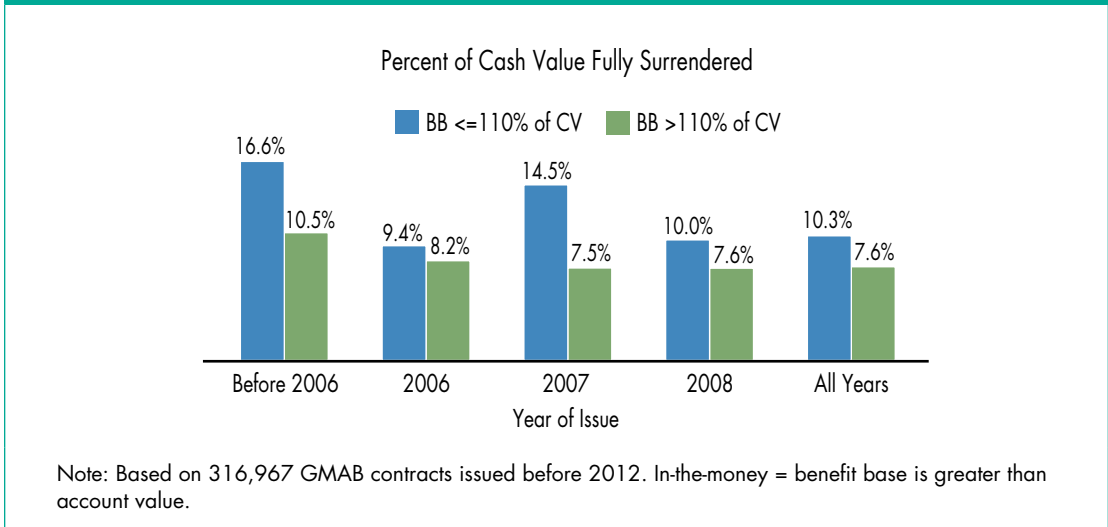
## Surrender Activity by Degree of In-the-Money

Another important analysis of surrender rates involves whether or not the GMAB contracts are in-the-money. Controlling for year of issue as well as reviewing contracts that did not take withdrawals before 2012, contracts that are not in-the-money have slightly higher surrender activity (Figures 4-33, 4-34, and 4-35). We would not expect a contract being in-the-money to make that much of a difference, because GMAB owners purchased the product to avoid loss of principal in market volatility during a fixed period of time. Unless their investment objectives have changed, they should hold on to their contract until its maturity date. Other issues such as the expiration of the surrender charge could explain some of the increased surrender activity.

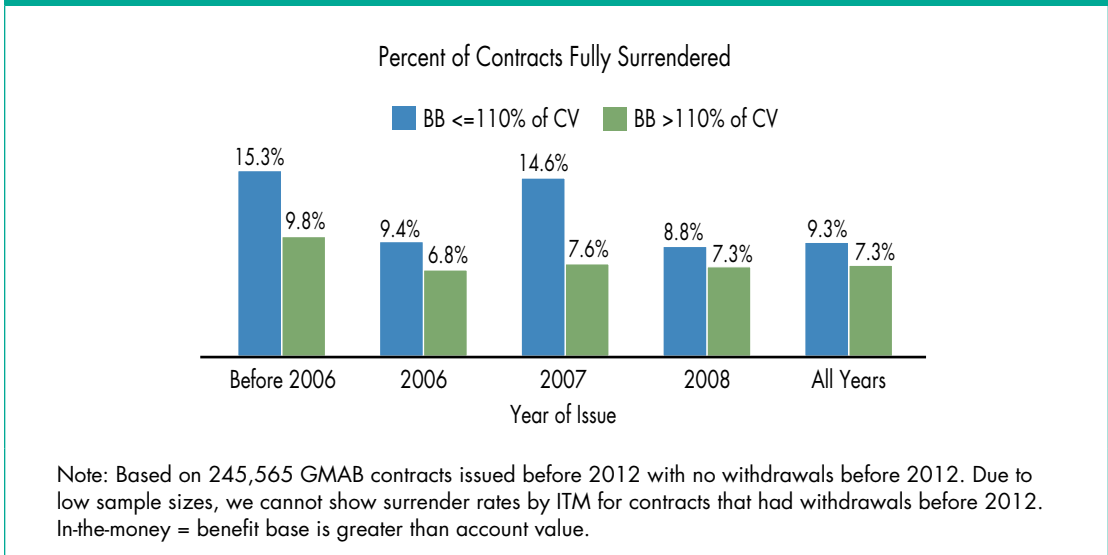
**Figure 4-33: GMAB Contract Surrender Rate by Degree of In-the-Money**



**Figure 4-34: GMAB Cash Value Surrender Rate by Degree of In-the-Money-ness**



**Figure 4-35: GMAB Contract Surrender Rate by Degree of In-the-Money-ness for Contracts That Did Not Have Withdrawals Before 2012**



Surrender activity is higher for older contracts and older owners, as the contracts come out of surrender charges, and as they near benefit maturity period (Table 4-5).

**Table 4-5: GMAB Surrender Rates**

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>All contracts</b>	9.9%	10.1%
<b>Year of issue</b>		
Before 2004	15.5%	15.9%
2004	13.6%	13.9%
2005	16.7%	18.5%
2006	9.4%	9.3%
2007	12.4%	12.6%
2008	9.0%	9.9%
2009	4.2%	3.8%
2010	2.8%	1.7%
2011	1.7%	1.2%
<b>Age of owner</b>		
Under 50	6.7%	6.4%
50 to 54	8.0%	8.3%
55 to 59	9.0%	8.9%
60 to 64	11.9%	11.2%
65 to 69	12.3%	11.8%
70 to 74	12.8%	12.7%
75 to 79	11.9%	12.1%
80 or older	10.8%	9.9%
<b>Contract value, BOY 2012</b>		
Under \$25,000	10.3%	9.6%
\$25,000 to \$49,999	9.2%	9.3%
\$50,000 to \$99,999	9.9%	9.9%
\$100,000 to \$249,999	10.1%	10.1%
\$250,000 to \$499,999	10.2%	10.2%
\$500,000 or higher	10.9%	11.1%

Table 4-5: GMAB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
<b>Gender</b>		
Male	10.2%	10.5%
Female	9.7%	9.6%
<b>Share class</b>		
B-share	9.6%	9.8%
L-share	12.2%	12.5%
<b>Market type</b>		
IRA	9.2%	9.2%
Nonqualified	11.5%	11.5%
<b>Distribution channel</b>		
Career agent	5.5%	4.5%
Independent agent / Independent B-D	10.0%	10.1%
Full-service national BD	14.5%	15.6%
Bank	12.0%	13.0%

Note: Based on 318,641 GMAB contracts issued before 2012. Percent of contracts surrendered = number of contracts fully surrendered / total number of contracts in force. Percent of contract value surrendered = sum of values of fully surrendered contracts / total contract value in force. We have not shown some measures related to channels, asset allocation restrictions and share classes in order to preserve confidentiality and avoid revealing company-specific information, as data in those characteristics were heavily weighted for one company or a very limited number of participating companies.

### Key Findings

- There is little difference between persistency in contracts funded by nonqualified and qualified money. There is even less difference based on gender, or the size of contracts.
- GMAB contracts issued through full-service national BDs have the highest surrender rates (14.5 percent) while those issued by career agents have the lowest (5.5 percent).

## Product and Benefit Characteristics

GMABs are the least expensive GLB, especially for contracts issued before 2010. Most cost around 0.40 to 0.80 percent of contract value — either including or excluding any fixed account balance (Table 4-6).

**Table 4-6: GMAB Product and Benefit Characteristics**

	Issued before 2006	Issued in 2006	Issued in 2007	Issued in 2008	Issued in 2009	Issued in 2010	Issued in 2011	Issued in 2012
<b>Average Mortality and expense charge</b>	1.46%	1.45%	1.44%	1.46%	1.47%	1.37%	1.36%	1.44%
<b>Average benefit fee</b>	0.34%	0.44%	0.45%	0.60%	0.59%	0.71%	0.77%	0.78%
<b>Average number of subaccounts</b>	67	66	68	69	70	57	51	49
<b>Product has fixed account</b>								
Yes	75%	85%	87%	90%	84%	89%	83%	79%
No	25%	15%	13%	10%	16%	11%	17%	21%
<b>Product still available as of 12-31-2011</b>								
Yes	21%	31%	42%	43%	31%	78%	97%	99%
No	79%	69%	58%	57%	69%	22%	3%	1%
<b>Rider still available as of 12-31-2012</b>								
Yes	13%	37%	40%	52%	57%	86%	68%	75%
No	87%	63%	60%	48%	43%	14%	32%	25%
<b>Cap on benefits</b>								
Yes	54%	41%	34%	22%	24%	21%	31%	41%
No	46%	59%	66%	78%	76%	79%	69%	59%
<b>Benefit fee basis</b>								
Benefit base	10%	16%	23%	33%	36%	32%	51%	69%
Account value	47%	44%	34%	19%	14%	18%	22%	26%
VA subaccounts	33%	35%	39%	46%	50%	50%	27%	5%
Other	10%	5%	4%	2%	0%	0%	0%	0%
<b>Average maximum age at election</b>	82	84	80	80	81	80	79	78
<b>Step-up if available*</b>								
Annually	57%	69%	74%	83%	82%	88%	82%	76%
Every 3 years	0%	1%	1%	13%	17%	11%	17%	22%
Every 5 years	43%	30%	25%	4%	1%	1%	1%	2%

**Table 4-6: GMAB Product and Benefit Characteristics** *(continued)*

	Issued before 2006	Issued in 2006	Issued in 2007	Issued in 2008	Issued in 2009	Issued in 2010	Issued in 2011	Issued in 2012
<b>Asset allocation restrictions</b>								
Forced asset allocation model	44%	46%	45%	48%	28%	21%	31%	41%
Limitations on fund selection	9%	7%	5%	3%	2%	1%	1%	0%
Dynamic asset allocations	34%	34%	35%	34%	50%	56%	36%	10%
No, but may restrict	7%	8%	10%	12%	18%	21%	31%	47%
No restrictions	6%	5%	5%	3%	2%	1%	1%	2%
<b>GMAB roll-up percent</b>								
100% of premium	98%	95%	95%	95%	98%	98%	97%	96%
Over 100%	2%	5%	5%	5%	2%	2%	3%	4%
<b>Waiting period</b>								
5-year	5%	0	0	0	0	0	0	0
7-year	31%	31%	35%	25%	22%	24%	13%	0
10-year	63%	68%	65%	75%	77%	74%	84%	74%
More than 10-year	1%	1%	1%	1%	1%	2%	2%	26%
<b>Among contracts with maximum charge info. provided</b>								
Standard rider charge	0.33%	0.43%	0.44%	0.59%	0.59%	0.71%	0.77%	0.78%
Maximum rider charge	0.69%	0.87%	0.85%	0.84%	0.82%	0.81%	0.90%	1.13%
*Among contracts that allow multiple step-ups.								
Note: Based on 334,954 GMAB contracts issued in or before 2012.								

## Key Findings

- In 2012, two thirds of GMAB fees were based on the benefit base. On average, maximum fees in 2012 increased to 113 basis points.
- The average buyer of a VA with a GMAB in 2012 paid 78 basis points as the rider fee. Combined with M&E charges, the total charge was around 2.22 percent for contracts issued in 2012.
- A ten-year waiting period is the most common guarantee period. Just over 2 in 10 GMAB contracts issued in 2012 have a 12-year waiting period.
- Annual step-up options have become more common, and caps on benefits have become more prevalent.



## Participating Companies

Ameritas  
AXA Equitable  
CUNA Mutual  
Guardian Life  
ING  
Kansas City Life  
Lincoln National  
MassMutual  
MetLife  
Nationwide  
New York Life  
Pacific Life  
Penn Mutual  
Phoenix Life  
Principal Financial  
Protective Life  
Prudential  
RiverSource Annuities  
Securian/Minnesota Life  
Security Benefit  
SunAmerica  
Transamerica

## Appendix A: About the Survey

Twenty-two companies provided contract and product information for their VA GLB business that met the following criteria:

1. Were in force as of January 1, 2012, or were issued during 2012;
2. Were nonqualified contracts except for IRA annuities; and
3. The contract owner had elected at least one GLB offered on the product.

The study excluded contracts for which no GLB was available and contracts for which one or more GLBs were available but the owner elected none. In total 4.6 million contracts were represented in this study.

For each contract, companies indicated which GLB had been elected and provided specific information about the characteristics of that benefit, including:

- Method of benefit base calculation (e.g., percent of premium, roll-up, ratchet)
- Timing of benefit maturity
- Asset allocation restrictions
- Presence and use of step-up options
- Benefit base at beginning of year, anniversary, and end of year

Contracts with withdrawal benefits included information on the maximum annual withdrawal amounts (and percentages) and the selection of lifetime payouts.

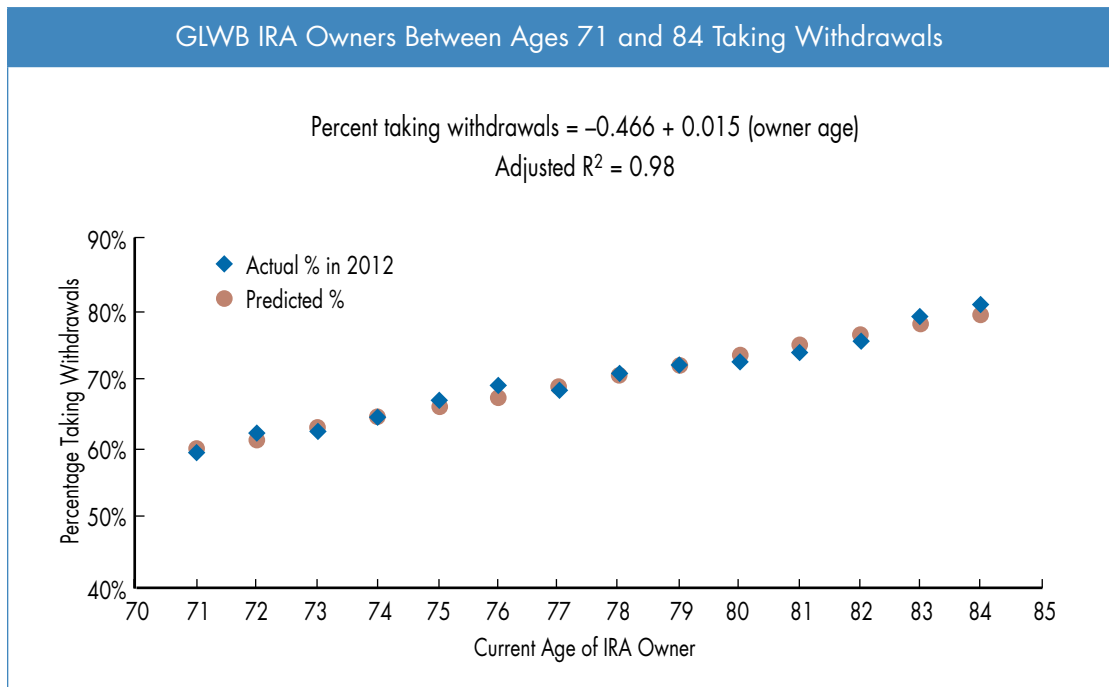
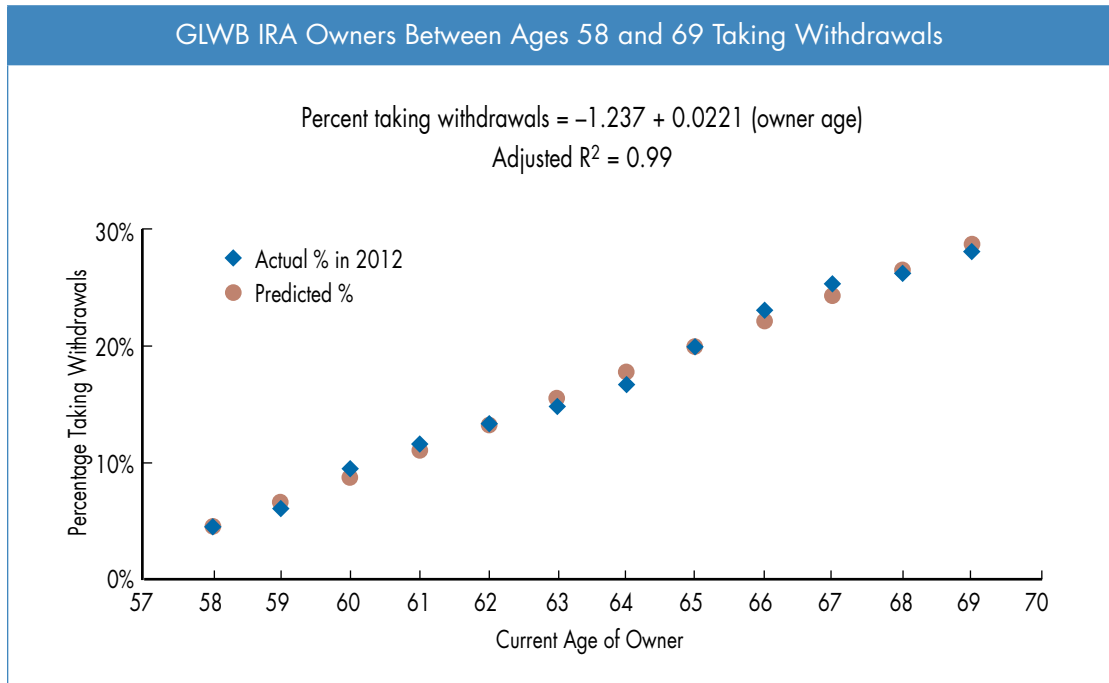
Companies also provided the following information at the contract level:

- Basic owner demographics (age, sex)
- Distribution channel
- Market type (nonqualified or IRA)
- Cost structure (A-share, B-share, C-share, or L-share)
- Account values (beginning of year, at anniversary, and end of year)

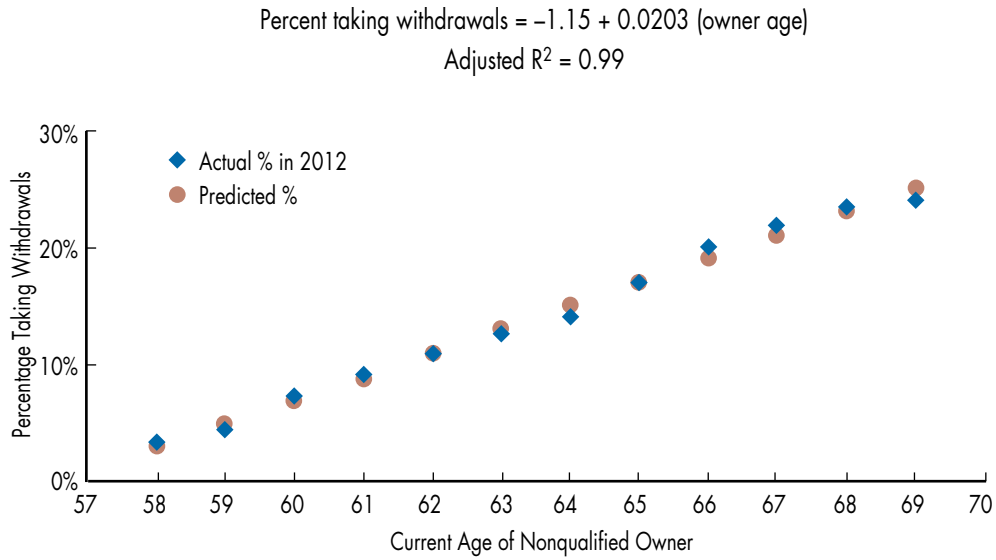
- Cash-flow activity (current-year premium, cumulative premiums, cumulative withdrawals, and current-year partial withdrawals)
- Contract status (in-force, end-of-year, surrendered, terminated due to death, or annuitized) and timing of status change

The study collected detailed, product-level information for each product represented in each company's data. This product information was used to categorize products in terms of their benefit features. LIMRA relied solely on the product specifications for certain characteristics, including product and rider costs and method of reduction of benefit bases due to withdrawals, though these components may vary across individual contracts.

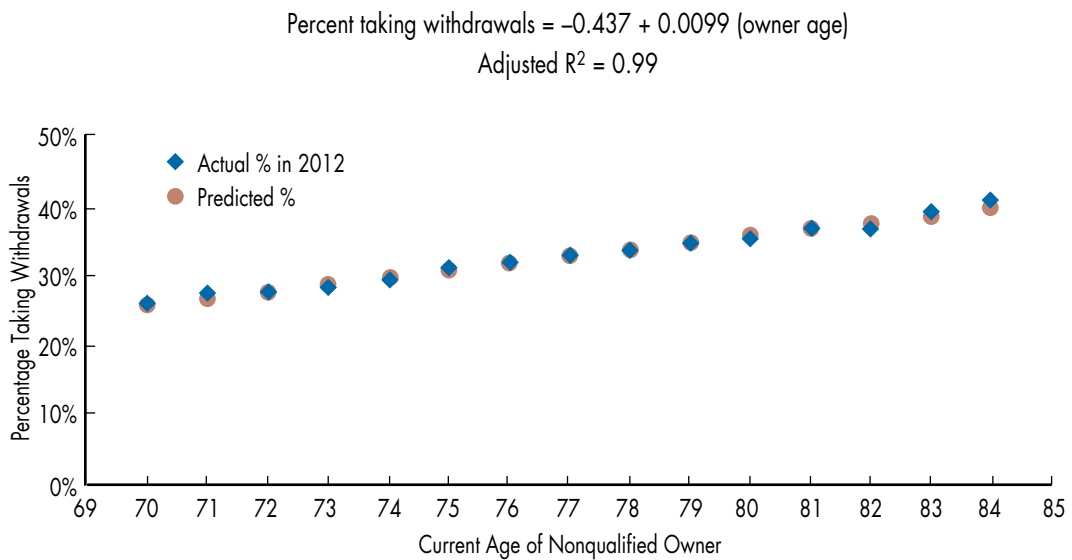
## Appendix B: Regression Model of GLWB Owners Taking Withdrawals



### GLWB Nonqualified Owners Between Ages 58 and 69 Taking Withdrawals



### GLWB Nonqualified Owners Between Ages 70 and 84 Taking Withdrawals



## Related Links

The following links are valid as of March 2014.

### **LIMRA**

*Guaranteed Living Benefits Utilization: 2011 Data* (2014)

Based on 2011 data for 19 companies.

**[http://www.limra.com/Research/Abstracts/2014/Variable\\_Annuity\\_Guaranteed\\_Living\\_Benefits\\_Utilization\\_%E2%80%93\\_2011\\_Experience\\_\(2014\).aspx](http://www.limra.com/Research/Abstracts/2014/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_%E2%80%93_2011_Experience_(2014).aspx)**

*Guaranteed Living Benefits Utilization: 2010 Data* (2013)

Based on 2010 data for 23 companies.

**[http://www.limra.com/Research/Abstracts/2013/Variable\\_Annuity\\_Guaranteed\\_Living\\_Benefits\\_Utilization\\_\\_2010\\_Data\\_Summary\\_Report.aspx?](http://www.limra.com/Research/Abstracts/2013/Variable_Annuity_Guaranteed_Living_Benefits_Utilization__2010_Data_Summary_Report.aspx?)**

*Guaranteed Living Benefits Utilization: 2009 Data* (2011)

Based on 2009 data for 21 companies.

**[http://www.limra.com/Research/Abstracts/2011/Guaranteed\\_Living\\_Benefits\\_Utilization\\_\\_2009\\_Data\\_\(2011\).aspx?](http://www.limra.com/Research/Abstracts/2011/Guaranteed_Living_Benefits_Utilization__2009_Data_(2011).aspx?)**

*Guaranteed Living Benefits Utilization: 2008 Data* (2009)

Based on 2008 data for 19 companies.

**[http://www.limra.com/Research/Abstracts/2009/Guaranteed\\_Living\\_Benefits\\_Utilization\\_\\_2008\\_Data\\_\(2009\).aspx?](http://www.limra.com/Research/Abstracts/2009/Guaranteed_Living_Benefits_Utilization__2008_Data_(2009).aspx?)**

*Guaranteed Living Benefits Utilization: 2007 Data* (2009)

Based on 2007 data for 19 companies.

**[http://www.limra.com/Research/Abstracts/2009/Guaranteed\\_Living\\_Benefits\\_Utilization\\_\\_2007\\_Data\\_\(2009\).aspx?](http://www.limra.com/Research/Abstracts/2009/Guaranteed_Living_Benefits_Utilization__2007_Data_(2009).aspx?)**

*Guaranteed Living Benefits Utilization: 2006 Data* (2008)

Based on 2006 data for 19 companies.

**[http://www.limra.com/Research/Abstracts/2008/Guaranteed\\_Living\\_Benefits\\_Utilization\\_\\_2006\\_Data\\_\(2008\).aspx](http://www.limra.com/Research/Abstracts/2008/Guaranteed_Living_Benefits_Utilization__2006_Data_(2008).aspx)**

*Glimpse: Variable Annuity Guaranteed Living Benefit (GLB) Election Tracking Survey (2013, 4th Quarter)*

This survey tracks industry VA GLB election rates on a quarterly basis. GLB election rates for new VA sales are tracked by type of GLB, as well as by distribution channel.

**[http://www.limra.com/Research/Abstracts/2014/Glimpse\\_\\_Variable\\_Annuity\\_Guaranteed\\_Living\\_Benefit\\_\(GLB\)\\_Election\\_Tracking\\_Survey\\_\(2013,\\_4th\\_Quarter\).aspx](http://www.limra.com/Research/Abstracts/2014/Glimpse__Variable_Annuity_Guaranteed_Living_Benefit_(GLB)_Election_Tracking_Survey_(2013,_4th_Quarter).aspx)**

## **Non-LIMRA**

*Unpredictable policyholder behavior challenges US life insurers' variable annuity business*,  
Moody's Investor Service, June 2013

Unpredictable behavior by variable annuity policyholders will continue to pressure US life insurers going forward, says Moody's Investors Service in its new special comment.

**[https://www.moody.com/research/Moodys-Unpredictable-policyholder-behavior-challenges-US-life-insurers-variable-annuity--PR\\_276484](https://www.moody.com/research/Moodys-Unpredictable-policyholder-behavior-challenges-US-life-insurers-variable-annuity--PR_276484)**

*Nearly 15% of Variable Annuity Policies With a Guaranteed Withdrawal Benefit Started Withdrawals Within the First 12 Months After Attaining Eligibility*; Milliman, June 2011

This Milliman survey provides insight into consumer use of guaranteed living benefits on variable annuities.

**<http://www.prnewswire.com/news-releases/nearly-15-of-variable-annuity-policies-with-a-guaranteed-withdrawal-benefit-started-withdrawals-within-the-first-12-months-after-attaining-eligibility-123737939.html>**

*Practice Note for the Application of C-3 Phase II and Actuarial Guideline XLII (2009)*, American Academy of Actuaries, July 2009. Milliman

This practice note was prepared by a work group set up by the Life Practice Note Steering Committee of the American Academy of Actuaries. It is an update of the September 2006 C-3 Phase II Practice Note and represents a description of practices believed by the VA Practice Note Work Group to be commonly employed by actuaries in the United States in 2009. It includes discussion of owner behavior (e.g., lapsation) when living benefits are present on the VA contract.

**[http://www.actuary.org/pdf/life/c3p2\\_july09.pdf](http://www.actuary.org/pdf/life/c3p2_july09.pdf)**

*"Guaranteed Living Benefits: Before the Meltdown," Product Matters!* June 2009.

This article describes a study by Milliman Inc. that explores overall living benefit utilization rates for a group of 21 companies.

**<http://www.soa.org/library/newsletters/product-development-news/2009/june/pro-2009-iss-74-saip.pdf>**

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